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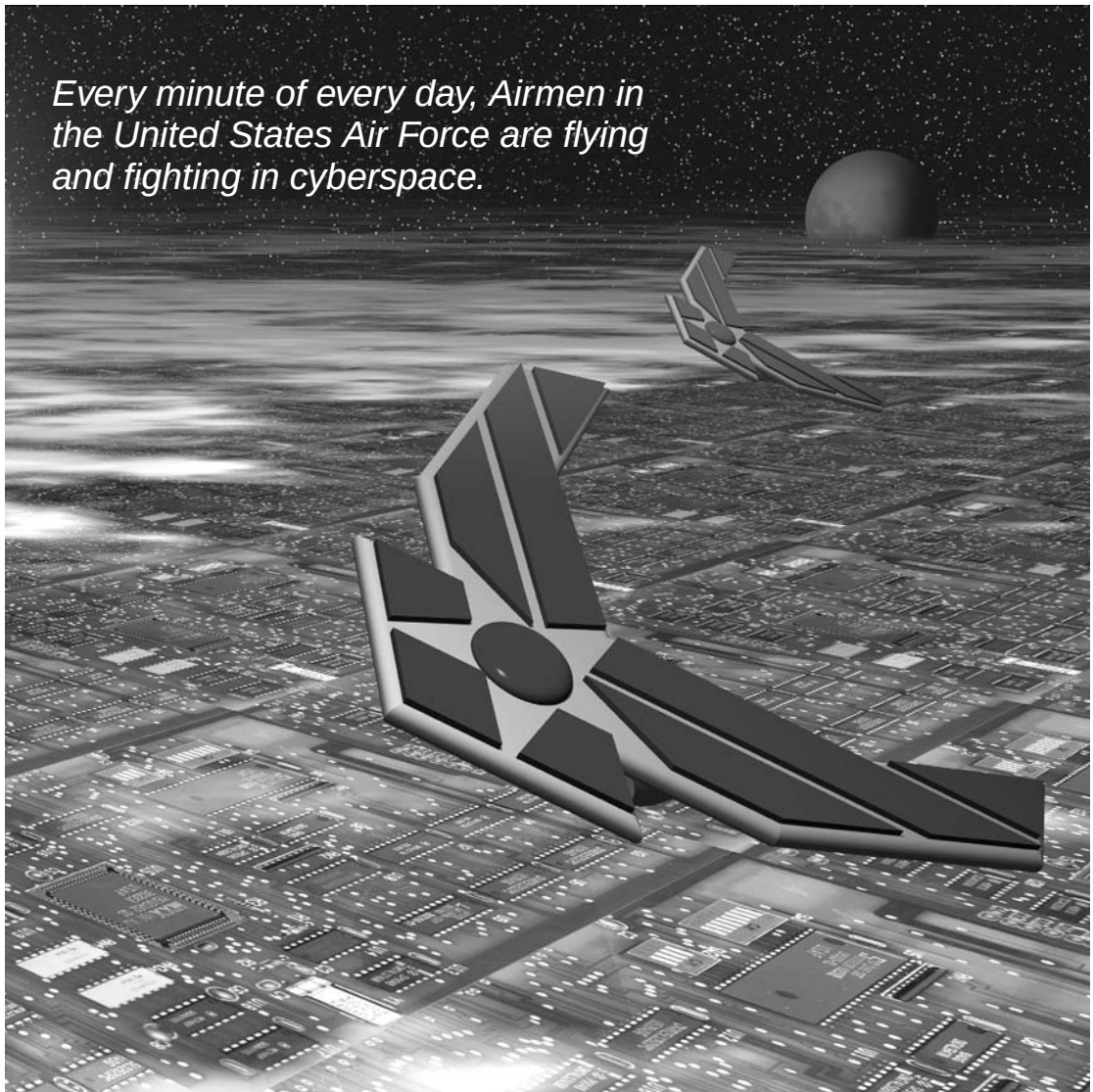
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Flying and Fighting in Cyberspace

HON. MICHAEL W. WYNNE, SECRETARY OF THE AIR FORCE

Every minute of every day, Airmen in the United States Air Force are flying and fighting in cyberspace.





Secretary of the Air Force Michael W. Wynne

CONSIDER THE FOLLOWING scenarios:

- Right now a terrorist lies on his belly in a dusty ditch. He holds a radio transmitter that will detonate an improvised explosive device and kill Americans as they convoy across a stretch of broken asphalt. Airmen in a secure facility just east of the front range of the Colorado Rockies input commands to global positioning system (GPS) satellites to enable an F-16 to engage the terrorist with precision-guided munitions.
- Right now a finance technician, sipping coffee in an Internet cafe, is moving US dollars via a laptop computer to support terrorist operations. Airmen in a network operations center remotely reconfigure Air Force computer systems worldwide to mitigate the Internet computer attack.

Every minute of every day, Airmen in the United States Air Force are flying and fighting in cyberspace.

Recently, the chief of staff of the Air Force and I took steps to focus and accelerate Air Force efforts in cyberspace: updating the service's mission statement, standing up a Cyberspace Task Force, and tasking major commands to develop potential organizational options up to and including an additional major command. The Air Force is particularly dependent upon cyberspace and well postured for the cyber battle. Without dominance in cyberspace, operations in the air and space domains as well as those on land and at sea remain at risk. The crux of the Air Force's effort calls for combining the disparate though effective efforts of thousands of Airmen who already contribute to cyberspace operations into an organization that can deliver global effects, provide stewardship to current cyberspace capability, and develop new systems and approaches to deliver the sovereign options requested.

Cyberspace

Just as water molecules and principles of hydrodynamics define the *sea domain* and just as air molecules and principles of aerodynamics define the *air domain*, so do the electromagnetic spectrum (EMS) and associated electronics and energy propagation define *cyberspace*. This includes all signals that flow through the EMS—those from cell phones, the Internet, and remote-detonation devices. If it emits, transmits, or reflects, it uses cyberspace.

In September 2006, the Joint Chiefs of Staff endorsed a definition of *cyberspace* as “a domain characterized by the use of electronics and the electromagnetic spectrum to store, modify and exchange data via networked systems and associated physical infrastructures.”¹ The key point in the definition—the idea that cyberspace includes the totality of the EMS—enables a more holistic approach to the cyberspace fight. For instance, efforts against an enemy's Integrated Air Defense System could include offensive and defensive as well as kinetic and nonkinetic effects against the signals (radar and communications), nodes, and networked systems of the entire system—not just

the communications or data-storage aspects. The Air Force is the nation's *premier* multi-dimensional maneuver force whose strategy and tactics consider agility, reach, speed, stealth, payload, precision, and persistence to deliver global effects at the speed of sound and, with cyberspace capability, at the speed of light. This definition means that cyberspace encompasses but is larger than the Internet because it also includes capabilities such as directed energy, which exists in a part of the EMS that lies outside the interconnected, computer-based, global-information grid.

The Air Force currently dominates the space domain to the extent that it even monitors and tracks thousands of pieces of space "junk." Although foreign and commercial payloads exist in space, the Air Force unquestionably gives the United States the ability to project power through this domain.

Furthermore, the Air Force provides superiority in the air domain in the place and duration of its choosing. True, various nations claim sovereignty of airspace in close proximity to and over their territorial possessions, but these boundaries are likely unenforceable in the face of deliberate Air Force actions. Our service currently has the capability to deny use of even foreign-national airspace for any specified time and place.

Cyberspace demands an effort comparable to the Air Force's global, strategic omnipresence in air and space, but today the service can offer only limited options in that domain. Adversaries, be they nation-states or terrorists, can effectively maneuver within cyberspace and therefore can find opportunities to exploit it. They can communicate globally with their agents, spread propaganda and solicit support worldwide, attack opponents' cyberspace presence (crashing servers and defacing Web sites), and even conduct tactical operations that have kinetic effects, such as jamming GPS frequencies or detonating improvised explosive devices via remotely controlled radio frequencies.

Our nation's neural network resides in cyberspace. As a highly technologically developed nation and group of armed forces, we cannot afford to risk compromise of that network. Cy-

berspace superiority permits effective operations on land, at sea, and in air and space. We must be prepared to defeat our enemies by using combined arms—air, ground, sea, space, and cyber weapons systems. Our nation depends on it.

A great deal of our combat capability operates in cyberspace: command and control (C2) systems as well as the intelligence, surveillance, and reconnaissance platforms that ensure battlefield awareness stand as just two examples of critical systems operating in cyberspace—and associatively at risk. We cannot allow our adversaries, enticed by the low entry cost and high payoff of gaining an advantage in cyberspace, to operate freely there. The pervasive nature of pro-jihad Web sites represents a tangible and highly visible example of how our adversaries use elements of cyberspace against us.

Air Force Efforts in Cyberspace

The Air Force has a long history of fighting in cyberspace. As operations in the EMS gained in importance, a range of cyberspace war fighting emerged, from jamming radio frequencies, to radio electronic combat (a Russian derivative for electronic warfare), to C2 warfare, to research in directed energy, to information-operations capabilities (including computer attack and defense), and so forth. Although all of the services invest substantially in cyberspace capabilities, the Air Force provides the preponderance of assets for the cyber battle.

Unfortunately, a lack of focus of cyberspace forces within the Air Force enterprise has hindered the service's presentation of these assets to the joint war-fighting effort. Whereas the land and sea services have straightforward command relationships with their cyberspace

All aspects of air war will have some equivalent role in cyber war.

capabilities and direct lines to the combatant commanders through US Strategic Command or US Joint Forces Command, the Air Force employs various arrangements across different major commands to deliver cyberspace capabilities and effects. For cyberspace to reach its full potential, it must become a capability as crucial as airpower to the joint fight's attainment of true cross-domain dominance in air, space, cyberspace, land, and sea.

The effects that we could produce in and through cyberspace range from simple deterrence all the way to unmitigated destruction and defeat. However, it is important to emphasize that *nonkinetic* does not equate to *nonlethal*. Just as we can use a kinetic attack to terrify rather than kill, so can we employ nonkinetic attacks to deliver a full spectrum of effects to irritate or cause tremendous loss of life and destruction of property. The proper force presentation will allow precise use of these effects in accordance with the rules of engagement.

Examples of effects realizable in the cyber realm might include suppressing enemy cyber defenses, co-opting and controlling enemy defenses on an as-desired basis, and conducting close cyber support that involves cyber operations designed to ensure freedom to carry out cyber/noncyber operations in safety or decoy operations to lure enemy cyber operations away from friendly activities/forces. *All aspects of air war will have some equivalent role in cyber war.*

Recent Actions

On 7 December 2005, Pearl Harbor Day, the chief of staff and I proclaimed a transformational mission for the Air Force: "to fly and fight in Air, Space and Cyberspace."² The explicit mention of cyberspace reflects the recognition of cross-domain interdependence. Cyber superiority is the prerequisite to effective operations across all strategic and operational domains. The Air Force has a nonnegotiable commitment to deliver sovereign options for the United States through cross-domain dominance of air, space, and cyberspace. This

The cyber realm embodies far more than just network warfare. Cyberspace is a domain, like land, where each of the principles of war applies. To grasp this concept requires a major institutional and cultural shift in war planning and operations.

pronouncement gives cyberspace the same emphasis accorded to the air and space domains.

In January 2006, we also established an Air Staff-level Cyberspace Task Force under guidance of the Senior Executive Service. Manning consists of personnel drawn from across the Air Staff and experts from the Air Force Reserve and Air National Guard (ANG). The task force researched all aspects of an Air Force role in cyberspace, discussed options with our sister services and at the general-officer level across the Air Force, developed briefings to focus the discussion, and formulated options for a road map to assist in the development of capability.

In September 2006, the chief and I tasked the four-star leadership from major Air Force commands with cyberspace capability to deliver a range of options for evolving a major cyberspace combat command. Thus far this has led to identifying Lt Gen Robert Elder and Eighth Air Force as the commander and resident command for cyberspace. We will evaluate recommendations on the size and composition of this force and implement a comprehensive plan, including acquisition, force development, and capabilities to posture the Air Force to lead in the cyberspace domain.

The Vision

As in other domains in which military forces conduct operations, cyberspace can have both

offensive and defensive components. Red Flag exercises, well known as training components of air warfare, will also become a staple of cyber warfare. In this context, we must note that the defensive nature of cyber warfare refers to protecting the ability to conduct offensive operations—not the more common view of defense as information assurance. Although the latter is important, taller and thicker firewalls will not ensure cyberspace safety. This much is crucial: *The cyber realm embodies far more than just network warfare. Cyberspace is a domain, like land, where each of the principles of war applies. To grasp this concept requires a major institutional and cultural shift in war planning and operations.*

The Air Force holds certain advantages in delivering global effects. Witness the air and space operations center (AOC) weapons system, which enables the joint force air component commander of a joint war-fighting force to leverage networked C2 of effects across air/space/cyber domains. Presently weighted toward providing air-delivered effects, with space support and reachback to cyber capabilities, the AOC could evolve into a coordination and tasking center for the complete range of the Air Force's air, space, and cyberspace assets.

The Air Force will develop a long-range plan for the future cyber warrior while drawing upon established expertise throughout the Air Force across multiple disciplines and functional communities. Core competencies such as electronic warfare, space control, and network-warfare operations are key candidates for an initial core cadre, with others as close competitors.

Our people hold the key to success, and we have just the hard-charging, technologically savvy workforce to lead us there. We need to seek and develop Total Force talent to ensure cyberspace dominance. We need to recruit and develop in all components of the Air Force. We also must capitalize on the talent and expertise of our Guard and Reserve members who may have direct ties and long experience in high-tech industry.

We have already instituted several initiatives along these lines. For example, the 262nd Information Aggressor Squadron, an ANG unit in Washington State, leverages the industry expertise of guardsmen employed at Microsoft, Adobe, Cisco, and other technology firms from the western side of the state. The 177th Information Aggressor Squadron in Kansas, another ANG unit, draws upon individuals from local firms such as Sprint, Boeing, and Koch Industries. In each of these examples as well as the Texas connection with Guard and Reserve personnel drawn from the Austin Corridor (a well-known technology center) and serving at a variety of units within the 67th Network Warfare Wing and Air Force Information Warfare Center, we are moving forward the Total Force nature of the cyber realm by effectively bringing together active, Guard, and Reserve warriors.

We plan to leverage the Air Force's appeal to our technologically savvy American populace. Cyberspace efforts will allow us to fight in agile, scalable groups using networked entrepreneurial approaches and fresh ideas from the "Cyberspace Generation." We will develop a coherent cyberspace enterprise to foster a force of twenty-first-century warriors capable of delivering the full spectrum of kinetic and nonkinetic, lethal and nonlethal effects across all domains. Because our nation depends on us not only to fly and fight but also to win, we must have the ability to deliver sovereign options in cyberspace, just as we do in air and space. □

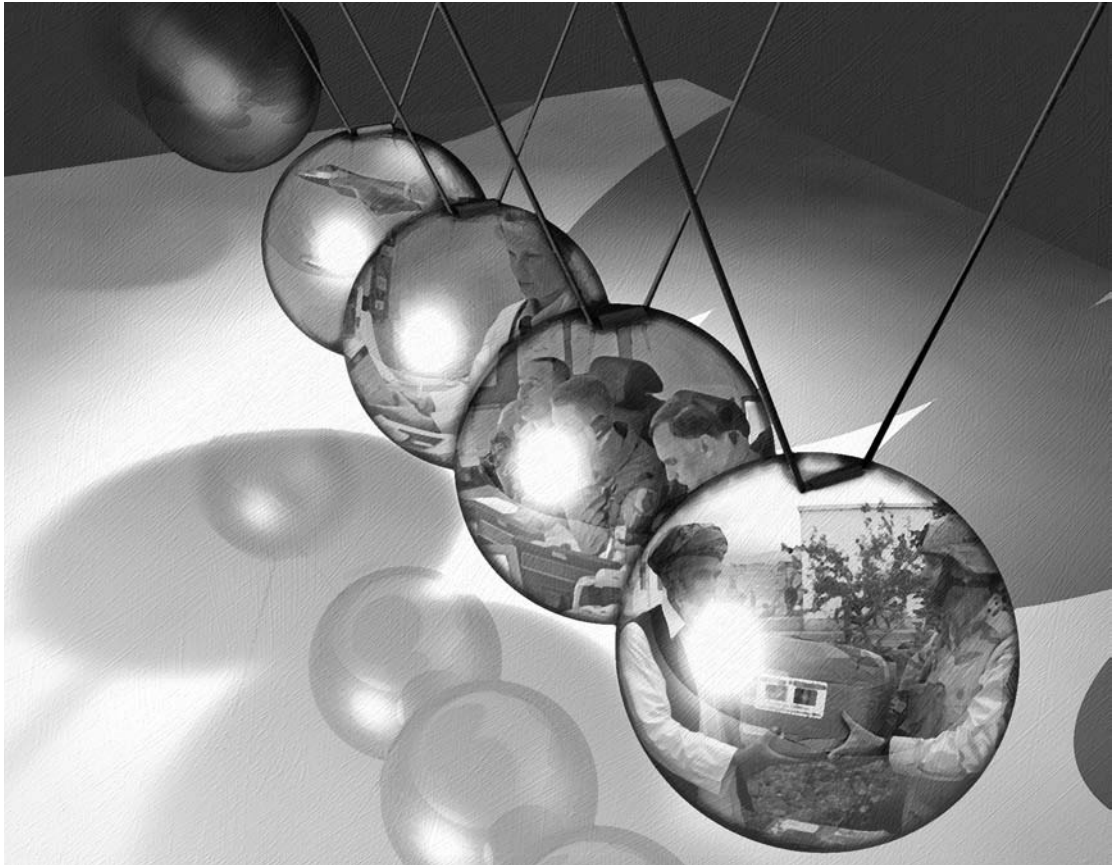
Notes

1. Joint Chiefs of Staff, *Joint Net-Centric Operations Campaign Plan* (Washington, DC: Joint Staff; Command, Control, Communications, and Computer Systems Directorate [J-6]; October 2006), 62, http://www.jcs.mil/j6/c4campaignplan/JNO_Campaign_Plan.pdf (accessed 9 January 2007).
2. "SECAF/CSAF Letter to Airmen: Mission Statement," [7 December 2005], *Air Force Link*, <http://www.af.mil/library/viewpoints/jvp.asp?id=192> (accessed 9 January 2007).

Effects-Based Operations

A Command Philosophy

LT GEN ROBERT J. ELDER JR., USAF



MUCH HAS BEEN written regarding the use of effects-based operations (EBO) theory and processes. In this article, I offer an operational perspective based on my experiences in Operation Iraqi Freedom during major combat operations and follow-on operations. I have seen EBO used successfully as a command philosophy that enables a military com-

mander to employ all elements of power in a self-adaptive way to meet tactical, operational, strategic, and even political objectives appropriate to the level of command. I recognize that considering EBO as a “command” or “leadership” philosophy differs from the standard understanding of the concept. In fact, Joint Forces Command removed EBO from its glossary in February 2006 and replaced its

Joint Warfighting Center Pamphlet 7, *Operational Implications of Effects-Based Operations (EBO)*, 17 November 2004, with the *Commander's Handbook for an Effects-Based Approach to Joint Operations*, 24 February 2006. This effects-based approach to joint operations focuses on improving our ability to affect an adversary's behavior and/or capabilities through the integrated application of select instruments of national power; it also connects strategic and operational objectives with operational and tactical tasks by identifying desired and undesired effects within the operational environment. It is thought to apply primarily at the operational and strategic levels and have minimum impact on how tactical commanders apply their ways and means to accomplish tactical tasks. This approach addresses the science of EBO, but the art of effects-based war fighting involves using effects-based principles not only for planning but also for guiding all of our actions, particularly in joint, multinational, and multiagency operations.

I've watched successful commanders use EBO as a leadership or command philosophy to improve intelligence employment, incorporate operational assessment as a key part of strategy development, and conduct influence operations. In fact, I argue that every action is ultimately part of the combined/joint force commander's (CFC) overall influence operation. Since actions can produce either favorable or adverse effects, EBO performs the important function of ensuring that all participants in military and international security operations remain sensitive to the potential strategic consequences of their actions.

Iraqi Freedom further demonstrated the utility of EBO concepts to provide opportunities for innovation—in particular, creative approaches to integrate multiservice, multinational, and multiagency capabilities in an evolving security environment. As we move from joint integration to joint interdependency and from multiservice jointness to multiagency jointness (with a capital “J”), EBO will serve as a key transformational enabler. It will become very difficult to determine which service or agency is “decisive” in a given operation; in fact, the concept of supporting and supported

commands, at least in the traditional sense, is already becoming an anachronism.

Effects-Based Operations as a Command Philosophy

The Army's Gen Tommy Franks, the CFC, worked closely with his components to ensure clear understanding of the joint force's operational objectives in the context of effects he desired to achieve. Although individual components were designated as the supported command for each objective, all components received encouragement to collaborate and offer innovative joint approaches to achieve contributing effects. For example, special operations forces (SOF) had responsibility for the protection of oil fields in northern Iraq, but a “blanket” of air assets operating in close coordination with ground controllers enabled a small force to control a large territorial area. In the west, the combined force air component commander (CFACC) served as the designated commander for theater missile defense, but SOF forces closely integrated themselves to provide “sensors” for possible targets. I was impressed that General Franks understood the importance of dialoguing with political leadership regarding the objectives as well as conversing with his component commanders regarding the effects; furthermore, he counted on his subordinate commanders to collaborate and devise integrated joint capabilities to achieve those effects quickly and efficiently. This shared understanding of objectives and effects enabled unprecedented joint-force integration and cooperation.

For example, tasked to provide air superiority for the ground assault, the Air Force's Gen T. Michael Moseley, the CFACC, recognized that traditional air operations in advance of ground maneuver would not support the CFC's objective to protect the oil fields in the south. Therefore, he worked with the ground forces to develop a plan that called for near-simultaneous air-ground attack on 19 March 2003. Less well known are the preparatory actions that began in June 2002, conducted as part of Operation Southern Watch,

to reestablish air superiority in southern Iraq—crucial to achieving both objectives. In summary, we attained both desired effects by using nontraditional means, thanks to the co-operation of the components. Potentially negative effects of traditional air-superiority actions to fulfill the objective of protecting the oil fields led General Moseley, along with other component commanders, to devise an innovative, nontraditional joint alternative.

At Multinational Corps-Iraq (MNC-I), Gen Thomas Metz, USA, took a proactive approach to EBO when he appointed an Army general officer as director of his effects-coordination cell and an Air Force colonel as deputy. Before this time, the CFC had only air-support requests available to coordinate and prioritize air actions across his divisions. By establishing and prioritizing a system of desired effects, division commanders and the CFACC could integrate their actions in a manner that optimizes fulfillment of the CFC's priorities. Over time, MNC-I established a regular effects-management process that provided commanders prioritized effects and recommended weights of efforts for joint operations. Ground-liaison elements at the combined air operations center (CAOC) and air-liaison elements with the ground units adapted existing joint and service tactics, techniques, and procedures to increase interoperability, effectiveness, and availability of joint effects across the area of responsibility.

Note that all of these commanders—Generals Franks, Moseley, and Metz—enabled EBO through their command philosophy, which cascaded to their staffs and units, just as operational risk management (ORM) programs—a concept parallel to EBO—cascade from commanders to every person in an operational unit. The success of ORM depends upon the commander's establishing it as a (priority) command philosophy. Unit members at all levels must undergo training in its planning and execution. The same approach holds true for EBO because its effectiveness relies upon the full commitment of commanders, training (at all levels) in the positive and negative aspects of tactical actions, capable

planning tools, and continuous application and assessment during execution.

Intelligence Employment

Because some significant effects-based accomplishments occurred in the intelligence mission area, relatively few people know about them. As one senior intelligence officer in the CAOC noted, except for the engagement itself, the elements of the “find, fix, track, target, engage, and assess” effects chain are primarily, albeit not exclusively, intelligence operational processes. This point illustrates not only the importance of intelligence for successful EBO but also the value of EBO as a powerful tool to improve ways of fully integrating all intelligence processes to support military operations and command objectives.

The first three elements of the chain are worth highlighting. “Find” primarily denotes an integrated intelligence-analysis/operations process that utilizes surveillance sensors such as RC-135 Rivet Joint and E-8 Joint Surveillance Target Attack Radar System (JSTARS) aircraft; however, sensors in space and on the ground, including human intelligence, can contribute significant data as well. “Fix,” also an intelligence-intensive process, includes determining geolocation, establishing positive identification, and perhaps determining intent. Either reconnaissance or surveillance assets (or both) may lead the “track” process. Our ability to track adversary assets ensures that we maintain positive identification and the ability to engage at a place and time of our choosing. Frequent misunderstandings arise when we expect intelligence, surveillance, and reconnaissance (ISR) platforms—which carry surveillance, reconnaissance, and tracking sensors for data collection—to produce fully analyzed, final intelligence products. ISR is an operations/intelligence process focused on collecting and analyzing current situational data; the platforms are simply sources of data that may require additional verification prior to our taking action.

Following the end of major combat operations, we found it difficult to conduct fix-and-

track operations because the best platform to provide data for that mission, the RQ-1 Predator, remained in high demand for surveillance applications, for which it was not particularly well suited. By demonstrating that we could meet many surveillance needs with alternative sensors, we freed the Predators to perform the mission that best suited them. The employment of EBO concepts demonstrated the value of conducting actions with Predator alternatives to achieve desired effects.

The “find” mission also benefited from EBO techniques. Rather than using various sensors and sources of information simply to collect data for subsequent analysis, we “cross-cued” them tactically to help focus search efforts. EBO offered a methodology to understand the actions we expected of an adversary and to establish a framework for linking otherwise random pieces of information. Cross-cueing very small signatures based on our adversaries’ patterns of activity allowed us to perceive almost imperceptible actions, “amplify” or “spotlight” them, and then determine if they warranted focused reconnaissance or other intelligence collection.

Operational Assessment

EBO, which improved the approach to overall operational-assessment efforts, proved instrumental in constantly improving and adapting joint operations. To enable the use of effects-based assessment (EBA), whereby documenting “effects-action” linkages pays the greatest dividends, the CAOC’s Strategy Division shifted the air operations directive (AOD) from a strategy-to-task format to an effects-action format. Building these effects-action matrices was time consuming, but they led to implementation of a highly effective operational-assessment regime. The remaining challenge lay in determining useful measures of effectiveness to associate with each effect; this process served us well in examining our activities, identifying shortfalls, and brainstorming opportunities for improvement.

We also found that subjecting these measures to EBA processes helped foster innovation. By

exposing our entire team to issues in an easily understood form, we allowed people to contribute ideas, and those diverse perspectives helped create joint actions that produced effects requested by the CFC. We found that these innovation sessions permitted different service organizations to coordinate their capabilities in ways that achieved potent synergistic effects.

We used EBA to provide a viable alternative to “bean counting” as a means of assessing progress. For example, in Afghanistan we had to count the number of aircraft destroyed even though the remaining aircraft could not operate from the airfield or pose any threat to coalition forces. In Iraq, we evolved to the point that we concerned ourselves with effects: it really didn’t matter that aircraft were on the ground; if they couldn’t fly or otherwise pose a threat, we had achieved the desired effect. Similarly, we did not concern ourselves with the number of tanks destroyed. The desired effect called for removing them from the fight; once a unit surrendered, it no longer posed a threat, and we did not regard it as such.

We also established a daily AOD in conjunction with MNC-I that we found quite effective. We updated the AOD weekly but prepared a supplement each evening to guide the air planners’ development of the next day’s air tasking order (ATO). The AOD also helped units better understand their assigned tasks and the ways their missions related to each other. Acting on behalf of the CFC, MNC-I issued prioritized effects each day. The CAOC still processed air-support requests but worked with the fire/effects coordination cell at MNC-I to recommend weights of effort for each prioritized effect so as to best meet the CFC’s requirements. Once approved by MNC-I, we used these prioritized effects and weights of effort to construct an apportionment matrix to plan and execute the ATO. Planners understood the desired effects, division commanders understood the CFC’s intent, and aircrews understood the effects that their tasked actions should produce. The AOD also served very well as a communication tool that enabled the CFACC to command and control air in an optimum manner. Use of the daily AOD serves as

a striking example of how the CFC and component commanders can use the concepts underlying EBO to command their forces in a way that allows adaptation to rapidly changing circumstances.

Influence Operations

It is easy to argue that attempts to conduct any type of effective influence operation at the operational or strategic level require the use of EBO in one form or another. Although we tend to focus on the desired effects of influence operations, we clearly need to consider the undesired effects of our actions as well. Virtually every action contributes to some effect, and, of course, not all effects are desirable. So by using an effects-based approach to plan operations that maximize our ability to influence the behavior of our adversaries and other affected actors, we can examine the linkage of each action and thus identify both desired and undesired effects. Iraqi Freedom offers some good examples of how we used EBO to influence our adversaries and the civilian population.

For instance, during that operation many Iraqi forces surrendered without a fight. The CFC intended to maneuver to Baghdad quickly, so the land-force commander worked with all components to minimize the time necessary to render opposition forces combat ineffective. Rather than do this through attrition, the land-component commander developed a plan to encourage quick surrender by calling on the joint force's full range of capabilities to convince the enemy of the futility of fighting. This successful influence operation occurred through a combination of information techniques reinforced by clear demonstrations of superior force. Similarly, because we persuaded the Iraqi air force not to engage coalition forces, its leaders grounded their airplanes, which allowed nonfighter aircraft to fly in Iraqi airspace. This enhanced their effectiveness and contributed to the speedy advance of ground troops into Baghdad.

We also successfully employed EBO during the Iraqi elections to influence both the civil-

ian population and our potential adversaries through a series of ground-force and airpower operations. The desired effects called for encouraging the population to vote and discouraging adversaries from disrupting the elections. In the first case, aircraft flew patrols at medium altitudes near polling locations, with their presence highlighted by forces on the ground. In the second case, fighter aircraft operated near suspected trouble areas at lower altitudes to demonstrate the coalition forces' resolve that the elections would proceed without incident. Although we can't quantitatively assess the specific contribution of the air patrols, we know that we realized the desired effects through combined actions of the joint force.

Dynamic Operations (Strategic Effects from Tactical Actions)

Despite the attention paid to effects-based planning, effects-based analysis proved particularly beneficial by helping all participants in military operations to consider the effects of their actions on overall objectives at the tactical, operational, and strategic levels. We must realize that unintended consequences of our actions may actually disrupt otherwise well-conceived plans to achieve the CFC's objectives.

We prepare flight plans fully expecting that we will need to deviate from them. The same holds true for execution of our military operations: when we work the linkages and explain the effects to everyone involved in our operations, we give them the equivalent of a flight plan—a set of guidelines leading towards our ultimate objectives. Armed with this “road map,” individuals confronted with unexpected situations and forced to deviate from their original plans can still act in a way that supports the commander's intent, produces the desired effects, and lessens the chance that their actions will undermine those of others working towards the same objectives. Not every individual needs to understand the linkages, measures of effectiveness, or distinction

between contributing nodes and primary nodes, but everyone should appreciate how his or her actions can either contribute to or detract from achieving those effects.

Multiservice Integration

Unquestionably, EBO improves multiservice integration: having all components in a joint force working together to achieve common objectives and effects obviously provides a focused sense of direction and unity of effort. We've all heard the story of how different services might interpret a similar order, such as "secure the building." Although we tell that story in jest, in reality, without explaining our objectives in greater detail, we can expect each component to interpret them differently, based on its own perspective of the situation. With EBO, we can better define that situation by using objectives and effects accompanied by clear measures of effectiveness that all components can readily understand.

We all recall the great concern about the possibility of missile launches from Iraq's western desert against countries friendly to the United States. One objective involved ensuring that no country would do anything that could destabilize the coalition. The prevention of missile launches was the only effect with a high probability of meeting this objective. After the components quickly determined that none of them could meet this objective alone, the CFACC was assigned responsibility for it with the support of SOF forces, which provided strategic reconnaissance to detect possible missile movements, and airpower postured itself to engage the launchers upon detection. Enabling this ability required incredible intelligence preparation of the battlespace, superb communications, a highly responsive command and control (C2) network, and phenomenal teamwork. It worked—no launches occurred.

Similar cooperation between the air component and SOF personnel took place in northern Iraq, but in this case SOF served as the engagement force while air offered support in the form of overhead sensors. Here

the objectives included preventing ethnic violence as well as damage to the oil fields. This combination leveraged capabilities of the relatively small component forces, allowing the production of much greater effects than any one force could achieve alone.

EBO also fostered solid ground and air cooperation in cordon operations. With regard to the cordoning of large areas, the land-component commander developed a joint approach that capitalized on the strengths of air and ground forces and collectively mitigated many of their weaknesses. In most cases, air forces could take actions to ensure that items of interest did not leave the area until ground forces responded or until personnel tracked items to their destination for subsequent ground-force action. Platforms such as JSTARS aircraft, other nontraditional sensors, and Predators significantly leveraged the capabilities of ground forces with whom they worked. It would have been difficult for either the ground or air forces to conduct this mission alone; together, however, they proved quite effective.

Air and ground forces also worked together in the infrastructure-protection mission. Clearly, protecting such assets as oil pipelines and electrical power lines—both of particular interest to the CFC—using ground forces alone would prove difficult due to the large areas involved. However, by working with closely integrated support from the CFACC, the land-component commander significantly reduced infrastructure attacks. In general, aircraft with targeting pods could monitor large areas, identify activities that required detailed examination, and vector ground forces to the area of concern. When aircraft flying patrol routes over Iraq detected unusual activity around pipelines or power lines, they would make their presence known and call for ground forces to respond. In short order, the insurgents learned that after aircraft had spotted them, ground forces would soon arrive. Had the desired effect entailed killing or capturing the insurgents, we would have used different actions; however, since all forces understood that we wished to prevent attacks on the infra-

structure, these integrated joint tactics proved quite successful.

The value of using one force to serve as the sensor and another to perform engagement actions emerged as a common theme. As described earlier, SOF and air forces worked together effectively, the former providing strategic reconnaissance to cue indirect fires from air assets overhead and the latter operating sensors to extend the “view” of forces on the ground. We can attribute the success of these operations to a leadership philosophy that stressed joint integration and the tasking of effects rather than specific actions. Tasked to determine the best way to achieve those effects rather than simply acting on specific tasks assigned by the CFC staff, the components planned the actions together, thus allowing the joint force much more adaptability.

Multiagency Jointness

EBO can also serve as an enabler for multi-agency operations. C2 becomes complex in these situations because the CFC does not actually control all the assets involved in the operation. However, if the CFC can work with other participating agencies to reach consensus on the objectives, effects, and measures of effectiveness, then he or she can use that agreement as a means of aligning the activities of all agencies involved. We have observed some success in this area with the use of provisional reconstruction teams in Afghanistan. Additionally, we’ve seen this kind of shared understanding of objectives and desired effects build a foundation for cooperation among intelligence-agency activities in both Iraq and Afghanistan.

Moving Forward

Although I’ve argued that more effective EBO requires a holistic approach based on a commitment to this philosophy from the CFC, the development of methodical, standardized processes to tie actions to effects remains critically important. A standard methodology will allow members from all components and even

non-Department of Defense (DOD) agencies in the field to conduct cooperative actions that complement one another to meet the CFC’s and national objectives. A standardized approach will enable easier communication among combined/joint/coalition components and other agencies; moreover, it will allow all players to document their activities in a way that is readily distributed and shared. Such tools will permit commanders at all levels to monitor effects-based planning performed at subordinate levels to assure that it meets the supported commander’s objectives and desired effects. We establish flight plans to serve as points of departure for coordinating our actions with other agencies in situations that require changes from the planned routing. The same is true of EBO planning tools, which offer a road map for personnel at the tactical level to deal with situations that prevent the originally planned actions from taking place (including possible undesirable effects) and that communicate revised actions to joint partners.

Clearly, establishing mechanisms to determine, distribute, and explain objectives to the entire joint force is important to the effectiveness of any mission-order approach to military operations. It also remains a critical element of both EBO, particularly those operations that require close coordination across components and agencies, and the characteristically dynamic situations encountered in war fighting. In the air-operations business, we know that the ATO is truly effective when every crew member who reads it actually understands the commander’s intent. As desired effects become more complex, as strategy becomes more sensitive to undesired effects, and as actions become more interdependent, then attaining such understanding becomes both increasingly important and difficult.

Additionally, Iraqi Freedom demonstrated that EBO does not deal solely with “kinetic” or physical engagement. In fact, the EBO approach proves particularly useful in developing intelligence processes that not only respond to operational commanders’ needs but also allow intelligence operators and analysts to take a more proactive posture. We need our intelligence community to focus its efforts on “knowledge

creation” rather than simply data collection and intelligence applications. This is particularly important as we attempt to fuse data from multiple sources, some originating outside the DOD, to enable precise actions in the dynamic environment of postconflict stability operations and preconflict shaping and deterrence operations. We are seeing great work in this area. More extensive use of effects-based methodologies and increased integration of operational and analytic intelligence activities will significantly enhance these efforts.

Furthermore, EBO can enable a shift from a traditional, hierarchical C2 structure to a command, control, and influence (C2I) approach that facilitates more effective operations with non-DOD agencies or the integration of highly compartmented and conventional military actions. In the latter, we can integrate compartmented effects into overall plans to allow proper coordination while safeguarding techniques used to achieve the desired effects. We found the ATO an effective tool to ensure the coordination of effects with air and space forces in this manner. But the C2I “influence” area is ripe for additional work. Clearly, in the military, we grew up with a hierarchical C2 structure that has worked well for us. As we become involved with more complex activities involving non-DOD and even nongovernmental agencies, these hierarchical approaches to C2 simply aren’t adequate. Use of EBO can act as an enabling function to establish effective C2I networks. The key here lies in negotiating with our partners, obtaining agreement on the desired effects, and then establishing a mechanism that allows each agency to coordinate its actions with the other participants to achieve those effects. Coordinating mechanisms such as effects boards have already proven effective within the military to coordinate component activities. There’s no reason to believe that they wouldn’t work across the spectrum of diplomatic, informational, economic, and similar nonmilitary activities when dealing with non-DOD agencies. Of course, attaining

full effectiveness will require some cultural changes, particularly within the military, but EBO can provide a foundation for the necessary negotiations to enable the full range of Joint (with a capital “J”) and coalition capabilities to integrate and meet overall strategic and operational objectives.

It seems clear that influence operations benefit from an EBO approach, but in a strategic sense, isn’t EBO in large part a process to influence our adversaries and potential adversaries? When we take into account collateral effects, isn’t it also about how we influence the international community, including our friends—even our own countrymen? Certainly, when one examines war fighting and other military operations at the strategic and political levels, the objectives of EBO appear to closely resemble those associated with higher-level influence operations. To reiterate an obvious point, tactical actions can have major consequences at the operational and strategic levels. Therefore, as we discuss EBO and work to establish standard methodologies, it is useful to remember that such operations ultimately seek to influence behaviors so we can achieve our objectives at the operational and strategic (and even the tactical) levels. This perspective is important because regardless of the level, all personnel involved with military operations must remain sensitive to the impact of their actions at any other level, including the political.

In summation, all commanders who successfully employed EBO during Iraqi Freedom did so largely because they adopted a command philosophy that enabled them to adapt, integrate, and utilize all available elements of power to meet their objectives. It’s time to institutionalize the concepts they employed, develop standardized methodologies, and educate participants at all levels so that in future campaigns we can take joint, coalition, and even multiagency operations to higher planes of efficiency and effectiveness. □

Lean Uniforms

Cutting the “Waste” Line

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AIR FORCE UNIFORMS are the tangible heritage that starts and chronicles an Airman’s journey. Uniforms indelibly welcome newcomers into the Air Force legacy. They provide a common identity throughout an enlistment or career, and their symbolism evokes pride and emotion. At the same time, uniforms represent an individual and organizational expression. Because they literally “touch us” everywhere, any adjustments to them can become incredibly complex, often involving seemingly irrecon-

cilable perspectives. Unlike civilian organizations or personnel, who can change clothing and subsequently their image “off the rack”—with easy access to end products from a market-driven, primarily international production process—the Air Force encounters compounding dimensions when it considers changes and improvements to its uniform.

In fact, the Air Force faces a multitude of challenges as it strives to develop and deliver new uniforms to Airmen. Any endeavor to adjust the external expression of our warrior

ethos must consider image, function, and uniformity. Priorities must also reconcile desired timing with a long-neglected internal process, historically encumbered by a host of laws governing purchases of US-government uniforms. In order to navigate these restraints, stakeholders in Air Force uniforms have successfully applied the same discipline used for the development and procurement of weapon systems. This approach of “uniforms as a weapon system” fundamentally links the emotionally charged world of the Air Force uniform with the historically industrial process-improvement program called “Lean.”

Lean is an especially important tool not only for the acquisition of new uniforms but also for the ongoing sustainment of existing uniforms, both aspects involving many processes and agencies. This makes the uniform-process scenario an exemplary springboard for illustrating how the Lean methodology’s effectiveness aligns with nonindustrial processes. Equally vital is Lean’s potential during confrontation with cross-agency protocols. Although the Air Staff and Air Force Materiel Command (AFMC) are key players for the Air Force, the Defense Logistics Agency (DLA) and Army and Air Force Exchange Service (AAFES)—not to mention several other critical stakeholders—are also substantially involved with uniform design, procurement, and distribution. Altogether, this diverse lineup encompasses joint, Air Staff, Office of the Secretary of the Air Force (SAF), major command (MAJCOM), field, and industrial arenas.

Background on Lean

Industry literature defines *Lean* as the elimination of “wastage.” Within the Air Force, specifically AFMC, Lean has considerable impact, benefiting both customer and supplier. Despite this significant impact, the Lean approach, in theory, is quite simple. One sequesters personnel and gives them sufficient time to review process flows during a “rapid improvement event” (RIE), during which they identify inefficiencies and map improvements. A key element of the Lean methodology stipu-

lates involving the right people in the RIE. Essentially, RIEs consist primarily of personnel responsible for and familiar with the specific process under review since they are uniquely invested to recommend and implement improvements. Lean RIEs have consistently proven themselves a triumphant approach to improving the way we go about our business, ultimately saving money and manpower.

Fortuitously, the Air Force established a program in early 2006 for use across all of its processes that enables the service to harness the power of Lean methodology. Air Force Smart Operations for the Twenty-first Century (AFSO21), an Air Force enterprisewide initiative, guides the implementation of continuous process-improvement tools and philosophies, including Lean, throughout the service. Although it will take time for most people to fully comprehend the implications of AFSO21, its designers built the initiative on a foundation of best practices as well as lessons learned. Lean constitutes one of four basic practices in use under the AFSO21 umbrella, the others including Business Process Reengineering, Theory of Constraints, and Six Sigma, many of them used by other Department of Defense (DOD) agencies. For example, the Army, DLA, and AAFES use a combined Lean/Six Sigma approach. AFSO21 is also part of the DOD’s transformation initiative, which involves all services and agencies completing internal programs with an eye on meshing well in a joint environment.

Why Uniforms?

Beyond the obvious point that striving for more efficiency makes common sense for stewards of public resources, compelling dynamics drive the need to improve efficiency and protect Air Force capital. The five Lean principles include having customers define value (Value), mapping the process (Value Stream), making the process flow (Flow), producing goods and service on demand (Pull), and striving for perfection (Perfection) (all of them providing an overlay for enduring change as processes undergo review). Appli-

cation of these principles and tools to organizational processes has yielded positive results.¹ Essentially, Lean principles apply to any process, regardless of whether it involves a maintenance function, contracting procedures, time-sensitive-targeting routines, or the acquisition of new uniforms.

As previously mentioned, the uniform process provides a good case study for illustrating the broad applications of Lean. But to fully understand where Lean begins facilitating restoration of an outdated uniform process, one must review the origins of the dilemma. For starters, the Air Force Uniform Office underwent dramatic downsizing in the early 1990s. Consequently, no overarching processes or primary point of contact existed. Many uniform-related tasks proved successful, such as functions of the Uniform Review Board, which meets annually, but the lack of a process led to wide variations in predictability, in turn causing delays to the implementation of uniform changes. Also problematic was the lack of timely updates to applicable governing publications, complicated by noncentralized communication of changes. These issues highlighted the lack of thoroughly documented roles and responsibilities.

The initial uniform-process RIE occurred at the enterprise level, establishing a full life-cycle time and process baseline for the development and fielding of a typical Air Force uniform—the Airman battle uniform. The baseline documented the current time of four and one-half years required to develop, produce, and issue a new uniform. Major subprocess identification during the baseline also provided focus for future RIEs, underscoring the cross-enterprise dynamic of the uniform process. The four subprocesses include requirements and funding (owned by Headquarters USAF/A-1—the Manpower and Personnel Directorate), development (owned by Aeronautical Systems Center), issue-item procurement (owned by the DLA), and optional-item procurement (owned by the AAFES).

Subsequently, application of Lean tools to the entire uniform cross-enterprise required scheduling a total of seven RIEs. To date, four have come to fruition: the initial enterprise

RIE, requirements-and-funding RIE, issue-item-procurement RIE, and optional-item-procurement RIE. All of them attained goals set in the charter, established by participants at the onset of each RIE. The three remaining events are scheduled for completion by summer 2007. To ensure sustainment of long-term improvement, part of each RIE process establishes a timeline for future RIEs targeting the same process, allowing a second review. This guarantees setting aside a designated time to allow thorough assessment of the implementation of process change, fostering the permeation of continual process improvement into the organization.

The requirements-and-funding RIE, involving the earliest phases of the uniform process, documented a nonindustrial application of Lean tools. With all stakeholders involved, plus a facilitator at hand, participants put the primary phases of the uniform process—requirements and funding, development, procurement, and distribution—on paper (i.e., mapped them). Then they sequenced and authenticated processes within each phase, paying close attention to points that created a cross-agency interaction and/or dependence. At that point, the individuals most familiar with the specific tasks and any existing workarounds aggressively and meticulously scoured them. As suspected, numerous gaps came to light, as well as wasteful redundancies, resulting in the preparation of detailed courses of action. From this endeavor, RIE participants recognized the need for (and subsequently added) a review of communication rules of engagement. The team then synchronized the requirement-collection processes to ensure that participants ask the right questions at the right time, thus eliminating procedural delays in response time.

The requirements-and-funding RIE also revealed the need to increase the use of automation to achieve efficiencies—specifically, implementation of an e-uniform software architecture, now in development. The plan includes a user-friendly, easily accessible Web-based tool capable of hosting virtual Uniform Review Boards. This goal of improving customer input will increase the frequency with

which boards meet and will reduce travel requirements for their members. Also, boards will consider suggestions quarterly rather than annually. Hence, Lean tools not only improve processes but also increase personnel buy-in and customer involvement.

In addition to improving process documentation, interagency communication, and automation, Lean improved bottom-line numbers. As a result of the requirements-and-funding RIE, Headquarters USAF/A-1 cut nearly 80 percent of the time spent on its uniform-requirements processing and review cycle, eliminating 528 of 663 days. During the issue-item-procurement RIE, the team removed 26 percent of the cycle time—77 of the 294 days currently required by the DLA to establish Air Force uniform contracts. The long-term, cumulative goal of these improvements calls for reducing the uniform-enterprise process-time requirement from a problematic four and one-half years to a diligent, responsive target of just over one year, assuring that the approximately 530,000 Airmen in the Total Force have the right uniforms when they need them.

A subsequent government/industry RIE, aimed at reducing production and delivery time, has been set for early 2007. The seventh RIE will return to the initial enterprise-level review, enabling examination of the integration of previous RIE sequencing and process improvements.

Lean Application beyond Uniforms

This recent experience in applying process-improvement tools in a cross-agency, enterprisewide process has yielded significant, encouraging observations.

A Seat at the Table for Everyone

Interagency improvement works, so we should strive to “widen the net”! The uniform commitment from stakeholders up and down the chain of command led to visibility across the entire uniform-enterprise spectrum. As a prac-

tical example, this prompted a number of improvement discussions among joint, MAJCOM, external, field, and Headquarters USAF senior leaders to focus the improvement effort. Additionally, it established the Uniform Enterprise Working Group, comprised of representatives from each associated agency, which convenes weekly to maintain dialogue and troubleshoot any disconnects before problems become overwhelming. This is continuous process improvement in action.

Cradle-to-Grave Approach

Using an enterprise process leads to “knowing what you don’t know.” For this particular process-improvement effort, we rapidly discovered that we had not previously captured the end-to-end process. This had profound implications, as we identified cross-agency-process disconnects, duplications, and waste that optimized one part of the process at the expense of another. Simply put, we didn’t really have a “complete” uniform process. As a result of this enterprise perspective, the development of a uniform-requirement document process has finally captured what information we need, where we can obtain it, and when we need it.

Multidimensional Application

We need not always execute improvement events sequentially. In fact, we can engage several aspects of Lean concurrently. Doing so expedites the overall review process and identifies problem areas that will affect processes earlier. Horizontal application of the uniform Lean effort with involvement from AFMC as well as the Air Staff, DLA, and AAFES was accompanied by vertical campaigns that drilled down into AFMC-specific areas (Air Force Clothing Office [AFCO]) and those within the Air Staff (A-1’s relationship with A-4 [logistics] and Financial Management [FM]). By approaching the uniform process in this multidimensional manner, we garnered benefits such as clarifying the AFCO’s relationship with SAF/FM.

Conclusion/Summary

Lean is a paramount component of an extensive process-improvement net being widely cast across the Air Force. The overall objective seeks to cultivate throughout the service a deliberate conviction regarding the perpetual identification of processes—or in some cases, the absence of processes—for improvement. We can continuously—or at least regularly—scrutinize, streamline, reshape, develop, or even eliminate processes or process interaction for the ultimate purpose of improving efficiency. Evolving from its industrial genesis, Lean has become more than a force multiplier; potentially, it is a bellwether for an organizational mind-set.

Obviously, the cornerstone to true success of any kind remains the Air Force's person-

nel—the process owners and subject-matter experts. But tools are vital. If Michelangelo had had no paint, brushes, or canvas, he would have remained brilliant—but bereft of art. We need the imperative linkage of both talent and tools. When applied by the right talent, Lean works in virtually any organization or with any mission. More than ever, AFISO21 and MAJCOM initiatives compel commanders to empower personnel to infuse the benefits of Lean into their organizations—whatever the mission. □

Note

1. James P. Womack and Daniel T. Jones, *Lean Thinking: Banish Waste and Create Wealth in Your Corporation* (New York: Simon & Schuster, 1996), 16, 19, 21, 24, 25.

Our vision is an Air Force where every Airman fights alongside and above our fellow Soldiers, Sailors, and Marines, and puts air, space, and cyberspace power on target as part of a dominant Joint warfighting team.

—Air Force Strategic Plan, 2006–2008



New USAF Doctrine Publication

Air Force Doctrine Document 2-10, *Homeland Operations*

COL JOHN L. CONWAY III, USAF, RETIRED

A QUICK QUIZ: what is the difference between *homeland security* and *homeland defense*? Stumped? You're not alone. Now comes a third term: *homeland operations*.

Before you throw your hands up at yet another addition to the Airman's lexicon, take a look at Air Force Doctrine Document (AFDD) 2-10, *Homeland Operations*, 21 March 2006—the initial document (partly drawn from Joint Publication 3-26, *Homeland Security*, 2 August 2005) designed to outline Air Force roles and responsibilities under both homeland security and homeland defense constructs. AFDD 2-10 defines *homeland operations* as “the means by which its support to homeland defense, defense support of civil authorities and emergency preparedness is accomplished” (p. 1). The document discusses each of these three core areas of homeland operations in depth.

AFDD 2-10 makes the overarching point that “active duty Airmen are always under the command of military commanders up through the Secretary of Defense and the President” (p. vii). Additionally, when the military provides forces to civil authorities, the relationship resembles that of one military force directly supporting another. An additional principle found in the document explains that local and state organizations must first respond to disasters with their own resources. If overwhelmed, they can make a formal request for federal assistance and ask that the president issue a declaration of an emergency. Under provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Staf-

ford Act), federal resources do not come into play until the president issues this declaration. Employment of such resources prior to a formal declaration would negate any reimbursement. However, this prohibition does not preclude alert postures and preplanning activities if a presidential declaration of emergency appears imminent. AFDD 2-10 urges local commanders to plan possible assistance scenarios with local authorities well in advance and to understand the local operating environment. This literally translates into local “preparation of the battlespace,” which may save time and resources in an emergency response.

To educate the reader with the myriad of terminology, the doctrine document offers an extensive list of “Suggested Readings” (pp. 41–43, from Air Force doctrine to the White House's *Federal Response to Hurricane Katrina: Lessons Learned*); an excellent appendix on “National Policy and Law” (pp. 44–47); and another on a “Notional Sequence of Events for Defense Support of Civil Authorities” (pp. 48–49). A comprehensive glossary rounds out these invaluable resources. Readers should probably review these sections prior to attempting a serious analysis of the entire document.

Given the intense and continuing national debate regarding defense of the homeland, we can anticipate additions and refinements to this doctrine document in the coming years. A valuable tool for planning and understanding the Air Force's role in homeland operations, AFDD 2-10 is a must-read for local base commanders through national-level Air Force decision makers. □



Celebrating 60 Years of Excellence as a Professional Journal and Introducing the Latest *Chronicles Online Journal* Article

THE US AIR Force will celebrate its 60th anniversary in September 2007, but *Air and Space Power Journal* (ASPJ), the professional journal of the Air Force, marks its 60th birthday with the publication of this issue. Originally called *Air University Quarterly Review*, the *Journal* has built a reputation for publishing high-quality scholarship since the appearance of its inaugural issue in the spring of 1947.

The *Journal's* editorial focus and audience have expanded considerably over the decades. Initially dedicated to airpower alone, ASPJ later broadened its scope to encompass space power. Today, its range of interest reflects the Air Force's extension into cyberspace. The growth in the number of readers has proven equally significant. *Air University Quarterly Review*, published in English, initially served officers attending Air University schools at Maxwell AFB, Alabama. Far-sighted Air Force leaders decided to create Spanish and Portuguese editions, which appeared in 1949, as foreign-language and cultural-outreach initiatives to an international audience of military professionals. Renamed *Airpower Journal* in 1987, the periodical addressed the entire US Air Force as well as the world's Spanish- and Portuguese-speaking militaries. In the 1990s, the *Journal* began a pioneering venture into online publication, magnifying the reach of its traditional hard-copy issues. Arabic and French editions of ASPJ, added in 2005, represented the first professional journals in those languages published by the Department of Defense and extended the Air Force's out-

reach to dozens of Middle Eastern and African militaries. Now read in the native languages of over 90 countries, ASPJ has become a global forum for discussing national defense, available in both printed and electronic media. With an eye toward further expansion of its audience, this year ASPJ will add a Chinese edition, which will support the Air Force's language and cultural initiatives as well as foster international understanding on an even larger scale.

All ASPJ editions promote professional dialogue among Airmen worldwide so that we can harness the best ideas about air, space, and cyberspace power. *Chronicles Online Journal* (COJ) complements the printed editions of ASPJ but appears only in electronic form. Not subject to any fixed publication schedule, COJ can publish timely articles anytime about a broad range of topics, including historical or technical matters. It also includes articles too lengthy for inclusion in the printed journals.

Articles appearing in COJ are frequently republished elsewhere. The various ASPJ foreign-language editions routinely translate and print them, book editors from around the world select them as book chapters, and college professors use them in the classroom. We are pleased to present the following recent COJ article (available at <http://www.airpower.maxwell.af.mil/airchronicles/cc.html>):

- Maj Rhett B. Lawing, USMC, "American Armed Forces' Service Culture Impact on Close Air Support" (<http://www.airpower.maxwell.af.mil/airchronicles/cc/lawing.html>)

The *ASPJ* staff always seeks insightful articles and book reviews from anywhere in the world. We offer both hard-copy and electronic-publication opportunities in English, Spanish, Portuguese, Arabic, French, and Chinese (coming soon). To submit an article in any of

our languages, please refer to the submission guidelines at <http://www.airpower.maxwell.af.mil/airchronicles/howto1.html>. To write a book review, please see the guidelines at <http://www.airpower.maxwell.af.mil/airchronicles/bookrev/bkrevguide.html>. □



Ricochets and Replies

We encourage you to send your comments to us, preferably via e-mail at aspj@maxwell.af.mil. You may also send letters to the Editor, Air and Space Power Journal, 401 Chennault Circle, Maxwell AFB AL 36112-6004. We reserve the right to edit the material for overall length.

FILLING THE STEALTH GAP

I have a question about Maj Collin T. Ireton's article "Filling the Stealth Gap and Enhancing Global Strike Task Force Operations" (Fall 2006). The F-22 apparently lacks a laser designator. If so, that would definitely be a flaw, but couldn't it easily be fixed? If I recall correctly, the F-22 has quite a lot of signals intelligence/communications intelligence hardware/software on board. Maybe a certain version of the F-22 could have a laser designator in place of that other gear. Something similar happened when the F-15C air-superiority model gave rise to the F-15E Strike Eagle, but maybe an all-purpose F-22 is just not the right idea. What do you think?

Mr. Frank Gerlach
Herrenberg, Germany

FILLING THE STEALTH GAP: THE AUTHOR RESPONDS

The question is an excellent one; my answer will point out the difficulties in adapting a highly optimized aircraft (the F-22 in this case) to a new mission. It may appear simple to modify an existing aircraft for another mission, but it is often complicated and expensive, especially when low observable (LO) or stealth technologies are involved. Consider

the F-15E: it was not LO and capitalized on a highly capable platform but still took significant resources and years to develop. I should make it clear that I'm no expert with regard to the F-22; however, I can confidently say that the suggested modification is not trivial.

The Raptor's "signals intelligence/communications intelligence" equipment is probably not made up of independent subsystems but is highly integrated with an array of sensors and processors that cannot simply be removed to make way for an infrared (IR) or charged coupled device (CCD) camera seeker and laser designator. Removing the hardware to generate the required space and rewriting the software to control the device would be a large design-and-test effort—a multimillion-dollar, several-year effort. Additionally, this notional IR/CCD tracker/laser designator would have to be created. The space within the F-22 would, no doubt, be unique and small. I know of no off-the-shelf device that would fit. Existing LANTIRN [low-altitude navigation and targeting infrared for night], Sniper, and Litening pods are designed for outside carry (for cooling, etc.), which is unsuitable for a stealthy platform. A system is being tucked into the F-35, but it is specially designed for the jet's small and irregularly shaped bay. Its design and integration represent a significant area of risk for the F-35, and

the same would apply to any F-22 effort. But let's assume that the Air Force had the resources to create this pod and to redesign the F-22's internal architecture and structure to accommodate it.

The next step would be to redesign the weapons bays: they can't accommodate a 2,000-pound bomb. Could you put a 1,000-pound laser-guided bomb (LGB) in the bay? I haven't done a fit check, but I doubt it. The laser guidance kit for the GBU-16 (1,000-pound LGB) adds nearly half a meter to the weapon's length and a considerable amount to its girth. A change of this type would likely require extensive structural rework—a multimillion-dollar, several-year effort. Still, the weapon system would suffer from nearly all the woes I've already pointed out. It would lack the flexibility of employing a dedicated penetrating weapon or opting for the better blast/fragmentation of the 2,000-pound warhead. But let's assume that the Air Force had the resources to create the pod, redesign the internal architecture and structure of the F-22, and redesign the bomb bays to fit the GBU-16.

The next step is to redesign the F-22's LO characteristics. It is optimized for air-to-air operations—"first look, first shot, first kill," beyond-visual-range fighting. Again, I'm no F-22 expert, but I suspect that the design focuses stealth capability in the front quarter. An LGB must be guided, and the most common source of guidance (laser illumination) is the releasing aircraft. This would mean that the aircraft could not release from 20 nautical miles and leave; it would have to descend below any weather and stay to guide the weapon. If its LO strengths are aimed toward the front quarter, it simply would not be survivable in a mature, integrated defense system under these conditions. To change its LO signature would be a multimillion-dollar, several-year effort. It is not my intent to discuss all the tactical implications—only to provide an inkling of the many problems an LO aircraft, optimized for air-to-air combat, would encounter with a mission change.

Even if the Air Force had the resources to create the pod, redesign the internal architecture and structure of the F-22, change the

bomb bays to fit the GBU-16, and remold the aircraft's external stealth characteristics, it would not do so because even with these changes, the jet would still be ineffective in flexible air-to-ground operations. If the Air Force had such resources, I'd suggest that the service fill the stealth gap by keeping the F-117 around until a credible, flexible, precision stealth platform becomes available.

Maj Collin Ireton, USAF
Palmdale, California

IS RED FLAG OBSOLETE?

I am the Red Flag program manager at Headquarters Air Combat Command. I had an opportunity to read Lt Col Rob Spalding's article "Why Red Flag Is Obsolete" (Fall 2006). He is either unaware of the exercise's broader context or has not been to a Red Flag in the last three years. Red Flag has evolved significantly in recent years. We are well beyond the "go low, go fast" Vietnam-era mentality. We have exerted great effort and spent lots of money to ensure that the opposing force threat is current and realistic. We have expanded the mission scenarios to include current in-theater taskings such as urban close air support, convoy escort, and nontraditional intelligence, surveillance, and reconnaissance. Having said that, we do have limitations. We cannot be everything to everyone. The primary training audience is and will remain the aircrews. We try to maximize training for supporting elements such as intelligence; the combined air operations center; and command, control, intelligence, surveillance, and reconnaissance, but we have limited range time and dollars, which are becoming even scarcer. Lieutenant Colonel Spalding makes several references to the Predator's role. The Predator is a regular participant in every Red Flag, as is Rivet Joint, the Joint Surveillance Target Attack Radar System, and, sometimes, the U-2 aircraft. The Predator's role is direct support of close air support and time-sensitive-targeting missions. We have neither sufficient time nor sufficiently large range blocks to send intelligence, surveillance, and reconnaissance assets up two hours early to do a complete intelligence

preparation of the battlefield. As a result, intelligence has to work with inputs from the exercise control group for each mission instead of real-time data. In summary, my biased opinion is that Red Flag is not only relevant but also the best place to practice composite-force integration for both the current battle and battles of the future.

Gary “Buch” Sambuchi
Langley AFB, Virginia

INTERDEPENDENCE: KEY TO OUR COMMON SUCCESS

Gen Tom Hobbins’s article “Interdependence: Key to Our Common Success” (Fall 2006) led me to ask if he has considered the vulnerabilities that interdependency can cause. The Air Force, like most large organizations, is both interdependent and dependent. Vulnerabilities are inherent in this scenario and can be identified and addressed before they adversely affect an organization’s goals or a mission’s success, whether those entail taking out an enemy position or delivering food to starving refugees.

Robert W. Foedisch, President
Critical Infrastructure Protection Team 3814
Seattle, Washington

INTERDEPENDENCE: KEY TO OUR COMMON SUCCESS: THE AUTHOR RESPONDS

Mr. Foedisch, I appreciate your thoughtful question and comments. I would like to address your question on the vulnerabilities of interdependency and share some of the successes we have had working with other nations. While there are always vulnerabilities in what we do, by working closely with our partners and allies, we take the necessary precautions to mitigate them through careful joint coordination and planning. As the allied air component commander at Ramstein, I visit our partner NATO nations and their senior leaders frequently to discuss security, upcoming missions, training, and exercises. Being interdependent in the alliance has proven, over the years, to make us stronger rather than more vulnerable. Examples include the NATO

Response Force’s support to Hurricane Katrina and Pakistan earthquake victims. In Pakistan, 42 nations and more than 1,000 troops were involved, offering assistance along with 11 C-130s from six different nations—Denmark, France, Greece, Italy, Turkey, and England. We also sent a mobile NATO medical team, helping more than 2,000 patients. The coalition’s air-policing mission is another example of multinational cooperation. We have a theater that has delivered proven coalition forces. Seventeen of 22 Operation Iraqi Freedom coalition members and 12 of 19 Operation Enduring Freedom coalition members are all from this theater. Interdependence has been our way of life for 64 years; we live together, we work together, and, when needed, we fight together. We are truly in a global war, and being interdependent and interoperable enables us to better accomplish those missions you specifically mentioned. Taking out an enemy position and delivering food to refugees require efficient coordination among many moving parts—a process that would take a lot longer without interdependent planning and preparation. Although interdependency does require a degree of trust, this trust has been proven and allows us to accomplish the missions jointly. It should be noted that I also believe strongly in the USAF having a very strong independent service, as does Gen T. Michael Moseley, our chief.

Gen William T. Hobbins, USAF
Ramstein Air Base, Germany

CLAUSEWITZ AND THE FALKLAND ISLANDS AIR WAR

I just read Maj Rodolfo Pereyra’s great article “Clausewitz and the Falkland Islands Air War” (Fall 2006). That very interesting piece offers lots of succinct information about air-component operations in the Falklands War. Making such a good connection between Clausewitz’s work and that war was a good idea and is helping me write a research paper about how moral, physical, and conceptual factors affect war fighting. My compliments to Major Pereyra.

Lt Col Mircea Gologan, Romanian Army
Bucharest, Romania

NANOTECHNOLOGY AND NATIONAL SECURITY

LCDR Thomas D. Vandermolen's excellent article "Molecular Nanotechnology and National Security" (Fall 2006) identified the important difference between the near-term nanoparticles/nanomaterials of nanotechnology (NT) and the far-term, autoproduktive mechanosynthesis nanofabricators of molecular nanotechnology (MNT). I would add that Robert Freitas is compiling a list of the growing number of experimental and theoretical studies that detail the emergence of diamondoid mechanosynthesis (see <http://www.molecularassembler.com/Nanofactory/AnnBibDMS.htm>). Also, planar assembly will be almost as fast as convergent assembly—and supposedly much simpler to design (see http://www.niac.usra.edu/files/studies/final_report/1030Phoenix.pdf and <http://video.google.com/videoplay?docid=-2022170440316254003>). Lieutenant Commander Vandermolen also did a great job of touching on the indirect effects of NT. The right questions will offer insight into the magnitude of the challenges he describes. For economics, the question is, "When artifacts are as cheap as dirt and sunshine, what is really valuable?" NT expert Eric Drexler has identified two valuable items: new scientific knowledge and land area on Earth. I would add the trust and love of other people, especially those with the power to hurt others.

For difficult social issues, the important question is, "What is a human?" Our positions on today's explosive political issues depend on how we answer this question. The author points out that it's going to get worse. We can't even figure out cloning, abortion, and fetal stem-cell research, so what is going to happen when we face the wide range of claimants to personhood made possible by MNT? Drexler has proposed the solution: give them all the benefit of the doubt.

I disagree with Lieutenant Commander Vandermolen about two items. First, he posits a nanofabricator that can't be hacked. But that is like building a machine shop that can't build another machine shop or a computer language that can't compile programs that

print copies of themselves. Second, I disagree about the possibility of effective nanotech regulation. Who enforces the regulations? Do we allow them to have MNT powers to do their job? Who guards the guardians? There might be solutions for both items. We might make nanofabricators open source and make society transparent (as described by David Brin [see <http://www.davidbrin.com/privacyarticles.html>]). That way, everyone has power, but it is balanced by everyone else's power; we all guard the guardians. It won't be an easy transition, but it's the only scenario in which we keep our lives, freedom, and property.

Mr. Tihamer T. Toth-Fejel

*General Dynamics Advanced Information Systems
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EFFECTS-BASED AIRPOWER FOR SMALL WARS

I want to compliment Col Robyn Read for his outstanding article "Effects-Based Airpower for Small Wars" (Spring 2005). The article is a bit jargon heavy for an ordinary civilian like me, probably due to the audience for which it was intended, but I was able to make sense of most of it. In no major area of either the Iraq war or the global war on Islamic Fascism are we actually winning the information war. We are at best holding our own, and in some cases, we are actually losing. The type of innovative thinking in Colonel Read's article is precisely what we need to prevail in the future. It dovetails nicely into a strategy that I suppose might be called "feed the beast"—the media beast. The "Arab Street" has a huge appetite for—and directly or indirectly, an increasing amount of access to—various (mostly non-Western) media outlets. Thanks to al-Jazeera and similar channels, viewers even have some measure of substantive choice about what program to watch. That, plus the 24-hour news cycle, means that even pure-propaganda outlets like Hezbollah's Al-Manar TV have an insatiable appetite for fresh, compelling footage that keeps their audience from changing the channel. On occasion, they can't help showing it, even if it may conflict with the domi-

nant narrative of so-called coalition atrocities and Arab/Muslim victimhood. Semiautonomous outlets like al-Jazeera have thus affected the way wholly state-controlled (or Hezbollah-controlled) propaganda outlets operate; once an issue (e.g., civilians forced at gunpoint to attack coalition forces, as has happened) has been raised in the Arab/Muslim media space, that issue must be dealt with in some manner. An Air Force program cognizant of these emerging realities and designed in part to feed the beast with compelling and—equally important—genuine (meaning real, as opposed to manufactured or doctored) footage would be an invaluable information-warfare asset.

John Hadjisky
Leland, Michigan

NEAR-TERM MANNED SPACE LOGISTICS OPERATIONS

I was impressed by the detail and concepts presented in Mr. James Michael Snead's "Near-Term Manned Space Logistics Operations" (*Chronicles Online Journal*, 31 August 2005) and would like to offer a few thoughts on the subject. First, the National Aeronautics and Space Administration (NASA) is planning to build the Ares 1, Ares 5, and Orion vehicles, which are similar to those in the author's presentations. By planning to utilize these systems and/or their components, one could build most of the concepts presented in Mr. Snead's article by using NASA's space junk (i.e., components placed in space and discarded). It is very unlikely that NASA is interested in recovering these components. A partnership between the Air Force and the private sector could use these discards to build the infrastructure outlined in the article. Second, under the right conditions, it is possible to tap billions in private-sector funding to develop the concepts outlined by the author. For example, with a fixed-price, fixed-term lease (similar to NASA's lease of the Mir space station), it would be possible to fund reusable launch vehicles, space tugs, and so forth. Such a lease could potentially generate favorable

credit terms comparable to the government's cost of borrowing. The problem is not lack of money but finding a viable partner on the government side of the deal. The private sector could fund the development (at no cost to the government) and then provide the systems, based on long-term use/lease agreements to the government, which would be very cost-effective. Third, near-term, reusable launch vehicles such as a dual Titan IV solid-rocket motor upgrade or a single space-shuttle solid-rocket booster combined with a reusable orbiter vehicle could speed time to market and reduce development cost. NASA's Ares 1 is tagged at about \$8 billion, but a commercial vehicle with the same capability could be built for less than half that amount by combining existing rocket engines such as the AJ26-60, Vulcain II, LE-7a, or J2 with new airframe thermal-protection systems, such as advanced carbon/carbon. Fourth, the second stage of the Ares 1 could be used in space in many ways that have been proposed for the shuttle's external fuel tank. In fact, if it were possible to refuel this stage on orbit, there would be little need to build Ares 5. This use of resources that would otherwise be discarded could jump-start space development on a massive scale and lower the cost of lunar and Mars missions.

Mr. Royce Jones
Arlington, Texas

SHARPENING THE EAGLE'S TALONS: ASSESSING AIR BASE DEFENSE

I'm a member of the Brazilian air force infantry and am writing a master's thesis about ground threats to air bases. During my research, I found Maj David Briar's article "Sharpening the Eagle's Talons: Assessing Air Base Defense" (Fall 2004) very valuable to the "air base defense community," especially because few technical articles about air base defense are available in the international media. Major Briar's work is a real gem for us.

Maj Luiz C. Topan, Brazilian Air Force
Brasilia, Brazil



Dominant Air, Space, and Cyberspace Operations

SECRETARY OF THE Air Force Michael Wynne and Chief of Staff Gen T. Michael Moseley have said, “As Airmen, it is our calling to dominate Air, Space, and Cyberspace.”¹ The Air Force has long dominated air and space operations, and Airmen understand that such dominance requires more than devastating weaponry. Supporting functions such as intelligence, surveillance, and reconnaissance; air refueling; airlift; global positioning; and communications are equally critical. Properly integrating complex air and space functions with other military activities makes truly dominant battlespace effects possible. We can achieve equally impressive effects in cyberspace, but we cannot rest on our air and space laurels as we ponder new cyberspace challenges. The face of warfare changes constantly, so today’s technologies and doctrines may become obsolete tomorrow. We must “recapitalize” our aging air and space hardware by fielding new platforms, even as we transform operational concepts for their employment and develop new cyberspace equipment and doctrine. The growing need for cultural and language expertise amplifies these interlocking challenges.

Everyone recognizes the importance of cyberspace, but opinions vary about the most effective way to define it, promulgate doctrine, organize forces, and integrate cyberspace activities with the more familiar air, space, sea, and land operations. Cyberspace’s abstract and ubiquitous nature complicates efforts to characterize it, but tentative definitions describe this realm as a “warfighting domain . . . ‘defined by the electromagnetic spectrum.’”²

One does not find the term *domain* clearly identified in doctrine manuals, which now take an increasingly effects-based approach to explaining how best to conduct operations. Current doctrine focuses more on optimally achieving desired effects than on specifying the environments in which military forces operate. For example, the Air Force has strategic-attack doctrine, but the document notes that forces operating in any environment can potentially produce effects through such attack.³ Because of cyberspace doctrine’s embryonic state, it remains to be seen how that guidance will address military cyberspace activities. Organizationally, the cyberspace picture became clearer in 2006 when the Air Force redesignated Eighth Air Force as Air Force Cyber Command.⁴ Though still evolving, specific responsibilities of the new command will likely include computer-network defense and attack, among other areas.

If we properly define *cyberspace*, codify valid doctrine, and establish effective organizations, this domain may help take joint integration of air, land, sea, and space operations to the next level. Conversely, errors may have dire consequences for national security. Potentially, cyberspace may transcend the other military operational environments and help interweave them, but that does not mean it is superior to them. For example, the atmosphere covers land and sea, but airpower does not control all activities in those environments. One can say the same of space. The Goldwater-Nichols Department of Defense Reorganization Act of 1986 has contributed significantly to integrating joint military operations. Will Goldwater-Nichols

prove equally able to encompass cyberspace operations, or will we need some additional landmark legislation?

Airmen will dominate air, space, and cyberspace only by engaging in disciplined think-

ing and taking bold action. *Air and Space Power Journal*, the professional journal of the Air Force, dedicates this issue to advancing the professional dialogue about how best to answer Secretary Wynne and General Moseley's call. □

Notes

1. "SECAF/CSAF Letter to Airmen: Mission Statement" [7 December 2005], *Air Force Link*, <http://www.af.mil/library/viewpoints/jvp.asp?id=192> (accessed 8 December 2006).

2. SSgt. C. Todd Lopez, "Air Force Leaders to Discuss New 'Cyber Command,'" *Air Force Print News*, 5 October 2006, *Air Force Link*, <http://www.af.mil/news/story.asp?storyID=123028524> (accessed 8 December 2006).

3. Air Force Doctrine Document (AFDD) 2-1.2, *Strategic Attack*, 30 September 2003, 5, https://www.dctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd2-1-2.pdf (accessed 8 December 2006).

4. SSgt C. Todd Lopez, "8th Air Force to Become New Cyber Command," *Air Force Print News*, 3 November 2006, *Air Force Link*, <http://www.af.mil/news/story.asp?storyID=123030505> (accessed 8 December 2006).

The mission of the United States Air Force is to deliver sovereign options for the defense of the United States of America and its global interests—to fly and fight in Air, Space, and Cyberspace.

—Air Force Mission Statement



The Doolittle Raid

A 65-Year Retrospective

DR. ROBERT B. KANE, LIEUTENANT COLONEL, USAF, RETIRED

AFTER JAPAN'S ATTACK on Pearl Harbor on 7 December 1941, Pres. Franklin Roosevelt wanted to retaliate. The next month, Navy captain Francis S. Low suggested using Army medium bombers launched from an aircraft carrier. Gen Henry "Hap" Arnold, commander of US Army Air Forces, accepted the idea and selected Lt Col James H. "Jimmy" Doolittle—a well-known pioneer, military aviator, and aeronautical engineer—to plan and command the mission.

After secretly training at Eglin Field, Florida, from 9 to 25 March 1942, 16 B-25 Mitchell bombers with 80 crew members flew to Alameda, California, for loading onto the carrier USS *Hornet*. On 18 April, the aircraft took off from the *Hornet*, flew 650 miles across the western Pacific, and attacked targets in and around Tokyo. After the attack, one aircraft landed in the Soviet Union, which interned the crew until its "escape." The other 15 B-25s flew another 1,200 miles and ditched short of the Chinese coast or crash-landed after crossing the coastline.

Chinese forces and villagers rescued 67 raiders, including Colonel Doolittle. In retaliation, the Japanese army massacred up to 250,000 Chinese people and drove China's forces further from the coast. Japanese leaders tried eight captured raiders as war criminals, executing three of them. Of the remaining

five prisoners of war, one died from disease before the war's end.

Given the minimal damage from the attack and the extensive losses, Arnold and Doolittle wondered if the raid had been worth the effort. After the US defeats of early 1942, however, news of the raid caused American morale to soar, and word of the massacre of so many Chinese further enflamed anti-Japanese feelings. The raid also caused Japanese military leaders to recall frontline fighter units to defend the home islands from future attacks.

More importantly, Japanese leaders decided to extend their defense line in the Pacific as well as trap and destroy the American aircraft carriers that they missed at Pearl Harbor. The Battle of the Coral Sea, fought entirely by carrier-based aircraft on 7–8 May 1942, further confirmed these objectives. Adm Isoroku Yamamoto sent a massive fleet against Midway Island with the same objectives, and the ensuing battle on 5–7 June, resulting in a resounding American victory, marked the start of the three-and-one-half-year campaign across the Pacific to Tokyo Bay.

Finally, the raid portended the massive strategic bombing that virtually destroyed Japan's war-making capabilities by August 1945. The raid also stands as the longest B-25 combat flight in the aircraft's history—an early example of joint and special operations as well as "out-of-the-box" thinking. □

To Learn More . . .

Cohen, Stan. *Destination, Tokyo: A Pictorial History of Doolittle's Tokyo Raid, April 18, 1942*. Missoula, MT: Pictorial Histories Publishing Co., 1983.
Daso, Dik Alan. *Doolittle: Aerospace Visionary*. Dulles, VA: Potomac Books, 2003. (See this issue's "Book Reviews" section.)
Doolittle, Gen James H. "Jimmy," with Carroll V. Glines. *I Could Never Be So Lucky Again*. New York: Bantam Books, 1991.
Lawson, Ted W. *Thirty Seconds over Tokyo*. Edited by Robert Considine. New York: Random House, 1943.

The Merge

In air combat, “the merge” occurs when opposing aircraft meet and pass each other. Then they usually “mix it up.” In a similar spirit, Air and Space Power Journal’s “Merge” articles present contending ideas. Readers can draw their own conclusions or join the intellectual battlespace. Please send comments to asbj@maxwell.af.mil.

Strategic Imperative

The Necessity for Values Operations as Opposed to Information Operations in Iraq and Afghanistan

COL WILLIAM M. DARLEY, USA*

Thus it is that all armed prophets are victorious, and disarmed ones are crushed.

—Machiavelli, *The Prince*

AMONG THE MANY epiphanies the military has experienced pursuant to operations in Iraq and Afghanistan is the dramatic, albeit late, realization that it needs an intimate understanding of indigenous culture as well as well-developed cultural skills (such as linguistic capabilities) to operate successfully in such environments. As a result, culture has become a hot topic of discussion in military circles, resulting in a rapidly expanding body of literature that provides various prescriptions for obtaining and developing cultural capabilities.¹ However, the major problem with the current thesis of most such literature—indeed, the entire thrust of interest by the military in culture as a dimension of the battlefield—is the unfortunate but prevailing assertion that culture is merely a kind of human-terrain obstacle that one must negotiate like any other factor impeding successful operations, similar to dealing with adverse weather or topography. If that is as far as we get in our appreciation of culture within the overall context of the kinds of conflicts we face in Iraq and Afghanistan, we will never de-

velop the proper sets of skills, much less the appropriate policies, required to help attain the nation’s political objectives. Instead we will get a set of truncated, although politically correct, capabilities that will prove ineffective and perhaps even counterproductive for prosecuting conflicts best understood as irreconcilable collisions between culturally dissimilar and incompatible values systems.²

To clarify the essence of the kinds of conflicts in which we currently find ourselves engaged, we must observe that the cultural dimension of these battlefields is best understood not as means but as ends. Culture is not merely one dimension of these conflicts; it is the battlefield. Therefore, we must logically and frankly understand the end objective as the transformation of those cultures and the values that underpin them in a manner that makes them compatible with the values underpinning our own culture and political objectives for being at war.³

Consequently, the most basic reason for the military’s study of culture should not be learning merely how to negotiate or exploit

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the human cultural terrain as if it were a battlefield obstacle. Rather, the military's cultural study and training should focus on helping synchronize all elements of national and international power to change the character of the human terrain itself (i.e., defeat the adversary by changing the culture that sustains him). Without such a change to the basic culture and values system that abets the continued existence and activities of the enemy, successes on the battlefield—no matter how many and spectacular—will be ephemeral. Seen in this way, we can declare victory only after the emergence of clear and consistent evidence of compliance with a new set of normative values. In the end, the conquered must become Romans to stay conquered. How best can we effect such a transformation in culture within an enemy population?

History provides some compelling potential answers to the question. Recognizing the inducing of cultural change as an essential ingredient of conquest is an old and repeating feature in the history of major conflicts. As a result, since antiquity a key strategic reality for successfully building empires entailed imposing the conqueror's values system to make the culture of the conquered compatible with that of the conqueror and to reify acceptance of the conqueror's legitimacy and authority in the minds of the vanquished.⁴ Roberta L. Coles obliquely identifies the key cultural component for bringing about such an essential change by describing national cultural identity as "more than the land it encompasses, the number or kind of people residing in it, or the economy it generates. . . . Rather it is an 'imagined community' constructed through selectively remembered and embellished events, myths of origin, heroic stories, and proclaimed values. These transcendent symbols constitute the nation's civil religion, a set of myths that seeks consensus, attempts to provide a sacred canopy to a diverse community, and gives meaning to the community's existence."⁵

In other words, Coles identifies "civil religion" as the key centrifugal cultural force that unifies people in ethnic and national identity and shapes their values. Imperial powers of earlier times clearly recognized the key signifi-

cance of civil religion to the integrity and co-gency of society and therefore actively sought to transform the culture and values system of a vanquished people by imposing their own civil religion, doing so through a combination of proselytizing and coercion. For example, a major component of Roman conquest involved incorporation of local religious practices into Roman religion as a means of acculturating conquered people. At a minimum, Rome permitted continuation of local, independent religious traditions as long as the populace gave due deference to Roman religious authority and rendered appropriate honors to Roman deities. Rome answered defiance of that principle with breathtaking ruthlessness—the annihilation of British Druids is one prominent example.⁶

The many striking later parallels to Rome's emphasis on the use of civil religion as a cultural instrument of conquest include Russia's imperial conquest of Central Asia, the Northern European conquest of what is now the United States, and the Spanish conquest of Latin America, including Mexico. This principle is also reflected in the policies of conquest employed by states erected on secular ideologies that possessed the attributes of organized religion, such as National Socialism in Nazi Germany or the civil religion of individual human rights which emerged in the United States.

The dogma of the Eastern Orthodox Church lay at the heart of Imperial Russia's justification for conquest in Central Asia. The conviction that Russians had an obligation to spread civilization through the divine instrument of Orthodox Christian faith served as the common thread of Russian expansionism that transcended centuries.⁷ As described by Michael Khodarkovsky, "Russia's expansion to the south and east was anything but haphazard. . . . Cultivating the new lands and pacifying, settling, and converting its new subjects to orthodox Christianity became an imperial *raison d'état* in the eighteenth century and Russia's own mission civilisatrice."⁸

Aware of the calculated purpose of their own policies, Russian leaders were acutely sensitive to threats posed by the emergence of

other civil religions as challengers. As military historian Robert Baumann notes,

Aroused by the example of Poland and the rise of Germany, Russian nationalists viewed with alarm what they viewed as the centrifugal influence of Germanism and Lutheranism in the Baltic region. Among the most outspoken was the Slavophile publicist Iurii Samarin who attacked Baltic provincialism in his well-known *Okrainy Rossii* (Russia's Borderlands) and called for an aggressive effort to convert the Latvians and Estonians to Orthodox Christianity.⁹

In like manner, imposing civil religion on the conquered became a dominant feature of Northern European conquest of the Americas. Franz Altheim observes that the English perspective inherited by American Puritans derived from Protestant theology:

The English system of political thought was born of Puritanism, of the belief that one was a peculiar people and had therefore a special position before God and in the world as well. . . . England, like Rome, has her task to fulfill, assigned to her by the divine plan of history. This "manifest destiny" which includes a responsibility both to God and to the world, demands that, when occasion arises, she has to serve the welfare of the world and the welfare of her neighbour by establishing her own rule, where the other party cannot see, for the time at least, the necessity.¹⁰

Protestant American Manifest Destiny became both a powerful unifying psychological force for the early American colonists as well as a stimulant for aggressive westward conquest. Comments by Maj Gen Nelson Miles outlining the steps required to "civilize" Indian populations reflect how profoundly linked these concepts became in the general American consciousness. He saw the Indians as "a race of savages [that] cannot by any human ingenuity be civilized and Christianized within a few years of time."¹¹

Ironically, leaders of Mexico—largely a product of Catholic civil religion imposed on vanquished peoples—viewed Protestant-inspired Manifest Destiny from the north as a direct threat to the values system underpinning the prevailing civil religion of the Mexican state. Maria Rodríguez Diaz comments that Mexican conservatives saw in the values espoused

by Manifest Destiny "the [potential] destruction of the Mexican language and the erosion of religious custom in the face of increasing contact with the United States."¹² She goes on to observe that

conservatives were the most vocal in denouncing Manifest Destiny, in defending Catholicism as the taproot of Mexico's culture, and in denouncing the Liberal model for making Mexico a modern state. . . . They viewed the Catholic religion as essential for achieving national unity. The Anglo-Saxon advance threatened this essential foundation of Mexico's identity. The presumption of Manifest Destiny that Protestantism was superior to Catholicism inspired bellicose denunciations of the invader and calls to defend Mexico's Catholic faith. From the conservative point of view, Protestantism symbolized barbarism and Catholicism denoted civilization.¹³

"As a consequence, Mexican politicians frequently portrayed the intercultural conflict as 'a crusade against infidels—Protestants.'"¹⁴ Some conservatives even called for an aggressive campaign to bring Catholicism to the United States. Agitating for this cause, the Mexican newspaper *La Voz del Pueblo* declared on 19 July 1845 that "Mexico should arm itself and organize a significant territorial and maritime expedition to force the United States, by fire and the sword, to adopt solely the Roman Catholic Religion."¹⁵

In more recent times, ideologies espousing different systems of values emerged that have the structure and de facto force of religion on political, social, and economic organization as well as normative social behavior. Among these, National Socialism in Germany stands out as a prominent contemporary example. As Adolf Hitler noted, "We are not a movement. Rather we are a religion."¹⁶ Consciously aiming to supplant Judeo-Christian religions in Europe with the civil religion of National Socialism, he stated that

when National Socialism has ruled long enough, it will no longer be possible to conceive of a form of life different from ours. In the long run, National Socialism and religion will no longer be able to exist together. . . . The heaviest blow that ever struck humanity was the coming [of] Christianity. Bolshevism is Christianity's illegiti-

mate child. Both are inventions of the Jew. The deliberate lie in the matter of religion was introduced into the world by Christianity. Bolshevism practices a lie of the same nature, when it claims to bring liberty to men whereas in reality it seeks only to enslave them.¹⁷

Comparing the religious traditions of National Socialism to those of early Christianity, he went on to say that

the greatness of every mighty organization embodying an idea in this world lies in the religious fanaticism and intolerance with which, fanatically convinced of its own right, it intolerantly imposes its will against all others. If an idea in itself is sound and thus armed, takes up a struggle on this earth, it is unconquerable and every persecution will only add to its inner strength. The greatness of Christianity did not lie in attempted negotiations for compromise with any similar philosophical opinions in the ancient world, but in its inexorable fanaticism in preaching and fighting for its own doctrine.¹⁸

Similarly, the fundamentally religious character underlying the values system and culture engendered by Communist “theology” had historically significant geopolitical consequences on a global scale for most of the twentieth century. This is reflected in the remarks of Marxist scholar Eugene Kamenka, who writes that “Karl Marx’s position as the greatest of the socialist ideologists and as the posthumously proclaimed founder of one of the world’s greatest religions, of course, has not prevented his greatness from being questioned, as it no doubt will continue to be, at least by some.”¹⁹

In like manner, the emergence of the United States as a single national identity with aggressive designs on continental expansion and beyond correlates with the rise of secular civil religion having as its central icon the concept of “individual liberty” as a fundamental, natural endowment. The cultural values system that emerged on the foundation of this concept cultivated in the British colonies a distinct national identity together with the presumption of a sacred obligation to propagate the new religion. As observed by Coles, America’s sense of Manifest Destiny originated in “centuries old themes of American civil religion; it proffered America’s superior and

chosen nature and its duty to redeem the continent and perhaps the globe as justification to expand America’s geographical and political boundaries.”²⁰

Currently, the American civil religion of individual liberty and the cultural values system to which it has given rise are among the world’s most powerful and feared iconic cultural movements. To cultures that eschew personal liberty as a legitimate principle of social and political organization of society, the concept of individual rights has now become so identified with the American civil religion that nations attempting to adopt similar systems are often viewed as literal extensions of American culture and civilization.

These observations are relevant to the contemporary situation we face in Iraq and Afghanistan. Fundamentally, seen from the perspective presented above, we can best understand those struggles at their most basic cultural level as disputes between different civil religions and the values system that stems from each. Therefore, we should view the conflicts in Iraq and Afghanistan in essence as those between incompatible values systems having different cosmological assumptions about the proper relationship of individual human beings to those governing them: a secular ideology asserting the existence of natural individual rights apart from government in conflict with a values system that denies the existence of such rights and demands submission to the dictates of God as interpreted by a *de facto* Islamic priesthood in charge of government.

We can illustrate the difference by comparing the most basic aspects and role of the central documents anchoring the civil religion of the United States of America—the US Constitution and Declaration of Independence—to those of the central document of Islamic culture and government: the Koran. The documents of the American civil religion make respectful, but only general, mention of Deity as the source of human dignity and rights, while asserting that the people have final authority over themselves and their civil government. Moreover, the documents outline specific methods for altering them to satisfy the changing desires of the people. In comparison, the

Koran places the God of Islam at the center of government and asserts that His words as written in the Koran are unchangeable, especially by people, and certainly not through popular selection by majority vote. (Nevertheless, among fundamentalist Muslims of all stripes exists the practice of ceding interpretation of what the Koran means in practice to clerics and Islamic scholars.) As a result, we must realize that we can successfully establish democratic pluralism in countries that have never known it only if we broadly supplant cultural values at a grassroots level that currently makes cultural acceptance of democracy virtually impossible due to Islamic literalism.

The current conflict understood in this way clearly suggests that it can never be won through military measures—certainly none that Western society is morally prepared to undertake. Therefore, the current conflict can end only when the basic values of one religion or the other are sufficiently modified to make them compatible with the other. To do that, the United States must either abandon its policy of exporting the secular religion of personal liberty, which carries the presumption that it offers a universal panacea to the human condition, or the fundamentalist Islamic opponents must moderate their absolute literalism toward the Koran and the civil authority of Islamic Sharia law that stems from it. Certainly Osama bin Laden and al-Qaeda view the struggle in this way: “I am one of the servants of Allah. We do our duty of fighting for the sake of the religion of Allah. It is also our duty to send a call to all the people of the world to enjoy this great light and to embrace Islam and experience the happiness in Islam. Our primary mission is nothing but the furthering of this religion.”²¹

This is not the first time Western powers have faced the challenge of imposing civil religion on former enemies. American political and military leaders once saw operations aimed at broadly changing the cultural values of entire populations by modifying their civil religion not as utopian, insurmountable, and politically incorrect measures but as essential components of successful conflict termination. For example, American leaders recognized that the United States could not finally

defeat the Japanese Empire until it curtailed ground-roots emperor worship and until the Japanese embraced secular democratic pluralism as the alternative to the state civil religion. This became a major tenet of US postwar reconstruction policy in occupied Japan. A momentarily significant one-word change to the rewritten Japanese constitution following the war symbolized the profound cultural change that we sought: “The Matsumoto Committee (Draft A) retained the Privy Council and made only one slight change in the first four articles of the constitution, which concerned the crucial elements of the emperor system. Article III had stated: ‘The person of the Emperor is *Sacred*.’ The Matsumoto draft changed this to: ‘The person of the Emperor is *Supreme*’ ” (emphasis in original).²²

Similarly, the Allies assumed that Nazism would remain capable of resurgence until they uprooted the cult of fuehrer worship as well as the religion of Aryan supremacy and replaced them with egalitarianism. According to James F. Tent, “To institute a democracy in Germany required establishing more than the outward forms of popular governance. Free elections, democratic constitutions, independent political parties, and local government were simply institutional features; they required inner spirit to give them meaning. ‘Re-education’ became the conquerors’ catchword to describe the efforts to democratize Germany.”²³ Moreover, in opposing Communism during the Cold War, the US Information Agency and the Central Intelligence Agency, in concert with synchronized diplomacy by the State Department, executed a well-funded and comprehensive values campaign to directly attack Marxist/Leninist values globally using cultural weapons—the principal warheads of which consisted of carefully packaged liberal democratic values derived from the US civil religion.²⁴

Similarly, whatever cultural understanding and respect we develop among our forces for the Arab-Islamic culture in Iraq and Afghanistan will be irrelevant unless we understand that success depends ultimately on the coalition’s ability to transform the civil religion of Iraq and Afghanistan in a manner that sus-

tains broad cultural acceptance of individual liberty as a legitimate organizing principle of society. The metrics of this success will serve as clear evidence of popular acceptance of a single national identity as manifested through a continuing pattern of peaceful transfer of power through democratic elections and tolerance of minority opinion. Solid evidence of such cultural change will require more than public flirtation with a few elections.

Consequently, with regard to Iraq and Afghanistan, the most important question military planners and policy makers should ask themselves is, What essential elements and tools in the spectrum of cultural knowledge does the military need to master in order to change the basic values underpinning that culture? More than taxonomies of cultural facts or even acquisition of linguistic skills, the military needs a sophisticated understanding of applied techniques that specifically effect cultural transformation of values within societies.

We will not find the answer in developing broad and relatively superficial awareness of the cultures in which coalition forces operate. On the contrary, we can settle the high purpose for which we ostensibly wage these conflicts only by developing the functional equivalent of a fully synchronized cultural-values "missionary" program by those who have acquired the skills both to entice and compel the acceptance of the basic values of a democratic civil religion that ultimately shapes and modifies sociopolitical behavior. Therefore, for the coalition campaign ultimately to succeed, specific values must be resolutely introduced and steadfastly cultivated in Iraq by cultural "missionaries" properly armed and resourced to proselytize respect and tolerance for the unfettered right of individual freedom of conscience and choice as prerequisites for establishing democratic political institutions in Iraq.

To obtain this kind of understanding moves beyond T. E. Lawrence's observations regarding insights into the nature of Arab culture or the counterinsurgency theories of David Galula.²⁵ Instead, it points up the necessity for intimate study of such effective practitioners of values modification as the Jesuits, the Communist International, or the proselytizing tactics, tech-

niques, and procedures of Muhammad himself. Our adversaries understand the nature of this conflict more clearly than we do: "Democracy is a Greek word meaning the rule of the people, which means that the people do what they see fit. . . . This concept is considered apostasy and defies the belief in one God—Muslims' doctrine."²⁶

Since a change in values systems at a cultural level would prove extraordinarily difficult under any circumstances, what practical steps might we take to support such a program? To highlight the most essential, we should consider the following statement used by Puritan leader Capt John Underhill to justify the ruthless annihilation of a Pequot Native American village formerly located near what is today West Mystic, Connecticut. On 26 May 1637, Underhill led an attack by Puritan militias against a sleeping village without warning, resulting in the massacre of more than 400 Native Americans, the majority of them old men, women, and children. Recounting his rationalization for this attack, he wrote,

I would referre you to Davids warre, when a people is growne to such a height of bloud, and sinne against God and man, and all confederates in the action, there he hath no respect to persons, but harrowes them, and sawes them, and puts them to the sword, and the most terrible death that may bee: sometimes the Scripture declar-eth women and children must perish with their parents; some-time the case alters: but we will not dispute it now. We had sufficient light from the word of God for our proceedings.²⁷

In describing why he and his fellow Puritans came to the conclusion that they were justified in their actions, Underhill asserted that Judeo-Christian scripture had given him the authority to kill unbelievers. Such claims of divinely sanctioned violence based on scripture led to almost unspeakable barbarism not only among medieval European Christian sects in numerous merciless sectarian wars but also among many Muslim, Hindu, and Buddhist sects as well. Taking note of this too-common inclination for clergy to claim divine authority on the matter of "revealed scripture" as justification for violent acts and coercion, the founders of American democracy intentionally de-

fanged pugnacious European religious orders by establishing a secular government that specifically excluded clergy from exercising political authority and replaced the use of the Judeo-Christian Bible as civil authority with reliance upon a system of secular law.

This formal delinking of sectarian religion from state power has promoted a cultural environment that helps create conditions not only for development of unparalleled exercise of personal freedom of conscience and expression but also a flowering of intellectual inquiry free from intrusion by state-sponsored religious authority. Some observers have asserted that this disengagement of the state from sectarian religion also fostered unprecedented individual initiative leading to the flourishing of economic enterprise.²⁸

Therefore, as we debate the content and direction of future values operations, the American experiment in secular civil religion may offer useful lessons for effecting the tectonic change of values required to give Iraqi and Afghan democracy their best opportunity for taking root—specifically, the essential need to delink Islamic religion and religious clergy from official administration of the state. In other words, to attain conditions conducive to democracy, the Iraqi people should shift the Koran to the same respected cultural niche within their society that the Judeo-Christian Bible now occupies in developed Western democratic societies—a resource for examining the traditions and wisdom associated with the history of Islamic moral judgments but entirely excluded from official legal standing as representing the authority for enforcement of civil law.

In conjunction, just as we sanction Judeo-Christian clergy from exercising civil legal authority except in closely circumscribed ways, Iraqis should sanction Islamic clergy from exercising any civil authority apart from such purely ceremonial activities as solemnizing marriages. To allow otherwise is to ensure that at the departure of the coalition, Iraq will rapidly become mired in a values struggle driven by age-old Islamic traditions including clerical fragmentation within Islamic groups. As a result, the outcome cannot avoid domination by

the prejudices of powerful Islamic religious ideologues who have no interest in allowing the legal exercise of personal conscience outside the interpretation of religious values dictated by Imams. An article in the *Washington Post* expresses the aggressive point of view that would resist the establishment of a government not dominated by clergy: “Abu Ibrahim said he regarded Afghanistan during the Taliban rule as one of the few true Islamic governments since the time of Muhammad. ‘The Koran is a constitution, a law to govern the world,’ he said.”²⁹

The dilemma that the military, as well as the coalition, faces in prosecuting the current conflicts can be resolved only by clearly recognizing them as strife between civil religions and understanding them as primarily a test of strength of conviction by each side in the rightness of that civil religion. The real question then becomes whether we as a coalition have the same depth of conviction with regard to the superiority of our own civil religion and the values that stem from it that we previously held as a premise for shaping occupation policy toward Imperial Japan and Nazi Germany as well as Cold War policy in cultural conflict with the Marxist-Leninist Soviet Union. Western democracies will require strong resolve combined with a supporting values campaign to transform Middle Eastern populations to a civil-values system that establishes individual liberty as the core cultural value in democratic societies. Success therefore ultimately depends on the effectiveness of determined values-based campaigns that clearly persuade the ground-roots populace to accept an alternative cosmology that supplants both the fascist secular values of Sunnis loyal to the former regime as well as the fascist values of Wahhabi-fundamentalist Islam. Anything short of such concerted values operations to bring about this essential change is useless self-deception and wasteful dabbling at the edges of the essential issue.

With the above in mind, whatever fleeting political relief the coalition has enjoyed due to the public-relations value of a string of successful one-time elections, the short-term impact of such transitory events pales in comparison

to the devastating long-term effect of officially conceding to the control of Islamic religious authority over the state apparatus. A public statement posted by members of the Iraqi insurgency on the World Wide Web following a suicide attack in Mosul, Iraq, foreshadows the consequences of ceding the values battlefield by permitting the clergy to assume secular authority in either Iraq or Afghanistan:

The "call to jihad is rising in the streets of Europe, and is being answered," reported *The New*

York Times in April 2004. The *Times* story quoted a Muslim cleric in Britain touting the "culture of martyrdom," an imam in Switzerland urging his followers to "impose the will of Islam on the godless society of the West," and another radical Islamist leader in Britain predicting that "our Muslim brothers from abroad will come one day and conquer here, and then we will live under Islam in dignity."³⁰

Fort Leavenworth, Kansas

Notes

1. Among others, see Maxie McFarland, "Military Cultural Education," *Military Review*, March–April 2005, 62–69; Montgomery McFate, "The Military Utility of Understanding Adversary Culture," *Joint Force Quarterly*, 3d quarter, issue 38 (2005): 42–48, http://www.dtic.mil/doctrine/jel/jfq_pubs/1038.pdf; Christopher Varhola, "The U.S. Military in Iraq: Are We Our Own Worst Enemy?" *Practicing Anthropology* 26, no. 4 (2004): 40; and House, *Statement of Arthur K. Cebrowski, Director of Force Transformation, Office of the Secretary of Defense, before the Subcommittee on Terrorism, Unconventional Threats, and Capabilities, Armed Services Committee, United States House of Representatives*, 108th Cong., 2d sess., 26 February 2004.

2. Samuel P. Huntington, "The Clash of Civilizations?" *Foreign Affairs*, Summer 1993, 72–73.

3. See *God's Rule: The Politics of World Religions*, ed. Jacob Neusner (Washington, DC: Georgetown University Press, 2003). See also R. H. Tawney, *Religion and the Rise of Capitalism: A Historical Study* (New Brunswick, NJ: Transaction Publishers, 2000); Max Weber, *The Theory of Social and Economic Organization*, trans. A. M. Henderson and Talcott Parsons (New York: Oxford University Press, 1947); and Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons (New York: Charles Scribner's Sons, 1976).

4. Franz Altheim, *A History of Roman Religion*, trans. Harold Mattingly (London: Methuen, 1938), 422–23. "To take one point before others, so much is plain, that cult, the kernel of Roman religion, has a far wider importance for state and politics than has generally been supposed. The careful and unremitting worship of the gods will in that case have been the necessary conditions for the rise and rule of Rome" (423).

5. Roberta L. Coles, "Manifest Destiny Adapted for 1990's War Discourse: Mission and Destiny Intertwined," *Sociology of Religion* 63, no. 4 (Winter 2002): 403.

6. Alan Wardman, *Religion and Statecraft among the Romans* (London: Granada, 1982), 58–59. Religious groups that refused to respect Roman claims of divine authority for conquest and political rule were dealt with in a brutal manner and eliminated. For example, the Druids (who constituted the most prominent British religious cult)

were singled out for annihilation, based on Roman claims that they used religious grounds to stir resistance to Roman rule. Noting this as official Roman policy, Pliny wrote, "The principate of Tiberius did away with the Druids and this horde of seers and medicine men. . . . It is beyond calculating how great is the debt owed to the Romans who swept away the monstrous rites in which to kill a man was the highest religious duty and for him to be eaten was a passport to good health." Quoted in Wardman, *Religion and Statecraft*, 58–59. Also, "as is well known, the Druids and the religion they represented were, by the early first century AD, made the object of successive measures of repression by the Roman authorities. Augustus, according to Suetonius, took action to prohibit *religio druidarum* to those who had become Roman citizens; Pliny relates how under Tiberius a decree of the senate was issued against Gaulish Druids 'and all that kind of diviners and healers.' . . . And then Suetonius again states that Claudius in AD 54 'completely abolished the barbarous and inhuman religion of the Druids in Gaul.'" Quoted in Stuart Piggott, *The Druids* (1975; repr., New York: Thames & Hudson, 1999), 119. See also *Wikipedia: The Free Encyclopedia*, s.v. "Druid," <http://en.wikipedia.org/wiki/Druids>.

7. Michael Khodarkovsky, *Russia's Steppe Frontier: The Making of a Colonial Empire, 1500–1800* (Bloomington: Indiana University Press, 2002), 47. See also Firouzeh Mostashari, "Russian Colonization of Caucasian Azerbaijan, 1830–1905," in *Extending the Borders of Russian History*, ed. Alfred J. Rieber and Marsha Siefert (Budapest and New York: Central European University Press, 2003), 175.

8. Khodarkovsky, *Russia's Steppe Frontier*, 37.

9. Robert F. Baumann, "Universal Service Reform and Russia's Imperial Dilemma," *War and Society* 4, no. 2 (September 1986): 35.

10. Altheim, *History of Roman Religion*, 429.

11. Nelson Miles, "Our Indian Question," *Journal for the Military Service Institution of the United States* 2 (1878): 291.

12. Maria del Rosario Rodríguez Díaz, "Mexico's Vision of Manifest Destiny during the 1847 War," *Journal of Popular Culture* 35, no. 2 (Fall 2001): 43.

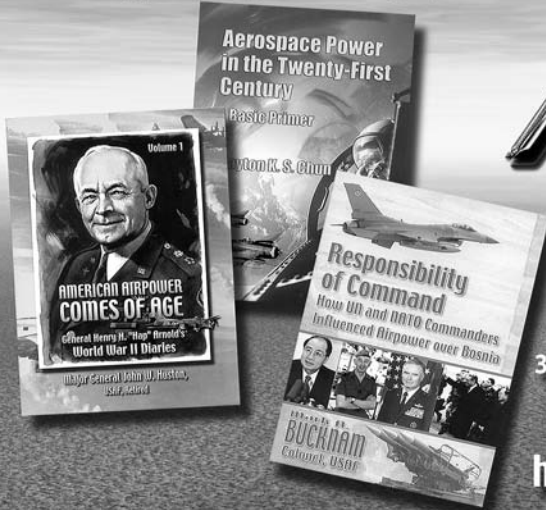
13. *Ibid.*, 45.

14. *Ibid.*

15. Ibid.
16. Robert G. L. Waite, *The Psychopathic God: Adolf Hitler* (New York: Basic Books, 1977), 29.
17. George H. Stein, *Hitler* (Englewood Cliffs, NJ: Prentice-Hall, 1968), 67.
18. Adolph Hitler, *Mein Kampf*, trans. Ralph Manheim (Boston: Houghton Mifflin, 1971), 351.
19. Karl Marx, *The Portable Karl Marx*, ed. Eugene Kamenka (New York: Viking Penguin, 1983), xxxviii.
20. Coles, "Manifest Destiny," 404.
21. Osama bin Laden, interview by John Miller, American Broadcasting Company, May 1998, <http://www.pbs.org/wgbh/pages/frontline/shows/binladen/who/interview.html>.
22. *Democratizing Japan: The Allied Occupation*, ed. Robert E. Ward and Sakamoto Yoshikazu (Honolulu: University of Hawaii Press, 1987), 111. See also Richard B. Finn, *Winners in Peace: MacArthur, Yoshida, and Postwar Japan* (Berkeley: University of California Press, 1992), 47–65; and Meirion Harries and Susie Harries, *Sheathing the Sword: The Demilitarisation of Japan* (New York: Macmillan, 1987), 33–84.
23. James F. Tent, *Mission on the Rhine: "Reeducation" and Denazification in American-Occupied Germany* (Chicago: University of Chicago Press, 1982), 1, 13–39. See also Arthur Lee Smith, *The War for the German Mind: Re-Educating Hitler's Soldiers* (Providence, RI: Berghahn Books, 1996); and Timothy R. Vogt, *Denazification in Soviet-Occupied Germany: Brandenburg, 1945–1948* (Cambridge: Harvard University Press, 2000).
24. See Walter L. Hixson, *Parting the Curtain: Propaganda, Culture, and the Cold War, 1945–1961* (New York: St. Martin's Press, 1997). See also David Cate, *The Dancer Defects: The Struggle for Cultural Supremacy during the Cold War* (New York: Oxford University Press, 2003); and Frances Stonor Saunders, *The Cultural Cold War: The CIA and the World of Arts and Letters* (New York: New Press, 1999).
25. See T. E. Lawrence, *Seven Pillars of Wisdom* (New York: Anchor Books, 1991); and David Galula, *Counterinsurgency Warfare: Theory and Practice* (New York: Praeger Press, 1964).
26. "Democracy Called Un-Islamic," *Kansas City Star*, 31 December 2004, A-13.
27. Ronald Dale Karr, "Why Should You Be So Furious? The Violence of the Pequot War," *Journal of American History* 85, no. 3 (December 1998): 877.
28. See Weber, *Theory of Social and Economic Organization*; and Weber, *Protestant Ethic*.
29. Ghaith Abdul-Ahad, "Outside Iraq but Deep in the Fight: A Smuggler of Insurgents Reveals Syria's Influential, Changing Role," *Washington Post*, 8 June 2005, 1.
30. Philip Seib, "The News Media and the 'Clash of Civilizations,'" *Parameters* 34, no. 4 (Winter 2004–5): 71, <http://www.carlisle.army.mil/usawc/parameters/04winter/seib.pdf>.

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Editor's Note: This article is a direct reply to "Ten Propositions Regarding Space Power: The Dawn of a Space Force" by Lt Col Mark E. Harter, Air and Space Power Journal, Summer 2006.

The Long and Winding Road to Operationally Responsive Spacelift

LT COL STEPHEN K. REMILLARD, USAF*

On 15 November 2001, the Air Force Requirements Oversight Council (AFROC) approved the mission needs statement for operationally responsive spacelift (ORS). Five months later, when the Joint Requirements Oversight Council (JROC) validated and approved that statement, I celebrated, believing that the Department of Defense was now on the path to developing this badly needed military capability. More than five years later, however, in light of the lack of progress since approval of the mission needs statement, I find myself agreeing with the thesis of Lt Col Mark Harter's article "Ten Propositions Regarding Space Power": "The reality is that, as in the evolution of air power, the true potential of a nation's military space power will come to fruition only when a separate space force is created, complete with its own space-competent leadership, organization, doctrine, theory, policy, and resources."¹ I am indeed pessimistic about the ability of the Air Force to create the space capabilities this country needs to remain the world's preeminent space power. A review of the history of ORS, along with some major institutional changes within the Air Force, illustrates the problem.

First, what is ORS? The AFROC's letter of approval for the mission needs statement sums it up this way:

ORS ensures the Air Force has the capability to rapidly put payloads into orbit and maneuver spacecraft to any point in earth-centered space, and to logistically support them on orbit or return them to earth. As a key enabler for con-

ducting the full spectrum of military operations in space, ORS involves transporting mission assets to, through, and from space. Additionally, ORS includes spacecraft servicing, which encompasses traditional satellite operations activities, but it could also include re-supply, repair, replacement, and upgrade of space assets while in orbit.²

On 15 April 2002, the JROC validated our military's need to fulfill tasks outlined in the mission needs statement. Unfortunately, based on what has happened in the intervening five years, another 10 to 15 years will pass before we can field an ORS capability. In the formal acquisition process, personnel perform an analysis of alternatives to determine the best way to meet a defined, validated need. Air Force Space Command (AFSPC)/DR began this analysis in February 2003, and the AFROC approved it about two years later, in April 2005. Today, the JROC has yet to validate that analysis and may never do so. Also, since a Milestone A decision never received approval for the ORS initiative, it still lacks designation as a formal acquisition program. Furthermore, five years after the AFROC's approval of the ORS mission needs statement, we still have no ORS program office. Granted, some programs have been funded—such as Force Application and Launch from CONUS [continental United States] (FALCON), which may enhance our ability to launch payloads into orbit quickly—but without an office that can demonstrate how the progress of these programs relates to

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the established need, their funding remains in doubt from year to year.

Along with the glacial rate of progress on ORS, major institutional changes have occurred within the Air Force that call into question its commitment to space—take, for example, the dissolution of US Space Command (USSPACECOM). Were it not for that command's vision and articulation of war-fighting requirements, as expressed in documents such as the *Long-Range Plan: Implementing USSPACECOM Vision for 2020*, we would have no ORS mission needs statement.³ Nor would the statement have received approval without the unwavering support of USSPACECOM's senior leadership. Because the command provided a war-fighting mentality to the Air Force's space leadership, it was well on the way toward developing the "space-competent leadership, organization, doctrine, theory, policy, and resources" mentioned by Lieutenant Colonel Harter (see above). That leadership no longer exists, thus squandering several years of progress.

More recently, rumors about reducing AFSPC's commander billet from a four-star to a three-star, which circulated during the Air Force's latest reorganization drill, called that command's future into doubt. So serious was this speculation that Senator A. Wayne Allard (R-CO) wrote in a letter to the secretary of defense that "despite this national security imperative, it appears that the Department of Defense has not been devoting sufficient attention to enhancing and defending our nation's space dominance. In fact, several recent management and organizational changes suggest that this trend is accelerating, much to the detriment of our nation's security."⁴ It is

difficult to gauge the seriousness of the threat to AFSPC, but even as a trial balloon it suggests a lack of vision.

Lieutenant Colonel Harter's article correctly points out that "*space superiority starts with assured access to space*" (emphasis added).⁵ If scheduling launches six months to a year in advance (as is the case currently with the evolved expendable launch vehicle, our new generation of space boosters) constitutes "assured access," then we might be all right. I fear, however, that if we need to conduct the full spectrum of military operations in space in a timely manner, then we could easily find ourselves arriving late to the next gunfight, armed only with a dull knife. Clearly, we need a space force to focus our human energy and scarce financial resources to deliver and operate the hardware designed to secure the high ground of space. □

Peterson AFB, Colorado

Notes

1. Lt Col Mark E. Harter, "Ten Propositions Regarding Space Power: The Dawn of a Space Force," *Air and Space Power Journal* 20, no. 2 (Summer 2006): 76, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/sum06/sum06.pdf>.

2. Air Force Requirements Oversight Council, memorandum, 15 November 2001.

3. *Long-Range Plan: Implementing USSPACECOM Vision for 2020* (Peterson AFB, CO: USSPACECOM, [1998]).

4. "Senator Allard Gets Assurances That Space Command Will Remain a 4-Star Air Force Command," press release, 13 April 2006, http://allard.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=231851&Month=4&Year=2006.

5. Harter, "Ten Propositions Regarding Space Power," 66.

Leadership is the art of getting someone else to do something you want done because he wants to do it.

—Pres. Dwight D. Eisenhower

Potential Air Force Shortfalls in Implementing the *Defense Language Transformation Roadmap*

COL STEPHEN SCHWALBE, PhD, USAF*

Language skill and regional expertise are not valued as Defense core competencies, yet they are as important as critical weapon systems.

—*Defense Language Transformation Roadmap*, 2005

IN THE *DEFENSE Language Transformation Roadmap*, the Department of Defense (DOD) identifies expertise in foreign languages as a critical war-fighting capability in conducting military operations that involve insurgencies and nation building in the twenty-first century.¹ During Operation Iraqi Freedom, even one American soldier conversant in the native language can make a significant difference, from the tactical to the strategic level. For example, in Mosul, Iraq, a US Army foreign area officer (FAO) determined the infiltration route of foreign fighters from Syria into Iraq even though two dozen US Army Rangers had failed to do so. This same FAO also discovered that Iraqi interpreters hired to translate for general officers in US Central Command had lied about their backgrounds and language capabilities and had translated commanders' sophisticated English into grade-school Arabic, thus creating a negative impression.² During Iraqi Freedom, language and cultural misunderstandings have led to both tactical and strategic mistakes—a common occurrence throughout the history of warfare. DOD leaders decided to address this problem by assuming that military operations in the twenty-first century will likely resemble Iraqi Freedom. Toward that end, this article examines the Air Force's implementation of the DOD's *Roadmap* by briefly reviewing the document's main points and then con-

sidering shortcomings in such areas as duty assignments and promotability.

Defense Language Transformation Roadmap

To significantly improve the DOD's organic capability in foreign languages and dialects, the *Roadmap* identifies four goals and the actions necessary to achieve them:

The Strategic Planning Guidance (SPG) for FY 2006–2011 directed the Under Secretary of Defense for Personnel and Readiness . . . to develop and provide to the Deputy Secretary of Defense . . . a comprehensive roadmap for achieving the full range of language capabilities necessary to support the 2004 Defense Strategy. The SPG established four goals for language transformation:

1. Create foundational language and cultural expertise. . . .
2. Create the capacity to surge language and cultural resources. . . .
3. Establish a cadre of language specialists. . . .
4. Establish a process to track the accession, separation and promotion rates of . . . FAOs.³

The *Roadmap* makes the key assumptions that future enemies will speak “less-commonly-taught languages” and that “robust foreign

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language and foreign area expertise are critical to sustaining coalitions.” Currently the DOD does not sufficiently incorporate foreign-language capability and regional expertise into operational or contingency planning because it does *not* consider them either war-fighting skills or core competencies.⁴ Congress (specifically, elected officials such as Rep. Steve Israel [D-NY]) has also identified shortcomings in linguistic and cultural awareness within the department. During a March 2006 conference on improving the DOD’s professional military education, held at the US Merchant Marine Academy in New York, the key and recurring themes included building and sustaining stronger language and cultural capabilities as well as tying them to career progression.⁵

Duty Assignments for International Affairs Specialists

Bruce Lemkin, deputy undersecretary of the Air Force for international affairs, has responsibility for the service’s FAO program—now called the international affairs specialist (IAS) program. It is designed to produce field-grade officers with the international insight, foreign-language proficiency, and cultural understanding to operate effectively in today’s dynamic security environment. To become certified as an IAS, an officer must attain a proficiency level of 2, 2, 2 (limited working proficiency) in foreign-language reading, listening, and speaking, respectively. One can reach this proficiency level in Romance languages after six to nine months of intensive training, but Russian, Arabic, Mandarin Chinese, and Korean require 12–18 months. The IAS program’s two tracks—political-military affairs and regional affairs—both call for in-residence intermediate-developmental education and a graduate degree in international affairs, but only the regional-affairs track requires proficiency in a foreign language.

The US Army, which began its FAO program in 1987, has extensive experience in training international specialists. After providing basic instruction in a foreign language, it assigns trainees to a region where the lan-

guage is spoken. Upon completing a year or two in such an immersion program, trainees achieve a “professional” level of competence in language proficiency, cultural knowledge, and country/regional expertise and then begin a standard three-year tour of duty on an FAO assignment. Thus, the Army invests between five and seven years (including preparatory training) in a field-grade officer to complete one such assignment—the normal length of time at the rank of major (O-4).

Assuming comparable numbers across the services, the Air Force’s IAS majors would likely meet their lieutenant-colonel promotion board with top-performance reports indicating years of IAS training and one assignment, probably as either an assistant air attaché or a security-assistance staff officer at a US embassy. Board members will compare these reports to those of their peers, which normally show work at the Joint Staff, Air Staff, or headquarters of a functional or regional combatant command. Alternatively, these peer reports might reflect performance in an ongoing military operation. In any case, most of the time, the IAS officer’s overall record as an O-4 will probably not compare favorably with that of an O-4 line officer.

After discovering that this situation usually led to FAOs retiring at a rank no higher than lieutenant colonel (O-5), the Army created a separate branch for its FAOs, with quotas at flag rank. Because the Air Force’s structure differs from the Army’s, it cannot duplicate this approach; instead, the Air Force promises that IAS officers’ careers “will be carefully managed to remain viable and competitive.”⁶ However, this statement flies in the face of reality. Not only the Air Force’s culture but also its promotion process must change to ensure the viability of IAS officers’ careers. The Air Force is now following the path that the Army blazed many years ago—which it eventually had to transform.

Recommendations for Officer Promotability

A folder given to promotion-board members for each officer candidate includes an Officer Preselection Brief, which indicates key

aspects of the officer's career such as service data, education (both developmental and academic), military decorations, and a complete duty-assignment history. One could easily use the extra space in the portion of the brief designated for joint-duty data to display the candidate's foreign-language test scores, which each panelist could consider—as well as the difficulty of the language—in determining the overall score. (The harder the language and the higher the proficiency score, the higher the scoring of the officer's record.)

Rank Criterion

The *Roadmap* recommends using proficiency in a foreign language as a criterion in considering an officer for promotion to brigadier general, similar to the joint-service requirement for becoming a joint specialty officer (which emanates from the Goldwater-Nichols Department of Defense Reorganization Act of 1986).⁷ Clearly, this recommendation would apply primarily to those officers promoted below their primary zone multiple times (fewer than 3 percent), but the intent of the initiative in language and cultural awareness is to offer FAO training to far more military officers—not the exceptional minority. Therefore, the foreign-language requirement for promotion should apply to the rank of colonel (O-6), thereby motivating not only below-the-zone officers but also a large number of on-time officers seeking promotion to colonel.

Command Credit for International Affairs Specialists

Logically and realistically, officers given more responsibility relative to rank are promoted more often than peers with less responsibility. A corollary to this hypothesis holds that service jobs receive more rewards than nonservice jobs. Although military attachés or security-assistance officers in US embassies have roughly equal responsibilities, those who do not work within their service risk some promotion potential. From personal experience as a security-assistance officer and two-time air attaché, this author can attest that working in

an embassy will neither hurt nor help the promotion prospects of an Air Force field-grade officer. At best, it has a neutral effect despite the extremely demanding nature of embassy work, which can have significant consequences. Service jobs at headquarters or in the field seem more demanding and benefit from direct exposure to leadership. Today, at the field-grade rank, embassy work will usually not get an officer promoted—a fact that would cause company-grade and field-grade officers interested in the IAS program (most of whose jobs are in embassies) to have second thoughts.

Although the Air Force's current structure does not appear to give IAS officers a reasonable expectation of promotion, the service could implement at least one inexpensive measure that would increase their chances. Simply put, the Air Force could give command credit to embassies' military-leadership positions and make them part of the standard command-screening process. Specifically, air attachés and Air Force security-assistance chiefs would receive the same credit as line squadron commanders, and defense attachés and security-assistance chiefs (both members of the embassy country team) would receive the same credit as line group commanders. As a side benefit of this proposal, the quality of field-grade applicants to the IAS program would likely improve significantly.

Because these recommendations would entail a significant change in Air Force culture, they will prove extremely difficult to implement. Resistance from members of the bureaucracy, especially those who have commanded at any level, would probably stifle this initiative. However, it may be the only way to ensure that Air Force officers who volunteer for the IAS program actually have a reasonable chance at promotion to full colonel. Undoubtedly, fluency in foreign languages and cultural-awareness skills will become critical to the success of future combat operations; therefore, something significant needs to happen to guarantee their existence in the Air Force and DOD of the twenty-first century. □

Maxwell AFB, Alabama

Notes

1. *Defense Language Transformation Roadmap* (Washington, DC: Department of Defense, January 2005), 3, <http://www.globalsecurity.org/military/library/policy/dod/d20050330roadmap.pdf>.

2. Greg Jaffe, "In Iraq, One Officer Uses Cultural Skills to Fight Insurgents," *Wall Street Journal*, 15 November 2005, A1.

3. *Defense Language Transformation Roadmap*, 1.

4. *Ibid.*, 3.

5. On 25 March 2006, Congressman Israel convened a conference entitled Rebuilding America's Intellectual Arsenal, in which over 40 leaders from the military and civilian communities participated.

6. House, *Statement of Lieutenant General Roger A. Brady, Deputy Chief of Staff, Manpower and Personnel, United States Air Force, on Recruiting and Retention and Military Personnel Policy, Benefits and Compensation Overview, to the Military Personnel Subcommittee, Committee on Armed Services, United States House of Representatives*, 109th Cong., 2d sess., 6 April 2006, 5, <http://www.house.gov/hasc/4-6-06StatementBrady.pdf>.

7. Although the requirements do not specify the level of language proficiency, one could assume that it would not exceed a 2, 2, 2.

If we can continue to make ourselves more lethal and effective, then we will continue to dominate Air, Space, and Cyberspace for the Joint Team.

—Gen T. Michael Moseley, USAF, Chief of Staff



Revised USAF Doctrine Publication

Air Force Doctrine Document 2-1.7, *Airspace Control in the Combat Zone*

LT COL ALEXANDER M. WATHEN, USAF, RETIRED

On one plasma screen, the Air Picture displayed hundreds of multicolored icons streaming across the digital map toward Baghdad—strike aircraft and their supporting tankers, electronic warfare jammers, and the Special Ops Combat Search and Rescue forces. “Showtime, Buzz.”

—Gen Tommy Franks to Gen T. Michael “Buzz” Moseley
“A-day,” 21 March 2003

AIRSPACE IS THE most fluid portion of the battlespace. According to Air Force Doctrine Document (AFDD) 2-1.7, *Airspace Control in the Combat Zone*, 13 July 2005, US Airmen must share operations within that space with “civil users, nongovernmental organizations, coalition military forces, and host nation users” (p. [ii]). Those operations must be conducted not only safely (for the previously mentioned agencies as well as our own forces operating within, above, and below the airspace) but also effectively. This document outlines principles that enable “combat effectiveness, while promoting the safe, efficient, and flexible use of airspace with a minimum of restraint placed upon airspace users” (p. [ii]).

AFDD 2-1.7 substantially revises the previous version (9 May 2001). Its “Summary of Revisions” notes that

this version updates key airspace control doctrine concepts to include a discussion of airspace control during varying levels of conflict/contingency; discusses other possible nongovernmental users of the airspace during conflict and en route air traffic control/airspace/airfield management during contingencies and con-

flicts . . . ; adds a discussion of conventional air-launched cruise missiles and Army tactical missile systems and their requirements for airspace coordinating measures . . . ; updates the discussion of the theater air control system, including deletions of the terms airborne battlefield command and control center and control and reporting element; adds a discussion on the airborne command element, the air mobility liaison officer, the expeditionary operations center and the regional air movement control center (RAMCC); updates the discussion of the airborne warning and control system and data links used for airspace control . . . ; adds a discussion of en route airspace management . . . ; adds a new appendix that discusses RAMCC operations and employment . . . ; [and] updates definitions, terminology, historical references, and readings throughout. (p. [i])

However, AFDD 2-1.7 fails to address the intricacies of commanding and controlling missions that cross multiple theaters or operations, such as mobility and global-strike missions that sometimes originate outside the combat theater area of operations (e.g., in the continental United States) as well as those that take place within the combat theater and in some cases either return to their original theater or termi-

nate in completely different theaters. Although airspace control is a very complex subject, this doctrine document provides in-depth explanations of many facets of airspace control that lie beyond the doctrinal level, approaching a textbook mentality more suitable for instructions on Air Force tactics, techniques, and procedures. Additionally, it details airspace control

operations in a very businesslike fashion, forging historical vignettes that would offer the reader an occasional diversion.

Nevertheless, practitioners of airspace design and control should read AFDD 2-1.7. The same holds true for any airman, soldier, sailor, or marine destined for duty in an air operations center or theater air control center. □

AIR & SPACE **POWER** *JOURNAL*

<http://www.airpower.maxwell.af.mil>

• *Air & Space Power Journal – English*

<http://www.airpower.maxwell.af.mil/airchronicles/apje.html>

• *Air & Space Power Journal – En Español*

<http://www.airpower.maxwell.af.mil/apjinternational/apjiesp.html>

• *Air & Space Power Journal – Em Português*

<http://www.airpower.maxwell.af.mil/apjinternational/apjipor.html>

• *Air & Space Power Journal – Arabic*

<http://www.airpower.maxwell.af.mil/apjinternational/aspjarabic.html>

• *Air & Space Power Journal – En Français*

<http://www.airpower.maxwell.af.mil/apjinternational/aspjfrench.html>

• *Chronicles Online Journal*

<http://www.airpower.maxwell.af.mil/airchronicles/cc.html>



Editor's Note: PIREP is aviation shorthand for pilot report. It's a means for one pilot to pass on current, potentially useful information to other pilots. In the same fashion, we use this department to let readers know about items of interest.

Cyberspace

The New Air and Space?

LT COL DAVID A. UMPHRESS, USAFR*

The mission of the United States Air Force is to deliver sovereign options for the defense of the United States of America and its global interests—to fly and fight in Air, Space, and Cyberspace.

—USAF Mission Statement

IN LATE 2005, the Air Force altered its mission statement. As before, the service flies and fights in air and space, but now it also flies and fights in *cyberspace*. We have long recognized that information serves as a center of gravity for the military. Although military operations may involve aircraft, guns, tanks, ships, and people, information is the “glue” that tells each aircraft what sortie to fly, each tank where to go, and each ship where to sail. The revised mission statement represents a bold move if for no other reason than the fact that its explicit mention of cyberspace brings to the forefront the role played by information and information technology in the modern Air Force. Indeed, the statement elevates the notion of cyberspace and its attendant infrastructure to the level of importance occupied by air and space. Whereas, formerly, the Air Force perceived itself as carrying out kinetic operations, the latest version of its mis-

sion statement places the service squarely in the nonkinetic arena as well.

We have an intuitive sense of how the Air Force operates in air and space since both are physical in nature. Less clear is the relationship between the Air Force and cyberspace. What is cyberspace? Why is it important? What are the rules under which it operates?

Cyberspace Defined

In the early 1980s, writer William Gibson coined the term *cyberspace* to describe a fictionalized computer network containing vast amounts of information that could be tapped for wealth and power.¹ In his cyberspace, the physical world and the digital world become blurred to the point that human users perceive computer-generated experiences that have no real existence, and sentient digital be-

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ings affect the physical world. Although Gibson's depictions of computer-simulated reality, cybernetically enhanced humans, and artificially intelligent entities remain in the realm of science fiction, the concepts of "exploring" vast amounts of data and "visiting" remote computers do not. Moreover, the premise that computer networks contain information that people can exploit—for good and ill—is very real.

We need a physical infrastructure of computers and communication lines to implement cyberspace. In other words, cyberspace runs "on" computers. However, what resides "inside" computers provides the greatest leverage: we measure the true value of cyberspace in terms of the information contained within that infrastructure. The crucial characteristics of cyberspace include the fact that (1) information exists in electronic format, and (2) computers can manipulate (store, search, index, process, etc.) that information.

Cyberspace has thus become a metaphor for the digital society made possible through computers and computer networks. When referred to abstractly, it connotes the sum total of information available electronically, the exchange of that information, and the communities which emerge from the use of that information. When used in reference to a particular military operation, it signifies the information available to a specific audience.

Cyberspace need not be publicly accessible although the public does have access to the predominant implementation of cyberspace—the Internet. Military units can operate private networks that constitute their own limited versions of cyberspace. In fact, many disconnected "cyberspaces" can exist simultaneously, each servicing its own community of users.

Why Cyberspace Is Relevant

Marshall McLuhan's aphorism "the medium is the message" characterizes our expectations of cyberspace. He points out that "societies have always been shaped more by the nature of the media by which humans communicate than by the content of the communication."² Since computers and electronic communica-

tion networks encourage the rapid and widespread exchange of information, it naturally follows that they would also influence military operations.

It is interesting to observe the evolution of the medium-is-the-message effect on the Air Force's perception of cyberspace. Initially, government policies equated cyberspace with the communication hardware comprising computer networks, concentrating on hardening to protect against infiltration. Later policies envisioned cyberspace not only as networks but also as the data transmitted across them, which led to a focus on data integrity. The change in the Air Force's mission statement to include cyberspace implies that we now perceive it as *content*—something more than hardware and data.

The electronic encoding of information in cyberspace, rather than on physical media, permits wider interchange of those data. This is the foundation of an information-driven society proposed over the last 30 years by so-called new-age pundits such as McLuan, John Naisbitt, Alvin Toffler, and Don Tapscott, to name a few.³ The premise of the information society is that information itself has economic value, with a corollary which holds that information has operational value to the military. The more efficiently and effectively we manage information, the more benefit we derive from it.

The military has recognized this idea by declaring "information superiority" as one of its core values.⁴ It has moved to organize and equip itself so as to improve the management of information. The specific organizational approaches have various names—net-centric, knowledge management, battlespace, infosphere, and so forth—but the general concept remains the same: create a rich cyberspace (with tools, sensor-provided data, quality of information, etc.) in which to make decisions.⁵

Ideally, two primary benefits become evident from operating in such an information-driven environment. First, the organization can be decentralized as much as is feasible within a military context. Everyone operates within cyberspace and has access to the appropriate information needed to make decisions.

We no longer have to make decisions at the point in the organization determined by the nexus of suitable information, but at the point most affected by the decision. Second, the organization can function as a coalition of semi-independent agents whose environment drives their operations.

For every benefit, however, a host of side effects exists. Technology that relies on information encoded in electronic format remains central to supporting information superiority. That technology does not exist in any integrated fashion today. We carry out information-related functions with a patchwork collection of software and hardware tools. We also struggle with a number of questions: How do we manage massive amounts of information? How do we prevent the mining of large amounts of unclassified data for classified information? How do we “compartmentalize” cyberspace so that the right information gets to the right decision makers? What information can we transmit over unclassified civilian networks versus tightly controlled, classified military networks? How do we integrate information coming through official military networks with information coming from “back-channel” sources? How computer savvy do users of cyberspace have to be? What mechanisms are in place to detect information tampering?

Fundamental Principles of Cyberspace

The Air Force’s announcement of its revised mission statement prompted a considerable amount of discussion regarding the precise definition of *cyberspace* and the way it relates to air and space. In the midst of this discussion were debates about what constitutes the bounds of cyberspace, whether it can function as a medium for weapon delivery, how the Air Force *flies* through cyberspace, and the like. That this discussion arose demonstrates that the concept of cyberspace is very much open to debate. As with the proverbial blind men giving their interpretations of the elephant, we have a number of ways of looking at cyberspace, depending on our perspective. Regard-

less of how we ultimately view cyberspace, though, we must recognize that it operates under some very fundamental principles.

Information Is the Coin of the Realm in Cyberspace

Since cyberspace deals with information, the latter naturally determines the “economy” of the particular cyberspace in which it resides. In other words, we can think of information as having “value,” which depends on its inherent usefulness as a stand-alone piece of information as well as the way it relates to other information, both within cyberspace and without. Changes in the availability or usefulness of the information alter its value.

For example, content on an intranet page may gain in value if it leads to other information of equal or greater value. Similarly, it may lose value if it is duplicated or contradicted somewhere else. In the absence of relationships with other information, the value of information in cyberspace generally decreases over time because it has a greater chance of having been put to some use.

We need not restrict the notion of value to factual information. There is no guarantee regarding the accuracy or truthfulness of information in cyberspace. Consequently, *disinformation* intended to disguise the worth of legitimate information has value.

We may not explicitly know the value of a particular piece of information in cyberspace. Certainly, if it has a security classification, we understand the inherent risk if that information is compromised. We thus attach an arbitrarily high value to such information. However, it is computationally infeasible to compare one piece of information to all other combinations of pieces of information within cyberspace in order to determine value. We cannot know, a priori, when we can combine a particular piece of information, classified or not, with another piece of information to form intelligence higher in value than the individual pieces separately. To complicate things further, hardware and software appliances that “sniff” networks and intercept data transmissions often prevent us from determining if someone has obtained a piece of information

illicitly, thereby unknowingly altering its value. Encryption and other information-assurance measures mitigate such occurrences to a great extent but don't prevent them.

Paradoxically—at least in terms of economic theory—the ever-increasing supply of information available within cyberspace does not decrease the value of information. Instead, its value increases due to the scarcity of time and resources required to find useful information from the overall supply. This phenomenon has given rise to “technopower,” the concept that power and control are in the hands of people able to use cyberspace technology effectively to obtain high-value information.⁶

Cyberspace Shapes Authority

Although information itself defines value in cyberspace, access to that information determines power and, consequently, shapes authority. Economists portray information as falling into one of three categories: free, commercial, and strategic.⁷ Free information is available to whoever seeks it; commercial information to people willing to pay for it; and strategic information only to those specially entrusted to have it. Outside the context of cyberspace, strategic information has the greatest persuasive value because its restricted availability can serve as a source of influence and power over those who don't have it. Holders of strategic information serve as gatekeepers, doling it out as necessary for their own purposes.

The emergence of cyberspace has altered this balance of power, providing a mechanism for disseminating information widely and freely. Previously, we funneled and filtered valuable information through gatekeepers; now, however, we can bypass them altogether, thus permitting peer-to-peer communication of information. Given this model, strategic information will undergo almost instantaneous devaluation if we put it into cyberspace without providing some sort of protection because it becomes available to all users of that cyberspace. Further, making information freely available means it becomes more accessible and has the potential to reach a larger audience.

This scenario has had societal effects, the most profound of which are virtual communities. Whether implemented as a private network supporting military operations or as a public Internet, cyberspace connects people. Users of a military cyberspace are fairly homogeneous; their goals address a specific military operation. As the user base of cyberspace becomes larger and more public, not only do user goals diversify, but also communities form within cyberspace.

Take the Internet, for example. With an estimated audience of 1.8 billion users across 225 countries, it has transformed the globe into a virtual village.⁸ People can communicate with each other regardless of physical location. In so doing, they are able to form and join social networks consisting of individuals with similar interests. The popularity of Web-based social networking tools such as Facebook (7 million users), Xanga (40 million), MySpace (108 million), and Hi5 (40 million) demonstrates the potential of cyberspace to bring people together.⁹

This ability is not lost on nonstate actors, who use the Internet as a meeting place, recruiting tool, and conduit for propaganda. For example, Hezbollah has leveraged cyberspace technology quite effectively, sponsoring a number of Arabic and English Web sites that describe world events from a Hezbollah perspective. Its graphic pictures, video clips, and news articles of the Israel-Lebanon conflict in July 2006 are clearly designed to portray Israel as a terrorist puppet of the United States.¹⁰ Realizing that many Israelis visit these sites, Hezbollah uses them to demoralize this Israeli audience while simultaneously boasting of its victories to the Arab audience.¹¹

Cyberspace Operates under Nontraditional Physics

The juxtaposition of cyberspace with air and space in the Air Force's mission statement almost depicts cyberspace as a physical means for conducting operations. True, it is useful at some level of abstraction to conceptualize cyberspace as a medium. After all, cyberspace works through the medium of computers and networks. However, drawing too close an

analogy between a physical entity (air and space) and a logical one (cyberspace) can be dangerous. Cyberspace operates on entirely different laws of physics than does physical space. For example, information doesn't weigh anything. It has no physical mass. It can instantaneously pop into—and out of—existence. It can be replicated without cost, accumulated without human intervention, and divorced from its physical location. Information does not, in itself, kill. It does so only when we use it to influence physical players in air and space. Because of the nonphysical nature of information, placing it in cyberspace gives it instant, global availability to all users of that cyberspace. We often cannot determine whether information we obtain from a source in cyberspace is original or has been copied from somewhere else within cyberspace.

Cyberspace—particularly the Internet—is a global phenomenon. Information that the United States does not wish to reveal may be available through sources located in countries outside its purview. We cannot necessarily control all information, nor can we necessarily remove a piece of information. We can only regulate information within our own span of control.

Cyberspace Brings the Front Line to the Front Door

Census and survey data indicate that 54 million households in the United States have at least one personal computer and that roughly two-thirds of Americans actively use the Internet in some fashion.¹² Fifty-seven million employed Americans—62 percent of the workforce—report using a computer at work, 98 percent of whom have access to electronic mail.¹³ Of those, the majority reports trusting the content of electronic mail when it contains at least one item of personal information other than first name. We can reasonably assume that these statistics generally represent the Air Force workforce, given the 15 million personal computers in the Department of Defense's inventory, combined with the leadership's vision of a net-centric force.¹⁴

We can access public cyberspace literally from within our own homes or places of em-

ployment. For the first time in history, we have a vast amount of information at our fingertips. Also for the first time, we have the front line of a battle at our front door. Prior to cyberspace's rise in popularity, the main participants in military operations were soldiers physically engaged in conflict. News reports that portrayed the results of military action to civilians at home dealt with events happening outside the country's borders. With cyberspace within easy reach of ordinary citizens, those who wish to use it for ill gain have direct entrée into the home. This situation is particularly poignant since empirical studies have shown that computers, at home or otherwise, are probed for security vulnerabilities during the first 20 minutes of their connection to a public network.¹⁵

Contrary to the prevailing picture painted by the media, "war" in cyberspace will not likely manifest itself as an electronic Pearl Harbor, causing massive destruction. More probably, cyberwar will take the form of influence rather than lethality. Cyber warriors will not destroy infrastructure because that would be self-defeating, particularly within the United States. Instead, they will more likely obtain information they can use to manipulate happenings in the physical world to their advantage.

Those who choose to operate in cyberspace have a number of asymmetrical advantages. First, the "battlefield" is large and easy to hide in. Second, the effects of attacks are disproportionate to their costs. Using cyberspace is neither material- or capital-intensive. Individuals can access it with inexpensive computers, free software, and consumer-ready communication equipment. They can launch attacks from across the globe almost with impunity because of the difficulty of determining the exact origin of the attack or the identity of the attacker. Third, the one-sided nature of cyber attacks forces potential victims into assuming a defensive posture. The victim curtails his computer and communication services to within what his governance structure deems "acceptable," based on its perceptions of the prevailing dangers—real or not. In case of an attack, the victim probably will not launch an in-kind offensive action since, even if he can identify the attacker, he probably lacks the

computer infrastructure to make a counterattack worthwhile.

Conclusion

Perhaps the greatest lesson we can derive from the Air Force's revised mission statement is that it warns all Airmen of the reality of cyberspace. The statement requires us to understand the implications of an information-reliant military. It also challenges us to look for ways to best use cyberspace and to under-

stand that we can attain "throw weight" by finding new ways to make the best use of cyberspace technology.

B. H. Liddell Hart's admonition that a "strategist should think in terms of paralyzing, not killing" remains as relevant today as it ever was.¹⁶ Although Liddell Hart spoke of paralyzing armies of people and the economies of states, his words nevertheless apply to the individual Airman. Never in history have so many people found themselves intimately tied to a weapon system—cyberspace—that is limited only by the human imagination. □

Notes

1. William Gibson, *Neuromancer* (New York: Ace Books, 1984).

2. Marshall McLuhan and Quentin Fiore, *The Medium Is the Message* (New York: Random House, 1967).

3. Ibid.; John Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (New York: Warner Books, 1982); Alvin Toffler, *The Third Wave* (New York: Morrow, 1980); and Don Tapscott, *The Digital Economy: Promise and Peril in the Age of Networked Intelligence* (New York: McGraw-Hill, 1996), 6.

4. *Joint Vision 2010* (Washington, DC: Joint Chiefs of Staff, 1996), 18.

5. John G. Grimes, "From the DoD CIO: The Net-Centric Information Enterprise," *CrossTalk: The Journal of Defense Software Engineering* 19, no. 7 (July 2006): 4; *Managing Knowledge @ Work: An Overview of Knowledge Management* (Washington, DC: Chief Information Officers Council, 2001), 7; Dr. David S. Alberts, *Defensive Information Warfare* (Washington, DC: National Defense University Press, August 1996), <http://www.ndu.edu/inss/books/books%20-%201996/Defense%20Information%20Warfare%20-%20Aug%2096/index.html>; and Michael Vlahos, "Entering the Infosphere," *Journal of International Affairs* 51, no. 2 (1998): 497–525.

6. Tim Jordan, "Cyberpower: The Culture and Politics of Cyberspace," *Internet Society*, http://www.isoc.org/inet99/proceedings/3i/3i_1.htm.

7. Robert O. Keohane and Joseph S. Nye Jr., "Power and Interdependence in the Information Age," *Foreign Affairs* 77, no. 5 (September/October 1998): 89–92.

8. "Web Worldwide," *ClickZ Stats*, http://www.clickz.com/showPage.html?page=stats/web_worldwide.

9. *Wikipedia: The Free Encyclopedia*, s.v. "List of Social Networking Websites," http://en.wikipedia.org/wiki/List_of_social_networking_websites.

10. "Israeli Aggression on Lebanon," *Moqawama.org*, <http://www.moqawama.org/aggression/eindex.php>.

11. Maura Conway, "Cybercortical Warfare: The Case of Hizbollah.org" (paper prepared for presentation at the European Consortium for Political Research [ECPR] Joint Sessions of Workshops, Edinburgh, United Kingdom, 23 March–2 April 2003), <http://www2.scedu.unibo.it/roversi/SocioNet/Conway.pdf>.

12. *Home Computers and Internet Use in the United States: August 2002* (Washington, DC: US Department of Commerce, US Census Bureau, September 2001), <http://www.census.gov/prod/2001pubs/p23-207.pdf>; and "U.S. Internet Adoption to Slow," *ClickZ Stats*, <http://www.clickz.com/showPage.html?page=3587496#table1>.

13. "Email at Work," *Pew Internet and American Life Project*, 8 December 2002, <http://www.pewinternet.org/reports/toc.asp?Report=79>.

14. Army Field Manual 100-6, *Information Operations*, 27 August 1996, 14.

15. Lorraine Weaver, "They're Out to Get Us! The Cyber Threat to the Telecommuter, Small Office / Home Office (SOHO), and Home User" (presentation to the 14th Annual Systems and Software Technology Conference, Salt Lake City, UT, 1 May 2002), <http://www.sstc-online.org/Proceedings/2002/SpkrPDFS/WedTracs/p1371.pdf>.

16. B. H. Liddell Hart, *Paris: Or the Future of War* (New York: Garland Publishing, 1975), 40–41.

Joint Close Air Support Transformed

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THE CURRENT EFFORT by the Joint National Training Capability (JNTC), led by US Joint Forces Command (USJFCOM), to transform all aspects of joint military training focuses needed attention on joint close air support (JCAS).¹ In fact, the JCAS training event in January 2004 served as the cornerstone demonstration for defining the JNTC's initial operating capability. This training included assessment of all aspects of JCAS, such as planning, execution, command and control between all levels, synergistic effects of fires, battle damage assessment, and prevention of fratricide.² Additionally, the US military services, including US Special Operations Command, signed a "joint close-air support memorandum of agreement" in September of 2004 that should pave the way for a single document and supporting joint doctrine to standardize the tactics, techniques, and procedures (TTP) of JCAS.³ It is no coincidence that the military is paying so much attention to this mission area. The events spanning the short period between Operations Desert Storm, Enduring Freedom, and Iraqi Freedom have demonstrated a rapid evolution in the way air and ground forces integrate and sequence joint air and ground fires. This article investigates how the military can most effectively integrate airpower and ground forces to optimize the shaping of the battlespace and then seamlessly shift to an effective, safe environment for JCAS operations.

A few definitions from joint doctrine will set the stage for the discussion on JCAS. Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, defines CAS as "air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces."⁴ Joint

Publication 3-03, *Doctrine for Joint Interdiction Operations*, defines *air interdiction (AI) operations* as those "conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required."⁵

The US Air Force merges AI and CAS operations under the mission area known as *counterland*, defined by Air Force Doctrine Document 2-1.3, *Counterland*, as "operations conducted to attain and maintain a desired degree of superiority over surface operations by the destruction, disrupting, delaying, diverting or other neutralization of enemy forces. The main objectives of counterland operations are to dominate the surface environment and prevent the opponent from doing the same."⁶ Iraqi Freedom demonstrated the combined power of air and ground forces and the potential effect of joint synchronization on the enemy's ability to resist in a force-on-force capacity. If we more thoroughly develop joint training, doctrine, and interservice operability in counterland and JCAS operations, then we should be able to meet the combatant commander's airpower-supported objectives more rapidly and efficiently.

Brief History

The TTPs, doctrine, training, and purpose of CAS have long remained contentious issues among US military experts because of its perception as an ancillary mission. In general, early proponents of strategic airpower very consciously tried to avoid assignment of this role to their fledgling service, preferring other roles that better justified the existence of the

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Air Force as a separate entity. Immediately following World War II, for instance, most Air Staff officers, including Gen Carl Spaatz, Gen Hoyt Vandenberg, and Gen Curtis LeMay did not want to provide secondary support to the Army in the form of air artillery, choosing to develop Airmen primarily for strategic-attack missions.⁷ The Korean War and Vietnam War presented the US military with adversaries and terrain that caused ground forces to rely heavily on CAS. During these conflicts, many Airmen in Tactical Air Command and Strategic Air Command became familiar with and proficient in CAS operations.⁸ Even these experiences, however, failed to produce the impetus among military leaders to increase and formalize the required level of joint training and proficiency among air and ground forces tasked with executing this critical mission.

The Cold War and, in particular, the threat of a Soviet invasion of Europe motivated the Army's development of AirLand Battle doctrine, which integrated air and land operations (including CAS and AI as essential elements) to halt or slow the Soviet advance.⁹ The end of the Cold War and breakup of the Soviet Union resulted in a drastic drawdown of US forces and a diminished likelihood of having to execute this doctrine. In recent history, Desert Storm featured an extensive 38-day air operation highlighted by strategic attack, AI, and CAS, followed by only four days of ground operations. This situation limited CAS sorties, which received very little attention from either the Air Force or Army. Furthering this trend, the United States conducted Operation Allied Force, the air war over Serbia in 1999, without deployment of friendly ground forces. The absence of CAS placed this mission even lower on the Air Force's priority list and deemphasized the necessity of conducting extensive joint air and ground training. Enduring Freedom and the global war on terrorism saw the reemergence of airpower directly controlled by ground forces to direct tactical fires against enemy supplies and forces. Finally, Iraqi Freedom relied heavily on the synchronization of air and ground power to engage and overwhelm the enemy's ground forces.¹⁰ In contrast to Desert

Storm, Iraqi Freedom's air operations did not culminate with a ground invasion since the two occurred simultaneously, requiring detailed joint command, control, and coordination of countless tactical and operational fires.

Analysis

Enduring Freedom and Iraqi Freedom demonstrated the rapidly evolving nature of the JCAS mission. Once regarded as a specialty conducted by a limited number of aircraft, it has become a critical capability requiring more weapon systems to execute. A number of factors influence the application of JCAS: technological advances in precision weapons, the changing structure of armed forces due to military-transformation efforts, the growing ability of ground forces to maneuver over large distances quickly, and the changing character of the war against terrorism.

Key factors such as technology and the precise delivery of munitions without visually identifying the target have propelled the evolution of JCAS. Integration of technology into all aspects of JCAS operations remains critical, regardless of whether forces execute fires from the air or ground. The battle for Fallujah during Iraqi Freedom in 2004 offers a perfect example. Aircraft from all services conducted the JCAS portion of the operation; they precision-guided, launched, or dropped nearly every weapon from altitudes that prevented the visual identification of targets. Standardized procedures, skillful employment of precision-guided munitions (PGM), and a clear airspace-deconfliction plan contributed to the operation's effectiveness.¹¹ Technology has also benefited JCAS by increasing the accuracy with which PGMs strike their targets. Such accuracy enables the use of smaller weapons to achieve the same desired effects as larger numbers of less-precise weaponry, which translates to the availability of more weapons per aircraft to strike more targets, less collateral damage, and decreased chances for fratricide.

Although PGMs have undergone significant advances, airpower has had difficulty suc-

cessfully engaging moving targets on the battlefield, a situation that imposes significant limitations and unacceptable risk to friendly ground forces during JCAS operations. Technology has helped alleviate this challenge, and recent flight tests have shown how high-altitude bombers or fighters can successfully engage and destroy a moving target in support of JCAS. One test consisted of an E-8C Joint Surveillance Target Attack Radar System (JSTARS) aircraft linked with a B-52H carrying multiple weapons guided by the global positioning system (GPS), with the latter aircraft successfully engaging a moving ship.¹² This test demonstrated that any weapon classified as a Joint Direct Attack Munition (JDAM) could be used in the JCAS or AI role against moving ground targets and that delivery procedures could be nearly transparent to pilots of all weapon systems carrying JDAMs. Integration and location of the JSTARS aircraft, however, would require development of additional procedures and planning considerations—clearly part of developing a concept of operations.

The joint standoff weapon (JSOW) and Joint Air-to-Surface Standoff Missile (JASSM) can also prove effective in a JCAS role, particularly for striking a target in near real time (five to 20 minutes from release) while facing a high-threat air defense. A GPS-guided weapon, the JSOW has a range of approximately 50 nautical miles (nm), and the optically and GPS-guided JASSM has a range of over 200 nm. Recent flight tests have illustrated the feasibility of updating the desired point of impact of en route GPS-guided weapons with respect to a moving target. During these tests, a tactical air control party (TACP) used a laser range finder in conjunction with an operational software suite to generate digital geographic coordinates and then provided them to the weapon via a Link-16 network.¹³ Air Force tests such as these indicate the need for common (or at least compatible) hardware and software throughout the Department of Defense (DOD) as well as standardized training and qualifications for JCAS ground controllers, including special forces and related Central Intelligence Agency operatives. Tech-

nology will not be able to eliminate what Carl von Clausewitz called the “friction” and “fog of war,” but its ability to attenuate these effects has outpaced joint training and doctrine.

In addition to advances in weapons technology, transformation in the DOD influences many operations. One can describe transformation of the US military as the process of changing the structure of its forces as well as the culture and doctrine supporting those forces. Moreover, transformation will streamline our war-fighting functions to more effectively meet the complexity of emerging threats in the new millennium.¹⁴ Thus, because transformation serves as another catalyst for the evolution of JCAS, we must analyze and actively adopt its effects in all aspects of training, doctrine, and interoperability of hardware and software systems. The Unified Command Plan of 2002 directs USJFCOM to serve as the lead command for developing ways and means of increasing joint interoperability and synergy in military-training programs. USJFCOM, which has started many initiatives that address deficiencies in joint interoperability, seems on the right track toward better joint training and rehearsal exercises, more realistic evaluation of command and control, and more thorough TTPs and planning phases. The command has also established lead-agency responsibility for the interoperability of data interfaces (i.e., can my system talk to your system?). Unfortunately, many of these initiatives will take years to become effectively implemented. Procurement, testing, and integration of hardware and software systems that enable all joint tactical air controllers to communicate consistently with aircrews—or directly with the weapons—are years away. Moreover, the current simulated and actual military-training ranges cannot effectively conduct and evaluate JCAS operations with the multitude of weapons and weapon systems now in the DOD’s inventory.¹⁵

The ability of our Marine and Army ground forces to maneuver quickly in the battlespace has also outpaced the TTPs and doctrine of JCAS and AI. Fire support coordinating measures are doctrinally inadequate to synchronize many JCAS and AI fires required by the joint force commander’s tactical and opera-

tional plans. In support of Enduring Freedom and Iraqi Freedom, US Central Command successfully developed alternate procedures to compensate for inadequate doctrine. For instance, the grid-box system—unofficially used since Allied Force in Kosovo—became procedural for air and ground forces by virtue of its inclusion in Central Command's special instructions for Iraqi Freedom. US forces enjoy substantial advantages when they operate in darkness and bad weather. The necessity of conducting JCAS missions during these conditions also exemplifies the inadequacy of our current fire support coordinating measures when coupled with the fluidity of today's battlespace and the speed of ground maneuver.

The global war on terrorism has also had significant effects on the role and execution of JCAS. The war rapidly shifts from special forces operations to major combat operations and back to counterinsurgent or special forces operations. The nature of this conflict dictates that our military forces remain extremely adaptable to evolving enemy tactics and strategy. Therefore, all aspects of our military power must be able to perform a variety of missions with little or no warning. This flexibility is especially true of special forces soldiers, now frequent consumers of JCAS. During Desert Storm, for instance, 30 operational detachment teams of special forces functioned independently of conventional forces. In Iraqi Freedom, however, over 100 special forces teams worked closely with conventional forces in the air and on the ground.¹⁶ As the need for special forces during air support continues to increase, the demand for qualified TACPs will exceed the number of personnel the Air Force can supply.¹⁷ Even if the Air Force could provide enough TACPs, however, these Airmen do not have the training to operate like special forces personnel.

Similarly, the military's current exercises conducted with joint US forces have little or no integration with special forces on a large, deliberate scale. Using specialized weapon systems to perform specialized missions evidently is responsible to some extent for this lack of training. A further complication of providing air support to special forces is that such re-

quests are generally unplanned events in reaction to enemy maneuvers. Therefore, providing focused, precise JCAS to special forces exacerbates many current shortfalls and requires even more extensive analysis of the joint training, doctrine, and interoperability challenges facing the DOD.

Conclusion and Recommendations

Tasked with conducting joint training, USJFCOM is responsible to the Joint Chiefs of Staff and combatant commanders worldwide. The JNTC—the centerpiece for joint training—currently conducts simulated and live joint-force exercises in an attempt to establish its initial operating capability. The JNTC is still developing a model for emulating combat operations at a joint operational level—a daunting task—so personnel will execute many exercises at the rudimentary or intermediate levels for the next few years.

Military forces conducting joint training and large exercises must plan and execute JCAS and AI from an operational level. If adequately planned and orchestrated by operational-level commanders and staffs, the requirement for representing all military forces, including Special Operations Command, will become apparent. Further, each service must consciously equip and train all units that will perform JCAS. If the mission receives proper development and documentation in unit training plans at the tactical level, service weapon systems and operators will also find themselves conducting operational planning and execution of JCAS and AI missions in support of ground forces during larger joint-force exercises. Realistic joint training that emulates current CAS operations will result in the refining or rewriting of doctrine to support the reality of joint combat. Finally, the military's transformation has significantly streamlined our war-fighting functions. The development of joint doctrine must include technological advances, and such efforts must recognize the growing capabilities of many weapon systems to perform missions not thought possible only a few years ago. □

Notes

1. The JNTC creates joint war-fighting conditions through a networked collection of interoperable training sites and nodes that combine personnel, doctrine, and technology to address the requirements of combatant commanders and service training. It not only will use live, virtual, and constructive training environments but also will focus on joint training, experimentation, testing, education, and mission rehearsal by linking command and control, training facilities, ranges, and simulation centers throughout the world. See House, *Statement of Maj. Gen. Gordon C. Nash, USMC Commander, Joint Warfighting Center and Director for Joint Training, U.S. Joint Forces Command, before the House Armed Services Subcommittees on Readiness, Terrorism, Unconventional Threats and Capabilities on the Joint National Training Capability*, 108th Cong., 2d sess., 18 March 2004, <http://www.jfcom.mil/newslink/storyarchive/2004/sp031804.htm> (accessed 16 December 2004).

2. Ibid.

3. Sandra I. Erwin, "Services Sign Off on Common Procedures for Close-Air Support," *National Defense* 89, no. 612 (November 2004): 33, <http://www.nationaldefense.magazine.org/issues/2004/Nov/CloseAir.htm>.

4. Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, 3 September 2003 (incorporating change 1, 2 September 2005), I-1, http://www.dtic.mil/doctrine/jel/new_pubs/jp3_09_3ch1.pdf.

5. Joint Publication 3-03, *Doctrine for Joint Interdiction Operations*, 10 April 1997, II-4, http://www.dtic.mil/doctrine/jel/new_pubs/jp3_03.pdf.

6. Air Force Doctrine Document 2-1.3, *Counterland*, 27 August 1999, 92, https://www.doctrine.af.mil/afdc/privateweb/AFDD_Page_HTML/Doctrine_Docs/afdd2-1-3.pdf.

7. Gen Carl Spaatz and Gen Hoyt Vandenberg, air chiefs of staff, encouraged the service to focus on developing an atomic strike force of intercontinental bombers. Strategic Air Command would prove critical to winning the next war, envisioned as a nuclear war against the Soviet Union. See John Darrell Sherwood, *Officers in Flight Suits: The Story of American Air Force Fighter Pilots in the Korean War* (New York: New York University Press, 1996), 169.

8. Walter J. Boyne, *Beyond the Wild Blue: A History of the United States Air Force, 1947-1997* (New York: St. Martin's Press, 1997), 56-59, 154.

9. Lt Col Phil M. Haun, "Direct Attack—A Counterland Mission," *Air and Space Power Journal* 17, no. 2 (Summer 2003): 13, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/sum03/sum03.pdf>.

10. CAPT Scott Jasper and Maj Michael Binney, "Joint Close Air Support Training Transformation," *Marine Corps Gazette* 88, no. 5 (May 2004): 71-73, <http://proquest.umi.com/pqdweb?index=11&did=635778041&SrchMode=3&sid=1&Fmt=6&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1155574859&clientId=417&aid=1>.

11. Journalist 1st Class (SW) Christopher E. Tucker, "CVW-17 Supports Coalition Ground Forces in Fallujah," *Navy NewsStand*, 22 November 2004, http://www.news.navy.mil/search/display.asp?story_id=16032 (accessed 1 February 2005).

12. TSgt Tonya Keebaugh, "Resultant Fury Successful Thanks to 'Test' Airmen," *Air Force Print News Today*, 14 December 2004, http://www.af.mil/news/story_print.asp?storyID=123009411 (accessed 30 January 2006).

13. Link 16 is a tactical data link that enables secure, jam-resistant communications between properly equipped platforms and weapons. See Kyle A. Swope, "Link-16/Seeker Flight Demonstration," <https://jcas.eplin.af.mil/Protected/reportsbriefs/0412FlightTestWhitepaper.pdf> (accessed 30 January 2005), 1.

14. "What Is Transformation?" United States Joint Forces Command, <http://www.jfcom.mil/about/transform.html> (accessed 16 December 2004).

15. Jasper and Binney, "Joint Close Air Support," 74-77.

16. Adm E. P. Giambastiani, "Remarks for Industry Symposium 2004," United States Joint Forces Command, 17 March 2004, <http://www.jfcom.mil/newslink/storyarchive/2004/sp031704.htm> (accessed 16 December 2004).

17. Christian M. Karsner, "The Integration of Special Forces into U.S. Air Force Counterland Operations," *Special Warfare* 16, no. 1 (April 2003): 3, http://www.findarticles.com/p/articles/mi_m0HZY/is_1_16/ai_108148692.

By dominating the air, space, and cyberspace, we pave the way to victory.

—Air Force Strategic Plan, 2006-2008

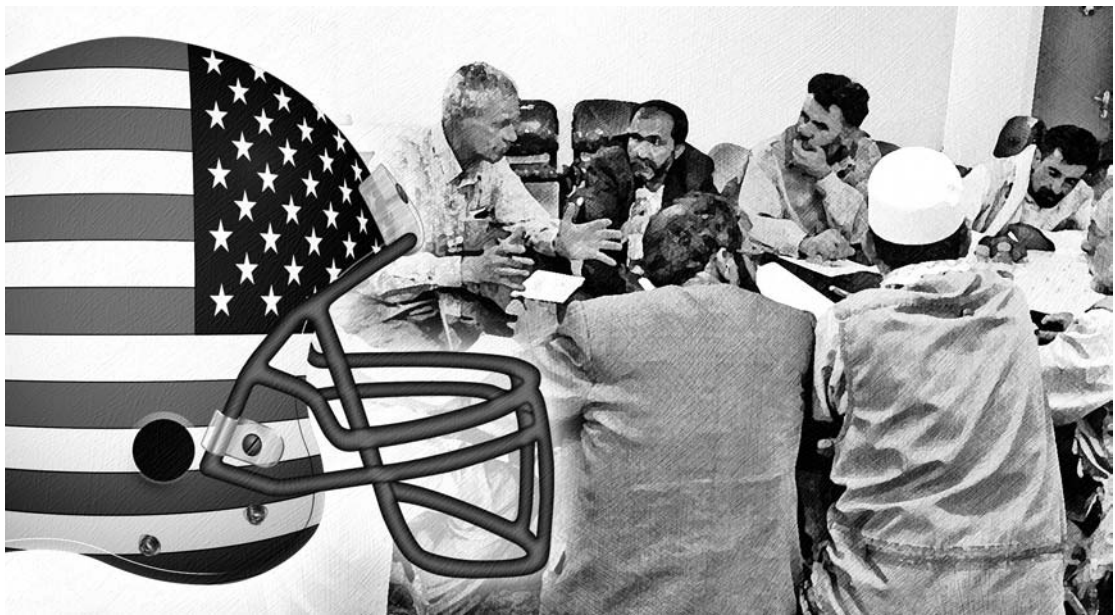


Building a Second-Half Team

Securing Cultural Expertise for the Battlespace

CAPT SCOTT E. MCINTOSH, USAF

Editorial Abstract: The United States and its allies have necessarily adapted to a new form of “urban and asymmetric” warfare preferred by the enemy. To remain effective, the United States needs nonkinetic, “softer” solutions, such as civil affairs, public affairs, and psychological operations—informed by cultural expertise—to meet its national-security objectives in present and future conflicts.



Americans love football. Sports talk shows earn high ratings, and numbers of fans call in to forecast and vent about their favorite team's recent and future performances. The periodic spectacle of two relatively similar teams—their actions governed by a well-

known rule book, meeting within visible boundaries to smash helmets and maneuver toward the end zones—has become part of our national identity.

Perhaps this popular sport has colored the American psyche's grasp on war. For instance, a portion of our population still waxes nostal-

gic for the Cold War. Back then, everyone chose between two favorite “teams,” each of which—though endowed with different strengths and weaknesses—brought similar capabilities to the global playing field. Each side made a huge effort to peek into the enemy’s playbook to ascertain his capabilities—President Eisenhower, for instance, created a serious diplomatic donnybrook by attempting to find out via the U-2 the number of bombers the Soviets could bring to the game. One can understand our national-security apparatus’s assumption of success in this endeavor and the big resources committed to it. After all, in 1959 we had one principal enemy with one Big Red playbook, so learning its contents became a high priority.

Fortunately, the two teams never crossed the Fulda Gap line of scrimmage; nor did Coaches Khrushchev and Kennedy take their teams to the Cuba Bowl in 1963. Now, however, the United States has no near-peer competitor and needs to adapt its team accordingly. Each of the numerous potential opponents in the world today uses a different playbook. Analysts can no longer watch the postgame show to prepare for future competitions. Briefing coaches on mission, enemy, terrain, time, and available troops is no longer sufficient. Each enemy will use a playbook tailored to local conditions as well—those of the indigenous culture. Combatant commanders will need advisors, warriors, practitioners, theorists, and strategists educated in human terrain to help them best utilize their people and equipment before, during, and after hostilities. This array of professionals will also hone nonkinetic tools like public affairs (PA), civil affairs (CA), and psychological operations (PSYOP). These are important activities, especially for the postconflict phase of military operations—a phase inherently asymmetric and increasingly conducted in cities. The end of the Cold War, therefore, does not demand a new metaphor but a modification of our previous paradigm, and the Department of Defense (DOD) will need a bench crowded with on-call regional expertise to meet this demand.

Simply put, the enemy is going urban and asymmetric. The Russian approach to Grozny—

pulling forces back beyond rocket-propelled-grenade range from city limits and flattening the population center with shells and bombs—will not work in Fallujah. The United States needs nonkinetic, “softer” solutions like PA, CA, and PSYOP to meet its national-security objectives in future conflicts. We can enable and maximize these activities by means of cultural expertise, a craft worthy of the DOD’s investment and cultivation.

Heading into the Stands: A Useful Analogy for Counterinsurgency

As Maj Raymond Finch describes in his article on the Chechen guerrilla Shamil Basayev, the superpowers are still ready to take the field and prosecute conventional force-on-force conflict. The opposition, however, has discarded the Cold War rule book as nation-states erode and “away games” occur more frequently in venues like Chechnya and Somalia, where the opposition’s athletes “have moved up into the stands, wreaking all sorts of havoc.” Finch envisions the US military of the future maintaining its skills on the field but warns against sitting idle there in anticipation of the ideal opponent while the situation in the bleachers deteriorates.¹

Thomas Barnett notes the resistance to pulling our military capability away from its traditional conventional approach:

Our continued focus on the Big One left us with a force that can topple rogue regimes at will, without the assistance of allies, but cannot manage all the lesser included that arise in the aftermath—even with the help of our closest allies. In effect, we spent the 1990s buying one sort of military, only to realize after 9/11 that we needed another. . . . America lacked the vision—and the visionaries—to define the 1990s as anything beyond a mere addendum to the Cold War.²

This line of reasoning raises a question: if not “the Big One,” which war should American forces prepare to fight?

Future enemies probably won’t be as militarily inept as Saddam Hussein, who *twice* went

to war with the United States in 12 years, employing exactly the type of force that American commanders expected to fight in Central Europe. Our leadership must embrace the fact that future adversaries will not fight in open terrain, where US air supremacy and expertise with precision-guided munitions will threaten each operational and tactical maneuver. More likely, future adversaries will fight asymmetric warfare in cities.

As Prof. Steven Metz of the US Army War College's Strategic Studies Institute writes, this asymmetry will emerge in four ways on the future battlefield:

1. The enemy's *method* will be unconventional; he will not fight like American conventional forces do.
2. His *time perspective* will differ—he will deny US decision makers the quick success for which the American electorate yearns in war.
3. The enemy's "cells, bands, and networks" will not be a hierarchical *organization*.
4. Finally, an enemy's *ethical* asymmetry will be noticeable; he will fight in ways the US soldier finds abhorrent, outside the Geneva convention.³

Hence, the future enemy will not fit well into the parameters of our traditional adversary. If our commanders anticipate a tank battle, for example, the enemy may sow improvised explosive devices (IED) along our route of advance; he will not utilize tanks to assail us. He will be more patient in meeting his goals—like the Vietcong, he will not have to win the battle as long as he doesn't lose the fight. For intelligence analysts, compiling orders of battle will prove difficult because the enemy's units won't be as clearly delineated as our own. Lastly, those amorphous units will fight dirty to wear down our resolve.

The US military's current expeditionary mind-set makes ports and airfields a priority for delivering and sustaining our forces. The fact that most of these facilities are near major cities is significant since the latter offer several advantages to the asymmetric warrior. First,

the reconnaissance-strike cycle that enables us to take down conventional forces so spectacularly works best in open terrain—like that in Mesopotamia. Dense clusters of buildings erode battlefield communications (ground-to-ground, ground-to-air, and air-to-ground) and the effectiveness of munitions. Second, lobbing munitions into a densely populated area significantly raises the chance of killing noncombatants. As the Russians discovered in Chechnya, in the age of the digital camera and global connectivity of the Internet, this sort of indiscriminate destruction weakens one's case for armed intervention.

The population density of the modern city brings other issues to the combatant commander. As Lester Grau and Jacob Kipp describe this situation, operational commanders need to prepare for the needs of a city's civilian population. If noncombatants can't get potable water, an epidemic is likely, and starving, besieged civilians in the modern age will probably end up in front of a camera. American military leaders, therefore, cannot focus solely on the military task of taking down the city. Unlike Field Marshal Friedrich Paulus or Gen Vasily Chuikov at Stalingrad, today's combatant commander "does not have the luxury of claiming that military necessity precludes consideration of civilians' survival. He must prepare to restore or provide food, water, health care, public health services, and public safety."⁴

In fact, commanders of occupation forces are legally bound *to protect and provide for the civilians under their control*—in effect to become the mayors of cities in which they are tasked to operate.⁵ Indigenous providers of essentials, however, can offer much more than the necessities. Grau and Kipp cite neighborhood subject-matter experts as the best sources of intelligence in urban combat. Both the limitations to the electronic spectrum in modern cities and the shortage of municipal maps with a scale of 1:12,500 for these areas have increased the value of harnessing "the local police force, city engineers, utility workers, hospital workers and shopkeepers" to offset the enemy's human-intelligence advantages.⁶ In urban warfare, the enemy will often know the local subways and sewers. US commanders will

also need this information as well as the locations of electric, gas, fiber-optic, and drainage conduits necessary to provide the aforementioned essentials to populations. A friendly relationship with public-service providers is thus a major benefit in winning the peace.

To return to the analogy, when the US team moves into the stands to confront the opposition's mischief, it would be wise to get help from the stadium's custodians and concessionaires. Their routine tasks of maintaining and marketing make them experts in negotiating key terrain and identifying anomalies. Such intelligence is critical in conducting counterinsurgencies; understanding both the opposition team and the spectators is its precursor.

Handling Insurgents: Putting Aside Some Plowshares

What is the role of human terrain in all this? The most successful asymmetric warfare strategy during the Cold War—Mao Tse-tung's "People's War"—called for a team of revolutionary experts to agitate a populace via nationalism and local grievances. Establishing this underground political organization paved the way for organizing guerrilla warfare. "The people" were integral to the insurgents' aims—its members actively picked up rifles and assailed government forces or simply provided safe haven and logistical support to guerrillas. The well-known analogy of insurgent fish swimming through the sea of the populace propagated with each insurgent success. Attaining such results and maintaining popular support against an arrogant, clueless government proved easy in this paradigm, in which "psychological operations and political mobilization paralleled military actions. In fact, violence was viewed as 'armed propaganda' designed for maximum psychological effect, such as demonstrating the weakness or incompetence of the regime or provoking it into excessive reactions, which eroded its support."⁷ The most effective efforts to liquidate insurgents in this historical paradigm also alienated the public, both inside and outside the area of conflict. Often, the populace would

thus shift its support from government forces to the opposition.

This ugly cycle of "armed propaganda" and "excessive reactions" remains pertinent. Breaking it demands finesse, flexibility, and intense familiarity with local conditions and populations: "In counterinsurgency campaigns, protection of civilians was (sometimes) emphasized, not so much as an end in itself but in order to undercut the insurgents' infrastructure and because *the civilian population was an important source of intelligence*. In other words, protection and control of the population was a means to an end, which was defeating the insurgents" (emphasis added).⁸

As has recently become evident in Iraq, counterinsurgencies are political fights because both insurgent and counterinsurgent need the support of the population. According to Col John Jogerst, commandant of the USAF Special Operations School, "insurgencies are pure politics at the most basic level. It's more like an election campaign to garner votes, albeit a no-holds-barred campaign on the south side of Chicago in the 1920s, than a war."⁹

Human Terrain: The Best Collectors Won't Be Overhead

We must still send our forces into combat with the tangibles (i.e., the best weaponry and equipment we can procure), but in these sorts of engagements, intangibles are just as important. Although the need for clearly delineated and articulated strategic goals lies outside the scope of this article, one intangible remains paramount to victory in future wars—understanding of regional culture. Thomas Hammes observes that understanding the political terrain is an essential facet of modern warfare: "This requires a deep understanding of the culture, history, and current political structure of the area. Because modern conflicts are rarely limited to a single country, this understanding must extend to the region as a whole."¹⁰

In his recent assessment of lessons learned in modern counterinsurgencies, Col Joseph

Celeski, USA, retired, a former commander of the Combined Joint Special Operations Task Force in Afghanistan, agrees that commanders going into the stands must have the best possible analysis of the demographics there:

Key to the analysis must include a cultural “assessment,” even prior to entering the area of operations, to understand the forces at play concerning ethnicity, language (to include dialects), religion, and nationalism (or ideology). This assessment must take into account the social influence networks which buttress the society—political, academic, criminal, business, technology, etc. The data provides a start point for the links and nodes sought for in the target analysis of human terrain systems (human nodes, influence links, nexus areas, etc.).¹¹

Hence, many recent publications consider it essential that we understand this regional, human terrain. How can US commanders attain such knowledge?

Superior technology has allowed the American military to master the conventional fight. Unfortunately, it has also led to the gloomy description of “a first-half team playing in a league that keeps score through the end of the game.”¹² Certainly, this superior technology will have its place in the last two quarters—but only as an enabler for a more suitable *human*-collection platform:

It is through good knowledge of local practices that it is possible to identify insurgents or those who assist them. There needs to be an ongoing process of consultation and dialogue with people on the ground for early warning, prevention, learning, and feedback during deployment and for the measures needed to ensure redundancy of missions. Human intelligence . . . based on engagement with local people can be supplemented by other intelligence methods (technology and espionage) but should increasingly be considered the centerpiece of intelligence.¹³

One can infer that in cities, where populations are dense and the fight, therefore, is more political, the best collectors exist at ground level and don’t require batteries.

Iraq: We’re beyond the Second Quarter

America can use its technological superiority to collect amazing information that enables “fewer war fighters to levy more damage at a longer distance.”¹⁴ Again, however, the second half of the game is not so much about kinetic solutions. In a recent RAND report, Bruce Pirnie and others posit that modern air forces can engage ground targets more effectively and efficiently than ever. They also argue that—regardless of the monumental success in Kosovo—ground power remains critical to the modern fight because it necessitates contact with the locals. Airpower will never be the preferred method for such tasks as finding and engaging guerrillas, policing the area, collecting human intelligence, and constructing buildings. These endeavors are important to winning the peace in an urban environment because “activities requiring human contact tend to be most critical in counterinsurgency, stabilization, peacekeeping, ‘nation building,’ and related military operations, missions that have become increasingly important in U.S. strategy since 1989 and that are likely to predominate for the foreseeable future.”¹⁵

If US forces want to lob something heavy downrange at this point in the competition, it should be a message rather than a munition. At every step of the process—composition, delivery, and assessment—commanders from the president down will need regional expertise and superb intelligence to assist in this endeavor. As the British found in their counterinsurgencies in Malaya and Borneo during the 1960s, the best intelligence comes from locals, who will provide it only when the counterinsurgent guarantees them security from reprisals and a stake in the counterinsurgency’s success.¹⁶ In Iraq, it is essential that coalition forces find a way to do this as well, but they can accomplish only a small piece of it from air and space. Most of the weight rests on the shoulders of the on-scene (ground) commanders in places like Tal Afar and Fallujah.

According to military-affairs author Victor O’Reilly, the hazards of responding to an in-

surgency amongst a dense population were certainly a factor when the conventional phase of the war in Iraq wound down:

It is my belief that the insurgency was substantially created by the tactics used by the occupying force, who were initially the saviors, in their search for Saddam Hussein. Ambitious generals, who should have known better, created a very aggressive do-what-is-necessary culture. *Frustrated troops, with no familiarity with the language or culture naturally make mistakes.* And in a tribal society if you shoot one person it spreads right through the system. (emphasis added)

Furthermore, he notes, the search for weapons of mass destruction served to embitter the locals. The lack of interpreters forced soldiers to communicate with sign language, a state of affairs hardly conducive to winning hearts and minds. "The result," O'Reilly posits, "was that American troops were blind and deaf to much of what was going on around them, and the Iraqis were often terrified."¹⁷

The conflict in Iraq, however, is evolving. Current-affairs commentator Robert Bryce points out an alarming trend. In World War II, mines or booby traps accounted for 3 percent of US combat deaths; the figure rose to 4 percent in Korea and 9 in Vietnam. Notably, though, "from June to November of 2005, [IEDs] were responsible for 65% of combat deaths and roughly half of all nonfatal injuries." Bryce concludes that this lack of direct engagement cedes the tactical advantage to insurgents, citing an interview with military theorist William Lind to support a particularly somber assessment for American soldiers in Iraq: "Our whole military is based on the idea of overwhelming firepower put on targets, but that doesn't work in this type of conflict. We are fighting an enemy that has made himself untargetable. . . . Therefore, insurgents can continue fighting the American military in Iraq indefinitely—regardless of how many US troops are deployed or how quickly they are massed."¹⁸ Given the approximate figure of \$3.5 billion that the DOD spent in 2006 on counter-IED initiatives and recent press reports that the Army has overextended itself due to frequent rotations to Southwest Asia,

one wonders how to address the fluid situation in Iraq.¹⁹

Barnett provides a litmus test for US military success in modern expeditionary warfare: "Did we end up improving local security sufficiently to trigger an influx of global connectivity? Increasingly, our military interventions will be judged by the connectivity they leave behind, not the smoking holes."²⁰ Should the United States employ this metric for success, one would expect a search through the national-security quiver for something less lethal, kinetic, and technical than means used against previous asymmetric foes. As historian Michael Howard remarks in a recent article, "The light provided by our knowledge of technological capabilities and our capacity for sophisticated strategic analysis is so dazzling as to be almost hypnotic; but it is in those shadowy regions of human understanding based on our knowledge of social development, cultural diversity and patterns of behaviour that we have to look for the answers."²¹

The United States holds a superlative edge in air superiority, medical evacuation and treatment, logistics, and robust fire support—all essential facets. We can also put multiple platforms over the battlefield to monitor both the fight and many variables invisible to ground commanders. Each of these strengths remains essential even if enemy players drop their uniforms and head into the bleachers; this is certainly the case in Iraq, where IEDs represent a concrete symptom of this development. In order to win such small fights, however, the US team must communicate with concessionaires and custodial staff to keep feeding the spectators and to gain familiarity with the stadium. Maintaining communication with the fans themselves can yield valuable intelligence when something unexpected pops up in the crowd.

Consider, for instance, the aforementioned IEDs. In *No True Glory: A Frontline Account of the Battle for Fallujah*, Bing West describes not only the combat learning curve, but also a specific failure that could have been avoided had we established a working dialogue with the city dwellers. He reveals that soldiers of the US Army's 3rd Infantry Division quickly grew sus-

picious of their surroundings: dead dogs, barrels lying at odd angles, or cardboard boxes remaining stationary during high winds could be booby-trapped. Daily patrols, one could surmise, were essential to building this situational awareness. “In mid-July [2003], though, one soldier was killed and three wounded when an artillery shell detonated as a convoy drove through western Fallujah. Dozens of local residents had driven around the device, but no one had warned the Americans.”²²

It takes two entities to conduct a dialogue; we need to cultivate finesse in order to prevent American players from knocking people over and stepping on toes in their drive toward mission accomplishment. An active campaign to explain the presence of American might and to display interest in the population’s well-being could gain at least passive support from spectators and could induce local inhabitants to surreptitiously point out hazards to US soldiers.

Possible Solutions

The means to facilitate this dialogue already reside within the aforementioned quiver, and the DOD has ready access to it. First, as defined by Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001 (as amended through 14 April 2006), *public affairs* is “public information, command information, and community relations activities directed toward both the external and internal publics with interest in the Department of Defense.” Simply put, US forces can communicate their intents and activities via this medium. The need for PA is highlighted in the *9/11 Commission Report*, wherein Richard Holbrooke asks, “‘How can a man in a cave outcommunicate the world’s leading communications society?’” and Deputy Secretary of State Richard Armitage states that “Americans have been ‘exporting our fears and our anger,’ not our vision of opportunity and hope.”²³ PA may not invent US vision and goals, but when it comes to the struggle to drown out radical anti-US rhetoric, it certainly

has a critical role to play in communicating to the affected parties.

Second, according to JP 1-02, *civil affairs* activities “(1) enhance the relationship between military forces and civil authorities in areas where military forces are present; and (2) involve application of civil affairs functional specialty skills, in areas normally the responsibility of civil government, to enhance conduct of civil-military operations.” Thomas Henriksen mentions that such activities include “refurbishing schools, building roads, digging wells, and treating the sick.”²⁴ In sum, CA minimizes the disruption of noncombatants’ lives in the war zone, making each of them a stakeholder in the operation. If, for instance, a municipality is without potable water for months and US forces provide a permanent waterworks, then the head of every affected household has an interest in keeping insurgents far away from the town.

Prof. Dan Moran of the Naval Postgraduate School writes that Mao’s soldiers helped harvest crops, deterred crime, taught citizens to read, and made civil reconstruction a priority while fighting Japanese and Nationalist forces. These activities “allowed the revolutionary warrior to occupy the political and psychological void his own actions were intended to create.” By contrast, he notes, fighting against insurgencies demands a deployable instrument to work shoulder-to-shoulder with local populations and provide better “grassroots social action” than the insurgents.²⁵ The United States recognized the need to fill this void by creating CA units during World War II, so the pertinent apparatus has existed for six decades.

JP 1-02 defines a third nonkinetic tool, *psychological operations*, as “planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals. The purpose of psychological operations is to induce or reinforce foreign attitudes and behavior favorable to the originator’s objectives.” As highlighted previously, each of these concepts—PA, CA, and PSYOP—is important to commanders fighting in cities and against asymmetric foes.

Cultural information, buttressed by cultural intelligence, serves as the foundation of effective PA, CA, and PSYOP. Cultural preparation of the battlefield, therefore, is paramount. In their article “Refocusing Intelligence,” Keith Masback and Sean Tytler envision intelligence providing leadership—the “consumer”—not only with facts, but also the context of those facts. Thus consumers see battlefield causes as well as effects, a perspective that could augment their effectiveness in unconventional military actions. Where can the US military acquire this level of analysis?

Education that stresses investigative skills, tests assumptions, and informs our analysts with a complete range of cultural, economic, and social understanding will best position them to overcome biases, and strengthen their argument as they seek to mitigate the biases of their customers. A critical enabler to mitigating analyst and user bias is cultural awareness. Operators and decision makers must understand our adversaries—their biases, cultural beliefs, and image of the United States—in order to truly understand their motivations and intentions.²⁶

Currently, three sources can provide this perspective to our commanders. First, as Barnett points out, manpower is moving from the “Gap,” where American forces will increasingly deploy to export security, to the industrialized and globalized “Core”: “*They are coming, [and] our only choice is how we welcome them*” (emphasis in original).²⁷ Anyone who has spent time in a US military organization has met a service member who has earned his US citizenship via service in that organization. Each of these individuals, beyond his or her military specialty, can provide area expertise to US commanders. A concerted effort to locate these people and attach them to units deploying into their areas of origin could yield dividends—ask any commander who has dealt with a locally contracted interpreter in a combat zone. Certain advantages accrue by having someone in the US military hierarchy—in or out of uniform—available to commanders to take the pulse of local populations or enable negotiations with them.

Second, at the staff level, regional partners are very important. Beyond the obvious blood-

and-treasure burdens shared by coalition partners, regional expertise could prove vital not only to smashing conventional forces, but also to securing the support of those the coalition wishes to liberate in the process. If, for example, a commander from Minnesota wanted to take down Florida, he would be wise to look for common interests with Mississippi, Georgia, and Alabama. Liaison officers from those states could advise the commander’s staff on a wide range of issues should common interests emerge. Although some people may prefer a unilateral approach, imagine how the amphibious assault on Hitler’s Fortress Europe would have developed without assistance from the British—or the French. For a more recent example, one need only look to the essential support provided by Kurdish *peshmerga* militias (with 10th Special Forces Group advisors) to the 173rd Airborne Brigade in the first days of Operation Iraqi Freedom.

Third and most desirable, especially from the security standpoint, is the foreign area officer (FAO) program. In April 2005, Deputy Secretary of Defense Paul Wolfowitz signed Department of Defense Directive (DODD) 1315.17, *Military Department Foreign Area Officer (FAO) Programs*, tasking the military departments to “deliberately develop a corps of FAOs, who shall be commissioned officers with a broad range of military skills and experiences; have knowledge of political-military affairs; have familiarity with the political, cultural, sociological, economic, and geographic factors of the countries and regions in which they are stationed; and have professional proficiency in one or more of the dominant languages in their regions of expertise.” The directive calls on the heads of DOD components to cultivate a stable of on-call regional experts with a principal military specialty, a graduate degree, duty experience in the regional area, and professional-level foreign-language skills. To make this proposal marketable, FAOs will receive opportunity “for promotion into the General/Flag Officer ranks” and periodic “language [as well as] regional expertise sustainment and refresher training.”²⁸ Recognizing the importance of this asset, the DOD is

providing high-visibility billets and maintaining needed expertise for the program.

Conclusion

As Sean Edwards forecasts in his RAND study *Mars Unmasked: The Changing Face of Urban Operations*, asymmetry and urban warfare will probably marry up against US forces in future conflict. In this scenario, Edwards also posits that the American public will expect war with few casualties, that both physical limitations and those imposed by the rules of engagement will favor the other side, and that infantry-on-infantry clashes will degrade US advantages in heavy weaponry: “When civilians are present in large numbers, their support may be the center of gravity, especially in insurgencies. Noncombatants can conceal the enemy, provide intelligence, and *take an active role in the fighting*” (emphasis added).²⁹ The physical urban environment with its inherent restrictions—“density of structures, the team-

ing population, the complexity of terrain, the multiplicity of channels for communication, the voluminous background ‘noise,’ the prodigious quantity and heterogeneity of resources”—provides a rich human terrain as well.³⁰ The DOD—as validated by DODD 1315.17—has realized the importance of cultivating subject-matter experts to help prepare that human terrain.

The US team has a great record on the gridiron, but its efforts to move with finesse among the people and protect them in the stands are spotty. Similarly, America enjoys superb technology, but that advantage won’t be enough to support its teams when they leave the field of conventional play. The added emphasis and resources for area expertise enable commanders and statesmen—coaches, quarterbacks, and managers—to better equip, train, and lead our players to victory in the stands as well. The American citizenry—which includes the team’s players, fans, and owners—will witness returns on the investment. □

Notes

1. Maj Raymond C. Finch III, “A Face of Future Battle: Chechen Fighter Shamil Basayev,” *Military Review* 77, no. 3 (May–June 1997): 39.

2. Thomas P. M. Barnett, *The Pentagon’s New Map: War and Peace in the Twenty-first Century* (New York: G. P. Putnam’s Sons, 2004), 62–63.

3. Steven Metz, “Small Wars: From Low Intensity Conflict to Irregular Challenges,” in *Rethinking the Principles of War*, ed. Anthony D. McIvor (Annapolis: Naval Institute Press, 2005), 280.

4. Lt Col Lester W. Grau and Jacob W. Kipp, “Urban Combat: Confronting the Specter,” *Military Review* 89, no. 4 (July–August 1999): 13, https://calldbp.leavenworth.army.mil/eng_mr/2006091214483150/04_Jul_Aug/REFTP/05art.pdf#xml=/scripts/cqcgi.exe/@ss_prod.env?CQ_SESSION_KEY=RNUPQSWPDCVP&CQ_QH=125622&CQDC=6&CQ_PDF_HIGHLIGHT=YES&CQ_CUR_DOCUMENT=1.

5. See convention 4, pt. 3, sec. 3, *Reference Guide to the Geneva Conventions*, <http://www.globalissuesgroup.com/geneva/convention4.html>.

6. Grau and Kipp, “Urban Combat,” 14.

7. Metz, “Small Wars,” 83.

8. Mary H. Kaldor, “Principles for the Use of the Military in Human Security Operations,” in *Rethinking the Principles of War*, 393.

9. Col John Jogerst, commandant, United States Air Force Special Operations School, interview by the author, 28 February 2006.

10. Thomas X. Hammes, “Rethinking the Principles of War: The Future of Warfare,” in *Rethinking the Principles of War*, 273.

11. Col Joseph D. Celeski, *Operationalizing COIN* [counterinsurgency], JSOU Report 05-2 (Hurlburt Field, FL: Joint Special Operations University, September 2005), 40.

12. Barnett, *Pentagon’s New Map*, 319.

13. Kaldor, “Principles,” 396.

14. Dr. J. Douglas Beason and Dr. Mark Lewis, “The War Fighter’s Need for Science and Technology,” *Air and Space Power Journal* 19, no. 4 (Winter 2005): 72, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj05/win05/win05.pdf>.

15. Bruce R. Pirnie et al., *Beyond Close Air Support: Forging a New Air-Ground Partnership*, MG-301-AF (Santa Monica, CA: RAND, 2005), 25, http://www.rand.org/pubs/monographs/2005/RAND_MG301.pdf.

16. Maj Scott R. McMichael, *A Historical Perspective on Light Infantry* (Fort Leavenworth, KS: US Army Command and General Staff College, Combat Studies Institute, 1987), 137, http://www.cgsc.army.mil/carl/download/csipubs/historic/hist_c3_pt2.pdf.

17. Quoted in James Fallows, "Why Iraq Has No Army," *Atlantic* 296, no. 5 (December 2005): 66–67, <http://www.theatlantic.com/doc/200512/iraq-army>.
18. Robert Bryce, "Man versus Mine," *Atlantic* 297, no. 1 (January/February 2006): 44, 46.
19. *Ibid.*, 44; and Associated Press, "Army Stretched to Breaking Point, Report Says," *CNN.com*, 25 January 2006, <http://www.cnn.com/2006/US/01/25/army.study.ap/index.html> (accessed 25 January 2006).
20. Barnett, *Pentagon's New Map*, 137.
21. Michael Howard, "The Future of Deterrence," *RUSI* [Royal United Services Institute] *Journal* 131, no. 2 (June 1986): 10.
22. Bing West, *No True Glory: A Frontline Account of the Battle for Fallujah* (New York: Bantam Books, 2005), 18.
23. National Commission on Terrorist Attacks upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States* (Washington, DC: The Commission, 2004), 377, <http://www.9-11commission.gov/report/911Report.pdf>.
24. Thomas H. Henriksen, *Dividing Our Enemies*, JSOU Report 05-5 (Hurlburt Field, FL: Joint Special Operations University, November 2005), 1.
25. Daniel Moran, *Wars of National Liberation* (London: Cassell, 2001), 49.
26. Keith J. Masback and Sean Tytler, "Refocusing Intelligence," in *Rethinking the Principles of War*, 544–45.
27. Barnett, *Pentagon's New Map*, 214.
28. Department of Defense Directive (DODD) 1315.17, *Military Department Foreign Area Officer (FAO) Programs*, 28 April 2005, 2, 4, http://www.dtic.mil/whs/directives/corres/pdf/131517_042805/131517p.pdf.
29. Sean J. A. Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, MR-1173-A (Santa Monica, CA: RAND, 2000), xi, xvii, http://www.rand.org/pubs/monograph_reports/MR1173/MR1173.sum.pdf.
30. Scott Gerwehr and Russell W. Glenn, *Unweaving the Web: Deception and Adaptation in Future Urban Operations*, MR-1495-A (Santa Monica, CA: RAND, 2003), xiii, http://www.rand.org/pubs/monograph_reports/MR1495/MR1495.sum.pdf.

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—Air Force Strategic Plan, 2006–2008

An Untapped Resource for Stabilization and Reconstruction

The United States Air Force

MAJ WILLIAM FISCHER, USAF*

Editorial Abstract: The US military has extensive experience with peacekeeping, nation building, infrastructure repair, and other activities below the level of major combat operations. Despite successes in traditional combat operations, however, the postconflict phase continues to baffle US policy makers. Offering one possible solution, the author proposes using the Air Force's On-Scene Commanders' Course at Air University—among other resources—to increase training for postconflict operations.



The U.S. government-civilian agencies and the DoD do not have sufficient experience in multi-agency activities and lack training and educational programs. . . . It is essential that multiple agencies employ shared collaboration, decision-making aids, and execution tools to assess, plan, and execute integrated operations.

While the Department [of Defense] cannot control or assume responsibility for multi-agency integration, it seems clear that success will require the leadership of the agency with the greatest stake in most operations—the DoD.

—Defense Science Board Summer Study on Transformation:
A Progress Assessment, vol. 1, 2006

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THE US MILITARY has had extensive experience in the area commonly referred to as stabilization and reconstruction operations, encompassing missions such as peacekeeping, nation building, infrastructure repair, and a multitude of activities below major combat operations. Unfortunately, despite all the successes in traditional combat operations, the inevitable postconflict phase continues to baffle US policy makers. Stability operations constitute what Nancy Roberts refers to as a “wicked problem,” whereby no agreement exists on the root causes of postconflict instability and even less consensus on the solutions.¹ This situation leads to long and costly endeavors for the United States and for military personnel in particular. For example, the past three years of military operations in Iraq have cost taxpayers approximately \$226 billion with approximately \$33 billion in funding for security assistance and reconstruction projects.² Clearly, problems regarding the security and stability of postconflict environments such as Iraq frequently remain unsolved after large expenditures in terms of effort, funding, and lives. Although the United States can muster incredible financial and personnel resources for such operations, this article seeks to review their organization and to determine whether we have overlooked any of the Air Force’s training assets. Specifically, it assesses the applicability of Air University’s On-Scene Commanders’ Course as a means of increasing training for postconflict operations and asserts that anything less than a complete evaluation of such resources will result in their inefficient use and the exposure of US personnel to unnecessary risk.

Roles and Missions: The Debate over Culture in the Department of Defense

A significant gap exists between success in traditional combat operations and the ability to control the stabilization phase.³ However, we have come to realize that we should not view constabulary and stabilization functions

as a diversion of scarce resources but as a key determinant of the ultimate success of armed conflict.⁴ The US military will be called upon to ensure that an area remains stable, that nation-building progresses, and that autonomy returns to indigenous populations. We should view our inability to perform consistently in the stabilization and reconstruction realm as seriously as we strive for success in combat operations. James Carafano and Dana Dillon succinctly summarize the key issue: “The United States should be just as efficient in fighting for peace as in fighting battles. Winning the peace is part of winning wars. As in preparing for combat, sound planning for peace requires the right organizations, training, and preparation.”⁵

Obstacles to Successful Postconflict Operations

Two major obstacles may be largely responsible for problems in civilian-military integration and training. First, military culture and, hence, military personnel’s perceptions of their roles in postconflict operations must accommodate the realities of current missions. Second, civilian-military integration must increase in order to enhance the opportunities for success. Although now actively directed to emphasize the mission area of stabilization and reconstruction, the US military needs to improve its flexibility in changing from combat to stability operations and its integration with civilian institutions.

The United States frequently relies on its military to provide the preponderance of implementation personnel for stabilization and reconstruction operations. Unfortunately, success in such operations has been sporadic at best. Clearly, the military has unequalled expeditionary, equipment, and logistic capabilities. However, the current culture and organization of resources may not support the most efficient results in postconflict environments. The “stuckee” theory of Gen Anthony Zinni, former commander of US Central Command, rings true when he asserts that no other realistic opportunities exist to fill the gap between major combat operations and creation of a stable environment returned to indigenous control (fig. 1).⁶



Figure 1. The gap in US capabilities

Nation building and peacekeeping are not new to the military. Beginning after World War II in Germany and Japan and continuing through Korea into the 1990s, the United States has seen significant involvements in peacekeeping operations. Unfortunately, one could best describe the efforts as ad hoc since the military serves as executive agent with little planning or coordination with other agencies. Although we use the military because of its unmatched expeditionary capabilities, many people agree that civilians are more appropriate for nation-building activities, particularly those involving humanitarian agencies.⁷ However, since US taxpayers fund the military's expeditionary capabilities to the sum of approximately \$400 billion per year, it may not be reasonable to expect the creation of a parallel capability in the civilian sector.

Indeed, postconflict operations must frequently conform to political decisions geared towards how best to return indigenous control of a region after the military has secured it.

Therefore, stabilization and reconstruction seek to combine three aspects: military capabilities, organization, and culture; civilian oversight and direction; and external-internal civil-military cooperation. The optimal stability operation would organize the military more effectively and create better integration between civilian and military capabilities. Condoleezza Rice, national security advisor at the time, summarized this quandary by noting that "there's nothing wrong with nation building, but not when it is done by the American military."⁸ We must assess all of the Department of Defense's (DOD) training resources to ensure the best combination of skill sets for conducting postconflict operations and increasing civilian-military cooperation. An expansion of training and cooperation opportunities will allow more efficient accomplishment of tasks after conflict has concluded (fig. 2).

A reassessment of the military's organization and resources would provide a foundation for improving results in postconflict environments.

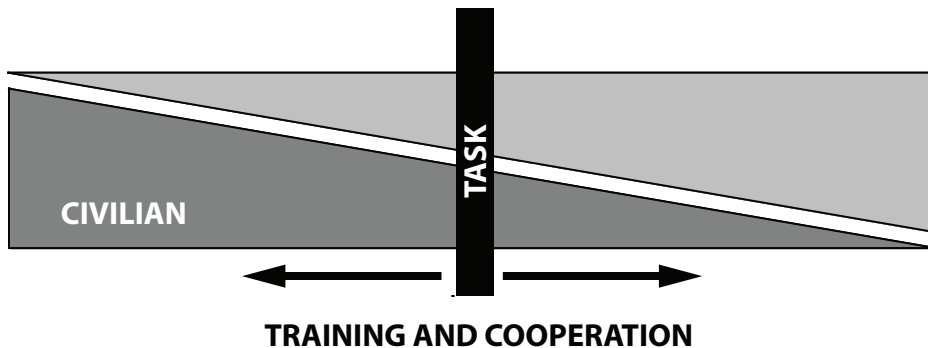


Figure 2. More flexibility through increases in joint training

The military's "tradition of forgetting" and its priorities must change in light of the new threats and taskings of the post-Cold War and post-9/11 eras.⁹ The US military must more fully appreciate the importance of integration with nongovernmental organizations (NGO) and humanitarian organizations. Clearly, we should not consider the military a long-term solution. Political and humanitarian considerations should replace military leadership as soon as possible, relegating the military to a supporting role. Our forces can build a bridge between active hostilities and the ability of the indigenous population to settle differences through a political and legal process. Even though the military can provide resources, logistics, command and control (C2), and intelligence, "politics and politicians . . . must secure the changes and solutions to the causes of the conflict."¹⁰ US armed forces can begin making stabilization and reconstruction a higher priority by identifying resources and personnel most appropriate for postconflict operations. Indeed, we may already have training resources that would enhance opportunities for civilian-military integration.

The Role of the Military

A substantive debate in the executive and legislative branches regarding the military's role in stability operations frequently addresses three core issues.¹¹ The first concerns the suitability of military personnel for stabilization and reconstruction operations. Many analysts and senior officers point to questions regarding their use because current training, doctrine, and philosophy still leave personnel unprepared for such operations. Many people consider our training oriented towards subduing an enemy in a nonpermissive environment rather than cultivating the law-enforcement and negotiating skills required after the cessation of hostilities. Thomas Donnelly effectively captures this policy dilemma when he asserts that "the preferred American way of war is to dash about the planet, zapping its enemies from afar, and then prepare for the next sally. It is, essentially, a raiding strategy on a global scale, the sort of approach more fitting for

lesser powers than superpowers."¹² Unfortunately, this approach continually leaves a gap in US capabilities to control events after the completion of major combat operations. However, because stabilization and reconstruction activities must begin before that point, we may need military personnel to assure the delivery of humanitarian assistance. Although one hears the argument that a military presence confuses the objective/neutral status of civilian personnel, ensuring a secure and stable environment for these workers means that the military must address its effectiveness in stabilization missions and its integration with civilian capabilities and institutions.¹³

The second core issue involves the effect of this mission area on readiness to conduct major combat operations. Realizing that military involvement following conflict would not diminish, many individuals began to reframe the debate not in terms of the military's suitability or adequacy but by maintaining that its current structure and size do not leave room for both stabilization/reconstruction and the primary mission of fighting. Thus, the debate shifted from the military's eschewing nontraditional roles to its not having the structure to perform both roles simultaneously.¹⁴ However, one cannot say for certain whether or not a complete review of all DOD resources has occurred to ensure that we have brought all military capabilities to bear.

Finally, armed forces currently tasked to perform both substantive postconflict operations and major combat operations will continue to face strains on equipment and personnel. Specifically, stabilization and reconstruction taskings impose additional wear on equipment and increase deployments for personnel in an all-volunteer force, reducing their readiness for major combat operations and therefore necessitating a significant debate about the military's roles and missions.¹⁵ We will certainly need military forces after the fighting, but how should we structure the force to better address this mission area? Robert Kaplan summarizes the imperative to develop an integrated system of civilian and military capabilities by asserting that the US military has emerged as the "world's most effective emer-

gency relief organization” because of its ability to deploy quickly, establish security, and provide unequalled logistics support.¹⁶ To assure full effectiveness, the military must determine whether its organization of resources meets doctrinal requirements for stability operations.

This discussion regarding the roles-and-missions debate and the need for greater civilian-military integration raises a follow-on question: to what strategy and policy guidance should the military look in order to organize itself for postconflict operations? Additionally, do any similarities in taskings for these operations exist between the DOD and other government agencies?

The Military’s Strategic Guidance for Postconflict Environments

The debates over military structure, training, and doctrine as well as the need to integrate with other government agencies are intriguing because the disconnects do not seem to stem from a lack of strategic-level guidance or planning. Multiple sources of doctrine and policy that direct increased training and coordination should provide sufficient authority to better integrate stabilization and reconstruction operations into the military and increase civilian-military cooperation—for example, the Universal Joint Task List (UJTL); creation of the State Department’s Office of the Coordinator for Reconstruction and Stabilization (S/CRS); Department of Defense Directive (DODD) 3000.05, *Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations*, 28 November 2005; and National Security Presidential Directive (NSPD) 44, *Management of Interagency Efforts Concerning Reconstruction and Stabilization*, 7 December 2005. One can now turn to assessing similarities in strategic guidance and determining any appropriate training resources available within the Air Force.

The Universal Joint Task List

The UJTL serves as the authoritative strategic source for determining tasks needed to carry

out the national military strategy. Specifically, it “serve[s] as the foundation for capabilities-based planning across the range of military operations.”¹⁷ Perhaps the most basic “to do” list for the US military, this guidance also establishes a relational hierarchy of mandates that link specific tasks to the national military strategy (fig. 3):

- *strategy*: overarching military requirements to support national security strategy
- *end state*: “the set of required conditions that defines achievement of the commander’s objectives”
- *effect*: “a change to a condition, behavior, or degree of freedom”
- *mission*: the task and purpose of a military operation
- *capability*: “ability to execute a specified course of action”
- *task*: specific skill that allows the military to provide a capability and fulfill taskings¹⁸

Although many requirements described in the UJTL are applicable to stabilization and reconstruction operations, five tasks have particular relevance:

- Cooperate with and support NGOs / private voluntary organizations (PVO).
- Provide governmentwide support.
- Coordinate activities within the interagency process.
- Conduct civil-military operations.
- Foster interagency relations.¹⁹

Public Law 108-447 and the State Department’s Coordinator for Reconstruction and Stabilization

Many aspects of the UJTL have parallels in the congressional intent of Public Law 108-447, Consolidated Appropriations Act, 2005, which endorsed the creation of the S/CRS.²⁰ These two developments can provide synergies for improvements in stabilization and reconstruction operations. The S/CRS, a new ambassador-



Figure 3. Hierarchy of mandates for the national military strategy. (Adapted from Chairman of the Joint Chiefs of Staff Manual [CJCSM] 3500.04D, *Universal Joint Task List*, 1 August 2005, A-7 [fig. A-1].)

level agency, intends to answer a perceived lack of oversight regarding the transition from active hostilities to stable control by the local population.²¹ Specifically, Public Law 108-447 outlines four major task areas designed to improve stabilization and reconstruction operations:

- Determine and document resources outside the military.
- Develop nonmilitary responses to post-conflict crises.
- Serve as the executive agent for US response by coordinating US response plans.
- Coordinate training of civilian personnel.²²

Department of Defense Directive 3000.05

DODD 3000.05 ensures that “stability operations are a core U.S. military mission . . . [that] shall be given priority comparable to combat

operations.”²³ Importantly, this policy provides clear guidance to increase training and integration in US government agencies and aide organizations. Some specific highlights include the following:

- “Coordinate DoD relations with the Department of State’s Office of the Coordinator for Reconstruction and Stabilization.”
- “Identify DoD-wide stability operations capabilities.”
- “Develop a process to facilitate information sharing for stability operations among the DoD Components, and relevant U.S. Departments and Agencies, . . . NGOs, and members of the Private Sector.”
- “Develop opportunities for personnel from other U.S. Departments and Agencies, foreign governments, International Organizations, and NGOs to participate, as

appropriate, in DoD training related to stability operations.”²⁴

National Security Presidential Directive 44

NSPD 44 identifies the secretary of state (as delegated to the S/CRS) as executive agent for deliberate and crisis planning for stabilization and reconstruction operations so as to ensure the effective combination of individual agencies’ capabilities.²⁵ The document specifically directs that “the Secretaries of State and Defense will integrate stabilization and reconstruction contingency plans with military contingency plans . . . [and] will develop a general framework for fully coordinating stabilization and reconstruction activities and military operations at all levels.”²⁶ One can collapse the numerous and wide-ranging responsibilities assigned to the Department of State into five general areas of responsibility:

- “Develop detailed contingency plans for integrated United States Government reconstruction and stabilization efforts.”
- “Coordinate United States Government responses for reconstruction and stabilization with the Secretary of Defense.”
- “Coordinate reconstruction and stabilization activities . . . [with] international and regional organizations, nongovernmental organizations, and private sector entities.”
- “Lead United States Government development of a strong civilian response capability including necessary surge capabilities.”
- “Identify lessons learned and integrate them into operations.”²⁷

The “fog of peace” in postconflict operations creates opportunities for confusion and duplication of effort.²⁸ Most seriously, an ineffective policy of stability operations leads to unnecessary risks for personnel and a waste of scarce resources for the US taxpayer. Fortunately, as indicated above, we seem to have a high level of congruence in policy directives

and congressional intent. One existing training resource in particular could be used to satisfy the concerns of both the postconflict literature and policy directives for US agencies tasked with stabilization operations.

The Air Force’s On-Scene Commanders’ Course

U.S. personnel . . . rarely have an opportunity to train with the representatives of the other U.S. agencies, non-governmental organizations, and the international actors with whom they will have to work in the field.

—*Play to Win: Final Report of the Bi-Partisan Commission on Post-Conflict Reconstruction*, January 2003

Multiple after-action reports and analyses have asserted that stabilization and reconstruction require a different skill set than major combat operations.²⁹ The Air Force’s On-Scene Commanders’ Course may provide an avenue to increase opportunities for success in postconflict operations. By expanding DOD personnel’s attendance at this course and by including individuals outside the DOD, we would increase the pool of personnel with skill sets needed for stability operations as well as the understanding of both civilian and military members.

Several studies address the importance of education and training in stabilization operations. In *Educating International Security Practitioners*, James Smith and others thoroughly review the nexus of military education and the requirements of the twenty-first-century security environment, finding that major changes are necessary to ensure that US forces can switch from war to peace.³⁰ Perhaps more powerfully, Leonard Wong and others in *Strategic Leadership Competencies* recognize the need for developing an integrated leadership-development program to address the requirements of postconflict operations.³¹ In addition, Wong’s *adaptive leader* concept argues that stabilization and reconstruction duties may make better officers, albeit not in their traditional specialties.³² The report of the Fifteenth Annual Strategy

Conference hosted by the US Army's Strategic Studies Institute also argues convincingly for increasing training and education opportunities for personnel engaged in stabilization and reconstruction operations, contending that we must create new leadership capabilities to address stabilization. It notes that more training and education will help reduce the gaps between prescriptions and results in operations following hostilities.³³ Finally, in his review of the first year of Operation Enduring Freedom, William Flavin describes the importance of civilian-military cooperation in facilitating the transition between the military's security-focused operations and civilian nation-building and stability operations.³⁴

Specific Course Elements

During a four-day workshop involving seminar presentations, hands-on exercises, and presentations by subject-matter experts, 14–17 students will cover topics such as (1) major-accident/disaster-response policies, (2) legal/media orientation, (3) medical responses, (4) responses to accidents involving hazardous materials, (5) mishap investigation and reporting, (6) terrorism, (7) identification and disposal of explosive ordnance, (8) posttraumatic-stress debriefing, (9) Office of Special Investigations, and (10) contingency contracting. Created in 1980 after a Titan II ICBM accident in Damascus, Arkansas, the course aims to create a better crisis-management response and leadership capability as well as teach leaders how to integrate various response agencies. It has the following goals:

- Provide emergency/contingency-response training.
- Emphasize peacetime techniques and response to weapons of mass destruction.
- Teach C2 functions during emergency/contingency situations.
- Teach situation assessment, communications, planning, public affairs, and logistics support.³⁵

The course currently trains approximately 400 people per year through a combination of in-residence instruction at Maxwell AFB, Alabama, and various teams that travel to sponsoring organizations within the Air Force—the only DOD agency that provides a separate academic experience for teaching crisis-management and integrated-response skills.³⁶ Training includes responding to contingency and crisis situations by integrating and managing various agencies, including civilian resources, as appropriate. A dialogue must begin to determine how to expand this course to more personnel, particularly those involved in stabilization and reconstruction operations.

Major Benefits

The On-Scene Commanders' Course can make a valuable contribution to postconflict operations for several reasons. In addition to following Patrick Donahoe's call for leaders who can quickly transition from combat to stability operations, the course would help solve the problem of multiple authorities, cultures, and priorities by providing a standardized experience for postconflict personnel.³⁷ Using the class's common framework would allow responding agencies to establish better understandings of capabilities, authorities, and C2 issues. The course would afford more opportunities to learn common practices and integration procedures as well as exchange ideas in a week-long seminar. Indeed, this Air Force resource may go a long way towards answering the taskings of DODD 3000.05 together with Hans Binnendijk and Stuart Johnson's call for civilian agencies to create new programs to better integrate their capabilities and appreciate the "maze of competing and conflicting entities."³⁸ The course could also provide a valuable training baseline for deployable civilian teams, perhaps as a capstone course prior to deployment.

Second, the course would allow the civilian community to leverage the best practices of the Air Force. It would support a suggestion from a task force sponsored by the Council on Foreign Relations to create additional civilian-military training to increase cooperation and

would allow the Department of State to solidify its role as executive agent without expending funds to create training programs from scratch.³⁹ In addition, an expanded audience for the On-Scene Commanders' Course would comply with a Defense Science Board study that calls for increased cooperation between the Departments of Defense and State.⁴⁰ This Air Force resource would allow the military to increase training for and appreciation of stabilization and reconstruction tasks; furthermore, it would help create similar synergies in the civilian sector and make this skill set a core competency for the Department of State.

Third, expanding attendance would reflect an appreciation for what Karl Rohr has termed "progressive reconstruction."⁴¹ That is, the On-Scene Commanders' Course could hone crisis-management capabilities and integrative skills needed in postconflict operations. By combining military and civilian attendees from the entire spectrum of supporting agencies, it could further their understanding of an increasingly blurry line between combat and stability operations. The most effective stabilization operation does not occur after active hostilities have ceased. Rather, combat and stabilization should occur as objectives are secured.

Fourth, the course would directly support an initiative to create a pool of deployable civilian teams well versed in crisis management and the integration of multiple-response agencies. It would also substantively contribute to the creation of a "U.S. training center for complex contingency operations."⁴² Civilian attendance at the course could create deployable expertise that would easily integrate with other agencies within Rohr's progressive-reconstruction concept. Course materials provided by the Air Force could assist in the creation of a national training center for stabilization and reconstruction.

The value of the On-Scene Commanders' Course lies in its ability to answer questions in multiple areas of strategic guidance for postconflict operations. With minor alterations, this resource could become part of the repertoire of resources available to the United States as it tries to enhance its capabilities for

stability operations. Indeed, this course lies at the nexus of overlapping strategic guidance.

Untapped Air Force Resources?

If you concentrate exclusively on victory, with no thought for the after-effect . . . it is almost certain that the peace will be a bad one, containing the germs of another war.

—B. H. Liddell Hart
Strategy

Although the Air Force is not the executive agent for postconflict operations, it may have resources available to help improve results. Seeking to begin a larger debate in the Air Force regarding resources applicable to stability operations, this article has reviewed key issues regarding the training and personnel involved in a growing mission area for the DOD. Specifically, it has analyzed common themes in the literature of postconflict stabilization and has assessed Air Force training and personnel resources that might increase opportunities for success. The article's findings indicate that the service could favorably affect stabilization operations, offering the On-Scene Commanders' Course as an example of leveraging existing training courses that satisfy many tasks which have parallels in the stabilization literature and after-action reports from postconflict operations. The Air Force could modify this course to create varying levels of support for the DOD and other government agencies, allowing them to tailor its materials as necessary. Possible changes include the following:

- Increase Air University's capacity to accommodate additional in-residence attendees.
- Increase the use of mobile training teams to deliver the course to sponsoring agencies.
- Create a distance-learning curriculum.
- Make course materials available to other agencies.

This continuum would create a wide variety of options for agencies to improve their joint training and crisis-management skills.

The On-Scene Commanders' Course addresses many issues highlighted in scholarly studies and doctrinal guidance. Specifically, one finds several similarities between the course and the strategic guidance for postconflict operations as embodied in the UJTL, the S/CRS, DODD 3000.05, and NSPD 44 (fig. 4). In addition,

the literature on stabilization and reconstruction also finds parallels in course topics such as enhancing civilian-military integration, increasing training and education, and reviewing all DOD assets for postconflict operations.

Perhaps most importantly, this article has sought to stimulate the dialogue needed to

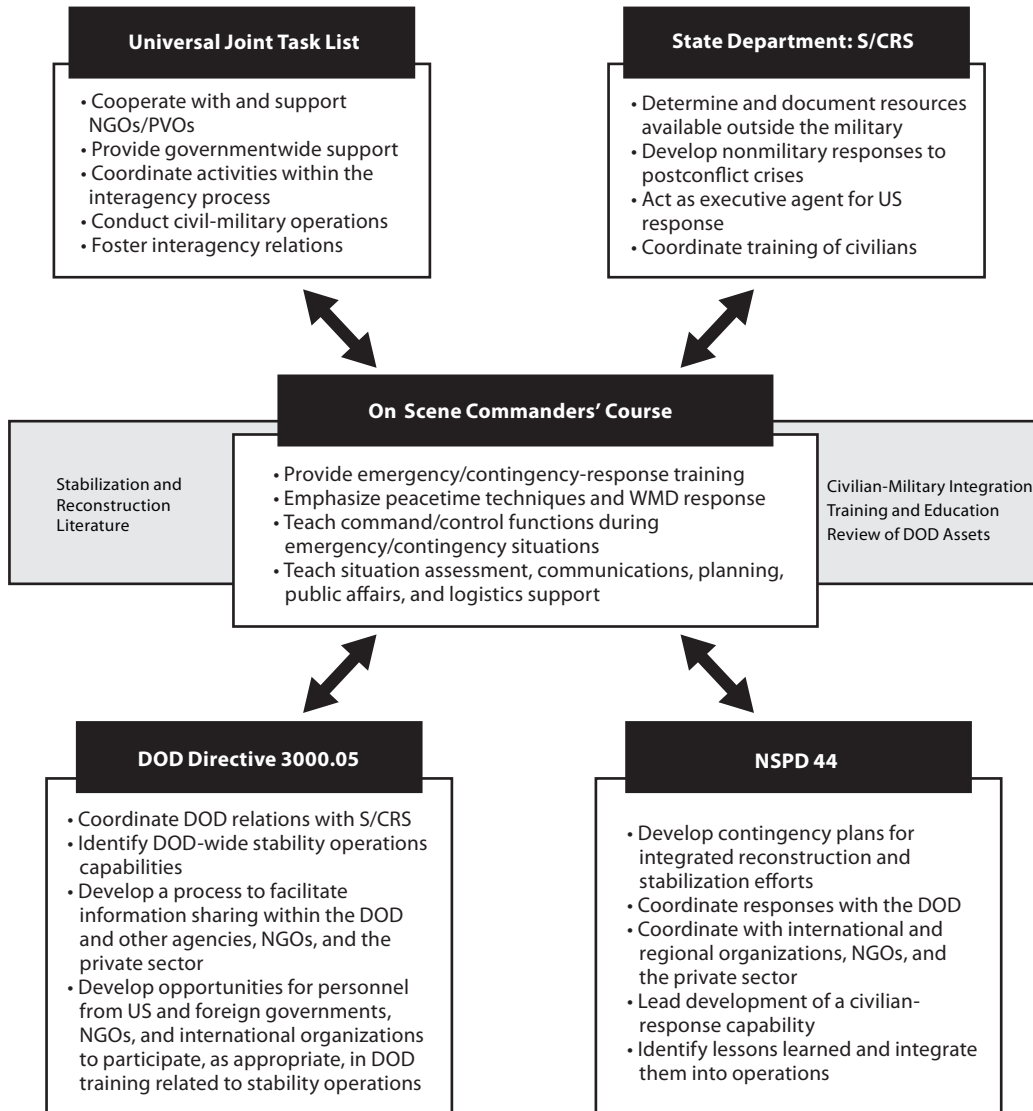


Figure 4. The On-Scene Commanders' Course—an Air Force resource for multiple doctrine and policy directives

fully develop the ideas it has presented. Clearly, the Air Force can make its training resources available for a wider mission. Only informed discussion will enable national leaders to conduct a complete review of how the

United States organizes its training and resources for the wicked problem of postconflict operations, a process that would hopefully reduce the number of our people placed in harm's way.⁴³ □

Notes

1. Nancy C. Roberts, "Coping with Wicked Problems: The Case of Afghanistan," in *Learning from International Public Management Reform*, vol. 11A, ed. Lawrence Jones, James Guthrie, and Peter Steane (New York: Elsevier, 2001), 353–75. Roberts's typology identifies three types of problems: (1) simple problems agree on the identification of the problem and its solution; (2) complex problems agree on the definition of the problem but find disagreements between stakeholders on the solution; and (3) wicked problems find disagreements between stakeholders regarding problem identification and an acceptable solution.

2. There are numerous analyses of the cost of operations in Iraq. See, for example, Steven M. Kosiak, *Three Years Later: The Cost of US Military Operations in Iraq* (Washington, DC: Center for Strategic and Budgetary Assessments, 20 March 2006), <http://www.csbaonline.org/4Publications/Archive/U.20060320.IraqCosts3/U.20060320.IraqCosts3.pdf>; and idem, *The Cost of US Military Operations in Iraq and Afghanistan through Fiscal Year 2006 and Beyond* (Washington, DC: Center for Strategic and Budgetary Assessments, 4 January 2006), <http://www.csbaonline.org/4Publications/Archive/U.20060104.WarSpending/U.20060104.WarSpending.pdf>.

3. Thomas Donnelly, *The Military We Need: The Defense Requirements of the Bush Doctrine* (Washington, DC: American Enterprise Institute Press, 2005), 1.

4. Michael Mandelbaum, "Foreign Policy as Social Work," *Foreign Affairs* 75, no. 1 (January/February 1996): 16.

5. James Jay Carafano, PhD, and Dana R. Dillon, "Winning the Peace: Principles for Post-Conflict Operations," Backgrounder no. 1859 (Washington, DC: Heritage Foundation, 13 June 2005), 2, <http://www.heritage.org/Research/NationalSecurity/bg1859.cfm>.

6. *Play to Win: Final Report of the Bi-Partisan Commission on Post-Conflict Reconstruction* (Washington, DC: Center for Strategic and International Studies and the Association of the US Army, January 2003), <http://www.csis.org/media/csis/pubs/playtowin.pdf>.

7. Nina M. Serafino and Martin A. Weiss, *Peacekeeping and Post-Conflict Capabilities: The State Department's Office for Reconstruction and Stabilization*, CRS Report for Congress, RS22031 (Washington, DC: Congressional Research Service, Library of Congress, 19 January 2005), 2, http://digital.library.unt.edu/govdocs/crs//data/2005/upl-meta-crs-7335/RS22031_2005Jan19.pdf?PHPSESSID=53189f79609308d469ff719bd8e0fe8.

8. Condoleezza Rice, "Foundation for a Nation," *Washington Post*, 29 October 2001, A-17.

9. Carafano and Dillon, "Winning the Peace," 4.

10. US Department of State, *Peacekeeping: What Works? America's Future Peacekeeping Policy*, Conference Report (Washington, DC: Bureau of Intelligence and Research, February 1994), 3.

11. For a discussion of the three core issues, see Nina M. Serafino, *Peacekeeping and Related Stability Operations: Issues of U.S. Military Involvement*, CRS Issue Brief for Congress, IB94040 (Washington, DC: Congressional Research Service, Library of Congress, 25 June 2005), <http://fpc.state.gov/documents/organization/48837.pdf>.

12. Donnelly, *Military We Need*, 51.

13. Serafino, *Peacekeeping and Related Stability Operations*, 5–7.

14. Ibid., 9.

15. Ibid., 10.

16. Robert D. Kaplan, "U.S. Forces: The World's Best Relief Group," *New York Times*, 12 October 2005.

17. Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3500.04D, *Universal Joint Task List*, 1 August 2005, A-1, http://www.dtic.mil/cjcs_directives/cdata/unlimit/m350004.pdf.

18. Ibid., A-4 through A-6.

19. Ibid., B-C-B-148–49, B-C-A-191, B-C-A-194, B-C-C-92, and D-15.

20. For provisions of the S/CRS, see *Consolidated Appropriations Act, 2005*, Public Law 108-447, 108th Cong., 2d sess., 8 December 2004, http://clinton.senate.gov/features/darfur/documents/2004.12.08_Consolidated_Approps_Act_2005.pdf.

21. Nina M. Serafino and Martin A. Weiss, *Peacekeeping and Conflict Transitions: Background and Congressional Action on Civilian Capabilities*, CRS Report for Congress, RL32862 (Washington, DC: Congressional Research Service, Library of Congress, 28 June 2005), 1, <http://www.fas.org/sgp/crs/natsec/RL32862.pdf>. An updated version of 26 January 2006 also provides a good summary of the creation of the S/CRS.

22. Serafino and Weiss, *Peacekeeping and Post-Conflict Capabilities*, 5.

23. Department of Defense Directive (DODD) 3000.05, *Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations*, 28 November 2005, 2, http://www.dtic.mil/whs/directives/corres/pdf/d300005_112805/d300005p.pdf.

24. Ibid., pars. 5.1.2, 5.1.4, 5.1.9, and 5.3.5.

25. National Security Presidential Directive (NSPD) 44, *Management of Interagency Efforts Concerning Reconstruction and Stabilization*, 7 December 2005, <http://www.fas.org/irp/offdocs/nspd/nspd44.pdf>.

26. Ibid., 5.

27. Ibid., "Responsibilities of the Department of State," 3–4 (pars. 3, 5, 6, 9, and 10).

28. Manfred K. Rotermund, *The Fog of Peace: Finding the End-State of Hostilities* (Carlisle, PA: Strategic Studies Institute, US Army War College, November 1999), 47–52, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB305.pdf>.

29. See especially Stephen J. Blank, *Afghanistan and Beyond: Reflections on the Future of Warfare* (Carlisle, PA: Strategic Studies Institute, US Army War College, 28 June 1993), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB121.pdf>; Carafano and Dillon, "Winning the Peace"; LTC Patrick J. Donahoe, "Preparing Leaders for Nationbuilding," *Military Review* 84, no. 3 (May–June 2004): 24–26, <http://usacac.army.mil/cac/milreview/download/English/MayJun04/don.pdf>; William Flavin, *Civil Military Operations, Afghanistan: Observations on Civil Military Operations during the First Year of Operation Enduring Freedom* (Carlisle, PA: US Army Peacekeeping and Stability Operations Institute, 23 March 2004); Rotermund, *Fog of Peace*; James M. Smith et al., *Educating International Security Practitioners: Preparing to Face the Demands of the 21st Century International Security Environment* (Carlisle, PA: Strategic Studies Institute, US Army War College, July 2001), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB280.pdf>; Brian G. Watson, *Reshaping the Expeditionary Army to Win Decisively: The Case for Greater Stabilization Capacity in the Modular Force* (Carlisle, PA: Strategic Studies Institute, US Army War College, August 2005), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB621.pdf>; Leonard Wong, *Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom* (Carlisle, PA: Strategic Studies Institute, US Army War College, July 2004), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB411.pdf>; and Leonard Wong et al., *Strategic Leadership Competencies* (Carlisle, PA: Strategic Studies Institute, US Army War College, September 2003), <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB382.pdf>.

30. Smith et al., *Educating International Security Practitioners*.

31. Leonard Wong et al., *Strategic Leadership Competencies*.

32. Wong, *Developing Adaptive Leaders*, 7.

33. Lloyd J. Matthews, *Winning the War by Winning the Peace: Strategy for Conflict and Post-Conflict in the 21st Cen-*

tury, Conference Report of the Fifteenth Annual Strategy Conference, 13–15 April 2004 (Carlisle, PA: Strategic Studies Institute, US Army War College, December 2004), 1–3, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB591.pdf>.

34. Flavin, *Civil Military Operations, Afghanistan*; see also NATO Allied Joint Publication 9-0, *Civil Military Operations*, June 2002, par. 0212.

35. "USAF On-Scene Commanders' Course," Commanders' Professional Development School, http://commanders.school.maxwell.af.mil/On_Scene_Commanders_Home.page.htm (accessed 5 October 2005).

36. Niel Krosner, course director, United States Air Force On-Scene Commanders' Course, interview by the author, 5 October 2005.

37. Donahoe, "Preparing Leaders for Nationbuilding," 26.

38. Hans Binnendijk and Stuart E. Johnson, eds., *Transforming for Stabilization and Reconstruction Operations* (Washington, DC: National Defense University Press, 2004), 109, http://www.ndu.edu/ctnsp/S&R_book/S&R.pdf.

39. *In the Wake of War: Improving U.S. Post-Conflict Capabilities*, Report of an Independent Task Force (New York: Council on Foreign Relations, 2005), xiii, 11, http://www.cfr.org/content/publications/attachments/Post-Conflict_Capabilities_final.pdf.

40. *Defense Science Board 2004 Summer Study on Transition to and from Hostilities* (Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, December 2004), vi, http://www.acq.osd.mil/dsb/reports/2004-12-DSB_SS_Report_Final.pdf.

41. Karl C. Rohr, "Progressive Reconstruction: Melding Expeditionary Maneuver Warfare with Nation Building and Stability Operations," *Marine Corps Gazette* 88 (April 2004): 48. See also Watson, *Reshaping the Expeditionary Army*, 9–10.

42. Senate, *Civilian Post-Conflict Reconstruction Capabilities, Testimony before the Committee on Foreign Relations, United States Senate, a Statement by Dr. John J. Hamre, President and CEO of the Center for Strategic and International Studies*, 108th Cong., 2d sess., 3 March 2004, n.p., <http://www.csis.org/media/csis/congress/ts040303hamre.pdf>.

43. Roberts, "Coping with Wicked Problems," 353–75. See also note 2.



Transforming American Airlift

Effects-Based Mobility, the C-17, and Global Maneuver

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Editorial Abstract: The ability to maneuver US military people and equipment remains a top defense priority for the nation. However, the author's review of air mobility doctrine since 1990 reveals that America's mobility capability has stagnated, despite the expenditure of considerable funding. The author proposes a new way of thinking, which he terms "effects-based mobility," to appreciably increase global agility for joint forces.

THE MANEUVERABILITY OF the US military remains a top defense priority for our nation. Some may argue that we are doing everything possible to improve our ability to maneuver forces on a global scale—also known as global agility. United States Transportation Command (US-TRANSCOM) is increasing in-transit visibility of cargo and automating existing processes to meet joint requirements.¹ The C-17 fleet is

growing, C-5s are modernizing, and advanced cargo-aircraft studies are under way. However, an analysis of air mobility doctrine since 1990 reveals that America's mobility capability has stagnated. This stagnation, termed the "mobility plateau," diverts crucial funding from the advanced-development programs needed to maintain the edge in global agility. We can trace the origins of this plateau to fiscal constraints in the 1990s that forced leaders to

shift investments from the development of advanced transport to dependence on a costly infrastructure of intermediate bases. Moreover, the global war on terrorism (GWOT) highlighted the limitations of this dependency, confirming the plateau's existence. Advanced aircraft design may hold the key to breaking the mobility plateau, but our dependence on overseas bases makes this endeavor seem doctrinally unnecessary and too costly to pursue. Furthermore, mobility initiatives presented in the Quadrennial Defense Review (QDR) of 2006 may not provide the capability to overcome the plateau.

How can we break our costly dependence on intermediate basing and achieve greater agility for joint forces? With the goal of effecting a transformation capable of appreciably increasing global agility for joint forces, this article proposes a new way of thinking—effects-based mobility (EBM)—that provides a doctrinal focus on air mobility effects which will trigger value-added investments in the development of advanced transport.

Evolution of the Mobility Plateau

As mentioned above, two occurrences gave rise to the mobility plateau. First, budget constraints after Operation Desert Storm forced leaders to increase airlift capacity by investing in intermediate bases and more aircraft rather than pursuing advanced aircraft development. This was not the case prior to 1990. From 1917 to 1990, the range of transport aircraft steadily improved, increasing from 600 to nearly 6,000 miles.² Throughout this period of growth, such improvements enabled leaders to bypass intermediate bases and reduce overseas basing requirements by 77 percent.³ This period of growth culminated with Desert Storm, during which airlift forces moved over 540,000 tons of cargo and 500,000 passengers, using one or two stops.⁴ Despite the unprecedented achievements of air mobility during this operation, force reductions after Desert Storm stifled the development of advanced transport. Compared to the steady improvements that took

place from 1917 to 1990, the range of military transports remained relatively unchanged due to the lack of new programs. Furthermore, several transport mishaps forced Congress to mandate safety upgrades on all mobility aircraft.⁵ Modification costs alone exceeded \$1 billion. In 1996 the undersecretary of defense for acquisition and technology released a report on strategic mobility that found “no need to develop new operational concepts.”⁶

As military budgets tightened, Headquarters Air Mobility Command (AMC) focused on purchasing more C-17s and increasing throughput at intermediate bases. AMC measured total airlift capacity by using the million-ton-mile-per-day estimate, which incorporates factors such as number of aircraft, payload, speed, and utilization rate.⁷ In 1997 the AMC commander, Gen Walter Kross, stated that “Air Mobility Capability is dependent on an En Route System . . . comprised of people, infrastructure, and equipment located within the United States and around the globe.” Guided by this vision, planners implemented a “six-lose-one” en route basing concept, which utilized six en route bases in Europe for large deployments, with the flexibility to lose one base yet maintain desired throughput.⁸ In light of scant funding for advanced development, airlift capacity and intermediate basing provided a short-term solution for budgetary constraints.

Despite a larger C-17 fleet and an improved en route strategy, mobility requirements continued to exceed capabilities. From 1992 to 2005, air mobility supported over 42 major operations, ranging from small humanitarian missions to major combat deployments.⁹ At the same time, closures of European bases continued, eventually producing the smallest overseas footprint since 1945.¹⁰ With fewer overseas bases, AMC continued to rely on the “hub-and-spoke” doctrine for large deployments, where aircraft depart major hubs in the continental United States for smaller overseas hubs, also known as “lily pads.”¹¹ Ground teams would then transload cargo to tactical aircraft and depart for in-theater or “spoke” destinations. Unfortunately, the closure of major bases resulted in overuse at the remaining hubs. In 1999 AMC

programmed \$1.5 billion for infrastructure upgrades at these hubs.¹² This large investment marked an important shift in air mobility doctrine. Leaders were now convinced that throughput capacity would yield more returns than advanced concept development.

The GWOT highlighted the second major source of the mobility plateau because it exposed the limits of intermediate basing. In December 2001, mobility squadrons at Incirlik Air Base (AB), Turkey, and Rhein-Main AB, Germany, were launching approximately 10–15 missions per day, with little infrastructure to support US Central Command's requirements.¹³ Although the 1999 Mobility Requirements Study secured funding for infrastructure upgrades, many projects were not yet complete. Facility and manpower limitations overloaded cargo-processing operations, resulting in numerous mission cancellations and delays. Although AMC had moved 882,609 tons of cargo and 1 million troops for the GWOT by 2004, the six-lose-one system required supplemental bases to meet throughput demands.¹⁴

In addition to the saturated system, large fluctuations in performance also provided evidence that mobility capabilities were stagnating. During Operation Enduring Freedom, C-17 operations in Germany, Turkey, Italy, and Spain experienced significant fluctuations in throughput. Factors such as airspace saturation, weather, overflight clearances, crew billeting, and parking restrictions resulted in daily launch rates ranging from 27 to 95 percent.¹⁵ Clearly, the six-lose-one plan did not meet agility requirements for Enduring Freedom. Faced with a saturated en route structure, planners established new cargo hubs to handle excess flow. Field commanders stretched resources to meet mission requirements, but overtasking resulted in fluctuations far too drastic to control. In July 2002, leaders at Rhein-Main AB discovered that a steady flow of 10 C-17 missions per day would prevent saturation of the local system.¹⁶ Consequently, mission output improved to 95 percent. However, the tanker airlift control center (TACC) directed an increase to 15 missions per day in August, causing increased mainte-

nance workload for inbound C-5s. After leaders grounded a total of eight C-5s for maintenance, parking restrictions reduced C-17 output to just three missions per day.

A closer look at hub operations during the GWOT revealed important clues concerning the limits of the en route system—take for example the launch rates at Ramstein AB during Operation Iraqi Freedom in the summer of 2004 (fig. 1).¹⁷ Each bar in the figure represents the number of missions requested by the TACC. The black portion of the bar denotes successful launches, and the striped portion mission cancellations. On 10 August, the TACC attempted to increase throughput by requesting 12 missions. However, this course of action actually resulted in a decrease in output. On this day, airfield-operating hours, maintenance delays, and limited crew transportation led to mission cancellations. Just like the C-5 groundings at Rhein-Main, overtaxing the system lowered throughput. Mission requests beyond the maximum-output capability decreased output because the local system became task saturated. The limits of intermediate basing become evident when individual systems reach their maximum-output levels. Unfortunately, sources of performance degradation vary from hub to hub, reflecting an inherent difficulty in controlling the entire en route system. Current performance fluctuations indicate a saturated system.

The QDR of 2006 projects some increases in global agility, but evidence suggests that the mobility plateau will continue. First, the \$1 billion C-5 modernization program focuses on increasing reliability rather than range. Second, the 2005 Mobility Requirements Study predicts that the current mobility fleet will fall short of the 54.5 million-ton-mile-per-day requirement.¹⁸ Third, the QDR recommends maintaining the C-17 purchase at 180 aircraft.¹⁹ Initially, this appears to free up funding for programs such as the advanced cargo aircraft, but it could result in cost increases.²⁰ For example, the QDR proposes storing C-17 tooling to maintain production capability in the event we need more of these aircraft. Modern manufacturing systems, especially in aircraft production, rely on highly developed

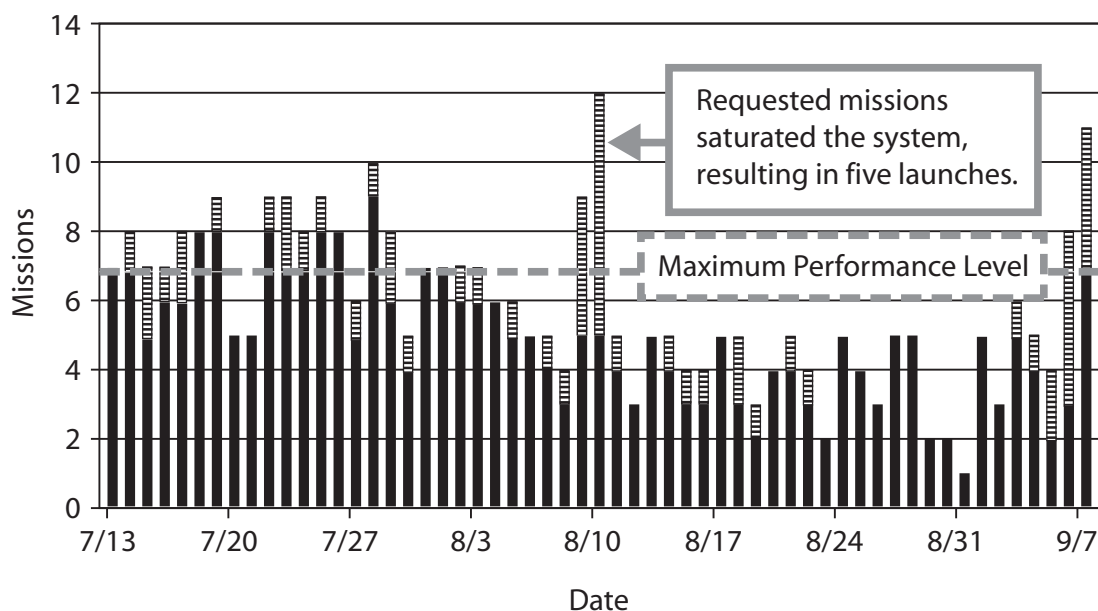


Figure 1. C-17 launch rates at Ramstein AB from 13 July to 7 September 2004. (Compiled from daily mission reports at Ramstein AB.)

processes, advanced assembly techniques, and thousands of component suppliers.²¹ Therefore, reestablishing C-17 production would require a herculean effort. Since hundreds of suppliers would eventually go out of business, redevelopment would necessitate costly reverse engineering of system components. The fact that we expect intermediate-base improvements to exceed \$1.3 billion by 2008 adds to the overall problem.²² Finally, the US Government Accountability Office (GAO) concluded that the Mobility Capabilities Study of 2005, which supplied significant inputs to the 2006 QDR, may lack credibility due to the absence of adequate validation of simulation models.²³ Supporting the GAO conclusion is the fact that the Mobility Capabilities Study predicts stability with 292 intertheater airlifters, while the 2005 Mobility Requirements Study predicts an air mobility shortfall beyond 2007.²⁴

In 2003 Headquarters AMC's Doctrine Division summarized mobility performance during the GWOT: "Air mobility operations at current levels with the existing force structure will lead to long-term detrimental effects on

the force (i.e., using equipment and resources at a higher rate than can be maintained, replaced and/or refurbished)."²⁵ In short, extensive analysis of the mobility plateau concludes that (1) intermediate bases create significant drag on our ability to maneuver forces globally, and (2) crucial funding spent to maintain this system diverts effort from developing advanced concepts that have the potential to eliminate this drag.

Ten-Year Transformation: Effects-Based Mobility

Breaking out of the mobility plateau requires new doctrine designed to trigger increases in agility for joint forces. Technology alone will not solve the problem. Since 1995 the aerospace industry has developed vehicles capable of doubling the range of transports by using blended-wing body (BWB) designs and lighter-than-air technology.²⁶ However, dependency on intermediate basing and budget constraints made advanced concepts appear

doctrinally unnecessary and fiscally unattainable. Bridging the gap between restrictive doctrine and advanced technology requires a new way of thinking. In an *Air Force Times* article titled “Eleven Areas Where the Status Quo Won’t Fly,” Gen T. Michael Moseley, Air Force chief of staff, stated that we need to “review how the Air Force organizes airmen and aircraft it presents to combatant commanders. Can we be quicker, more flexible, more adaptive and get there faster?”²⁷ With this vision, mobility air forces have an opportunity to develop effects-based solutions to mobility issues and integrate more closely with the joint fight.

EBM would transform air mobility over a 10-year period by (1) focusing resources on generating effects in order to release our costly dependency on intermediate basing, and (2) triggering innovations that allow forces to bypass intermediate stops for large deployments. Gen Norton A. Schwartz, commander of USTRANSCOM, supports effects-based approaches to mobility: “In the end, it all comes down to people, leaders and public service. All of us need to focus on maximizing effect for joint forces. This is not about airplanes or ships. It is about responding at the point of effect for theater commanders.”²⁸ EBM proposes a new doctrine that reflects General Schwartz’s vision and challenges leaders at all levels of war to break the plateau.

What is EBM? EBM is a doctrine designed to leverage air mobility systems to achieve effects that contribute to desired military and political outcomes. By synchronizing air mobility practices for theater commanders, EBM compels leaders to ask the question “Will this make joint forces more agile?” EBM can be applied to the tactical, operational, and strategic levels of war.

EBM merges effects-based concepts with the operational art of air mobility.²⁹ Air Force Doctrine Document 1, *Air Force Basic Doctrine*, defines *effects-based operations* as “actions taken against enemy systems designed to achieve specific effects that contribute directly to desired military and political outcomes.”³⁰ Although EBM applications may not directly correlate with actions against enemy systems, it recognizes control of complex systems as a

key factor in mission accomplishment. At the same time, it requires leaders to consider indirect or second-order effects of decision making. EBM also provides leaders with nonkinetic options for creating effects on the battlefield. For example, enemy attacks on ground-based logistics convoys during Iraqi Freedom caused numerous casualties. To solve this problem, US Central Command utilized airlift to limit ground-convoy missions and generated direct-delivery sorties from hubs in Europe and Kuwait to austere fields in Iraq. Leaders carried out this task without any reference to EBM doctrine; nevertheless, this example illustrates how airlift can achieve desired effects. We should document and integrate such innovations into future doctrine.

EBM requires leaders to analyze interactions in the air mobility system and develop courses of action that produce desirable effects. The first step entails determining critical factors— aspects of a system that have the most influence on effects—which create the most desirable outcomes.³¹ In the ground-convoy example, air mobility generated desirable effects by reducing the number of ground vehicles traveling on Iraqi roads. In this case, friendly ground-vehicle traffic represented the critical factor that air mobility could influence.

After the identification of critical factors, leaders can exploit their characteristics to generate desirable effects.³² Depending on the complexity of the system, one can use tools ranging from statistical modeling to simple intuition to determine system behavior. Most systems in the air mobility realm can be analyzed using basic statistical tools such as normal distribution or standard run-time charts. Gen William Tunner utilized similar tools in World War II to lead the China-Burma-India “Hump” operations, even employing a full-time statistician on his staff.³³ Although such personnel were not available at Ramstein AB in 2004 (see fig. 1), leaders did use basic tools to track mission performance and maximized output of C-17s. For example, the staff analyzed Ramstein’s mission output by means of a simple bar graph. Despite the tool’s simplicity, analysis of system characteristics revealed methods for maximizing output. EBM

tools provide methods for leaders to examine mobility systems critically and understand indirect effects caused by decision making. Tools range in difficulty from the tracking of simple linear trends all the way to stochastic processes used in simulation applications. Ultimately, such instruments will vary, given the capabilities of the leader, allotted time, and resources. Successful use of EBM depends on the leader's ability to determine the right tools that maximize effects. A systems approach to military operations, EBM nevertheless does not always require quantitative techniques because it is also an art. At times, nothing can substitute for personal experience and intuition when it comes to predicting system behavior.

One can best illustrate how to apply EBM by offering employment examples at the tactical, operational, and strategic levels of war. Air mobility operations consist of individual systems that provide output potential. To maximize effect for joint forces, operational commanders must first identify the primary output for these forces. For a deployed C-17 squadron, output is daily missions. To maximize output, leaders must first research and list critical factors that impact performance. A simple relationship diagram can be constructed to capture these interactions.³⁴ Figure 2 depicts a relationship diagram that leaders at Ramstein AB constructed to determine critical factors impacting mission output in July 2004. Using the relationship diagram, leaders identified factors that had the most impact on mission output. Using the maximum performance rate (see fig. 1), they determined that crew transportation was responsible for saturating the Ramstein system. Therefore, these leaders decided to focus more effort toward improv-

ing crew transportation and acquired rental vans for arriving crews. Thus, analysis of critical factors resulted in educated decision making and increased output for joint forces.

EBM also uncovered weaknesses in the local system. Using his personal experiences, the detachment commander decided to focus on aircrews as a critical factor and plotted the number of crews on station. Using the maximum performance rate (see fig. 1), he tracked the number of available crews at Ramstein (fig. 3). The commander determined that from 20 July to 4 August 2004, Ramstein operated with a surplus of three C-17 aircrews, creating waste in the mobility system—a fact confirmed by his intuition because the time between missions for a given crew had increased to two days.³⁵ In this case, the detachment commander reduced waste—defined as any resource in excess of the minimum required that generates effects—by moving surplus crews to a base with a crew shortage.³⁶ Striving for effect, an EBM mind-set encourages leaders to determine critical factors, reduce waste, and maximize effects for joint forces.

Once again, we should note that EBM is also an art. Leaders must use discretion when choosing critical factors and tracking performance. Rather than burying organizations in metrics, EBM focuses efforts on the most influential factors that produce desirable effects. Leaders should use their knowledge and experience to determine three to five critical factors and then assess both direct and indirect effects. If analysis of the critical factor does not maximize effects, it should be discontinued in favor of another critical factor. During the Berlin airlift, General Tunner mastered the art of choosing critical factors that maximized mobility effects.

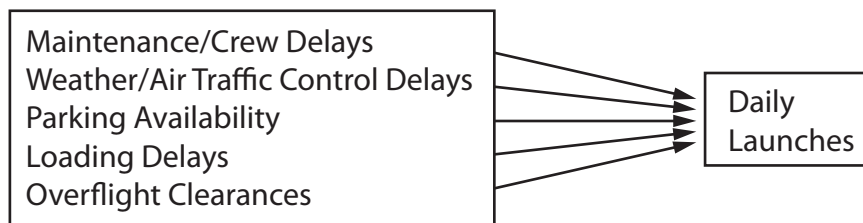


Figure 2. Factors affecting mission output at Ramstein AB

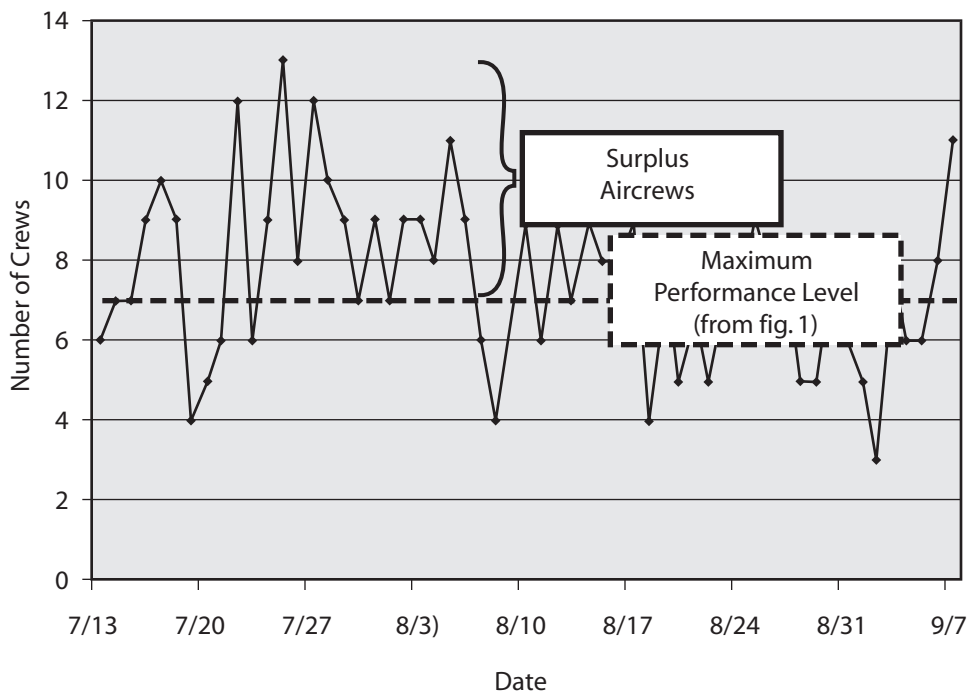


Figure 3. C-17 aircrews on station at Ramstein AB from 13 July to 7 September 2004

For example, Gary Gregorian observes that Tunner developed traveling “snack wagons” on the flight line to keep aircrews closer to aircraft and avoid crew-related departure delays. By concentrating on effects, he increased the output of the mobility system.³⁷

EBM is also robust enough for operational leaders to influence high-level decision making. Leaders at the strategic level of war may not have total visibility of indirect effects in the field. For example, how did the Ramstein detachment commander convince strategic leadership that a reduction in taskings would result in greater throughput? He simply presented figure 1 to members of the TACC and convinced them to support his recommendation. EBM provides tools for tactical leaders to communicate positive effects to strategic leadership. With a renewed focus on effect, EBM will guide leaders to focus on more ambitious goals, such as bypassing intermediate bases.

After EBM shifts our mind-set toward maximizing effects, leaders will advocate techno-

logical advances that bypass intermediate stops. Strategic analysis of air mobility starts with determining the primary effects that air mobility provides joint forces. Simply stated, mobility air forces are responsible for maneuvering armies on a global scale. Although air mobility can provide a wide range of effects for joint forces, time-to-arrival remains the primary effect used by mobility forces to influence the outcome of joint operations. Mobility air forces maximize effects for joint forces by minimizing time-to-arrival. The primary influences on arrival time are ground time, flight time, and aircraft speed:

$$\text{arrival time} = \text{flight time} + \text{ground time } 1 + \text{ground time } 2 + \dots + \text{ground time } N$$

where ground time is time spent on the ground at intermediate stops and flight time is the transit time required for an aircraft to travel a given distance.³⁸ Although flight time can vary, depending on the type of aircraft, it remains

relatively constant for a given distance and speed. On the other hand, en route ground times exert a much greater influence on arrival time. Many of the factors influencing ground time (see fig. 2) are difficult to control. Therefore, one can best reduce arrival time by controlling the factors that affect en route ground time.³⁹ EBM analysis uncovered ground time as a critical factor for joint forces. In order to continue the analysis, let's examine the indirect effects that QDR initiatives will have on ground time.

Using EBM to examine the indirect effects of the QDR mobility plan reveals the possibility of a rise in sustainment costs. The QDR proposes throughput increases by recapitalizing existing aircraft, capping C-17 production, and developing a light cargo aircraft.⁴⁰ However, the current basing strategy drives aircraft designers to develop aircraft, including the advanced cargo aircraft, that operate within the current en route system. Constrained by our doctrinal dependency on intermediate basing, proposed aircraft will achieve only nominal increases in speed and range. The indirect results of the QDR threaten to repeat the stagnation experienced in the 1990s. As stated in the previous section, intermediate bases can prove costly to upgrade and maintain, a fact that will divert crucial funding from the development of advanced transports. In 10 years, intermediate bases will once again incur repair costs with little improvement in global agility. Headquarters AMC also predicted approximately 165 percent overuse of the current air mobility fleet in 2006, resulting in more substantial costs for operations and maintenance.⁴¹

In March 2006, Secretary of the Air Force Michael W. Wynne testified before the Senate Armed Services Committee, reinforcing the indirect effects of current initiatives: "We are exhausting all of our assets at a much higher rate than we had previously forecasted, and maintaining this level with an aging fleet. Rising operations and maintenance costs are creating unyielding second order effects on our investment accounts in acquisition, research and development as a result of the foregoing must-pay bills."⁴² Given current trends, indirect effects of the 2006 QDR will cost us bil-

lions of dollars for aircraft maintenance and intermediate-base infrastructure. With a 13.8 percent decrease in funding projected for 2007, the mobility system is not poised to improve agility for joint forces.⁴³ Existing doctrine supports sunk costs and investments that result in nominal aircraft improvements. Consequently, ground time will continue to serve as a barrier for joint forces.

On the other hand, EBM uncovered speed and range as a strategic solution to the mobility plateau because they will allow development of aircraft that bypass intermediate bases. Industry's current design studies propose semi-buoyant airships (SBA) and BWB aircraft that have the potential to increase range by over 100 percent; furthermore, Lockheed Martin has proposed an aircraft called the global-range transport (GRT), which projects an unrefueled range of 16,000 miles (fig. 4).⁴⁴ However, what prevented full development of this air mobility technology, which was available in the mid-1990s? As previously stated, the primary barriers were doctrinal in nature, resulting from budgetary constraints. But what does our EBM analysis reveal about the indirect effects of this technology?

Unlike the results projected by the QDR, investment in speed and range produces encouraging indirect effects. A 100 percent increase in range would allow aircraft to bypass intermediate stops. Rather than relying on intermediate basing, an effects-based approach suggests elimination of ground time altogether. However, is such a plan feasible or even affordable? With a range of 25,000 nautical miles and a payload capacity of 500 tons, SBAs could relieve stress on intermediate hubs and eliminate intermediate basing for large deployments or humanitarian operations. These airships would reduce arrival time of a 15-vehicle Stryker Brigade Combat Team from 35 to 16 days.⁴⁵ Additionally, the deployment would not require the use of tanker aircraft, thus freeing assets for other missions and enabling utilization of a smaller tanker fleet. The direct-delivery capability of the SBA would allow theater commanders to maneuver forces more quickly, without experiencing delays caused by weather and cargo backlog.⁴⁶ This

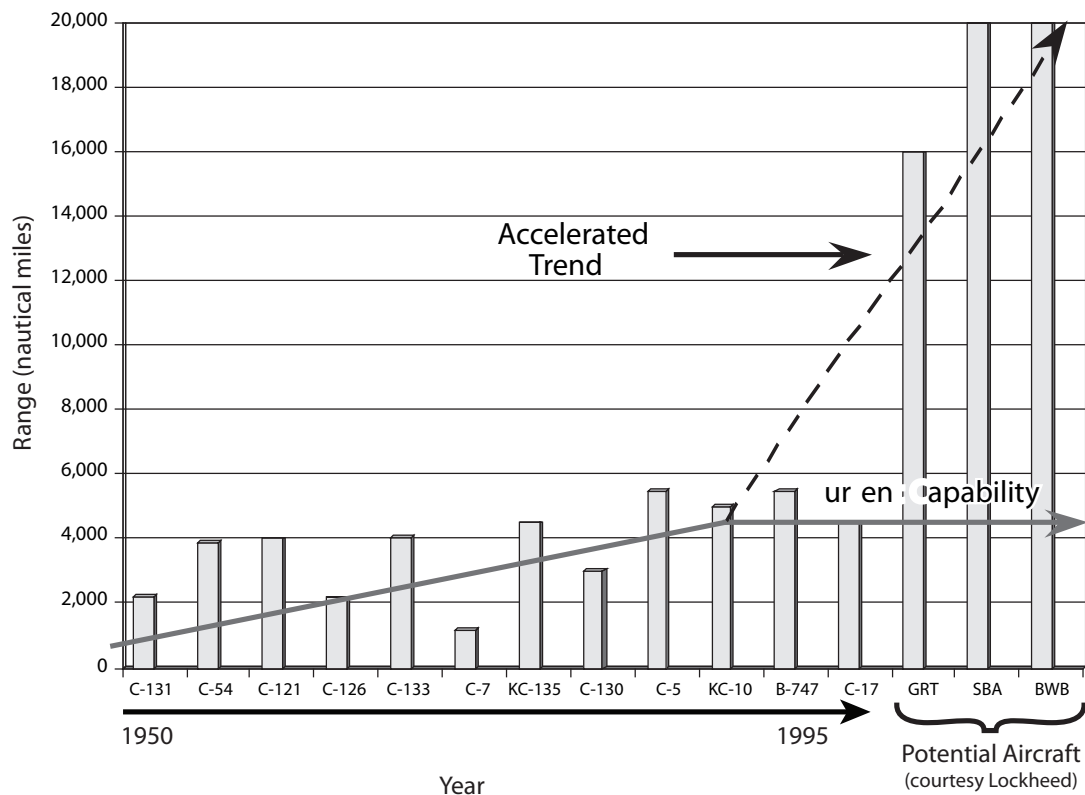


Figure 4. Transport aircraft range since 1950 and industry potential, assuming payload capacity of 30 percent. A payload capacity of 30 percent reduces sensitivity caused by factors such as power plant, specific fuel consumption, and flight regime. This technique is typical of design trade studies commonly used in the aerospace industry. For the trade-study techniques utilized here, see Daniel Raymer, *Aircraft Design: A Conceptual Approach* (Washington, DC: American Institute of Aeronautics and Astronautics, Inc., 1989), 28.

capability would also relieve stress on intermediate hubs and return theater distribution to manageable levels. Improved throughput at hubs would also reduce infrastructure costs for items such as runway repairs. Moreover, the existing aircraft fleet would benefit from extended life and reduced maintenance costs. With unrefueled ranges that exceed half of Earth's circumference, we could plan flight legs almost exclusively in international airspace. Missions could weave through the Mediterranean Sea or proceed around the Horn of Africa. Overflight and basing permission would no longer constrain military planners.

Employing SBAs would also reduce austere-runway maintenance and eliminate the need for extensive runway repair during disaster-relief operations. The survivability of SBAs presents some challenges, but current simulations indicate that they have substantial survivability.⁴⁷ In short, focusing on effects releases our costly dependency on intermediate basing.

An investment of \$4 billion in development would produce SBAs that could transform air mobility because of their potential for increasing agility and simultaneously reducing stress on the mobility system.⁴⁸ Most importantly, we can afford this option. Operating costs for a

fleet of 14 SBAs amount to approximately 43 percent of the cost of operating 21 more C-17s.⁴⁹ Compared to the QDR option, which allocates funding for limited increases in capability, investing in SBAs will yield greater effects for joint forces. With a new mind-set, EBM can bridge the gap between current doctrine and future technology—and break the mobility plateau.

Thirty-Year Transformation: Effects-Based Mobility Enables Global Maneuver

By focusing completely on generating effects, air mobility doctrine will return to the enduring legacy of speed and range to achieve global maneuver for joint forces. However, breaking out of the mobility plateau will require specific goals designed to energize innovation within industry. With an EBM doctrine in place, leaders can build strategic goals that emphasize the generation of greater effects for joint forces. According to Brig Gen Richard C. Zilmer, USMC, “We briefed the Pentagon, Congress, [US Special Operations Command], and the [National Security Council] and were never thrown out. Twenty-five to 30 years from now, the idea is to move a squad-sized unit of Marines to any place on Earth in less than two hours.”⁵⁰ At this point, one is tempted to dismiss this effect as unattainable. However, a closer examination reveals that the primary barrier is doctrinal in nature. Just like the period after Desert Storm, there is a temptation to rely on existing doctrine when funding is limited. On the other hand, use of EBM stimulates doctrinal change and enables new capabilities.

Benchmarking examples from Air Force space programs illustrate how EBM can be used to achieve General Zilmer’s effect. Lessons learned from the global positioning system (GPS) launch program illustrate this concept. Instead of specifying launch platforms, the GPS launch-program office specified the final orbital location of the satellites, leaving launch responsibilities to industry.⁵¹ In this

case, McDonnell Douglas Aerospace opted to develop the Delta II launch vehicle and assumed launch processing and development activities.⁵² In essence, the Air Force focused on producing effects rather than platforms. This approach shifted performance incentives to industry, resulting in a 99 percent launch rate.⁵³ Similarly, AMC can use EBM to stimulate industry to deliver similar effects. Well-defined effects provide a doctrinal framework for technologies previously thought too costly to pursue. In the case of General Zilmer’s concept, the desired effect triggered several proposals from industry. The Air Force Research Laboratory and the Defense Advanced Research Projects Agency recently allocated \$4 million to develop hypersonic transportation for small payloads, and proposed systems are scheduled for full development by 2018.⁵⁴ Without defining air mobility effects, industry can only speculate on future requirements.

EBM bridges the gap between doctrine and technology, but it is not the only application of the doctrine. For example, air refueling has been a mainstay of air mobility doctrine for over 50 years. Although the doctrine is well developed, training pilots in aerial refueling can prove costly, time consuming, and sometimes dangerous. Current proposals to improve air refueling’s boom technology present only nominal gains in capability.⁵⁵ Does current air-refueling doctrine impede technological advancement? To examine this question, consider a notional proposal to reduce training costs for aerial refueling by 50 percent. How will industry react to this proposed effect? Advances in composite structures since 1950 could enable industry to develop receiver aircraft that dock with tankers. Industry could also develop longer booms or fly-by-wire systems that require less precision by receivers to maneuver. Regardless of the solution, it is important to note that industry cannot explore innovative solutions without effects on which to base design goals. In this application, EBM differs greatly from classical effects-based approaches. However, the reduction goal of 50 percent provides a systems approach to improving tanker operations and shows how we

can use EBM concepts to trigger innovation within industry.

Regardless of what mobility platforms will look like in 30 years, transformation of American airlift should be measured by the agility of joint forces and its ability to reduce arrival time. Merging current mobility doctrine with joint effects offers the best way to stimulate technological growth and return to advances in speed and range. EBM will help America overcome the mobility plateau and trigger innovations that restore growth trends experienced prior to Desert Storm.

Conclusion

Given the uncertainty of future conflicts, developing and maintaining the edge in global maneuver should be a top priority for the US military. Transforming American airlift to meet this challenge requires investments that increase the agility of joint forces. Unfortunately, data from the GWOT suggests that America has reached a mobility plateau. Nominal increases in capability, regardless of

the size of the fleet or throughput capacity, will continue to divert funding from advanced concept development. Up until the 1990s, the speed and range of aircraft repeatedly overcame complexities posed by intermediate stops. However, in the 1990s financial constraints established a doctrinal dependency on intermediate basing. The QDR of 2006 suggests some mobility investments but falls short of appreciably increasing global agility. Without a course correction, we expect the emergence of a mobility plateau, possibly allowing competing nations to close the gap in mobility capability. On the other hand, implementing effects-based doctrine could break the plateau and trigger technological advancement. More importantly, EBM will reduce costs because it advocates investments that relieve stress on the mobility system. Leaders at all levels of war can start using EBM tools today. At the same time, merging EBM with existing air mobility doctrine will provide a basis for embedding effects-based approaches with joint operations. EBM will reenergize doctrine in order to focus industry on producing appreciable gains in global maneuver. □

Notes

1. Gen Norton A. Schwartz, "USTRANSCOM" (lecture, Air Command and Staff College, Maxwell AFB, AL, 20 January 2006).

2. The author analyzed the range of 20 major military transport aircraft from 1917 to 1990, including both strategic and tactical aircraft in the study and assuming a payload capacity of 30 percent. The author chose this figure to reduce the sensitivity caused by factors such as power plant, specific fuel consumption, and flight regime. This technique is typical of design trade studies commonly used in the aerospace industry. See "US Military Aircraft," *Federation of American Scientists*, <http://www.fas.org/man/dod-101/sys/ac/index> (accessed 22 November 2005); "US Military Aircraft," *GlobalSecurity.org*, <http://www.globalsecurity.org/military/aircraft> (accessed 23 November 2005); and Daniel Raymer, *Aircraft Design: A Conceptual Approach* (Washington, DC: American Institute of Aeronautics and Astronautics, 1989), 28.

3. Keith A. Hutcheson, *Air Mobility: The Evolution of Global Reach* (Vienna, VA: Point One, 1999), 42.

4. *Ibid.*, 26.

5. The author is specifically referring to the crash of a T-43 in 1996 and the crash of a C-141 in 1997. Considered separately, these incidents did not justify the need for all

avionics upgrades on AMC aircraft, but together they persuaded Congress to commit funding to install the safety-related systems contained on most civilian transports.

6. US Department of Defense, *Report of the Defense Science Board Task Force on Strategic Mobility* (Washington, DC: Office of the Undersecretary of Defense [Acquisition and Technology], August 1996), 13.

7. Headquarters AMC/XPMRP, "Command Data Book" (Scott AFB, IL: Headquarters AMC/XPMRP, 2004), 14.

8. Paul McVickar, *En Route Strategic Plan*, White Paper (Scott AFB, IL: Headquarters AMC/A55, 7 February 2006), 4, 11.

9. Schwartz, "USTRANSCOM."

10. *Ibid.*

11. Air Force Doctrine Document (AFDD) 2-6, *Air Mobility Operations*, 1999, 44. (This document has been superseded by an AFDD carrying the same number and title, published on 1 March 2006.)

12. McVickar, *En Route Strategic Plan*, 21–24.

13. The author compiled this information from personal journal entries and notes made during a mobilization in 2001 as a C-17 aircrew member during Operation Enduring Freedom.

14. USTRANSCOM, *2004 Annual Command Report* (Scott AFB, IL: USTRANSCOM Office of Public Affairs, 2004). In order to handle the tremendous throughput of cargo, we established en route bases in Doha, Qatar; Sigonella, Italy; Bahrain International Airport, Bahrain; Diego Garcia, British territory; and other locations.

15. The author derived this information by reviewing weekly notes and trends observed while performing duties as the chief of current operations and detachment commander during the GWOT. The author deployed to air mobility cells in Diego Garcia; Doha, Qatar; Rhein-Main AB and Ramstein AB, Germany; and Ganci AB, Kyrgyzstan, at various times from 2001 to 2005. Deployments ranged from seven to 60 days. The performance range of 27 to 95 percent was derived by assessing C-17 launch trends at each of these cells. The author acknowledges that the fidelity of data is most accurate at Ramstein, where he examined launch trends in greater depth. Although the trends observed at other cells carried slightly less fidelity, the author considered the information significant enough to conclude that intermediate bases experience large fluctuations in performance during the GWOT.

16. The "contract" flow of 10 missions per day caused frequent frustration with operations officers in the tanker airlift control center. Numerous attempts by the center to gain approval from higher authorities for additional missions often overtaxed the Rhein-Main system, resulting in less throughput.

17. Previous experience from operations at Rhein-Main led the author to examine the "saturation point" of C-17 operations at Ramstein. In order to establish system trends, the author attempted to develop a predictive approach often used in industrial-engineering applications such as statistical process control and queuing theory.

18. Mark F. Johnston, "Lockheed Martin Aeronautics, Future Systems" (presentation to the Air University chapter of the Airlift Tanker Association, Maxwell AFB, AL, 26 January 2006).

19. *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 6 February 2006), 54, <http://www.defenselink.mil/qdr/report/Report20060203.pdf#search=%22%22Quadrennial%20Defense%20Review%20Report%22%202006%22>.

20. Ibid., 53–55.

21. Serope Kalpakjian, *Manufacturing Processes for Engineering Materials* (Menlo Park, CA: Addison-Wesley, 1997), 20.

22. McVickar, *En Route Strategic Plan*, 15, 22.

23. The Department of Defense concurred with the findings of the US GAO report, which concluded that the simulations used in the Mobility Capabilities Study were completed with legacy models that may not have been adequately validated. *Defense Transportation: Opportunities Exist to Enhance the Credibility of the Current and Future Mobility Capabilities Studies*, GAO-05-659R (Washington, DC: GAO, 14 September 2005), 2, <http://www.gao.gov/new.items/d05659r.pdf#search=%22%22defense%20transportation%3A%20opportunities%20exist%22%22>.

24. Johnston, "Lockheed Martin Aeronautics."

25. Maj Whit Canfield, *Background Paper on Operational Control (OPCON) of MAF Forces*, White Paper (Scott AFB, IL: Headquarters AMC/A54, 23 August 2005), 1.

26. See James M. Snead, "Global Air Mobility and Persistent Airpower Operations," *Air and Space Power Journal* 18, no. 3 (Fall 2004), <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/fal04/fal04.pdf>.

27. Quoted in Bruce Rolfson, "Eleven Areas Where the Status Quo Won't Fly," *Air Force Times*, 3 October 2005, <http://esc.hanscom.af.mil/esc-pa/the%20integrator/2005/September/09292005/09292005-13.htm>.

28. Schwartz, "USTRANSCOM."

29. See Joint Warfighting Center Pamphlet 7, *Operational Implications of Effects-Based Operations (EBO)*, 17 November 2004.

30. AFDD 1, *Air Force Basic Doctrine*, 17 November 2003, 98, https://www.doctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd1.pdf.

31. One can consider critical factors analogous to the concept of *critical vulnerabilities*—a term from effects-based operations used in center-of-gravity analysis.

32. Jeffrey L. Whitten, Lonnie D. Bentley, and Victor M. Barlow, *Systems Analysis and Design Methods*, 3d ed. (Boston: Irwin, 1994), 274.

33. William H. Tunner, *Over the Hump* (New York: Duell, Sloan, and Pearce, 1964), 67.

34. Richard B. Chase, Nicholas J. Aquilano, and F. Robert Jacobs, *Production and Operations Management: Manufacturing and Services* (Boston: McGraw-Hill, 1998), 382.

35. According to the C-17 community, two days in between missions constitutes underutilization for a deployed crew.

36. Chase, Aquilano, and Jacobs, *Production and Operations Management*, 325.

37. Gary C. Gregorian, "Major General William Tunner: A Study in Creative and Innovative Leadership during the Berlin Airlift" (Maxwell AFB, AL: Air University Press, June 1997), 70.

38. Air Force Pamphlet 10-1403, *Air Mobility Planning Factors*, 18 December 2003, 3, <http://www.e-publishing.af.mil/pubfiles/af/10/afpam10-1403/afpam10-1403.pdf>.

39. US Congress, *Options for Strategic Military Transportation Systems* (Washington, DC: Congressional Budget Office, September 2005), 9, <http://www.cbo.gov/ftpdocs/66xx/doc6661/09-27-StrategicMobility.pdf>.

40. *Quadrennial Defense Review Report*, 41, 53–55.

41. The value rate of 165 percent was computed by averaging the overfly rates of the C-130, C-17, C-5, KC-10, and KC-135 fleet of aircraft as reported by Headquarters AMC/A4 to Air Command and Staff College, Maxwell AFB, AL, on 13 February 2006.

42. Michael W. Wynne, secretary of the Air Force (address to the Senate Armed Services Committee, Washington, DC, 5 April 2006).

43. Headquarters AMC/A4 reported funding information during an address to Air Command and Staff College, Maxwell AFB, AL, 13 February 2006.

44. For the projected range values for the GRT and SBA, see Johnston, "Lockheed Martin Aeronautics." For information on General Dynamics Design's (a subsidiary of Lockheed Aircraft Systems) BWB aircraft, see Snead,

"Global Air Mobility." The GRT, SBA, and BWB ranges were adjusted to reflect a payload capacity of 30 percent in order to provide a baseline for comparison with the performance of existing aircraft. This technique is typical of design trade studies commonly used in the aerospace industry. For trade-study techniques, see Raymer, *Aircraft Design*, 28.

45. US Congress, *Options for Strategic Military Transportation Systems*, 32.

46. *Ibid.*, 38.

47. See Col Walter O. Gordon and Col Chuck Holland, "Back to the Future: Airships and the Revolution in Strategic Airlift," *Air Force Journal of Logistics* 29, no. 3/4 (Fall/Winter 2005), http://www.afjma.hq.af.mil/lgi/Vol29_No_3-4_WWW.pdf.

48. US Congress, *Options for Strategic Military Transportation Systems*, 32.

49. *Ibid.*, 42.

50. Quoted by Jess Sponoble, Air Force Research Laboratory, "Trans-Atmospheric Aircraft Demonstration" (presentation, Defense Advanced Research Projects Agency, 28 November 2005).

51. Mark C. Cleary, *The Cape: Military Space Operations, 1971 to 1992* (Patrick AFB, FL: 45th Space Wing, History Office, 1992), chap. 3, sec. 2, <http://www.globalsecurity.org/space/library/report/1994/cape/Capetoc.htm>.

52. *Ibid.*

53. Edward Balkan, *Delta II 200th Launch*, McDonnell Douglas Space Systems Company Video Communications, 15 min., 1992, videocassette.

54. Sponoble, "Trans-Atmospheric Aircraft Demonstration."

55. Christopher Bolcom and Jon Klaus, *Air Force Air Refueling Methods: Flying Boom vs. Hose-and-Drogue*, Congressional Research Service Report for Congress (Washington, DC: Congressional Research Service, 11 May 2005), 6–7.



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Service before Self or Self-Service?

Some Fodder for Your Reading on the Professional Ethics of Air Warriors

DR. DAVID R. METS*



MORE THAN MOST or all other professions, the military demands serious moral thought from its practitioners. Doctors deal with life-and-death issues but generally with only one life at a time; *you*, the warrior-leader, may

be concerned with decisions that could cost hundreds or thousands of lives at a single stroke. Lawyers are sometimes concerned with the protection of important economic assets; *you*, the warrior, must consider the conservation of America's most precious assets—the

*I have been greatly assisted in the preparation of this article by Col Larry Carter, USAF, retired, and Col Barbara Faulkenberry, whose comments have substantially improved the review; the remaining faults are all my own responsibility.

lives of her sons and daughters. No other professionals must kill people in service of the state and at the same time risk their own lives. Individuals endlessly quote Gen Sir John Hackett as having said that bad people can be good doctors or lawyers, but “what the bad man cannot be is a good sailor, or soldier or airman.”¹

How do you know how to be such a good person? If you have never met a bad one in the service, then you have not been in very long. They come in all ranks and jobs. Some of the sources of moral knowledge are obvious: you can learn it at your mother’s knee, in school, in church, or even from pals on the street. For openers, good warriors should have all the ethical virtues expected of their fellow citizens. They should not lie, cheat, steal, break promises, or fail to respect the lives of all other souls. But we demand more of these warriors than the common decency expected of all good citizens. From boot-camp days forward, they receive training in developing physical and moral courage, taking care of the people they lead, and knowing and following the laws of war in combat. Many people, including Sam Sarkesian, assert that the professional officer must also be a “gentleman.”² It may sound quaint these days, but kindness, consideration for the weak, good manners and dress, and social graces cannot hurt.³

Dictionary Definitions

Ethics: A system of moral principles.

Moral: Of, pertaining to, or concerned with the principles of right conduct or distinction between right and wrong.

Integrity: Adherence to moral and ethical principles.

A warrior can learn much of that from the various codes declaring a service’s core values, the *Uniform Code of Military Justice*, the US Constitution, and all the associated laws and regulations flowing from it. We expect Airmen to

obey all orders—lawful ones, that is—and they must know the difference between the lawful and the unlawful. Laws and codes, however, cannot predict every moral dilemma faced by warriors. The good ones will undoubtedly face dilemmas that require a decision between the lesser of two evils—and never more painfully than when choosing to disobey an illegal order.⁴ How can they be sure that the order-giver does not have facts unknown to the rest of the force or be sure that the leader does not have a better grasp of the law than the followers? No one is morally perfect; no one can know everything all the time. How can individuals work to make themselves as close to truly good people as possible?

They will never do it by reading alone. Education and training may have some effect. Philosophers vary in thinking that good instincts can have a genetic origin. Too, some are “absolutists,” condoning no compromise and believing that a set of universal principles or truths applies to all societies and cultures. Others are “relativists,” arguing that moral choices vary with the circumstances, that no universal truths exist, and that choices must vary with the situation one faces.⁵ Many are somewhere in between those extremes. Experience may assist you, but reading may also do a bit to help you anticipate some of the dilemmas you may face as an air leader as you progress in your career—and to think about problems in advance. In combat, time and emotions may prevent you from deliberating your actions in detail. Hopefully, a good person’s ethical baseline, previously formed with time to fully consider the options and consequences, will improve the odds of making urgent choices that are morally sound.

As with previous “Fodder” articles, I wish to help you build a professional reading program by reviewing a few important books related to professional ethics. I then propose a 12-book sampler that may help you select works to examine as a part of your own effort. The books reviewed include James H. Toner’s *Morals under the Gun*, Thomas E. Ricks’s *Making the Corps*, Vice Adm James Bond Stockdale’s *Thoughts of a Philosophical Fighter Pilot*,

Malham M. Wakin's *Integrity First*, and Martin L. Cook's *The Moral Warrior*.

Morals under the Gun: The Cardinal Virtues, Military Ethics, and American Society by James H. Toner. Lexington: University Press of Kentucky, 2000.

James Toner was brought up in a New England family of Irish descent. His ancestors migrated to the United States during Ireland's famous potato famine in the middle of the nineteenth century and, like most immigrants, had a rough time during the first years. Dr. Toner, however, came along later, graduating from high school in the 1960s and proceeding all the way through graduate school, earning a doctorate. An Air War College professor for about a decade and a half, he recognizes that dilemmas exist and that no one is really free from sin, but he leans toward the absolutist side of the philosophical house. He describes another category slightly removed from that side as "universalists," who do believe in a set of universal principles but who also recognize that sometimes the dilemmas require even a good person to choose the lesser of two evils. Sinners are not generally beyond redemption so long as they try to do good and improve. A Catholic, Toner does not hesitate to cite religious sources in his work, declaring that even for nonreligious moralists, many of their moral beliefs have their origins in religion. He makes clear, however, that military people must not proselytize among their colleagues and juniors, regardless of their own beliefs.

Toner thinks that the Air Force's core values—integrity first, service before self, and excellence in all we do—are too general and, thus, of limited help.⁶ He offers up the four cardinal virtues—prudence, justice, courage, and temperance—as a better organizing theme for his book and our thought, devoting a chapter to each of them and keeping them prominent throughout the book. Toner begins by seeming to advocate the extreme relativist view as the way for military officers to go—an effective, attention-getting literary de-

vice. Full of crass self-service ideas and devoid of moral principles, it is sure to raise the hackles of most people.

After explaining himself at the beginning of chapter 2, he then goes on to explore a preference for universalist thinking, close to the absolutist end of things. Not as hard over on the idea as some thinkers, he does believe that a leader who is corrupt in his private life will sooner or later fail in his official life as well. I agree with him that all officers must be teachers and that, to remain effective, professors should also be moral people. However, he believes that advancement in the academic world does not demand good character as a prime requirement—and regrets that very much. In his mind, as in my own, the example set by both officer and professor is crucial to leading and teaching. Although he recognizes that the value systems of the military and the parent culture have grown further apart, that fact does not disturb him. He sees no threat to democracy there, feeling that the military can set a good example for the rest of us without usurping the role as society's moral arbiter by pressing its values onto the general public.

Sarkesian and many others long ago recognized, though, that one cannot divorce the military value set from that of the society from which it springs. All militaries are necessarily the products of their societies, and since ours springs from an egalitarian and a democratic one, the military must acknowledge that in its core values and leadership practices.⁷ Prior to 1976, the military value system opposed the admission of women to service academies or combat jobs—undoubtedly by a wide margin. Painful as it was to some, the values of the parent society called for their admission. In fact, as with racial integration, the military also led society into the practice of gender equality—a fact worth pondering both within the service and without.

To some warrior-scholars, *Morals under the Gun* may seem more prolix than necessary, and some may grow weary of the degree to which the author builds his case with citations from a host of philosophical and religious authorities. Toner yields no ground to those who

think that temperance might prove more difficult for some than for others because they have a genetic predisposition to alcoholism and gluttony. Likewise, some may feel that bone structure alone can limit athleticism, making it harder for some to stay in shape than it is for Dr. Toner and others. Still, you might want to put this worthy book on your reading list—and save enough time to ponder its arguments.

Making the Corps by Thomas E. Ricks. New York: Scribner, 1997.

Thomas Ricks, a young reporter for the *Wall Street Journal* who deployed with the US Marine Corps to Somalia in 1992, is a splendid writer whose style you might want to emulate.⁸ He does not pull any punches, and he admires the Marine Corps and marines. Yet he knows that bad marines exist and has concerns that the culture of the Corps has moved further from the values of the parent society than have the cultures of the other services. Marines, he says, have a moral system that they consider much superior to that of America, and they are driven more than members of the other services by the need to serve. Their declared code—commitment, honor, courage, and expert knowledge—resembles that of the other services. Ricks believes that because of its small size and expeditionary nature, the Marine Corps has had to make fewer adjustments than the other services to deal with problems of the post-Cold War world.

I share his admiration of the Corps. However, he seems to fear that among the services the Marines are the most likely to forget about subordination of the military to civilians. I don't agree. Also, he may have missed the point that the Marines, alone among the services, have a great part of their research and development as well as their logistical work done for them by the Navy and other services. Ricks knows that those very functions are the most civilian-like in the military; thus, the Corps may find it easier to approach warrior purity than the rest of us. I strongly recommend *Making the Corps*—a fine book and a good read—but Ricks leans toward the relativ-

ist side of things, worrying that the military value system has become too far removed from the parent culture's liberal values. He agrees with Richard Kohn, among others, that this may become a threat to our democracy.⁹ I do not agree—and neither does Dr. Toner.

Thoughts of a Philosophical Fighter Pilot by James Bond Stockdale. Stanford, CA: Hoover Institution Press, 1995.

As a former AC-130 pilot in the 388th Tactical Fighter Wing, I already knew that the title *Thoughts of a Philosophical Fighter Pilot* is not necessarily a contradiction in terms. It may make others wince, but some authors have noted that there is no such thing as a "military culture." Rather many such cultures exist, each having much variety. Like Ricks, our brethren in the media have a tendency to stereotype the military in a way altogether inappropriate for practically all other groups. I knew of one impressive philosopher in the 388th's F-4 Phantom squadron, and there probably were others. I did not know James Bond Stockdale, but I wish I had. By all reports, he came as close to being an officer and a gentleman—as well as an air warrior/scholar—as one could wish. Graduating from the Naval Academy with Pres. Jimmy Carter in 1946, he spent his professional life as a carrier fighter pilot, test pilot, and, finally, president of the Naval War College.¹⁰ He had a graduate degree from Stanford and won the Medal of Honor as a result of his leadership in the Hanoi Hilton prisoner of war (POW) camp in Vietnam. When Stockdale died in 2005, his funeral at the Naval Academy Chapel—a gripping ceremony indeed—was broadcast on C-SPAN.

Thoughts of a Philosophical Fighter Pilot anthologizes Admiral Stockdale's speeches, articles, and interviews. Many of his thoughts have to do with life and state of mind in the prison camp—worthy reading for all Airmen. An honorable man and a great leader, he clearly believed in his profession, recognizing loyalty to his fellow prisoners and theirs to him as the paramount motivation necessary to survival. That insight resonates with literature on the theory of combat motivation—people fight

because they do not want to let down their buddies, the other members of their own unit.¹¹ Obviously, he also knew that resistance to their torturers was not a black-and-white situation—that circumstances at the Hanoi Hilton placed the Eisenhower years' old code of giving only name, rank, and serial number beyond human capability. Furthermore, he believed in resisting until one suffered "significant pain" and believed in lying to the enemy. In a couple of places, he at least implies that the leadership of some of the most senior Air Force officers in the prison camp did not rise to the level of those from the Navy. Certainly, those of us who have not had the experience cannot make judgments on that point, but it does give some food for thought. However, his script for the video about Lance Sijan's ordeal and the posthumous awarding of the Medal of Honor could not have been more reverent.

During Admiral Stockdale's tenure at the Naval War College, his last tour on active duty, he created a stir by bringing in philosophical studies, including detailed reading on the ancients—apparently with good results. Although engaging, his book does involve a good bit of redundancy—fairly typical of anthologies. You might want to read another of his works instead: *In Love and War: The Story of a Family's Ordeal and Sacrifice during the Vietnam Years* (New York: Harper and Row, 1984), co-authored with his wife, Sybil. In the end, perhaps you will agree that he was a highly principled man but not a hard-over absolutist.

Integrity First: Reflections of a Military Philosopher
by Malham M. Wakin. Lanham, MD: Lexington Books, 2000.

Malham Wakin was already teaching at the Air Force Academy when I joined its faculty in 1963. A standout even then, he has speaking and writing skills worthy of emulation. As a collection of his speeches and articles, his book *Integrity First*, like Admiral Stockdale's, suffers from some redundancies. Wakin undoubtedly considers his own discipline—philosophy—one of the primary elements that distinguishes a military-academy education from all other college programs. He probably

leans more toward the absolutist side of things than does Ricks and even Stockdale. Initially trained as a navigator, he arrived at the academy as a first lieutenant and has spent most of the rest of his professional life there, aside from a short tour in Vietnam. He earned his undergraduate degree in mathematics from Notre Dame and his PhD from the University of Southern California.

In his survey of world philosophies, Wakin seems persuaded that the Western tradition arising from both the ancients and the Judeo-Christian religions is more progressive than most others. He argues that this tradition, though probably conducive to material progress and scientific advance, does not seem to yield the same tranquility of soul as do Eastern religions. Too, he does fear that some of the most extreme extensions of Western philosophies can lead to totalitarianism and injustice. Wakin remarks that his early efforts (and those of his colleagues) made the subject of philosophy too esoteric to have much meaning for undergraduates, many of whom were mainly interested in technology and flying.

Like many other authors, Wakin regrets the migration of the parent culture toward the relativist side of things. Unlike many of them, though, he does not think that the military culture should follow in that direction. As we noted above, Kohn and Ricks, among others, argue that the widening gap between the two is dangerous for American democracy in that it may portend the military's departure from the ancient tradition of civilian control. Wakin does not seem to agree that such a danger really exists, persuaded that the military cannot do its job if its values only reflect those of the marketplace.¹² He knows well that since ancient times people have often been motivated by self-service; however, he remains convinced that motivation involves more than that. Without one of the Air Force's core values—service before self—at least in times of mortal danger, we would have ceased to exist long ago. We have too much real evidence on the point to think otherwise.

Finally, Wakin explicitly comments on one issue that evokes varying views from military moralists. Some hold that official morality and

private morality are two different spheres—that one can be trustworthy in the former but otherwise in the latter. Wakin contradicts that notion by declaring that a leader should set the example in both areas. If your family cannot trust you, why should your copilot do so?²³ Although I consider *Integrity First* a worthy read, you might find another of Wakin's prominent works, *War, Morality and the Military Profession*, 2d ed., rev. and updated (Boulder, CO: Westview Press, 1986), more useful since it offers a sense not only of his thinking but also that of several other authorities in the field.

The Moral Warrior: Ethics and Service in the U.S. Military by Martin L. Cook. Albany: State University of New York Press, 2004.

A civilian professor of philosophy at the Air Force Academy, Martin L. Cook apparently wrote most of *The Moral Warrior* while teaching at the Army War College at Carlisle Barracks, Pennsylvania, deriving the greater part of its contents from many of his papers and book chapters published elsewhere. Like a great deal of the literature on morality and war, his book focuses not on the undergraduate (micro or tactical) level but principally on the war-college (macro or strategic) level, that is, what constitutes a just declaration of war and how one can fight it in a moral or just manner—the concerns of higher leadership. The other part of the literature seems to concentrate more on the micro or tactical level—the characteristics and methods of junior leadership. Both are important to relativists and absolutists and all those in between.

Like many others immersed in the discipline of philosophy, Cook seems to have a fondness for the classics—for example, his introduction is about the Peloponnesian War as described by Thucydides in a book so massive that one can find in its pages justification for practically anything. Notwithstanding his half decade of service at the Army War College, he does not seem to have shaken off his “ivory tower” coloration. The entire chapter is a sermon on the dangers of the United States becoming the second Athens—a sole superpower that ruins itself on overexpansion. By

attempting to impose its morals and culture, Athens came to grief on the rocks of Sicily. The analogy he draws with the present US expeditions to the Middle East has some appeal, but we all know that such a device can be deceiving. Whatever Ho Chi Minh was, he was not another Hitler, and Vietnam was not a replay of the Korean War.

Even in the preface, Cook reveals his tendency toward relativism. As do Kohn and Ricks, he laments that the military seems disproportionately Republican and shares their worry that officers (as well as enlisted members) now vote Republican in large numbers. He is seemingly oblivious of the fact that university faculties, especially those on the social sciences and humanities side of the house, vote disproportionately for the Democratic Party—far more so than the general public. According to Cook, the military vote should “raise concern, if not alarm,” but I am puzzled by the fact that the same phenomenon in academia does not trouble him. Like Kohn, he seems to think that although soldiers are almost always citizens long before they are military people, their voting smacks of something illegitimate—another puzzle for me. He further laments that the military has increasingly become a family affair. But what else would one expect in the absence of a draft and a serious national emergency? Academia had as much to do with ending the draft as did any other element of our society, and for its members to complain now that the military is becoming “too military” simply lacks legitimacy. Is it not also true that having a father (especially a rich one) who graduated from Harvard helps immensely in gaining admission to that institution? At many universities, professors' offspring can attend tuition free, creating an incentive for many of them to follow in their parents' footsteps.

Cook also reveals his partisanship and ideology in his criticism of the United States in its abrogation of the Antiballistic Missile Treaty and its refusal to make US soldiers subject to an international criminal court. He seems to think that we are gradually moving toward a universal republic to replace the Westphalian state system, but that has been a long time

coming. The European Union has tried to bring unity and equality to the Continent for many decades, but nationalism is far from dead there—in general all European states share a common Western culture. The idea that cultural divergences, well described by Mal Wakin, will not forever prohibit such a world state seems outlandish to me. Finally, Cook bemoans the fact that the United States has insufficiently funded the United Nations without recognizing the other side of that argument.

In the first chapter of *The Moral Warrior*, he deals with just-war theory—both the decision for war and decisions in war. Though not of immediate concern to cadets and midshipmen as well as majors and lieutenant colonels—and those who teach them—undergraduate and professional military education generally covers the rudiments of the theory. A just war must be one of last resort, motivated by self-defense or defense of legitimate rights, conducted with a reasonable chance of success, and waged by means proportionate to the expected outcomes. In olden days, even in the United Nations Charter, what went on inside a state's borders was its own business—state sovereignty remained sacred. Since the Holocaust, however, sustaining humanitarian rights has increasingly become a just cause for violating state sovereignty—as in Kosovo.¹⁴ To qualify as justly conducted, combat operations must recognize the immunity of noncombatants, proceed with means proportionate to the expected military ends, afford POWs humane treatment, and prohibit the use of noncombatants as hostages or shields. Collateral damage to noncombatants and property is permissible only when such damage is unintentional and incidental to attacks on legitimate targets in the vicinity; furthermore, the means must be proportional to the ends sought.

Without a doubt, armed forces have often violated those rules in war, and in any case one finds many gray areas subject to interpretation. American submarine commanders conducted the same kind of warfare against Japan as did the Germans against the Allies, but only Nazi admiral Karl Doenitz got locked up for the violation. We now find ourselves in a limited-war era where the rules count for more. Con-

sequently we assign lawyers to air and space operations centers to help commanders decide the justness and legality of attacking a specific target or undertaking a given operation. Still, Cook declares that the increasing humanitarian interventions offer evidence of the Westphalian state system's gradually becoming obsolete in favor of a more globalist procedure and structure. Most of that, however, resides above the pay grade of all of us, save perhaps a dozen or so officers serving either on the Joint Chiefs of Staff or as regional commanders. Even they can only advise on such things, not decide.

At a lower level, Cook makes some observations that concern a greater number of military professionals. One has to do with avoiding obedience of illegal orders by questioning the ordering authority, obeying the order if the leader persists, or resigning instead of obeying the command. Part of the problem for him concerns the fact that the Army is not retaining junior officers at former levels, allegedly because the trust between juniors and seniors has diminished. That is a matter of degree, of course, but one must acknowledge the danger of idealizing a past that never really existed. We have always had obtuse colonels, but Cook thinks that the division has become more pronounced—even more so than in the days of the draft. I wonder about his explanation for this phenomenon—that the old system of mentoring has diminished—because in 30 years' service ending in 1979, I truly do not recollect ever having been mentored by any of my seniors.¹⁵ The days of Gen Fox Conner taking a personal interest in the education of the young Dwight Eisenhower seemed gone forever in the parts of the Navy and Air Force in which I served.¹⁶ That may have implications for both the cohesiveness and professional expertise that Samuel Huntington describes as essential to military professionalism.¹⁷

Cook deals with the "last resort" element of just-war theory by suggesting that new technologies may have a detrimental effect. Promising political effects with much less risk to Americans than heretofore makes the initiation of war much more thinkable. He frankly admits, though, that history suggests that the

military does not consider such a situation a problem because soldiers have been much more loath to go to war than has the civilian leadership.

It seems to me that Cook is a little shaky when it comes to the history of airpower. He asserts that Linebacker II resulted in extensive civilian damage, but about the same number of civilians died in 11 days during that operation as lost their lives in a couple of hours during the terrorist attacks of 11 September 2001 (approximately 3,000). Compared to the tens of thousands of civilians who died in the Rape of Nanking, the bombing of Hamburg, the firebombing of Tokyo, and the atomic attacks on Hiroshima and Nagasaki, that does not amount to extensive damage. Too, he asserts that the coalition largely followed John Warden's plan in a strategic attack on Iraq in 1991, which did not exercise sufficient care regarding the killing of civilians. However, only about 10 percent of the bombs really went against "strategic" targets; by far, coalition aircraft dropped the greatest number on tactical objectives. Further, Warden makes very clear in his book and several articles that the deliberate targeting of population, one of his "five rings," remains out of bounds for a democracy. When the enemy deliberately places his citizens at risk at an obvious military target, the just-war tradition asserts that he must accept the blame for civilian losses that occur.¹⁸ Cook cites Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force*, 1992, as evidence of insufficient discrimination, noting its declaration that "early airpower theorists" aimed to undermine the capability and

will of the enemy to continue resisting. Those theorists are all dead now. That objective held true into World War II in some cases, but no longer applied in Operation Desert Storm or in the cited manual.¹⁹

On page 146 of his superficial chapter on the morality of strategic bombing, he observes that "the B-2's far greater *ordnance* capacity" (emphasis added) enhances its capabilities. (If the "ordnance" dropped by B-2s on the enemy is written by my county commission, that must *really* strike fear into the enemy's heart!) Despite Cook's good writing style, he was poorly served by his editors in the final preparation of the manuscript since this example is but one of too many careless mistakes that readers encounter in his book.²⁰ The chapter in question, evidently written to emphasize the limits of strategic airpower, seems out of place and implies an assumption that the Air Force consists of a band of strategic-bombing fanatics—a notion far from the truth. We have thousands of tactical fighters and air-mobility aircraft—but fewer than 200 long-range bombers and no new ones in sight.

In the end, readers of *Air and Space Power Journal* will find Cook's work useful, especially its expression of some views contrary to the Air Force's usual beliefs. It will not help much in the day-to-day concerns of those of you who are cadets or lieutenants, but it could become part of your longer-range education by clarifying your thinking—perhaps through accepting some of his ideas and rejecting others. Finally, I close this article with a sampler for your professional reading on the subject at hand.²¹ □

A 12-Book Sampler for Your Reading on Professional Ethics

Two for the Overview

The Soldier and the State: The Theory and the Politics of Civil-Military Relations by Samuel P. Huntington. Cambridge, MA: Belknap Press of Harvard University Press, 1957.

If you read only a single book on your profession, make this the one—a classic by one of America's most distinguished intellectuals.

The Professional Soldier: A Social and Political Portrait by Morris Janowitz. Glencoe, IL: Free Press, 1960.

Authored by a giant of scholarship from the University of Chicago, this study needs to be on your required reading list.

Ten for Depth and Mastery

Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War by James Kitfield. New York: Simon and Schuster, 1995.

This highly readable book, not wholly about the ethical dimension of things, is the work of a journalist familiar in a general way with all the military services. His main explanation for the failure in Vietnam involves moral shortcomings; he also addresses how young officers who served there reformed the system and made the all-volunteer military work. Kitfield uses a biographical approach based heavily on interviews.

Morals under the Gun: The Cardinal Virtues, Military Ethics, and American Society by James H. Toner. Lexington: University Press of Kentucky, 2000.

This work by an Air War College professor leans toward the absolutist side of things.

Thoughts of a Philosophical Fighter Pilot by James Bond Stockdale. Stanford, CA: Hoover Institution Press, 1995.

The product of a US Naval Academy graduate of 1946 and former POW, this book collects his writings and speeches.

Beyond the Battlefield: The New Military Professionalism by Sam C. Sarkesian. New York: Pergamon Press, 1981.

The author, a Chicago sociologist and an experienced Army officer, examines the problems of professionalism in the wake of Vietnam but before the end of the Cold War. He concludes that the new professionalism must deal with more than military matters—it must understand social and political factors as well.

Honorable Warrior: General Harold K. Johnson and the Ethics of Command by Lewis Sorley. Lawrence: University Press of Kansas, 1998.

This study, authored by a third-generation West Pointer, examines a man who spent almost all of World War II in a Japanese prison camp, fought hard in Korea, and wound up chief of staff of the Army during Vietnam—a splendid case study on practical ethics at all levels.

Neither Athens nor Sparta? The American Service Academies in Transition by John P. Lovell. Bloomington: Indiana University Press, 1979.

Written by a West Point graduate of 1955 who later earned a PhD from Indiana University, this book is a little dated now but provides good background on the role of the service

academies in military professionalism. It also offers a useful conceptual framework for studies of the subject.

First Class: Women Join the Ranks at the Naval Academy by Sharon Hanley Disher. Annapolis: Naval Institute Press, 1998.

The author, a female member of the US Naval Academy class of 1980 and by no means a rabid feminist, is a good writer who supplies important insights into the changing nature of the military profession.

Proud to Be: My Life, the Air Force, the Controversy by Kelly Flinn. New York: Random House, 1997.

The author, who needs no introduction, has written a book that stands in stark contrast to Disher's, above. A quick read, it may provide a snapshot about changing motivations at the entry level of the profession. She claims that she isn't a feminist and that she loves the Air Force, but there is room to doubt both statements.

Moral Issues in Military Decision Making, 2d ed., rev., by Anthony E. Hartle. Lawrence: University Press of Kansas, 2004.

A West Point professor experienced in military operations, Hartle deals with the various ethical systems that affect the training and employment of military organizations and pays attention to both macro- and microlevels of concern.

The Moral Warrior: Ethics and Service in the U.S. Military by Martin L. Cook. Albany: State University Press of New York, 2004.

The author of this book is an Air Force Academy professor with leanings toward the relativist side of things.

The 13th in a Baker's Dozen

The Challenge of Command: Reading for Military Excellence by Roger H. Nye. Wayne, NJ: Avery Publishing Group, 1986.

Written by a combat soldier-scholar for combat soldiers, this tome inspired my entire series of Fodder articles. Nye offers solid substance on ethics and writes in language that the serving officer is certain to find attractive.

Notes

1. Gen Sir John Winthrop Hackett, "The Military in Service of the State," in *The Harmon Memorial Lectures in Military History, 1959–1987*, ed. Harry R. Borowski (Washington, DC: Office of Air Force History, 1988), 523; and James H. Toner, *Morals under the Gun: The Cardinal Virtues, Military Ethics, and American Society* (Lexington: University Press of Kentucky, 2000), 20, quoting the same original source.

2. Sam C. Sarkesian, *Beyond the Battlefield: The New Military Professionalism* (New York: Pergamon Press, 1981), 203; and Malham M. Wakin, "The Ethics of Leadership," *American Behavioral Scientist* 19 (June 1976): 571, among others.

3. A subject practiced at the Air Corps Tactical School in the 1920s, equitation was taught at West Point until after World War II. When I entered the Naval Academy in 1949, I took dancing as part of the training in gentlemanship. Such endeavors are no longer required to fit the definition.

4. For a good discussion of the dilemmas involved, see Dr. Philip M. Flammer, "Conflicting Loyalties and the American Military Ethic," *American Behavioral Scientist* 19 (June 1976): 589–604; or Malham Wakin, "Ethics of Leadership," 576, in the same issue of that publication.

5. Sarkesian, *Beyond the Battlefield*, 11, credits Morris Janowitz with that construct and explores it a bit. See also

Anthony E. Hartle, *Moral Issues in Military Decision Making*, 2d ed., rev. (Lawrence: University Press of Kansas, 2004), 6.

6. *United States Air Force Core Values* (Washington, DC: Department of the Air Force, 1 January 1997), <http://www.usafa.af.mil/core-value/cv-mastr.html>.

7. Sarkesian, *Beyond the Battlefield*, 207; and Hartle, *Moral Issues*, 28.

8. Ricks, who won a Pulitzer prize, is now a journalist for the *Washington Post*.

9. Thomas E. Ricks, *Making the Corps* (New York: Scribner, 1997), 286. See Richard Kohn, "Out of Control," *National Interest* 35 (Spring 1994): 3–17, which contains his original argument. A former historian of the Air Force and now a professor at the University of North Carolina–Chapel Hill, he visited the School of Advanced Airpower Studies shortly after the article was published to conduct a seminar for 25 field-grade students, many of them Air Force Academy graduates. It resulted in one of the more spirited seminar debates that year, and shortly afterwards he delivered his message as keynote speaker at the annual meeting of the Society for Military History. James Schlesinger, the former secretary of defense, who introduced the speaker, did not agree that the military threatened civilian supremacy.

10. His class standing was not quite as high as President Carter's, but he was in the upper quartile. United States Naval Academy Alumni Association, *Register of Alumni, Graduates, and Former Naval Cadets and Midshipmen* (Annapolis: Association Publishers, 1991), 281–82.

11. John P. Lovell, "Professionalism at the Service Academies," *American Behavioral Scientist* 19 (June 1976): 613.

12. Back in the 1970s, Charles Moskos, a sociologist at Northwestern University, developed a model from his surveys of Army people that divided the force into "occupationalists" and "institutionalists," the former driven by marketplace values (wages and working conditions) and the latter by institutional factors such as duty, honor, country. The idea had some appeal, even to the Air Force, but I consider it an oversimplification—a false dilemma to some degree. It seemed (and seems) to me that there is no reason why warrior-scholars of institutionalist commitments could not also wish to leave their families well provided for in case they lay down their lives for their country. Here some similarity exists between occupationalist and relativist on the one hand and institutionalist and absolutist on the other. See Charles C. Moskos Jr., *The American Enlisted Man: The Rank and File in Today's Military* (New York: Russell Sage Foundation, 1970).

13. He also makes this point in "Ethics of Leadership," 575.

14. Hartle, *Moral Issues*, 51.

15. The one exception that comes to mind occurred during my plebe year at Annapolis in 1949. An ensign came into my room and asked me what I was going to do when I graduated. I declared that I would become a carrier pilot. He proceeded to lecture me (at just about the time the USSR detonated its first nuke) on this foolish notion of mine, for the real leaders would do all they could to serve with cutting-edge battleships!

16. I performed my enlisted service in an aircraft-maintenance unit; as a commissioned officer, I worked in tactical airlift, strategic airlift, gunship operations, Strategic Air Command air refueling, and academia. Evidence in the literature indicates that it may have been different elsewhere. To cite a couple of examples, Gen Wilbur Creech is said to have made considerable deliberate efforts at mentoring future commanders, and it is quite clear that Gen Jerome O'Malley received a good bit of mentoring or sponsorship as he moved on up until he met his tragic end in an aircraft accident.

17. Samuel P. Huntington, *The Soldier and the State: The Theory and the Politics of Civil-Military Relations* (Cambridge, MA: Belknap Press of Harvard University Press, 1957), 8–10.

18. One can point to the incident involving the al Firdos bunker during the Persian Gulf War as an example, yet few have blamed the Iraqi commanders for having put their own civilians inside a military fortified bunker. In his book *The Air Campaign: Planning for Combat* and elsewhere, Warden claims that the elements of all adversaries can be depicted in five concentric rings: leadership, industry, infrastructure, population, and fielded forces. In general, he claims that one can achieve the most decisive results against the leadership and, oftentimes, the earliest ones from attacks on the outermost ring—the fielded forces.

19. True, executing NATO's doctrine concerning the first use of nuclear weapons would have killed millions of civilians. So the idea of deliberately targeting large numbers of civilian lives lingered long after World War II—but for deterrent purposes, not coercion. Similarly, Saddam Hussein may have been deterred from using available chemical weapons during the Gulf War by threats that the coalition would use weapons of mass destruction in response—again, a measure to deter, not to compel.

20. More examples: in chap. 2, footnote seven is supposed to refer to something written by Admiral Stockdale but cites a letter written by Saint Augustine; the book includes no bibliography; and the two-page index is less than worthless.

21. I make no claim that this list is authoritative. The literature on military ethics and professionalism is so ancient and vast that none of us will live long enough to do more than scratch the surface. I offer it as a starter sampler of general, available books that may help with your reading program.



Back to the Future

USAF Special Operations School

COL JOHN D. JOGERST, USAF

MORE AND MORE, the call has gone out to increase our military's awareness of other cultures. For example, to prevail in the long war and to meet the challenges of the twenty-first century, former secretary of defense Donald Rumsfeld, in the *Quadrennial Defense Review Report* of 2006, identified a need to develop broader linguistic capability and cultural understanding.¹ Along those lines, the US Marine Corps created the Center for Advanced Operational Culture Learning and requires language training at Marine Corps University. Furthermore, Army soldiers bound for Iraq receive detailed instruction on the local culture. All of this reflects a growing recognition of the need to understand how current and potential adversaries think *and* how the billions of other people in the world perceive and respond to our actions. The requirement for cultural understanding and regional expertise is no longer unique to special operations forces.

The old paradigm of destroying an enemy's military forces to change his national behavior does not fit when the enemy is not a nation-state and does not field organized military forces. It applies even less when we must deal with insurgents hidden among a population. Changing the behavior of these adversaries requires us to understand the culture that shapes their actions and reactions. Toward that end, we need effects-based operations in their most basic sense—actions calculated to have an effect on the attitude and behavior of individual enemies, insurgents, neutrals,

and allies. Ultimately, we will have to fight a battle inside the enemy's head, and to win that battle we must understand the mental terrain where it takes place.

When we plan and conduct military operations, that terrain becomes every bit as important as the physical geography. Just as airpower's exploitation of the third dimension vastly increases commanders' options, so does operating in the mental terrain generate further opportunities for commanders. Understanding an adversary enables us to anticipate his likely actions, improve our defensive capability, and plan for further exploitation of any openings. That same understanding also proves crucial when we plan our operations. Clausewitz described war as a duel against an active enemy ruled by both logic and passion.² The effects of any action on our part, other than mere physical destruction, will be determined by the enemy's reactions, as shaped by his underlying worldview as well as the unconscious blend of history, religion, society, education, and other factors that make up a culture.

Since its establishment in 1967, the US Air Force Special Operations School (USAFSOS) at Hurlburt Field, Florida, has prepared warriors to understand and operate in this mental terrain. Its first offering, the Special Air Warfare Indoctrination Course, readied air commandos for duty in Southeast Asia. Today the USAFSOS makes available a series of courses to meet the requirements of all regional combatant commanders.

For instance, the school's one-week Cross-Cultural Communications Course helps stu-

dents recognize, understand, and adapt to cultural differences when they work in an international environment. Instruction focuses on strategies for effective interaction with people from a variety of cultures. Starting with a look at American culture, the course shows how members of other cultures perceive us. It then examines several specific regions in order to give students an idea of the values, thought processes, and reactions of people in those cultures. The course includes a cultural-application exercise that demonstrates how culture affects personal interaction.

Regional-orientation courses for Russia/Eurasia, Asia/Pacific, the Middle East, South-Central Asia, sub-Saharan Africa, and Latin America cover the cultural, historical, political, economic, and security issues of each particular region. A broad range of experts, including academics, ambassadors, and senior Department of Defense (DOD) and civilian leaders, delivers timely and relevant blocks of instruction designed to enable personnel to work effectively with military forces and civilian populations in each region. Unique in the DOD, these one-week courses serve as a foundation for understanding the *why* behind regional issues as well as individual and group behavior in these countries.

In addition to offering regional and cultural studies, the USAFSOS addresses the mental terrain of combat with operationally oriented courses, such as the Contemporary Insurgent Warfare Course—the latest incarnation of the school's original counterinsurgency course. Providing a strategic- and operational-level overview of insurgent warfare, it covers the ideology, strategy, and theory of insurgency; current doctrine; role of the US Country Team; civil-affairs operations; and case studies of current and past internal conflicts.

A panel discussion explores the future of insurgency and guerilla warfare, culminating with an in-class planning exercise.

For 40 years, the USAFSOS has equipped air commandos for irregular challenges. The needs of today's fight bring increasing numbers of airmen, soldiers, sailors, and marines to the school. In addition the USAFSOS has taken the Middle East orientation course to deploying Army division staffs, Marine expeditionary units, and Navy strike groups. In 2006 it developed and executed a five-week course for US Central Command Air Forces, preparing 100 Airmen to conduct the foreign-internal-defense mission of rebuilding the Iraqi air force.

The USAFSOS makes its courses available to all members of Air Force Special Operations Command (AFSOC) and the joint special operations community. It accommodates conventional forces, other government agencies, and coalition partners on a space-available basis. Space permitting, military members' spouses are welcome to attend unclassified sessions of the regional orientation courses. Interested parties should call the school registrar at (850) 884-4731 / DSN 579-4731 for course dates and registration information or access the Air Force Portal on the Internet and click on the link for AFSOC's "Primary Subordinate Units." ■

Notes

1. Donald Rumsfeld, *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 6 February 2006), 15, 56, 78–79, 92.

2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 75–76.



Book Reviews



Why Great Leaders Don't Take Yes for an Answer: Managing for Conflict and Consensus by Michael A. Roberto. Wharton School Publishing (<http://www.whartonsp.com>), One Lake Street, Upper Saddle River, New Jersey 07458, 2005, 304 pages, \$29.95 (hardcover).

If you're convinced you have no need of others' perspectives because you'll always lead your team to reach the best decision, skip this review and move on to another. If you're a leader committed to leading and growing your team to reach right decisions, *Why Great Leaders Don't Take Yes for an Answer* is for you—read on.

One rarely finds a book that resonates so well through a blend of practical experience, extensive study, and academic examination, but this one does exactly that. Its foundation includes a two-year study of decision making in the air and space and defense industry, a survey of presidents across *Fortune* 500 firms, in-depth interviews with general managers of top firms, and diverse yet relevant real-world examples. Dr. Roberto effectively weaves these observations and studies of both industry and government to compile what could easily be a Management 101 how-to text on effective decision making—and a how-to on developing teams toward effectively making *future* decisions. Offering sensible lessons on everything from organizational-culture analysis to approaches to defusing dysfunctionality,

the book is so rich in practical observations that this review can focus on only a selected few.

Why Great Leaders Don't Take Yes for an Answer presents several major components of decision making so that any leader of a group of team members—regardless of the level in the organization—can learn from and apply its ideas. First, it focuses on a conceptual framework for thinking about diagnosis, evaluation, and improvement of strategic decision-making processes. Second, it examines constructive methods for managing and even promoting conflict, leading into how managers can create consensus within their organizations. Finally, it calls leaders to seize an active role in shaping, influencing, and directing the process by which their organizations make high-stakes choices—without micromanaging the content of the decision.

The hook of the book is that by virtue of power, popularity, or position, a leader may hear yes and groupthink far too often—or simply hear nothing when people may prefer to say no, thereby receiving bad news late, if at all. Such leaders then enter into discussions, briefings, or strategy sessions with their teams, looking to provide “*confirmation bias*”—information which supports only a preexisting conclusion or an already-chosen path, while downplaying data that contradicts their existing views and thrusts. This situation is characterized as a “*charade of consultation*”—a process steered by the leader to arrive at a preordained outcome. If allowed to progress, an organization's decision processes then become restricted information processing and constrained searches for solutions, with reduced breadth of participation and increased reliance on formal communication procedures—all to the detriment of the final decision's effectiveness. The book illustrates another deterrent to effective decision making to which many leaders are susceptible—the flawed “*sunk cost bias*,” involving continued commitment to a flawed or risky course of action because of substantial prior investments of time, money, or other resources.

Addressing how to avoid taking yes for an answer, Dr. Roberto submits that one cause of the problem may reside in a leader's style, or it may simply reside in the challenges inherent in the organization's culture—patterns of dysfunction festering within. It may also have roots with executives uncomfortable with confrontation who willingly accept yes to avoid debate, with leaders who are highly

introverted, or with those who knowingly or subconsciously prefer to manage by fear and intimidation as they impose their will on organizations. Another pitfall in the making of key decisions comes from leaders who rely on their favorites—their “cronies or sycophants”—rather than their experts. Verbosity does *not* equal expertise. These examples underscore the critical role that a particular leader’s style and personality can play in encouraging or discouraging candid dialogue and consensus within an organization. Such dialogue and consensus remain essential to getting the team to embrace and implement decisions, and to ensure the quality of decisions and their effective implementation—so that the decision will outlive the leader’s tenure.

Another basic aspect examined is the role the leader assumes to control both the process and content of decisions—to decide how and when to introduce his or her own views into the deliberations, how much and how he or she will intervene actively to direct discussion and debate, and how he or she will attempt to bring closure to the process to reach a final decision.

An especially pertinent focus deals with how the most effective leaders take great care to anticipate unintended consequences, remaining acutely sensitive to the norms or organizational culture that tends to stifle the open communication which could give rise to those consequences. If communication is stifled, Dr. Roberto stresses that leaders cannot afford to wait for dissent or discussion to come to them; indeed, they may actively have to seek it out in their organization. Toward that end, he offers leaders selected tools to ignite discussion, warning signs to monitor the health of a debate, and methods for overcoming indecision. Finally, he stresses the importance of, and suggests paths for, conducting “process checks” from time to time to ensure everyone is on the same sheet of music as decisions are formulated and implemented.

Of utmost importance, present throughout the book is the theme that great leaders must behave as great teachers, mindful of teaching processes to the team members and recognizing that the leader’s first responsibility is to create new leaders. Finally, the comprehensive content of this book qualifies it for the list of works I recommend or personally present to encourage leadership, from newly commissioned officers to those assuming command. As you read it, you may find yourself reflecting as I did—“if only” some of the people I’d worked with had considered these lessons, then how much greater could have been their impact on and contributions to our service, our nation, and even their own individual “legacies.” The hope is that current

and emerging leaders will follow the wisdom that leaps off the pages of *Why Great Leaders Don’t Take Yes for an Answer* to form a strong foundation for our future.

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Execution: The Discipline of Getting Things Done

by Larry Bossidy and Ram Charan. Crown Business (<http://www.randomhouse.com/crown/business>), 280 Park Avenue (11-3), New York, New York 10017, 2002, 288 pages, \$27.50 (hardcover).

Far too often we hear of great-sounding ideas and new management techniques that promise amazing results. Although rolled out with much fanfare, many of them nevertheless fail to produce. Michael Hammer and Steven Stanton write that “most companies today are swimming—or sinking—in a sea of change programs. . . . The proliferation of change efforts causes harm in many ways: it consumes resources, creates confusion, and encourages cynicism” (“How Process Enterprises Really Work,” *Harvard Business Review* 77, no. 6 [November–December 1999]: p. 8). Why do these new initiatives seldom make it all the way through an organization? This book postulates that the lack of a culture of execution is to blame.

Coauthor Larry Bossidy has had a distinguished career, having served as chairman and chief executive officer (CEO) of Honeywell and Allied Signal, chief operating officer of General Electric (GE) Credit (now GE Capital Corporation), executive vice president and president of GE’s Services and Materials Sector, and vice-chairman of GE. Highly sought advisor to CEOs and senior executives, with clients such as GE, DuPont, Electronic Data Systems, and Colgate-Palmolive, coauthor Ram Charan has written a number of books and has taught at both the Harvard Business School and Kellogg School of Northwestern University. In *Execution*, the two team up to bring their experiences to bear in an area they believe has not received the attention it deserves.

The book speaks to leaders/managers in the military as well as the corporate world by providing the missing linkage between new management techniques (“Good to Great,” “Six Sigma,” “Lean,” etc.) and making them realities on the shop floor or in the office environment. It also makes an effective case for focusing on a culture of execution:

"Many business leaders spend vast amounts of time learning and promulgating the latest management techniques. But their failure to understand and practice execution negates the value of almost all they learn and preach. Such leaders are building houses without foundations" (p. 6).

Bossidy and Charan begin by describing a culture of execution and then delve into its "building blocks": (1) identifying the leader's essential behavior, (2) creating the framework for cultural change, and (3) having the right people in the right places—the job no leader should delegate. Subsequently, the book addresses the three core processes of execution: people, strategy, and operations, as well as the critical requirement of linking them and reviewing that linkage continuously. The authors' major themes include the need for engaged leadership throughout the process, robust dialogue, and follow-through. They also introduce the concept of the "Social Operating Mechanism"—integrative, cross-barrier communications processes used to "get the word out" at all levels of an organization. Especially helpful is the use of real-world examples to illustrate both positive and negative points (the latter sometimes more useful than the former).

Admittedly, some of the authors' concepts do not apply directly to the military because of the book's corporate setting; furthermore, Bossidy and Charan could have delivered their message in fewer pages—and done so without overusing the term *execution* and other business jargon (especially in part 1). Regardless, their study offers much that will prove beneficial, especially to higher levels of military leadership responsible for implementing new concepts such as Lean and Air Force Smart Operations for the Twenty-first Century (AFSO21). Indeed, in this time of change, it should be required reading. I recommend *Execution* to all leaders, especially at the squadron level and above.

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Doolittle: Aerospace Visionary by Dik Alan Daso.
Potomac Books, Inc. (<http://www.potomacbooksinc.com>), 22841 Quicksilver Drive, Dulles, Virginia 20166, 2003, 128 pages, \$19.95 (hardcover), \$12.95 (softcover).

I picked up Dik Daso's *Doolittle* about a year ago because I have two personal connections with the Doolittle Raid—America's first offensive attack on

Japan, which occurred on 18 April 1942, 65 years ago. I grew up in Columbia, South Carolina, near the Army airfield where the 17th Bomb Group met prior to volunteering for this top-secret mission (the Columbia Airport has a very nice memorial to the Doolittle Raiders). Presently, I am a historian at Eglin AFB, Florida, where, in March 1942, the Raiders secretly trained and had their aircraft modified for the now-famous raid. After realizing the significance of April 2007, I started to read the book.

James H. "Jimmy" Doolittle is best known as the leader of the raid that struck back at Imperial Japan after the disaster at Pearl Harbor and the loss of Wake Island and the Philippines. The attack gave a "shot in the arm" to American morale, led directly to the resounding US victory at Midway just seven weeks later, and portended the massive strategic-bombing campaign of 1944–45 that would destroy Japan's war-making capability. Gen Henry "Hap" Arnold, commander of the US Army Air Forces, personally chose Doolittle, a lieutenant colonel at the time, to plan and command this mission—perhaps the most famous individual aerial attack in Air Force history. Unfortunately, many Americans know Doolittle *only* as the leader of the renowned raid.

Daso goes beyond Doolittle's fame as the leader of the raid. A retired US Air Force pilot and author of several books about Air Force history, including a recent biography of Hap Arnold, the author reminds us that by 1941 Doolittle was already a well-known civil and military aviator, having won several civil and military aviation awards, including the prestigious Schneider Cup and Mackay Trophy. We also learn that Doolittle pioneered the procedures for instrument flying, demonstrated the importance of high-octane aviation gasoline for better airplane-engine performance, and earned a doctorate in aeronautical engineering from the Massachusetts Institute of Technology. These achievements alone would have put Doolittle's name in the annals of American aviation history.

Daso also covers Doolittle's enviable war record after the raid. Promoted to general officer, he commanded Twelfth Air Force and Northwest African Strategic Air Forces in North Africa in 1942 and Eighth Air Force in England after 1943. As commander of the Eighth, he released P-47 and P-51 fighters from "babysitting" bombers on their missions over Europe so they could attack German fighters wherever they found them. This decision reduced bomber losses, destroyed enemy aircraft (and pilots) in the air and on the ground, and rendered the Luftwaffe incapable of threatening the D-day invasion, the Allied breakout from Normandy, and the advance across France.

The book's last two chapters well describe the outstanding postwar career of the now very famous general. Doolittle served as an executive with Shell Oil, his prewar civilian employer; Thompson Ramo Wooldridge (TRW); and Mutual of Omaha. He was also president of the newly founded Air Force Association and served on the National Advisory Committee for Aeronautics as well as other scientific and aviation boards. Daso lets the reader know that Doolittle made many tremendous contributions to American aviation.

I found only two problems with the book. Daso states that the Raiders' secret training in March 1942 occurred at Eglin's Auxiliary Field no. 9 (p. 49); in reality, it took place at Auxiliary Field no. 1. Also, he digresses into a discussion of how the Doolittle Raid deviated from the Army Air Forces' accepted strategic-bombing doctrine (pp. 59–60). The former is a minor error while the latter is unnecessary and distracting in an otherwise well-done, concise biography of a great American civil and military aviator—truly an “aerospace visionary.” *Doolittle* is great reading for the general reader, scholar, and military/aviation enthusiast.

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American Women and Flight since 1940 by Deborah G. Douglas. University Press of Kentucky (<http://www.kentuckypress.com>), 663 South Limestone Street, Lexington, Kentucky 40508-4008, 2003, 376 pages, \$29.95 (softcover).

Anyone who needs instruction on the outstanding achievements of American women in the skies should read *American Women and Flight since 1940*. It is encyclopedic in its coverage, and no one doubts the expertise of the author—who does not hide her feminist viewpoint. Dr. Deborah G. Douglas has both the technical and literary qualifications to do this book, an updated version of an earlier work. Holding a PhD in history from the University of Pennsylvania, she has much service with the National Air and Space Museum and currently serves as curator of the science and technology collections of the Massachusetts Institute of Technology Museum.

The book sticks pretty close to the limits of its title. Well written and easy to read, it boasts documentation well beyond the norm and a bibliography hardly to be exceeded anytime soon—an excellent starting place for anyone doing research for

studies on women in aviation. The story offers no surprises. We have long known that women can fly and fly well. Oldsters like me well remember the newspapers and newsreels on the story of Amelia Earhart and her loss in the Pacific—a perennial on television. Too, we have heard the tale about women in aviation in World War II many times, and the author provides an authoritative treatment here. Then came the long march against male prejudice (real *and* perceived) in both civilian and military aviation, overcome in the 1990s only with Congress's decision to eliminate legislation against women in combat—and the military's decisions to utilize them in that function. That was the last great barrier; the penultimate one, the barring of women from the service academies, disappeared in 1976—partly in response to growing pressures of the women's movement. Their exclusion from combat proved a tougher obstacle, but thanks to the Tailhook Scandal of 1991 (at least in part), it too disappeared, so now precious few jobs in aviation remain closed to women.

Douglas declares, “I hope this volume will encourage readers to think more broadly about femininity and masculinity in American society” (p. 4). However, no one involved with the military side of aviation for the last two decades can really have been insulated from such thought, and perhaps we are nearing the point where we can declare peace in the gender wars. Maybe in military aviation, the time has come to think *more* broadly about our responsibility for national security and *less* on the superiority of fighter piloting to motherhood in our hierarchy of honors.

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The Leadership Quotient: 12 Dimensions for Measuring and Improving Leadership by Bill Service and Dave Arnott. iUniverse Press (<http://www.iuniverse.com>), 2021 Pine Lake Road, Suite 100, Lincoln, Nebraska 68512, 2006, 496 pages, \$30.95 (softcover).

An engaging and important book, *The Leadership Quotient* provides a realistic, practical, and workable model to identify, measure, and improve leadership effectiveness. Authors Bill Service and Dave Arnott argue with sound and convincing logic that leaders must clearly understand the fundamentals and interplay of followers, leaders, and environments. This interaction is essential before one

can become a successful leader. Although no clear-cut, universally accepted definition of leadership has emerged, the authors correctly echo the most widely accepted definition among theorists and practitioners: that leadership is any attempt to influence the behavior of an individual or group to accomplish an objective.

Service and Arnott contend that there is no magic to being a good leader, suggesting that effective leadership involves spending time around things that are really important, setting priorities, measuring outcomes, and rewarding them. Neither a simplistic, by-the-numbers, traditionally motivational work nor an excessive academic treatment of leadership theories and analyses, *The Leadership Quotient* outlines the core principles of a set of logical guidelines to measure and improve one's leadership through more insightful understanding and application of leadership tools. Contending that every person has the potential to become a leader, it provides a four-quadrant model to allow individuals to identify and leverage their personal leadership characteristics to improve their capabilities as leaders or help others to do so.

This back-to-basics text is powerfully convincing in maintaining that one must learn and practice the fundamentals of leadership regardless of the leadership level a person currently occupies or the level to which he or she aspires. In effect, people don't go to school once in a lifetime to study leadership but stay in school all of their lives. What they learn after they know it all is what really counts. Furthermore, learning moments occur as people become leaders: things happen over and over again, and they learn in a spiral—not a straight line. Then, one day they get it.

A lifestyle for leadership success, *The Leadership Quotient* categorizes and measures a leader's strengths and weaknesses for the purpose of improving sustainable leadership performance. The authors identify 12 verifiable dimensions of leadership labeled as quotients, measuring them separately and interactively: appearance, behavior, communications, desire, emotions, intelligence, knowledge, management, people, reality, situation, and experience. This formula for leadership improvement is designed to ameliorate leadership execution for anyone who has followers in varying environmental conditions. Service and Arnott clearly define these quotients as they guide readers through the process of accessing their ability to lead, believing that becoming a leader means first becoming oneself by means of self-discovery. Their book directly supports leadership development by focusing the learner on self-reflection and finding the essence of leadership through guided personal assessment.

This thoughtful and thought-provoking study also addresses leadership commitment and necessity directed toward accomplishment. Leaders cannot help changing the present because the present is not good enough. The authors make an excellent point in stating that the title of leader is just a phrase. In actuality, one earns a reputation as a leader by gaining trust, committing to something other than one's own self-interest, and helping people achieve their goals. Additionally, in appendix A, the authors help us better understand that leadership and management, though related, are different. Specifically, management is granted whereas leadership is earned. Nevertheless, the two support each other: we need both leaders and managers.

Examining *The Leadership Quotient* is a rewarding experience. This reviewer is convinced that leaders who successfully apply its principles will go a long way toward solving problems they may have with themselves, their followers, or the situations they confront.

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Hitler's African Victims: The German Army Massacres of Black French Soldiers in 1940 by Raffael Scheck. Cambridge University Press (<http://www.cambridge.org/us>), 32 Avenue of the Americas, New York, New York 10013-2473, 2006, 216 pages, \$65.00 (hardcover).

In Carl G. Gustavson's *A Preface to History*, the author asserts that when viewing any historical event, one should examine and try to understand any and all underlying influences that led up to a specific episode because such events never take place in a vacuum and simply do not "just occur." Rather, situations always go into motion on the heels of other occurrences. In his excellent book *Hitler's African Victims*, Raffael Scheck does this seamlessly and to great effect.

An associate professor of modern European history at Colby College and holder of a PhD from Brandeis University, Scheck has authored the books *Alfred von Tirpitz and German Right Wing Politics, 1914–1930* and *Mothers of the Nation: Right-Wing Women in Weimar Germany*, along with several articles on German right-wing politics. In *Hitler's African Victims*, Scheck brings to light an area of history that until now people have either intentionally ignored or unfortunately forgotten.

During the desperate summer of 1940, German forces ran largely unchecked through Western Eu-

rope. One of the many countries to feel the wrath of Hitler's army was France. Burning with an intense desire to seek revenge for the abomination imposed on the German people—the Treaty of Versailles—Hitler and his minions assumed a special attitude toward forcing a quick and humiliating surrender from France. The ranks of the French army held more than 100,000 black soldiers whom the French had recruited and mobilized from the areas of Mauritania, Senegal, and Niger in French West Africa, placing them into either all-black or mixed-race regiments and then making them part of Colonial Infantry divisions. During hard-fought battles against the Germans, these African soldiers—often armed with the feared, long-bladed coupe-coupe, with which they hacked their way through enemy soldiers in close combat—found themselves pitted against the best the Germans could muster. One rarely hears the story of the losses that the Africans imposed on the Germans.

Tragically, during the hardest-fought period in the French campaign, up to 3,000 of these Tirailleurs Senegalais prisoners were evidently massacred by German soldiers. The murder of enemy prisoners—by members of both sides—did occur during the war, but the sheer number of losses incurred by the Tirailleurs over a relatively short period of time raises serious questions. The author does a masterful job of crafting coherent background information to explain the circumstances surrounding these massacres.

As part of his analysis, Scheck discusses many aspects of the history of the racism in Germany that likely led to attitudes prevalent within Nazi society at the time—for example, what became known as the “Black Horror,” involving the stationing of black soldiers in the Rhineland following World War I. Several incidents took place between these soldiers and the indigenous population, especially the births of many mixed-race children. Appalled, Nazi leadership called for the forced sterilization of these children, and German propaganda worked overtime to portray blacks as savages and “sex crazed perverts.” Because of these efforts, a strong antiblack foundation arose in the new Germany. Likewise, as a colonial power in Africa (1904–7), Germany eliminated more than 150,000 blacks during a series of uprisings. In addition, Germans noted similar treatment of blacks caught fighting for the Union during the US Civil War, as well as US treatment of Mexicans, native Americans, and Filipinos during conflicts with those people.

All of these factors helped to create an atmosphere conducive to committing the atrocities described in this book. The author eloquently ex-

plains concepts such as the criterion for sanctioned massacre and five situational factors that led to the killing of black prisoners. Interestingly, Scheck's research revealed that when all is said and done, apparently no German government directive ordered soldiers to kill these prisoners. Most likely, the ferocity of battle, latent racism, and the effects of having seen fellow soldiers killed in combat—many hacked apart by knife-wielding West Africans—combined to motivate the Germans to act as they did. In fact, many German units refused to kill black prisoners at all, and after August 1940—the most desperate time for the Germans and French—little or no killing of prisoners occurred.

Although I sing this book's praises, I do have some disagreements with the author. Scheck states that the Germans would “immediately shoot dispersed blacks without giving them the opportunity to surrender. This was illegal as a massacre but easier to cover up. . . . The practice of not giving quarter to black soldiers, although illegal, was certainly facilitated by the fact that the legal provisions for surrender could be difficult to apply in close combat” (pp. 61, 66). According to the Law of Armed Conflict, however, it is not illegal to kill fleeing or dispersing soldiers. Only after they have surrendered and the enemy has taken control of them do they become immune from being killed. Likewise, it is legal to decimate entire formations of enemy soldiers—by not killing them today, one may have to fight them tomorrow. However “rude” it may be to kill fleeing soldiers or to decimate an entire enemy formation, it remains perfectly acceptable and legal to do so.

Overall, those minor points in no way detract from this most excellent book. It is not often that one finds a study of World War II that uncovers an entirely new page of history. Complete with 10 photographs, four pages of tables that outline the killings, and one map of the areas in question, *Hitler's African Victims* makes its mark as an important contribution to an already cluttered history of the war.

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Cobra II: The Inside Story of the Invasion and Occupation of Iraq by Michael R. Gordon and Bernard E. Trainor. Pantheon Books (<http://www.randomhouse.com/pantheon>), 1745 Broadway, New York, New York 10019, 2006, 640 pages, \$27.95 (hardcover).

Since books about Operation Iraqi Freedom began appearing sometime in late 2003, over 200 different accounts of the war have been published. Everyone from L. Paul Bremer, director of the Coalition Provisional Authority for Iraq from 2003 to 2004, to airpower advocate Col Walter Boyne, USAF, retired, has opined on the invasion, the occupation, what went right, what went wrong, and what's still going on in Iraq. Drawing on interviews with the soldiers, sailors, marines, and airmen who were there; top defense officials; and declassified interrogation reports of captured Iraqi officials and generals, authors Michael Gordon (chief military correspondent for the *New York Times*) and Bernard Trainor (a retired Marine Corps lieutenant general and former director of the National Security Program at Harvard University's John F. Kennedy School of Government) deliver the most authoritative, accurate, and readable book that I have seen on the war to date. If you read one book on the war in Iraq, let it be *Cobra II*.

Cobra II pulls no punches. If someone made a mistake in the planning or execution of the Iraq campaign, this book reveals it. No one is spared the authors' scrutiny, whether former secretary of defense Donald Rumsfeld or lieutenant colonels at the tactical level of execution. That said, Gordon and Trainor do an excellent balancing act as they trace the origins of the war through buildup and execution. One finds enough strategic-/operational-/tactical-level discussion to gain an overall view of the war from multiple levels and satisfy the desires of amateur tacticians and strategic thinkers alike. From Operation Plan 1003 through both generated and running-start concepts, the authors analyze the force that conducted the invasion. The reading never becomes turgid even though early on the book essentially deals with troop-level numbers and deployments. The book offers more than enough animated discussion between the Department of Defense (DOD) and US Central Command (CENTCOM) as to who and what will actually make up the force to keep the reader interested. It also presents a good strategic-level look at DOD transformation, which emphasizes lighter and leaner operations. Air Force members will appreciate how transformation has trickled down to all of their departments.

Cobra II's description of the contributions that airpower (or for that matter, sea power and special operations) brought to the fight leaves something to be desired, however. For example, Lt Gen T. Michael Moseley, the combined force air component commander, receives half the coverage of Lt Gen David McKiernan, the combined force land

component commander. The book also depicts the early "decapitation strike" against the Dora Farms complex, told in thrilling detail from the perspective of the F-117 operators who executed it, as a failure since Saddam Hussein wasn't there. Regarding other air strikes, the authors make clear what they think of airpower and, for that matter, intelligence: "As the war was waged, allied planes would carry out strikes against other time sensitive targets. . . . But not one of the top 200 figures in the regime was killed by an air strike. . . . [Air] attacks would be only as good as the intelligence they were based on. . . . That intelligence was often not reliable" (p. 177). Despite the factual nature of this statement, it overlooks any psychological effects of the air portion of the overall campaign on Iraqi leadership, and since many key Iraqi leaders fled for survival at first opportunity, one cannot say that the air campaign did not successfully separate them from the battlespace.

Airpower does come off better than maritime contributions: *Cobra II* portrays US Navy forces as somewhat of an auxiliary air force. It also paints an inaccurate picture of special operators as shadowy warriors operating under their own guidelines and by their own plans. The book simply doesn't give adequate emphasis to the contributions of sister services; indeed, it seems to promote a somewhat land-centric view of war—a prevalent theme in books, newspapers, and journals today.

Finally, I believe it is important to discuss the issue of weapons of mass destruction (WMD). Two schools of thought predominate: either Saddam had WMDs and we haven't found them, or he did not have them. If *Cobra II* is to be believed, the Iraqi dictator walked a delicate tightrope of deception. It seems he attempted to play both sides of the issue. On the one hand, he wanted to make countries in the region, most notably Iran, believe he had the capability to produce WMDs. On the other hand, he led the United Nations to believe that he was complying with the spirit of its Security Council resolutions, thus keeping the United States outside his borders. Iraqi officials called it "deterrence by doubt."

The book offers a particularly interesting dissection of Saddam's megalomania and paranoia. As officials in Washington and the military at Headquarters CENTCOM wrangle over exactly when the force will be ready, Gordon and Trainor flash to Iraq and meetings between Saddam and his top officials. Saddam did not greatly fear an American invasion. In fact, the possibility of his having to fight to save his regime from the American military rated a relatively low priority. Rather, Saddam seems

to have feared internal revolutions and the Iranians much more than any action by American forces.

Cobra II would make a good addition to the Air Force chief of staff's reading list. No work gives a more comprehensive picture of the Iraq war. Hopefully, though, General Moseley will take a lesson from Gen Charles Horner, USAF, retired, and write his own account of Iraqi Freedom. We have enough land-centric accounts of the war already—this book and *American Soldier* by Gen Tommy Franks, USA, retired, for example. It is time that someone told the air component's story. Who better than the man who led it? But until that happens, buy and read *Cobra II*.

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The Last Flight of Bomber 31: Harrowing Tales of American and Japanese Pilots Who Fought in World War II's Arctic Air Campaign by Ralph Wetterhahn. Carroll and Graf Publishers (<http://www.carrollandgraf.com>), 245 West 17th Street, 11th Floor, New York, New York 10011-5300, 2004, 364 pages, \$26.00 (hardcover), \$15.95 (softcover).

The Last Flight of Bomber 31—also the subject of a NOVA television program on the Public Broadcasting Service—describes circumstances regarding the finding of an American World War II US Navy bomber on southern Kamchatka Peninsula in the Russian Far East. According to author Ralph Wetterhahn, the Lockheed Ventura carried out a strike on Paramushiro and Shimushu Islands and then attempted to divert to a Soviet airfield in Kamchatka, after its engine overheated. The aircraft did not make it to the airfield but crash-landed, and the crew perished. The book also relates other losses and sacrifices made by crews flying the missions of the Arctic air campaign during the war, detailing the efforts of a joint task force working in Russia to document and find missing Americans.

Flying from the Aleutian islands of Attu, Shemya, and Kiska under difficult weather conditions over the bitter-cold Bering Sea with simple navigation (dead reckoning), the US Army Air Forces and the Navy (flying B-25Ds, B-24s, and Ventura PV-1s) carried out 1,500-mile sorties lasting 10 hours that pushed man and machine to their limits. The Soviet Union remained neutral in the Pacific in 1943, so US aircraft diverted to Soviet airspace only if lack of fuel or combat damage prevented a return to the

Aleutians. Ditching in the ice-cold waters often proved fatal. Citing neutrality laws, the Soviet Union interned Americans and initially refused to repatriate or give an accurate accounting of lost Airmen. Later it allowed them to “escape” from another part of the country to Iran—at the time under joint US and Soviet occupation. Wetterhahn describes all of these events in a gripping narrative, relying on a mixture of survivor and eyewitness accounts.

Besides exploring the United States' role in the Arctic air campaign, Wetterhahn also describes why the Japanese chose to strike at Dutch Harbor during the Midway campaign in 1942 and how US and Canadian troops drove the Japanese off the Aleutian Islands. The text then details the construction of airfields, actually runways, to allow American aircraft to strike the Japanese northern Kurile Islands. The final chapter, perhaps the most touching, offers an account of what became of crew members after the war, such as a Japanese soldier who survived the bombings on the Kurile Islands and then ended up in the Soviet gulag penal system as a prisoner of war, and American crews who fell into Japanese hands. In sum *The Last Flight of Bomber 31* is an excellent text that discusses the hardships and difficulties aircrews had to overcome in a very trying theater of World War II.

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Ensayos sobre las Fuerzas Armadas de America Latina by Russell W. Ramsey. AuthorHouse (<http://www.authorhouse.com>), 1663 Liberty Drive, Suite 200, Bloomington, Indiana 47403, 2003, 268 pages, \$15.95 (softcover).

Ensayos sobre las Fuerzas Armadas de America Latina contains over 20 articles written in Spanish and published by Dr. Russell Ramsey over a 40-year period. In effect, the book represents his selected works. Most of the pieces originally appeared in military journals—especially those of the US Army, such as *Military Review*. Five sections (“The Region and Theory,” “History,” “Strategy,” “Colombia,” and the “Military-Democracy Fraternity”) cover assorted Latin American military topics. Except for “History,” which includes an analysis of a failed British amphibious invasion of Cartagena, Colombia, in 1741 and an article about Nazi activities in Latin America during World War II, the essays deal with relatively recent events. One very interesting historical article not related to Latin America offers a

campaign analysis of a Spanish Civil War battle in 1937–38. The book also includes a book review written by a Colombian army general about one of Dr. Ramsey's works.

The author's long military and academic career makes him well qualified to discuss Latin American military affairs. As a US Army officer in the 1960s, he taught at the School of the Americas when it was located in Panama and served a combat tour in Vietnam. He later taught at the US Air Force's Air Command and Staff College at Maxwell AFB, Alabama, and continued his affiliation with the School of the Americas (renamed the Western Hemisphere Institute for Security Cooperation [WHINSEC] in 2001 and currently located at Fort Benning, near Columbus, Georgia). His Army viewpoint is apparent throughout the book, which offers few airpower-related insights.

Utilizing twin underlying themes—support for the professionalism of Latin American militaries and the importance of continued US military partnership with them—Ramsey consistently argues against those who brand all Latin American militaries as antidemocratic human-rights abusers. Instead he describes how these militaries have played important roles in national development, environmental protection, and defense. For example, he notes that “the record of Latin American armed forces in helping their citizens, developing their economies, and maintaining their nations' unity and territorial integrity is superior to that of the armed forces of comparable regions of the world since 1830” (p. 213). His “rule of twos” (pp. 236–37) reflects the importance of the United States' maintaining military relations with its southern neighbors. According to Dr. Ramsey, since 1830 Latin America remains the only region that has limited military expenditures to 2 percent of the gross national product and armed-forces personnel to two per 1,000 inhabitants (except for Cuba and Nicaragua). He repeatedly extols the benefits of US military schools such as the School of the Americas / WHINSEC and the Air Force's Inter-American Air Forces Academy (located at Randolph AFB, in San Antonio, Texas), which have trained many tens of thousands of Latin American military personnel since the 1940s. Ramsey concludes that although US military assistance to the region has amounted to only 2 percent of the nation's military foreign aid, it has yielded significant results.

The author wrote the articles over the course of several decades, so their timeliness varies; nevertheless, all are worth reading. His comments about counterinsurgency operations in Colombia seem a bit dated yet still offer useful insights. Remarkably,

Colombia has maintained a democratic government despite decades of guerrilla warfare against communist insurgents, paramilitary groups, and drug lords. Close study of the Colombian experience may prove instructive to countries such as Afghanistan and Iraq that seek to build democratic institutions despite serious domestic discord. The articles in the “Military-Democracy Fraternity” section are particularly timely as the United States debates future national-policy options for Latin America. The historical essays offer insightful analyses of seldom-studied campaigns.

One finds many virtues but few faults in this book. Dr. Ramsey's perspective contrasts with the leftist slant detectable in other studies of Latin American militaries. Indeed, *Ensayos sobre las Fuerzas Armadas de America Latina* provides a useful corrective to works that paint a decidedly negative picture of these militaries and criticize US military training efforts in the region. Readers would have appreciated a few maps, especially to complement the historical campaign analyses; the editing of some of the early chapters needs work, most notably on p. 96, which includes repetition of some sentences; and information and arguments occasionally reappear in multiple essays. However, these minor distractions should not deter military professionals seeking background and insight into current Latin American military trends from reading this book.

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Y: The Sources of Islamic Revolutionary Conduct

by Stephen P. Lambert, USAF. Center for Strategic Intelligence Research, Joint Military Intelligence College, Washington, DC, in cooperation with the USAF Institute for National Security Studies, USAF Academy, Colorado Springs, Colorado, 2005, 216 pages. Available from National Technical Information Service at <http://www.ntis.gov/search/product.asp?ABBR=PB2005110415&starDB=GRAHIST>. \$26.50 (microfiche), \$41.00 (customized CD).

Lt Col Steve Lambert's next-generation title intentionally recalls George Kennan's famous article published in *Foreign Affairs* at the outset of the Cold War (“The Sources of Soviet Conduct,” signed by “X”). Clearly, Kennan's work was monumental, but in a few important ways, Lambert's “Y” presents a more ambitious approach than that taken by Mr. X. Both admirably explain what motivates “enemies of

the West"; however, Lambert's study also provides us with an explanation of how Western ideological foundations handicap our understanding of and response to al-Qaeda (and its ilk). In this respect, Lambert goes beyond Kennan by reaching all the way back to the wisdom of Sun Tzu's admonishment of 400 BC: "Know your enemy and know yourself." In the context of the emerging "long war," this approach provides us with two essential steps in the right direction.

Lieutenant Colonel Lambert (a major when he published this study in early 2005) has a special interest in politico-military affairs and military strategic sciences. Since 1995 he has published three major works for the Institute of National Security Studies (INSS Occasional Papers nos. 12, 20, and 46) with a focus on strategic arms control and post-Cold War nuclear strategy. In this work, however, Lambert significantly branches out in search of the answer to heretofore unexplained reasons behind the terrorist attacks against the United States on 11 September 2001 (9/11).

The author employs a five-part approach to address these issues. His study begins with introspection: a look at the roots of Western intellectual pedigree. On this point, Lambert concludes that a society like that of the United States—one conditioned by philosophies of the secular age—can understand fundamental questions of a religious nature only by first coming to terms with its own biases and intellectual foundations.

In part two, Lambert delves deeply (with perhaps too much detail, employing extensive use of seminary-level nomenclature) into a comparison between Islam and Christendom. Readers should skim this section and concentrate on the 15 pages of conclusions. Key points include the following: (1) Islam and the West have divergent historical and political imperatives (for example, Islam embraces the fusion of religion and state, whereas the West [with its Christian heritage] generally differentiates between the secular and divine realms); (2) Islam's history and theological exhortations overwhelmingly demonstrate that it is *not* a "religion of peace"—Islam demands exclusivity, hostility, and incompatibility with all non-Muslims; and (3) Islam is expansionist. "The house of Islam" is locked in a continual struggle with all others who dwell in "the house of war." Unlike Christian evangelism—which is spiritual—Islam's kingdom is temporal, and its followers are exhorted to physically conquer this world.

In the next section (pp. 99–128), Lambert attempts to "capture the mindset of the broader Islamic faithful," which he asserts is "plagued by the fourfold trauma" of (1) the impact of European co-

lonialism, (2) pressures of modern secularism, (3) military and scientific impotency vis-à-vis the West, and (4) distorting influences of the modern Arab states. This trauma results in tension and misunderstanding between Islam and the West. Strategically—and unfortunately—these factors provide militant Islamists with a fertile recruiting ground.

The heart of Lambert's study lies in part four, "The Mind of the Enemy" (pp. 129–48). To date, numerous theories and characterizations have emerged as to whom America is fighting. More clearly than others, Lambert cogently characterizes al-Qaeda and its associates as "*a revolutionary Islamic vanguard*, with a goal nothing less than the complete transformation of the global status quo" (emphasis added, p. 5). In this context, keep in mind that terms are extremely important. Pres. George W. Bush and other statesmen have declared that America is not at war with Islam or with Muslims in general—and they are correct! In fact, the West is at war with a radicalized element of Islam—a fervent group of militant Islamists (some employ the term *Islamofascists*) comprised of more than just fundamentalist, purist, and radical Muslims, none of whom has necessarily declared jihad against the West. Instead, al-Qaeda and other self-proclaimed jihadists aim to overthrow the existing world order—wherever possible and by any means necessary, including the use of terrorism—to establish an international, Islamic theocracy ruled by a revived caliphate. This revolutionary Islamic enemy has stated for the record its clear intent to use chemical, biological, and nuclear weapons against all "infidels," innocent civilians included (pp. 138–41). Together, these tactics, targets, and justifications "yield the gravest military threat confronting the United States today" (p. 148).

Following his in-depth analysis that helps the West understand both its own ideological and intellectual heritage and that of its enemies, Lambert concludes with a section entitled "Seven Propositions for Recovering Strategic Insight." Propositions one through five follow directly from the earlier sections, summarizing foundational assertions such as "Islam's theological foundations yield expansionist imperatives" and "the United States is engaged in a religious war" (pp. 155, 158). These are clearly important postulates, basic to any strategic understanding of the current global war. Lambert's sixth and seventh propositions, however, do not follow from the text and are less compelling. (They speak to the unique nature of the Palestinian movement and recommend Sufism as "a strategic alternative to revolutionary Islam" [p. 165]—as if al-Qaeda is searching to radically alter its basic beliefs.)

In sum, Lambert's monograph explores fundamental issues central to understanding the global war on terror/long war. He rightly calls into question a Western "enlightened" approach that favors negotiation or attempts to reason with the revolutionary Islamic vanguard forces. Similarly, the West cannot fool itself into thinking that the root causes motivating enemy hatred and terrorist attacks can be easily resolved via renewing an emphasis on education, promoting equitable resource distribution, and proliferating/sharing democratic values. He points out that many of the 9/11 hijackers/terrorists received their education in the West, owned profitable businesses, and had access to Western freedoms and conveniences. Clearly, as the West continues to go down this road—assuming that its values are universally applicable and failing to comprehend what motivates its zealous enemies—it will founder upon one of Sun Tzu's most basic tenets of warfare.

Lambert's strategic motivation for writing *Y: The Sources of Islamic Revolutionary Conduct* was to offer a seminal analysis of the long war—just as Kennan did at the outset of the Cold War. In 1947 America rallied around a clear understanding of the global Communist threat. Today, the West faces a similar enemy who aims at nothing less than international, revolutionary change. In terms of analysis, Lambert's study clearly hits the mark. However, unlike Kennan's article, which directly informed America's most influential decision makers (leading to key policies such as National Security Council 68, *United States Objectives and Programs for National Security*, 14 April 1950), Lambert's monograph has received no such visibility. In fact, it is already out of print and available only via the National Technical Information Service (see above). As such, it remains to be seen if a sufficient number of Western leaders or policy makers gain access to and act upon the insightful information contained in this immensely valuable study.

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Terrorist by John Updike. Alfred A. Knopf (<http://www.randomhouse.com/knopf/home.pperl>), 1745 Broadway, New York, New York 10019, 2006, 310 pages, \$24.95 (hardcover).

When I heard a radio interview featuring novelist John Updike talking about his new novel, *Terrorist*, I was immediately intrigued. I'm a fan of fiction who enjoys its capacity to entertain and teach. Yes,

teach—by giving readers the opportunity to walk in somebody else's shoes. I was especially drawn to this novel because of what it might teach me, an Airman, about our new enemy—the terrorist. I vividly recall the sense of disequilibrium I experienced after 11 September 2001, when I learned that terrorists had purposely flown civilian airliners into the twin towers of the World Trade Center in New York City. Processing this horrific news, I joined the masses who asked "Why?" Why were those terrorists willing to sacrifice their own lives—and take the lives of innocent others? In its own way, *Terrorist* attempts to address those questions. Indeed, early on, a character asks, "Those people out there. Why do they want to do these horrible things? Why do they hate us?" (p. 48). In an interview appearing in the *New York Times* on 31 May 2006, Updike remarks, "I think I felt I could understand the animosity and hatred which an Islamic believer would have for our system. Nobody's trying to see it from that point of view. I guess I have stuck my neck out here in a number of ways, but that's what writers are for, maybe."

Terrorist follows Ahmad Ashmay Mulloy, a recent high school graduate in New Jersey. Encouraged by his Moslem teacher, he considers carrying out a terrorist attack. Ahmad—who is likeable, respectful, moral, and bright—seems to have everything he needs to succeed. He comes across as an "Everyman"; indeed, his commonness is one of the characteristics I enjoyed most about this novel. Updike allows the reader to get inside the head of a terrorist and see him not as a madman but as an Everyman who confronts a disturbing question that arises in a seemingly innocuous conversation with a Moslem mentor—"Would you give your life?" (p. 189).

I found no polite consensus on *Terrorist* among other reviewers. For example, in his assessment in *Booklist* magazine, Brad Hooper calls it "marvelous," labeling the book a "masterpiece for its carefully nuanced building up of the psychology of those who traffic in terrorism." Yet Benjamin Anastas, writing in *BookForum* magazine, dismisses it as "awful." My reaction falls somewhere between those two extremes. Parts of it felt too contrived for my tastes. For example, Updike seems overly provocative by making Ahmad's high school guidance counselor a Jew. Furthermore, the book's climax works itself out too simplistically. It let me down.

Regardless, I thought that *Terrorist* was worth my time, and I endorse it. I don't mean to overstate its merits for purposes of "understanding the enemy." After all, Updike does not offer us an intelligence analysis, a psychological treatise on a terrorist's state of mind, or an academic exploration of radical Islam.

Rather, he provides an interesting and entertaining—albeit fictional—glimpse into how a terrorist's reasoning processes *might* work. That's important during a time when thousands of American and coalition service members are putting their lives on the line against real, live terrorists.

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Dying to Win: The Strategic Logic of Suicide Terrorism by Robert A. Pape. Random House (<http://www.randomhouse.com/rhpg>), 1745 Broadway, New York, New York 10019, 2005, 352 pages, \$25.95 (hardcover), \$14.95 (softcover).

In *Dying to Win*, Prof. Robert Pape argues that despite a widely held belief to the contrary, Islamic fundamentalism is not the root cause of suicide terrorism. Rather, 95 percent of such attacks between 1980 and 2003 occurred as part of coherent campaigns that had political and territorial—not religious—goals. According to the author's thesis, "Suicide terrorism is mainly a response to foreign occupation" (p. 23). Although this sounds like a rather narrow proposition, if validated, it could significantly weaken many other popular explanations for this phenomenon, such as globalization, a clash of civilizations, and Islam versus democracy.

Dr. Pape marshals considerable evidence to support his thesis. By systematically studying 315 suicide attacks that occurred over a 23-year period, he demonstrates that most of them were not isolated acts carried out by lone fanatics who wanted to die for Islam. He makes a good case that the actions of the Tamil Tigers, Hamas, and even al-Qaeda were rationally guided campaigns driven by concerns over foreign occupation (or perceived occupation) of territory. The fact that individual suicide bombers may not be rational does not mean they can't be part of a larger rational scheme. Islam plays a role in the recruitment of potential suicide attackers, but it is not the sole or even the primary factor.

One problem with the book is its timing, related to the current situation in Iraq. According to the Brookings Institution, more suicide attacks have occurred in Iraq since 2003 (the book's publication date) than have taken place globally in the previous 23 years. This leaves a large number of incidents not analyzed by the study.

A second problem involves the fact that the author doesn't sufficiently address the idea of the Islamic state. If terrorist groups seek to reestablish

such a state, as bin Laden has often intoned, then terrorism entails more than simply fighting the foreign occupation of territory. Establishing a universal Islamic state means that the distinction between foreigners and natives becomes much less important than the one between Muslim and non-Muslim.

Dr. Pape's work raises important questions about the role of territory in causing suicide terrorism. It could undermine the notion that terrorists are irrational actors beyond compromise. As he points out, terrorists continue to conduct suicide attacks because the democracies of the world keep making concessions (Spain, for example). If these acts are part of rational strategies for national liberation, then recasting the Muslim world along democratic lines won't help. Terrorists would simply view democracy as another form of foreign occupation, which would have no effect on stopping the attacks—and could even lead to more of them. Whether or not one agrees with Dr. Pape's thesis, all policy makers and students of foreign affairs should read *Dying to Win*.

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Fighting for Rights: Military Service and the Politics of Citizenship, Cornell Studies in Security Affairs, by Ronald R. Krebs. Cornell University Press (<http://www.cornellpress.cornell.edu>), Box 6525, 750 Cascadilla Street, Ithaca, New York 14851-6525, 2006, 280 pages, \$45.00 (hardcover).

From ancient Greece to periods as recent as czarist Russia and even Meiji Japan, citizens have viewed military service as a viable avenue to full citizenship. In *Fighting for Rights*, Ronald R. Krebs argues that in modern times the Arab Druze (a religious sect) in Israel and African-Americans in the United States have relied on military service to enhance their citizenship status. Krebs further explains why the Druze were more successful than African-Americans and why the latter achieved greater success after World War II than after World War I. He concludes by showing how gays used their minority status and compares the gains of women with the achievements, or the lack thereof, of African-Americans. These groups' struggles underpin the author's central question: under what conditions and how does military service shape the nature and outcome of minorities' struggles for effective citizenship (p. 3)?

Another question in the book is, why does one minority group achieve greater success than another? Krebs believes that the answer lies in the “interaction between the minority’s rhetorical choices and the prevailing citizenship discourse and in the resulting possibilities for continued rhetorical play” (p. 3). For example, suffragists saw in World War I an opportunity for enfranchisement and a chance to break with the Seneca Falls Movement (a women’s suffrage movement that grew out of an assembly held at Seneca Falls, New York, in 1848). Women combined their efforts with the largest and best-organized women’s group—the National Woman Suffrage Association—and contributed to war efforts at home and abroad. Their turning to a Republican frame by focusing on the “common good” helped their cause. Pres. Woodrow Wilson became a convert and personally intervened to secure passage of the 19th Amendment, ratified in 1920.

African-Americans failed to garner similar support after World War I. In contrast, President Wilson’s inertia helped produce the Red Summer of 1919, as immigrants from Southern and Eastern Europe and white workers competed for jobs with blacks who had migrated north. The posture and policies of Wilson’s immediate successors—Warren G. Harding and Calvin Coolidge—were equally inept, and black rights were never placed on the national agenda. With black veterans also a target of the period’s violence, Krebs points out that blacks began to realize their military-service gamble had failed. After the war, they noticed that senior military officers charged them with cowardice and ineptitude. One white officer confessed that in France other white officers sought to discredit black servicemen but withheld anything that would bring them praise and commendation (p. 128). Krebs acknowledges that black pleas were ignored because blacks continued to place them in a Republican frame that emphasized “their historical contribution to building the United States, their young men’s recent sacrifices in uniform, and the entire community’s part in the war effort” (p. 143).

Into the vacuum stepped Marcus Garvey, who drove many blacks away from a fledgling National Association for the Advancement of Colored People (NAACP). The Jamaican-born disciple of Booker T. Washington extolled the virtues of black independence, unheard of since the days of Henry McNeal Turner and Martin R. Delaney. So popular was Garvey that when he visited Los Angeles in 1922, nearly half of southern California’s black population turned out (p. 138). His popularity drew the ire of such leaders as W. E. B. Du Bois of

the NAACP and Chandler Owens of the *Messenger* (a Marxist journal).

Returning stateside after World War II, black servicemen pressed their claims for voting rights and larger employment opportunities. The federal government responded with Pres. Harry Truman’s Executive Order 9971, which desegregated the armed forces in 1948. Blacks realized that after a day’s work in a military environment, they and whites went their separate ways. They also learned much from the rhetorical coercion of post-World-War-I-era activists as they emphasized battlefield achievements.

Changing their course for success, black leaders first capitalized on the language of individual rights, especially as outlined in the Constitution and the Bill of Rights. Second, they turned to a foreign-affairs frame, placing their claims after 1947 in an international context, enabling the United States to win the support of non-Communist Asia and Africa. In addition, Pres. Franklin Roosevelt’s Fair Employment Committee and Truman’s President’s Committee on Civil Rights (1947) undergirded black progress for at least the next two decades. A Supreme Court that had been the nemesis of blacks in the nineteenth century became a major ally in the twentieth century; a Congress that had been an ally during Reconstruction in the nineteenth century became their nemesis for much of the twentieth century.

Focusing on the years from independence to the 1980s, Krebs outlines how the Druze framed their route to full citizenship in terms of military sacrifice and how they “remain convinced that this has been the key to their success” (p. 184). The Druze lacked the cultural resources to advance their standing, yet the domestic and international communities reminded Israel that it must work to buttress Israeli interests and not solely Jewish interests. A sympathetic Hebrew-language press also helped publicize Druze grievances. In sum, the Arab Druze played the political game according to Israeli rules and did so by emphasizing integration.

The post-cold-war atmosphere of the 1990s was an excellent time for the military to experiment with a more liberal policy on sexual orientation. Yet the gay community blasted the Clinton administration for not going far enough with its “don’t ask, don’t tell” policy. Arguments for and against gay recruitment focused on unit cohesion and combat effectiveness. Gays contend that true acceptance in America will not come as long as the military’s discriminatory policies continue to deny them a place in the armed forces.

Krebs's well-written, meticulously researched book is an enormous contribution to military history, government, and academia. *Fighting for Rights* shows how the military is viewed by nonmilitary members and governments, why recruits enlist, and what their expectations are once they enlist. Governments want to know if the military is a nation builder or a nation destroyer. For African-Americans and other minorities, the study emphasizes that patriotism and an opportunity to show that they belong top their list.

Richard Bailey, PhD
Montgomery, Alabama

We Were One: Shoulder to Shoulder with the Marines Who Took Fallujah by Patrick K. O'Donnell. Da Capo Press (<http://www.perseusbooksgroup.com/dacapo/home.jsp>), Eleven Cambridge Center, Cambridge, Massachusetts 02142, 2006, 288 pages, \$25.00 (hardcover).

Patrick K. O'Donnell writes a gripping book detailing the second battle for Fallujah as seen through his own eyes and those of Marine small-unit leaders and their subordinates who fought the battle. According to an unknown marine, "Fallujah may not be hell, but it's in the same zip code" (p. 157). Not for the faint of heart, the book thoroughly details numerous small-unit engagements during this epic battle waged against a fanatical and determined enemy. Not an intellectual think piece, it is instead a blue-collar, in-your-face, real-life depiction of marines fighting an ingenious, determined, and radical mujahideen insurgency, high on adrenaline and willing to fight to the death. In grimacing detail, the book notes the hand-to-hand combat waged house-to-house and building-to-building that was necessary to secure Fallujah.

This book's perspective makes it stand out among others that deal with such battles. The author's decision to write about Fallujah through the eyes and experiences of those who fought it—and to draw on his own observations—brings credibility and a real sense of truth to a compelling story of bravery, courage, and commitment to something greater than oneself.

Shortly after the battle for Fallujah began, O'Donnell was embedded with 1st Platoon, Lima Company, 3rd Battalion, 1st Marine Regiment to tell the story of its members. His observations and detailed accounts of small-unit leaders such as Sergeant Connor and Lance Corporals Hanks, de la

Garza, and Sojda bring alive the constant danger and exhausting physical and mental effort required in clearing combatants out of large urban areas. Such was the case in Fallujah, where marines fought insurgents from 18 nations. Throughout the battle, young marines had to make life-and-death decisions—many times, within a split second. The right decision protected the lives of noncombatants and fellow marines, while the wrong one produced the unthinkable. In many cases, mere chance determined whether one lived or died—opening the one door that was not booby trapped, for example. Either way, as a matter of course, young marines made decisions with conviction and a real sense of purpose in spite of the inherent dangers. These types of events and decisions are highlighted throughout the book in the thoughts and words of the people who survived the battle.

The author thoroughly and accurately depicts the bond and brotherhood among marines, each willing to give his or her own life for others, fighting the fight for each other. He further captures the depths of their friendships, their thoughts and aspirations, and the absolute love, trust, respect, and admiration they had for each other. On a very personal level, he painfully recites individual accounts of the grief felt for the loss of their buddies. Most of the members of 1st Platoon, Lima Company, 3rd Battalion, 1st Marine Regiment were killed or wounded in the battle for Fallujah. One of the many emotional, personal acts of sincere love, kindness, and respect for a fallen fellow marine displayed in the book was that of 2nd Lieutenant Sommers. Upon the death of Sgt Juan Calderon, Lieutenant Sommers wrote a very personal letter to Sergeant Calderon's unborn son: "I wanted to explain his values, the things that he exhibited as a Marine that defined him as a man. These were things that I know Sergeant Calderon would have instilled in his son. Some of them I picked up on just observing him, and listening to his Marines on how he led them; others were things that he flat out said about being a father. I wanted it to be a message from his father, at a time when Juan, Jr. was becoming a man" (p. 45).

Having served with the 1st Marine Regiment a number of years ago as well as having served with or taught marines depicted in the book, I appreciate the author's depth, breadth, and thoughtfulness in showcasing the people in uniform as well as their exploits as the next generation of a national treasure: US marines. I believe that those American heroes of past wars would be proud of the next generation of Marine warriors described in *We Were One*. I further recommend the book to readers in-

terested in gaining a better understanding of the Marine ethos and the conduct of urban warfare as experienced by small-unit leaders.

Dr. David A. Anderson, Lieutenant Colonel, USMC, Retired
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Strikes: 323rd Bomb Group in World War II by

Ross E. Harlan. Oklahoma Cavanal Publishers (<http://www.okcavanal-publish.com>), 2639 N. Eagle Lane, Oklahoma City, Oklahoma 73127-1166, 2005, 144 pages, \$24.95 (hardcover).

As each day passes, we are losing members of America's "Greatest Generation," and with their passing we are losing their recollections of untold service and sacrifice during World War II. Ross E. Harlan's book about his unit, the 323rd Bomb Group, preserves a part of this combat-aviation heritage. An executive officer and intelligence officer with this Martin B-26 medium-bomber group, Harlan has written a first-person account of the group's movement and actions and showcases his personal collection of strike photographs. The memoir serves as a very brief chronological unit history, but its real value to the airpower historian lies with its insight into the effectiveness of the B-26.

In his introduction, the author clearly states that *Strikes* preserves "the splendid contribution this Group and its heroic members made to the great cause of defeating Nazi Germany." Although Harlan traces the activation, training, and movement of the group to England and France, he provides meager details about the missions themselves. As an intelligence officer, his view of the bombing missions mostly takes the form of poststrike analysis and conversation with the group's pilots and aircrews, but he recounts these only in the most general terms. He describes the weather, base conditions, and mission results as well as illustrates the impact of occasional changes in leadership and unit morale but offers little else in this sweeping history. Harlan even admits in his introduction that his approach is "fragmentary," a fact born out by the lack of detail in chronicling the efforts of the 323rd's Marauder aircrews and ground crews. For example, he rightly points out with pride that the group received the Distinguished Unit Citation for its role in retarding the German advance during the Battle of the Bulge in December 1944—but he does not discuss in any detail how it earned this prestigious award and contributed to the reduction of German communications and supply lines. In-

terspersed throughout are both official and personal photos depicting operations of the group at that stage of the war. Uniquely framed and annotated, the photos provide the reader with a visual understanding of the effectiveness of medium-altitude bombing operations and the difficulty of conducting damage assessment.

Harlan divides *Strikes* into chapters according to the various locations occupied by the 323rd during its existence. Each lists the dates and locations of these moves, sprinkled with a few details of the condition of the base and a summary of flying activity. The last chapter is a collection of copies of orders, newspaper articles, and personal letters. The most intriguing letter—from Col John Bull Stirling, 456th Bomb Squadron pilot—provides the type of anecdotal detail we expect in a unit history. Colonel Stirling discusses the B-26's tricky handling characteristics (due to uncommonly high wing loading) and mechanical teething problems (particularly the engines), which led to its early and prejudicial nickname—"the Baltimore Whore" because the wings were so short the aircraft had no visible means of support. Interestingly enough, while conducting initial flying training on the new B-26, crews jokingly coined the phrase "one a day in Tampa Bay" due to mechanical difficulty—an unfortunate expression that returned to the vernacular during the early days of F-16A flying training at MacDill AFB, Florida!

After reading this somewhat uneven unit history, one could easily dismiss the book, relegating it to the hobby-historian pile at the local discount bookstore. But Harlan's effort has some value—especially as a record of the contributions of these brave young men who asserted airpower over Europe in World War II. The strike photographs and candid appraisal of the B-26's performance are useful in completing the picture of the struggles that Airmen faced in the European theater of operations. Since World War II, Harlan has been an educator, executive, and active veterans' advocate—work that reflects his desire to capture his wartime experience and that of the men he admired and served with. Perhaps not one of the most complete or compelling unit histories available, *Strikes* nevertheless adds to our knowledge of medium-bomber operations, and for that reason alone it deserves a place on the airpower historian's shelf.

Lt Col Lawrence M. Gatti, USAF
RAND
Santa Monica, California



Mission Debrief

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The Editor

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Hon. Michael W. Wynne (USMA; MS, Air Force Institute of Technology; MBA, University of Colorado) is the 21st secretary of the Air Force, confirmed on 3 November 2005. He is responsible for the affairs of the Department of the Air Force, including organizing, training, equipping, and providing for the welfare of over 700,000 military and civilian personnel and a budget of approximately \$110 billion. Prior to assuming his current position, Mr. Wynne served as principal deputy undersecretary of defense for acquisition, technology, and logistics and as undersecretary of defense for acquisition, technology, and logistics. Before entering public service, he was a member of the NextGenFund Executive Committee and held executive positions with companies such as IXATA Group, Extended Reach Logistics, General Dynamics, and Lockheed Martin. He served in the Air Force for seven years, ending his career as a captain and assistant professor of astronautics at the US Air Force Academy. Mr. Wynne has published numerous articles on engineering, cost estimating, and contracting.



Lt Gen Robert J. Elder Jr. (BSEE, MS, DE, University of Detroit) is commander, Eighth Air Force, Barksdale AFB, Louisiana, and joint functional component commander for global strike and integration, US Strategic Command (USSTRATCOM), Offutt AFB, Nebraska. His staff experience includes senior leadership positions with the Joint Staff, Air Staff, Air Combat Command, and North Atlantic Treaty Organization. He has commanded an operational wing, group, squadron, and installation; he also commanded unit deployments to US Central Command (CENTCOM), US Pacific Command, and US European Command areas of responsibility. Other assignments include commander, US Central Command Air Forces-Forward Combined Air Headquarters in Southwest Asia, and deputy CENTCOM Air Force commander for Operations Southern Watch, Enduring Freedom, and Iraqi Freedom. Prior to his current assignment, he served as commandant of the Air War College, Maxwell AFB, Alabama. A command pilot with more than 4,000 flying hours, including 83 combat hours flown in Enduring Freedom and Iraqi Freedom, General Elder is a graduate of Squadron Officer School, Air Command and Staff College, Air War College, and National War College.



Lt Gen Terry L. Gabreski (BA, Louisiana State University; MPA, Golden Gate University) is vice-commander, Air Force Materiel Command, Wright-Patterson AFB, Ohio. General Gabreski has directed two aircraft maintenance units, served as a squadron maintenance supervisor in three units, commanded three maintenance squadrons and a logistics group, and twice served as director of logistics for a major command. She has served at the Air Staff, Secretary of the Air Force, and Joint Staff levels. During Operation Allied Force in the air war over Serbia in 1999, the general directed logistics efforts as the A-4 for the air war across the entire theater. Prior to assuming her current position, she was commander of the Oklahoma City Air Logistics Center, Tinker AFB, Oklahoma. A graduate of Squadron Officer School, US Army Command and General Staff College, Air War College, and Defense Systems Management College, General Gabreski holds a master aircraft maintenance badge and a basic parachute rating.



Maj Gen Loren M. Reno (BS, Cedarville University; MS, University of Southern California) is vice-director, Defense Logistics Agency (DLA), Fort Belvoir, Virginia. General Reno has had assignments in flying operations, training, and logistics. His staff tours include duty at Headquarters Military Airlift Command and Air Mobility Command, the Air Staff, the Secretary of the Air Force Office of Legislative Liaison, and the DLA. He has commanded two aircraft maintenance squadrons, a technical training group, and the Defense Fuel Supply and Defense Energy Support Centers. The general flew four missions into Saigon in 1975 and led air mobility logistics support for Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom. Prior to his current position, he served as director of logistics, Headquarters Air Mobility Command, Scott AFB, Illinois. A distinguished graduate of Officer Training School and undergraduate navigator training, General Reno is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.



Brig Gen Robert R. Allardice (USAF; MS, University of Southern California) is director of Airman Development and Sustainment, Deputy Chief of Staff for Manpower and Personnel, Headquarters USAF, Washington, DC. He has commanded at the squadron, group, and wing levels. Prior to his current assignment, he served as director of personnel at Headquarters Air Force Materiel Command, Wright-Patterson AFB, Ohio. A command pilot with more than 4,700 hours in the C-141, C-5, and C-17, the general deployed twice to command operations during the global war on terrorism. In 2001 he commanded the strategic humanitarian airdrop, which began on the first night of combat operations in Afghanistan. In the opening days of Operation Iraqi Freedom, he commanded and led the airdrop of the 173rd Airborne Brigade, seizing vital territory in northern Iraq. General Allardice is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.



Capt Scott E. McIntosh (MA, Naval Postgraduate School) is director of the South Central Asia Orientation Course at the USAF Special Operations School, Hurlburt Field, Florida. He previously served at McConnell AFB, Kansas, providing tactical and strategic intelligence support to the base's KC-135 mission and supporting combat aircrews in Operations Northern Watch, Southern Watch, and Allied Force. He then provided intelligence support to the 3rd Armored Corps' air liaison officer at Fort Hood, Texas, and deployed to the air support operations center for Combined Joint Task Forces Mountain and 180 to enable close air support for Operation Enduring Freedom. A Eurasian affairs specialist, he has studied at the Russian Government Language Institute at St. Petersburg, Russia; Ivan Franko University at L'viv, Ukraine; and the US Army's Foreign Language Training Center-Europe at Garmisch-Partenkirchen, Germany. Captain McIntosh is a distinguished graduate of both the Naval Postgraduate School and Defense Language Institute in Monterey, California.



Maj William D. Fischer (BA, University of Texas–Arlington; MA, Auburn University–Montgomery; MA, Naval Postgraduate School) is commander of the 22d Mission Support Squadron, McConnell AFB, Kansas, one of three such squadrons in the Air Force undergoing a test configuration to realign the functions of manpower, readiness, education/training, and casualty services. Previous assignments include chief, Rated Staff Assignments; deputy chief, Senior Officer Management Division; and executive officer to the director of personnel, all at the Directorate of Personnel, Headquarters Air Mobility Command, Scott AFB, Illinois. He participated in Operations Southern Watch and Enduring Freedom, where he led the largest forward-deployed personnel support for contingency operations (PERSCO) team in the area of responsibility. A manpower-personnel officer, Major Fischer is a graduate of Squadron Officer School and Air Command and Staff College; during his course of study at the Naval Postgraduate School, he was the only Air Force officer to earn a degree in stabilization and reconstruction operations.



Maj Ravi I. Chaudhary (USFA; MS, St. Mary's University) is chief, Operational Flight Testing, Headquarters Air Mobility Command Test and Evaluation Squadron, McGuire AFB, New Jersey. A C-17 pilot and aerospace engineer, he has completed assignments in space launch, acquisition, and mobility operations. Also, he has flown over 150 combat sorties from various locations, including tactical insertion of the Army's 10th Mountain Division commander for Operation Anaconda, initial assault of the 101st Airborne Division into Afghanistan, the first convoy-relief missions in Iraq, and various classified missions. Previous assignments include chief of third-stage launch operations, Los Angeles AFB; aerospace engineer, Kelly AFB, Texas; flight-test engineer, Robins AFB, Georgia; intern for the National Aeronautics and Space Administration, Marshall Space Flight Center, Alabama; deputy chief of wing training, Charleston AFB, South Carolina; and commander, Detachment 1, 817th Expeditionary Airlift Squadron, Ramstein AB, Germany. Major Chaudhary is an Associate Fellow of the American Institute of Aeronautics and a graduate of Squadron Officer School and Air Command and Staff College.



Dr. David R. Mets (USNA; MA, Columbia University; PhD, University of Denver) is professor emeritus at Air University's School of Advanced Air and Space Studies and military defense analyst at the College of Aerospace Doctrine, Research and Education. He studied naval history at the US Naval Academy and taught the history of airpower at both the Air Force Academy and West Point. During his 30-year career in the Navy and Air Force, he served as a tanker pilot, an instructor navigator in strategic airlift, and a commander of an AC-130 squadron in Southeast Asia. On another tour there, he was an aircraft commander for more than 900 tactical-airlift sorties. A former editor of *Air University Review*, Dr. Mets is the author of *Master of Airpower: General Carl A. Spaatz* (Presidio, 1988) and four other books.

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Left to right: Mr. Almerisio B. Lopes, editor of *Air and Space Power Journal—Português*; Gen Jacinto Pedro Cavunga, defense, military, air, and naval attaché to the United States; and Maj Gen Sérgio Luiz de Oliveira Freitas, Brazilian defense and air attaché to the United States, meet in the Angolan Embassy in Washington, DC (14 September 2006).



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