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The Coalition Air Force Transition Team

Rebuilding Iraq's Air Force

Maj Gen (sel) Robert R. Allardice, USAF
Maj Kyle "Brad" Head, USAF

ANYONE WHO WALKS into the dayroom of the Iraqi Air Force's 2nd Squadron at Taji Air Base would likely see a group of pilots sitting around, talking flying with hand movements ("shooting their watch"), and sipping tea from porcelain glasses—a scene typical of flying squadrons around the world. A closer look would reveal that half of those pilots are American aviators. On this particular day, they recount the events of their mission that called for monitoring the oil pipelines and passionately argue about how to best respond and stay in formation when attacked by a shoulder-fired missile. At 1400, as if on cue, the power goes out, and the discussion ends. The coalition Airmen head back to their offices to put in several hours' work on the next day's activities. All in all, it's just another day in the life of combat aviation advisors as they help build airpower capacity for a partner nation.

In August 1990, Iraq possessed the sixth-largest air force in the world.[1] Battle-hardened from a nearly decade-long war against its arch-rival Iran, the Iraqi Air Force (IqAF) maintained and flew some of the most advanced aircraft in the world.[2] Then it lost most of its air assets in the Gulf War of 1991 and withered and regressed during the decade of United Nations sanctions and no-fly zones, with the expected degradation of Iraq's once proud air force. By the end of major combat operations in Operation Iraqi Freedom, the aircraft, defense systems, heavy-maintenance capability, and command and control (C2) structure had all disappeared.[3] All that remained were a few cratered runways and distant memories of the pre-1991 era.

On 18 August 2003, the Coalition Provisional Authority's order number 22 authorized the creation of new Iraqi armed forces, including a new IqAF.[4] Letters of authorization, however, do not build air forces. Airmen do, when apportioned the appropriate training, education, experience, and resources to assemble the essential elements: technically qualified and motivated Iraqi personnel, adequate infrastructure, mission-suitable

aircraft, and all the relevant training systems and tech data necessary to field and sustain a credible force. Despite the Coalition Provisional Authority's declaration and the United States' generous gift of three 1960s-vintage C-130s in January 2005, it was not until October 2005 that a United States Central Command Air Forces assessment team was finally able to conduct site surveys in Iraq.[5] Comprised of functional experts from across the US Air Force, the team rapidly completed its assessment and published a comparative aircraft study two months later, which recommended how best to organize, train, and equip the IqAF to effectively meet the needs of the government of Iraq (GOI).[6] This document—the baseline for the relationship between the IqAF and the US Air Force—serves as the foundation that defines the mission of the Coalition Air Force Transition Team (CAFTT).[7]

One of the most effective means of fighting and winning the military element of a counterinsurgency (COIN) environment involves training and fielding a competent host-nation security force.[8] Doing so has the dual effect of increasing the legitimacy of the host-nation government, while simultaneously diminishing the requirement for international/coalition forces, whose presence often only exacerbates the situation.[9] The CAFTT has the responsibility for assisting the GOI in fielding and employing an air force capable of helping it fight and win the current conflict while laying the foundation for the air force it will need to defend its national sovereignty well into the future. An incredibly complicated process in itself, building an air force in the middle of a war becomes infinitely more complex.

This article provides only a snapshot—an incomplete picture—of the CAFTT's effort in Iraq today. But the approach developed to address the unique challenges facing the IqAF offers a good framework to consider in future situations, if and when the US Air Force finds itself helping a struggling nation build or rebuild an air force. The main lines of operation and lessons learned include examples of what worked and the challenges that still limit rapid progress. Finally, although the CAFTT has only a brief history, we continue to establish baseline recommendations to improve the predeployment training of combat aviation advisors.

The Importance of a Plan

The CAFTT simultaneously operates across the strategic, operational, and tactical spectrums of conventional military activities. Aviation advisors work hand in hand with the chief of the IqAF and his Air Staff to develop the planning and management processes and practices necessary to develop, field, and sustain the IqAF. These advisors also engage with members of the IqAF's Operational Headquarters to facilitate and envision a functioning air operations center and effective C2, as well as guide the development of the processes and procedures necessary to function at the operational level. Finally, over 200 US Airmen from virtually every career field work daily on the flight lines, in the back shops, and in the classrooms—from Basra to Kirkuk and several places in between. Their jobs entail assessing, training, advising, and assisting at the tactical level as well as nurturing the fledgling IqAF's operations.[10] Coordination of these efforts takes considerable energy and, of course, a plan. In fact, according to an old Arabic proverb, "The journey of 1,000 miles begins with a single step, and a plan." Planners developed a campaign plan to establish a common sight picture to coordinate and synchronize efforts across the CAFTT (fig. 1).

The essence of the plan is the CAFTT's mission statement: "Build an Iraqi Air Force capable of conducting sustained operations, focused on the COIN fight in the near-term, in order to defeat terrorism and create a stable environment, while setting the conditions for achieving air sovereignty."[11] Expanding on this statement, the CAFTT commander's intent calls for

> build[ing] a credible Objective Air Force capable of conducting sustained operations in defense of Iraq. The immediate priorities are getting the Iraqi Air Force in the air, developing operational capacity (weapons systems, training systems, and infrastructure development), and a management and command and control capacity. Longer-term priorities include setting the conditions for Iraq's air sovereignty, operational sustain-

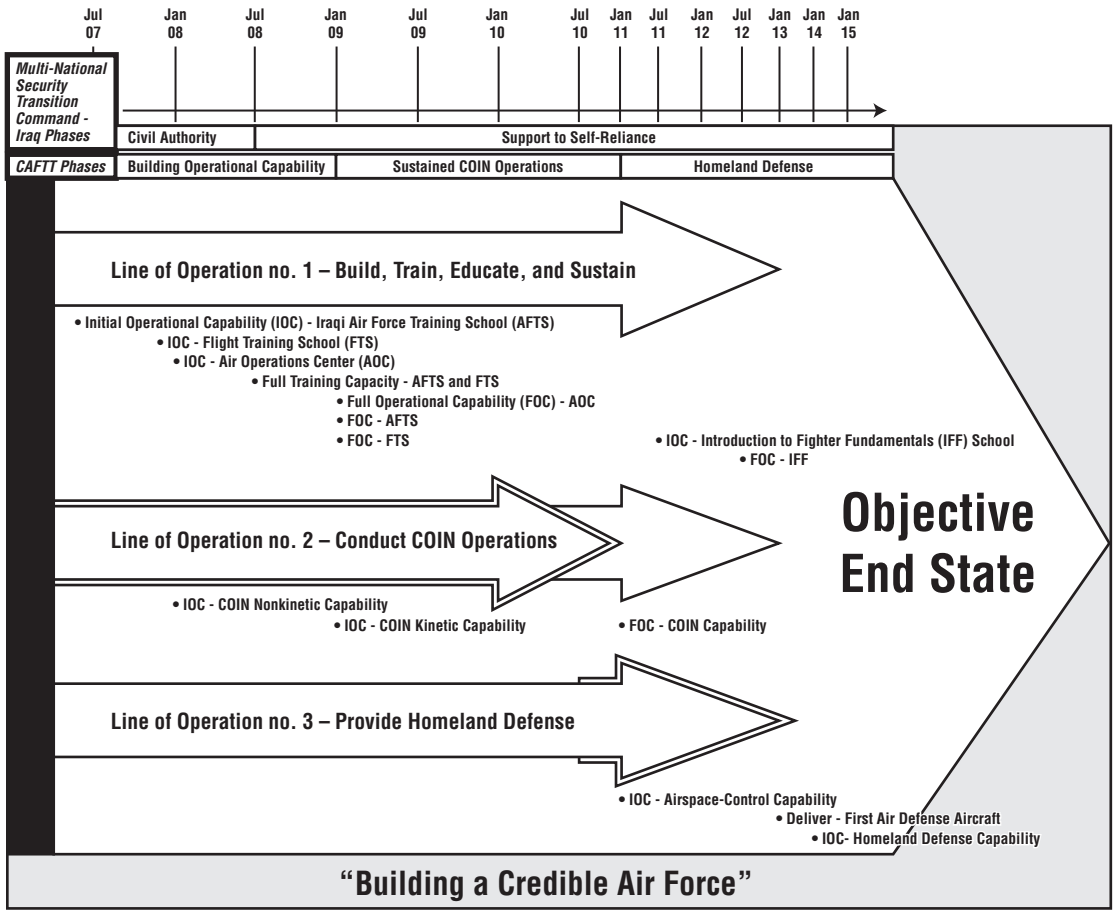

Figure 1. CAFTT campaign plan

> ability, and homeland defense capabilities. Introduce and sustain western influence in the IqAF through a combination of training, advising, and mentoring.[12]

To meet this intent, mission analysis yielded the following objectives: (1) build, train, educate, and sustain air operations; (2) exhibit military professionalism; (3) conduct day/night/all-weather COIN operations; and (4) provide the GOI with homeland-defense capabilities.

Fulfilling these objectives requires that the CAFTT operate simultaneously along three lines of operation: (1) the traditional build-train-educate-sustain effort, (2) the operational charge to conduct COIN operations, and (3) the effort to build a force that can protect Iraq's air sovereignty. Although these lines of operation are complementary and occur to some degree in parallel, the bulk of the CAFTT's initial effort focused on the first line of operation—building, training, educating, and sustaining air operations. In early 2008, the focus will shift to contributing credible airpower capability to ongoing COIN operations. The homeland-defense mission will take years to develop and will require a genuine commitment by the GOI. Until the IqAF becomes capable of conducting this mission independently, the coalition's airpower assets will have to weigh the level of synchronization and integration required for continued ongoing operations.

Line of Operation no. 1: Building, Training, Educating, and Sustaining

Although this important line of operation will take years to fully realize, the US Air Force, with full cooperation from coalition partners, has made significant progress in a very short time frame. The effort to "build" truly started from the ground. As previously mentioned, the IqAF effectively ceased to exist in 1991 and officially disbanded in the wake of the coalition invasion in 2003. The Coalition Provisional Authority approached former IqAF officers to form the nucleus of the new IqAF's Air Staff. Following proper screening and vetting, these officers contacted other former members and convinced them to rejoin. Recruiting of new members began in earnest in 2007. The IqAF's ability to field a credible air force will clearly depend upon its recruitment and retention of quality individuals. Current plans show the IqAF growing from 1,000 to 2,900 members by the end of 2007 and then doubling to almost 6,000 by the end of 2008. To support this rapid growth, the GOI and United States have invested $300 million in construction to provide the necessary infrastructure at each of the IqAF's four main bases.

The most difficult challenge in building a credible air force entails quality people. Getting the right people, in the right place, at the right time, with the right training and equipment is critical to the success of rebuilding the force. The effort to recruit, educate, train, and integrate technically competent people from this war-torn nation has proven extremely difficult. More specifically, identifying and grooming quality leaders takes considerable time and concentrated effort. To fill the gap between authorized and assigned positions, IqAF leaders were encouraged to reach out to former IqAF members. Unfortunately, the average pilot who returned to the IqAF was approximately 43 years old, with most flying their last sortie—usually in some variant of a MiG—in January 1991. Clearly, rehiring former pilots was not a viable long-term solution. The only realistic approach to filling the gap—a method that allowed the CAFTT to make a lasting change to the culture of the IqAF—involved recruiting and training to produce a new generation of Airmen.

As recruiting efforts began generating qualified candidates, the herculean task of building an entire training and accessions pipeline fell to the 370th Expeditionary Advisory Training Squadron at Taji Air Base, home of the Iraqi Air Force Training School. In March 2007, five members from the 370th started the first Air Force Officers Course at the Iraqi Military Academy (the country's premier military academy, often referred to as the "Sandhurst in the Sand") at Ar Rustamiyah. To meet the growing demand for young officers, the CAFTT also developed and won approval from the Iraqi minister of defense to initiate a six-month Officer Training School–style commissioning program geared toward university graduates with engineering degrees. In May 2007, a team of military training instructors from Lackland AFB, Texas, ran the first class of basic military training for 62 *janood* (the Iraqi equivalent of *airmen*). The instructors also addressed a critical shortage of noncommissioned officers (NCO) by creating a program to enable the IqAF to recruit high-quality candidates for direct commissioning as warrant officers—the IqAF's top NCO rank.

With the pieces of the accession pipeline falling into place, another flight in the 370th focused on building the basic technical-training pipeline.[13] A collection of motivated young officers and experienced NCOs drove the process to create the IqAF equivalent of the USAF's Second Air Force.[14] This Basic Technical Training Branch of the Iraqi Air Force Training School offers a myriad of courses ranging from air-intelligence applications to crash/fire rescue. A group of handpicked experts from across the US Air Force began with a baseline curriculum provided by Air Education and Training Command. Before teaching the courses, however, instructors modified them extensively to account for any IqAF-specific equipment and procedures. Instructors faced all the challenges of teaching in a foreign environment: translating slides into Arabic, learning to teach through interpreters, and remain-

ing sensitive to differences in educational systems and learning styles. Additionally, instructors tailored each course specifically to ensure it provided the knowledge, skills, and abilities required by the IqAF. They did this through collaborative efforts and coordination with their functional counterparts on the CAFTT and IqAF staffs and with continuous input from subject-matter experts in the field. Initially conducted on an ad hoc basis, this process eventually became formalized in a regular series of meetings of an organization known as the Training Integration Working Group.

The final piece of the institutional training puzzle fell into place in October 2007 with the opening of the Flight Training School at Kirkuk. Although the first class started with only a handful of students, the school is structured and designed to produce 130 new pilots each year by the end of 2008. Beginning with basic flight screening in Cessna 172s, students progress through intermediate and advanced training in either a rotary- or fixed-wing track. Understanding that attaining credibility depends upon their ability to produce indigenous pilots, IqAF leaders have already identified several potential instructors.

Beyond conducting formal training in schools, CAFTT members also perform the more traditional missions of aviation advisors, typically performed by the operational aviation detachments of the 6th Special Operations Squadron. In this environment, aircraft maintainers and support personnel—as well as Army, Marine, and Air Force pilots—work side by side with their IqAF counterparts to fly, fix, and sustain the equipment and infrastructure at each base.[15] More than just perform the training mission, these members serve as models for the leadership behaviors they hope the IqAF will adopt.

As late as February 2007, the IqAF effectively consisted of a collection of squadrons at four separate bases that reported directly to the Air Staff. The Iraqis lacked an operational-level C2 capacity to coordinate and prioritize the IqAF's limited air assets. To fill that void, CAFTT advisors worked hand in hand with their IqAF counterparts to build a modest air operations center collocated with a newly formed IqAF Operational Headquarters in the Victory Base Complex. Attaining initial operational capability in April, the center has become fully integrated into the Iraqi joint force's joint operations center, handling multiple taskings every day, including flying their C-130 aircraft on the daily air tasking order of US Central Command's combined force air component commander (CFACC).

As the IqAF develops operational capacity, it becomes increasingly difficult to manage the balance between continuing training and conducting real-world operational missions. The long-term investment of training produces a more capable and effective air force, whereas operations provide an immediate contribution to the COIN fight. This fine balancing act happens every day. Combat aviation advisors commonly find themselves both flying an operational mission in support of COIN and conducting training on one or more crew positions. As the IqAF continues to improve its ability to conduct operational missions and provide credible combat capability, the demand for such services could quickly outstrip its ability to supply them.

Line of Operation no. 2: Conducting Counterinsurgency Operations

Three distinct phases make up the CAFTT campaign. The first, building operational capacity, runs through December 2008. Major milestones during this phase include developing nonkinetic COIN capabilities focused on conducting battlefield mobility and intelligence, surveillance, and reconnaissance missions as well as reaching initial operational capability on kinetic COIN.

Although neighboring countries generously provided Seeker and CH-2000 aircraft to get the new IqAF off the ground, it could not conduct traditional air force missions until it received the C-130s from the US Air Force, as mentioned above. These aircraft have flown a variety of missions, such as humanitarian relief, patient transfer, prisoner transfer, airlift of distinguished visitors, troop movements, and re-

supply. The C-130s recently moved battalions of Iraqi Army troops in support of Operation Fard Al Qanoon and delivered humanitarian-relief supplies in response to an earthquake in Irbil and a cholera outbreak in Sulayminiyah.[16] The most common request for the IqAF's C-130 airlift involves the transport of distinguished visitors and high-ranking government officials. According to an accepted rule of thumb, the hearts and minds of the host-nation population represent the center of gravity in COIN operations. Transport of distinguished visitors engenders a sense of pride and dignity in these officials and inspires confidence among the population. Seeing one of their own C-130s, UH-1 "Huey" helicopters, or Mi-17 helicopters with the Iraqi flag prominently displayed evokes an instant patriotic reaction. Whether playing soccer in an empty field, shopping in a crowded market, or gathering on their roof-top patios, Iraqis will typically stop whatever they are doing, smile proudly, and wave vigorously at the sight of one of "their" aircraft. More than a largely regionalized army or police force, a credible air force serves as a source of national pride in people looking for something to unite them.

The IqAF recently took ownership of six more Huey IIs, and programming should allow for a total of 48 by the end of 2008. Several of these helicopters will form the 15th Squadron at Taji—a unit specifically trained and equipped to provide rapid response and mobility to the Iraqi special operations forces. Currently training to develop this capability, the squadron will greatly increase the effectiveness of special operations forces, enabling them to operate in the third dimension and quickly transport forces to achieve a desired effect. Special outfitting will permit other Hueys at Taji to perform medical- and casualty-evacuation missions in support of ongoing COIN operations. A recently delivered fleet of Mi-17 helicopters provides a medium-lift capability, which will enable the Iraqi Army to draw much-needed supplies and equipment from the Taji National Depot while avoiding unnecessary convoys on dangerous supply routes laden with improvised explosive devices.

Using a combination of Seekers, CH-2000s, and specially modified Cessna Grand Caravan aircraft, the IqAF offers real-time situational awareness through a combination of surveillance and reconnaissance missions in support of critical oil- and electrical-distribution infrastructure for the Iraqi Ministry of Oil and Ministry of Electricity. Flying a CH-2000 out of Basra on 11 July 2007, Colonel Karim, commander of the IqAF's 70th Reconnaissance Squadron, spotted a large oil spot in the middle of the desert—a telltale sign of oil theft. As he approached the incident area, he discovered that a band of thieves had poked a hole in a pipeline to suck the oil from the pool and transfer it into waiting tanker trucks. After establishing a surveillance orbit, Colonel Karim called members of his squadron, who contacted the Iraqi police. He stayed on station, conducted real-time surveillance, and guided the police to the scene, where they apprehended the suspects. The Ministry of Oil estimates that the GOI loses approximately $10 billion each year due to oil theft. Small victories like this one serve not only to increase the credibility of the IqAF but also to provide a much-needed service to the GOI.

CAFTT program managers are currently working with IqAF leadership to acquire several aircraft through the foreign military sales program for the purpose of increasing the range of operational effects at the IqAF's disposal. The latter include the production of kinetic effects with weapons such as guns, rockets, or—eventually—precision-guided munitions. As these kinetic capabilities become operational, the CAFTT will shift its emphasis from building initial operational capability to sustaining ongoing operations and training.

Line of Operation no. 3: Providing Homeland Defense

No nation can remain truly sovereign if it cannot protect its own airspace. Key elements of homeland defense include airspace control, air defense, and air interdiction. As the GOI stabilizes and fields a competent security force capable of COIN, the Multi-National Force-Iraq (MNF-I) coalition will seek to reduce the size and scope of its military presence. In the

airpower arena, until the GOI can perform basic functions such as air traffic control and weather operations, or more advanced functions such as air defense, the US Air Force and other CFACC coalition and US airpower assets will continue to fill the gap. Building an air force capable of homeland defense requires national will, as well as the proper resources to field and support the people and equipment that are core to Air Force operations and sustainment. Only the GOI and its leadership can determine when, and to what level, they want to invest in this range of capabilities.

Observations from the Field

Most importantly, US Airmen must prepare themselves to advocate the role of airpower from the very beginning of an operation. Airmen know that the measure of success lies not totally in the numbers of the coaliton ground forces in Iraq but in the effects brought to bear by the force as a whole.[17] Some members of the joint force may not be fully informed about the inherent and wide-ranging capabilities that airpower brings to COIN operations. All Airmen, regardless of their specialty, must see themselves as advocates who know how to explain airpower's critical role in COIN operations and the successes that are enabled by integrating the inherent speed, range, flexibility, and maneuver of an air force into those operations.

Traditionally, foreign internal defense falls into the realm of Army special forces, with specialized combat aviation advisors coming from Air Force Special Operations Command—most recently the 6th Special Operations Squadron. One hallmark of the special operations community is that it handpicks members who have excelled in their operational specialties and runs them through an extensive screening process. Those who pass the test then endure extensive, extremely rigorous training before going on their first real-world mission. Given the growing demand for this capability in Iraq and Afghanistan—which recently began rebuilding the Afghan National Army Air Corps—and with the new Africa Command looming on the horizon, requirements for foreign internal defense may quickly exceed the capacity of the special operations community as currently sized.

Is the US Air Force ready to embrace foreign internal defense as a growing mission that will be around for years to come? In a deployed war zone characterized by minimally manned functional areas, we must fill these jobs with the right people with the right skill sets and background. In the long run, the US Air Force may decide to build a large standing corps of advisors specifically trained and equipped to carry out this mission; however, in the short run, it must continue to conduct these specialized missions on an ad hoc basis, using existing line personnel.[18] This situation will drive much-needed changes to the selection process and training pipeline for future advisors. Advising in an Arabic culture, where the strength of one's relationships (which take time to develop) denotes the measure of one's power, demands that future advisors serve tour lengths commensurate with appropriate objectives. The US Air Force must adjust its personnel system to effectively screen for people with the aptitude to excel in these critical jobs; furthermore, these members need to hit the ground running, ready to sprint a marathon.

Embracing the fact that a majority of its advisors will come from regular forces, the US Army has created a three-month training pipeline for them. The course starts at Fort Riley, Kansas, two months before a scheduled deployment, taught by instructors fresh from the field, who bring a wealth of current knowledge and expertise to share with those in the deployment pipeline. Attending training together as a unit has the effect of building the team before it deploys and gives advisors an opportunity to develop networks they can leverage after arriving in-theater. A five-day layover in Kuwait allows additional specialized tactical training, including convoy and combat lifesaving. Army advisors in Iraq spend their first week in country at the Phoenix Academy at Taji, where they attend briefings by the commander of MNF-I and his senior staff, along with a select group of subject-matter experts that includes members of the departing advisory team. The academy covers a range of subjects, such as organization

of coalition and Iraqi security forces, policies and procedures of the Iraqi security forces, advanced COIN and advisor skills, and additional briefings on the most current insurgent tactics, techniques, and procedures.[19]

The CAFTT's predeployment training continues to evolve. The first wave of advisors attended a customized five-week course; later groups received only the weeklong Middle East Orientation Course; and the most recent group underwent two weeks of training generally designed for combat-convoy commanders. As Air Education and Training Command gathers feedback from each group, it continues to adjust the length and focus of predeployment training. While designing this training, the US Air Force must conduct a risk-reward assessment to balance competing demands between, on the one hand, dramatic and potentially lifesaving combat skills that advisors probably will not use, and, on the other hand, more mundane practical skills that comprise advisors' core competencies.

To assure its effectiveness, we must specifically tailor future advisor training to the challenges and realities of the unique environment as well as the particular mission—principally, cultural awareness.[20] Beyond merely learning a few key words and phrases, which earn them instant credibility, advisors must understand several perspectives: what they believe about their counterparts, what they believe about themselves, what their counterparts believe about them, and what their counterparts believe about themselves.[21]

Gaining a better understanding of their Iraqi counterparts requires that future CAFTT advisors possess general knowledge of the history of the Middle East, with a specific focus on the development of Islam and Arab history—which are not the same thing.[22] A basic understanding of tribal-based societies with an emphasis on social-network analysis helps in understanding the overlapping and competing spheres of influence at play in this complex culture. The ability to see the informal networks behind the formal bureaucracy enables advisors to more effectively comprehend and influence the behavior of their IqAF counterparts. The development of sufficient cross-cultural communication skills might benefit from role-playing scenarios wherein advisors practice speaking through an interpreter and negotiate with someone raised in an Arab culture.[23]

Given that their role involves helping the IqAF build an effective COIN force, advisors must know and understand the general principles and specific airpower applications in a COIN environment.[24] The US Air Force currently lacks a doctrinal framework to guide the building of a COIN air force.[25] The recently released Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, 1 August 2007, and AFDD 2-3.1, *Foreign Internal Defense*, 15 September 2007, represent a start in the doctrinal framework required for building fledgling air forces; however, the specific mission area of "building partnership capacity" requires further thought and may warrant its own doctrine.

A majority of the CAFTT's flying aviation advisors never served in the 6th Special Operations Squadron, and several had never learned basic tactics. They arrived lacking basic skills necessary to operate in a combat zone, much less train Iraqi pilots to function in this environment. Aviation-related air advisors require tactical flying training in the continental United States (CONUS) to avoid longer-than-necessary theater indoctrinations that expend the host nation's limited flying hours. Bare-minimum qualifications for ongoing consideration should include practicing strafing patterns, formation flying with night-vision goggles, and low-level threat analysis performed in the CONUS. Aircraft mechanics find themselves working on a variety of general-aviation aircraft unlike anything they have seen before. Providing airframe and power-plant commercial certifications not only would produce better-qualified advisors but also would serve as an incentive for potential volunteers.

The US Air Force can no longer afford to treat the advisory mission as a niche endeavor; rather, we must embrace it as a core competency of our twenty-first-century Air Force. Current geopolitical reality suggests that the need for a highly qualified advisor corps will grow significantly in the near future.[26] Effectively engaging these opportunities will require a well-thought-out doctrine that explains

how airpower, beyond US Air Force–unique capabilities, contributes to COIN operations and concentrates specifically on building fledgling COIN air forces. The US Air Force owes it to future advisors to make available both the general skills and specialized training necessary to excel in their jobs. To do it right, the service also will have to provide sufficient manpower and resources.

Conclusion

Iraq is a nation torn by a stifling combination of insurgency, terrorism, and communal conflict—all within the confines of a failed state.[27] No one knows what the future holds for that country; however, Airmen understand that no state or government will remain truly sovereign unless it can control and defend its own airspace. Building an air force capable of responding across the spectrum of operations in Iraq's complex environment differs fundamentally from anything the US Air Force has prepared the current generation of Airmen to accomplish. Like previous generations, today's Airmen are rapidly stepping up to the challenge.

Until Iraq can fully defend its own air sovereignty, US Air Force–led coalition air assets will likely assist the IqAF in maintaining a protective umbrella. Meanwhile, CAFTT members will continue performing one of the most challenging, exciting, and rewarding jobs in today's air force.[28] Embracing the mission of building or shaping a partner's airpower capacity, if required, as a critical component of any successful irregular-warfare campaign demands that the US Air Force leverage the lessons learned by the CAFTT and consider institutionalizing this capability. ❑

Notes

1. "Reaching Globally, Reaching Powerfully: The United States Air Force in the Gulf War: A Report, September 1991," 28 August 1997, http://www.globalsecurity.org/military/library/report/1991/desstorm.htm.

2. For more on the lessons of the Iran-Iraq War, see Maj Ronald E. Bergquist, *The Role of Airpower in the Iran-Iraq War* (Maxwell AFB, AL: Air University Press, December 1988), http://www.maxwell.af.mil/au/aul/aupress/Books/Bergquist/Bergquist_B25.pdf.

3. For a fascinating after-action review of Operation Iraqi Freedom, see Kevin M. Woods with Michael R. Pease, *The Iraqi Perspectives Report: Saddam's Senior Leadership on Operation Iraqi Freedom from the Official U.S. Joint Forces Command Report* (Annapolis: Naval Institute Press, 2006).

4. "Coalition Provisional Authority Order Number 22: Creation of a New Iraqi Army" (Baghdad, Iraq: Coalition Provisional Authority, 18 August 2003), http://www.iraqcoalition.org/regulations/20030818_CPAORD_22_Creation_of_a_New_Iraqi_Army.pdf.

5. For a comprehensive history on the genesis of the Coalition Air Force Transition Team's mission, see Michael Bauer, *Training the Iraqi Air Force: Lessons from a U.S. C-130 Advisory Mission*, Policy Focus no. 71 (Washington, DC: Washington Institute for Near East Policy, August 2007).

6. *Operational Assessment of the Iraqi Air Force* (Shaw AFB, SC: US Central Command Air Forces, 30 October 2005).

7. CAFTT falls under the Multi-National Security Transition Command-Iraq (MNSTC-I), a major subordinate component of the Multi-National Force-Iraq (MNF-I), under the command of Gen David Petraeus, USA, who previously stood up and commanded MNSTC-I. The latter has the overall responsibility for training, mentoring, and developing the Iraqi security apparatus, a subset of nation building commonly referred to as foreign internal defense.

8. Army Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, December 2006, 6-1, http://usacac.army.mil/cac/repository/materials/coin-fm3-24.pdf.

9. Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, 1 August 2007, 15, https://www.doctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd2-3.pdf.

10. Ibid., 28.

11. "Coalition Air Force Transition Team: Iraq Campaign Plan, 2007–2015," 16 August 2007, 7.

12. Ibid., 10.

13. For a good historical study on the development of tech training to support the Vietnamese Air Force, see Capt Drue L. DeBerry, "Vietnamese Air Force Technical Training, 1970–1971," *Air University Review*, January–February 1973, http://www.airpower.maxwell.af.mil/airchronicles/aureview/1973/jan-feb/deberry.html.

14. Second Air Force is the command responsible for conducting basic technical training for the entire US Air Force.

15. US Army National Guard officers and warrant officers are the primary instructors on the Bell Jet Ranger helicopters at Taji and Kirkuk. The US Marines recently provided several pilots with tactical experience to advise the IqAF's Huey II pilots at Taji.

16. Operation Fard Al Qanoon refers to the Iraqi Army's operations in conjunction with the surge in coalition forces in the summer of 2007.

17. As of early September 2007, about 6,000 Airmen were assigned to MNF-I, which boasts a total force of approximately 170,000 personnel.

18. For a proposed comprehensive approach to establishing a standing corps of army advisors, see John A. Nagl, "Institutionalizing Adaptation: It's Time for a Permanent Army Advisor Corps" (Washington, DC: Center for a New American Security, June 2007); and Lt Col Norman J. Brozenick Jr., "Another Way to Fight: Combat Aviation Advisory Operations," Research Report (Maxwell AFB, AL: Air University, June 2002).

19. This description is based on discussions with the cadre and staff of the Phoenix Academy during a site visit and review of the academy's program of instruction on 25 April 2006.

20. For an excellent summary of the importance of cultural awareness in stability operations, see Maj Jennifer V. Chandler, "Why Culture Matters: An Empirically-Based Pre-Deployment Training Program" (thesis, Naval Postgraduate School, September 2005).

21. Ike Skelton and Jim Cooper, "You're Not from Around Here, Are You?" *Joint Force Quarterly*, issue 36 (first quarter 2005), http://www.dtic.mil/doctrine/jel/jfq_pubs/0436.pdf; and Moshe Sharon, "Negotiating in the Bazaar," *Jerusalem Post*, 10 October 2006, http://www.jpost.com/servlet/Satellite?cid=1159193413129&pagename=JPost%2FJPArticle%2FPrinter.

22. For a good primer on this subject, see Edward V. Badolato, "Learning to Think Like an Arab Muslim: A Short Guide to Understanding the Arab Mentality," March 2004, http://www.blackwaterusa.com/btw2004/articles/0503arabs.html.

23. For further reading on this subject, see Lt Gen David H. Petraeus, "Learning Counterinsurgency: Observations from Soldiering in Iraq," *Military Review*, January–February 2006, http://usacac.army.mil/CAC/milreview/English/JanFeb06/Petraeus1.pdf; David Kilcullen, "Twenty-Eight Articles: Fundamentals of Company-Level Counterinsurgency," http://www.smallwarsjournal.com/documents/28articles.pdf; Capt Ryan T. Kranc, "Advising Indigenous Forces," *Small Wars Journal* 8 (May 2007), http://www.smallwarsjournal.com/documents/swjmag/v8/kranc-swjvol8-excerpt.pdf; and Sgt Robert M. Massie, "Advice for Advisors: Lessons Learned from a Tour with the New Iraqi Army," *Marine Corps Gazette*, July 2007, http://www.marinecorpsgazette-digital.com/marinecorpsgazette/200707/?pg=44.

24. For the definitive work on this subject from an airpower perspective, see James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003). For further readings on the general principles, see David Kilcullen, "Counter-insurgency *Redux*," *Survival* 48, no. 4 (December 2006): 111–30, http://www.informaworld.com/smpp/content?content=10.1080/00396330601062790.

25. Maj Kenneth Beebe, "The Air Force's Missing Doctrine: How the US Air Force Ignores Counterinsurgency," *Air and Space Power Journal* 20, no. 1 (Spring 2006): 27–34, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/spr06/spr06.pdf; and Lt Col Wray R. Johnson, "Whither Aviation Foreign Internal Defense?" *Airpower Journal* 11, no. 1 (Spring 1997): 66–85, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/spr97/johnson.pdf.

26. For options on how best to organize this capability, see Col Billy Montgomery, "USAF Irregular Warfare Concept," White Paper (Hurlburt Field, FL: Air Force Special Operations Command, May 2007), http://www.excaliburrd.com/docs/AT-6Project/AFSOCWhitePaperUSAFIrregularWarfare.pdf; and Alan J. Vick et al., *Air Power in the New Counterinsurgency Era: The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND Corporation, 2006), http://www.rand.org/pubs/monographs/2006/RAND_MG509.pdf.

27. Dr. David Kilcullen, "A Framework for Thinking about Iraq Strategy," *Small Wars Journal Blog*, 12 January 2007, http://smallwarsjournal.com/blog/2007/01/a-framework-for-thinking-about.

28. For regular updates on the overall effort to build the Iraqi security forces, see MNSTC-I's *Advisor* at http://www.mnstci.iraq.centcom.mil/advisor.htm.

The nation that makes a great distinction between its scholars and its warriors will have its thinking done by cowards and its fighting done by fools.

— Thucydides

Lt Col Paul D. Berg, USAF, Chief, Professional Journals

ASPJ's Peer-Review Process and Presenting the Latest *Chronicles Online Journal* Articles

As the professional journal of the US Air Force, *Air and Space Power Journal* (*ASPJ*) offers a forum for debating alternative solutions to national-security challenges. Reasonable people can disagree about proposed solutions but cannot dispute the underlying facts. Therefore, we on the *ASPJ* editorial staff ensure that articles contain accurate information and make well-reasoned arguments. When we receive an article, we examine it carefully because the *Journal* can publish only a fraction of the ones submitted. If it appears to have publication potential, our editors work with the author to address any obvious shortcomings. Naturally, though, the *ASPJ* staff cannot claim expertise on every topic. At this point, we engage the peer-review process—one of our main ways of screening prospective articles.

Specifically, we select from our Board of Reviewers (see p. 4) an appropriate "referee"—a subject-matter expert in the fields of air, space, and cyber power—to examine the article by means of a "double blind" process that precludes rank or other factors from distorting the procedure since neither the author nor the referee knows the other's identity. That is, prior to sending the article to the referee, our staff masks the author's name. The referee evaluates the submission meticulously, "stress-testing" it to expose any weaknesses, and then sends detailed written comments to us. If the subject-matter expert supports publication, we, in turn, mask his or her identity and send the comments to the author, who then has the opportunity to revise the article to address the referee's feedback. Articles often pass through several drafts before we accept them, some requiring 10 or more iterations. During this demanding process, many prospective articles fall by the wayside.

Peer review, one of the keys to *ASPJ*'s success, relies on the members of our Board of Reviewers—the *Journal*'s brain trust. Referees receive no pay, but their efforts are priceless. They possess the considerable intellectual discipline necessary to rise above their personal opinions and evaluate submitted articles solely on merit. Their advice helps authors turn good articles into great ones. All board members have our sincere thanks for their service.

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 or constraints regarding article length, *COJ* can publish timely articles anytime about a broad range of military topics.

Articles appearing in *COJ* are frequently republished elsewhere. The various *ASPJ* 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* articles (available at http://www.airpower.maxwell.af.mil/airchronicles/cc.html):

- Maj Patricia K. Seinwill, "Anatomy of Modern Courage: Highlights from the

Career of Colonel Kevin A. 'Mike' Gilroy" (http://www.airpower.maxwell.af.mil/airchronicles/cc/seinwill.html)

- Maj Brian L. Braden, "The Labor Pool Model: Effectively Managing Aircrew in Today's Air Force" (http://www.airpower.maxwell.af.mil/airchronicles/cc/braden.html)

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

INTRODUCING THE CHINESE *ASPJ*

Air and Space Power Journal is a distinguished military-academic publication. The launch of its Chinese-language edition will have a very positive impact and help gain more Chinese-speaking readers. I wish to thank the editors.

Sun Dejian
Library Chief, People's Liberation Army
Air Force Aviation University
Changchun, China

It was a pleasant surprise to discover the online inaugural version of *Air and Space Power Journal*—Chinese edition. First of all, the cover design attracted me. The idea of putting the Great Wall, a token of the Chinese armed forces, and the USAF emblem close together on the same page is symbolic in itself. Then I eagerly read the journal's content. I found new and broad topics as well as unique and professional insights. But all of these are not what I want to discuss here. As a reader with years of Chinese military experience, I want to stress the social significance of this new journal.

That a renowned US military journal would publish a Chinese edition is an unprecedented event and a positive move for military professionals and readers in both China and the United States. The journal's social and political significance may even exceed its academic value. Finally, Chinese and American military professionals may now stand on the same academic forum, exchanging ideas—a sign of a historical breakthrough.

The Cold War created misconceptions. In retrospect, the Chinese and US militaries confronted each other with minimal ideological exchange. Even recently, pointing fingers at each other dominated what little dialogue there was. For a long time, the Chinese side regarded the United States as a Western devil and bully, while the US side always referred to China as an undemocratic dictatorship. Such hostility and mind-sets originated from historical confrontations and ideological differences. Another important reason was that both sides looked inwards and refused to reach out for exchange, essentially freezing out any possi-

bilities of professional military dialogue. The birth of *Air and Space Power Journal*—Chinese edition, therefore, is all the more important. It is like a spark of fire that spreads to melt the ice between China and the United States, dissipating the mist blocking each side's vision of the other.

Like a stone thrown into water, the Chinese edition of *Air and Space Power Journal* is creating a ripple effect, the dynamics of which will push the militaries of both sides to engage seriously in professional exchange. Together, we study war, know war, eventually stop war, eliminate war, and move towards global peace. This, I believe, will be the long-term objective and contribution of the journal.

Zhi Jun
Retired Military Instructor, Chinese Police Academy
Fairfax, Virginia

A RESCUE FORCE FOR THE WORLD

As a rescue professional and advocate myself, I agree with everything said in the article "A Rescue Force for the World: Adapting Airpower to the Realities of the Long War" (Fall 2007), but I want to speak to one point that is missing. The article refers to potential new rescue-squadron locations and hints at the importance of properly managing rescue forces. None of these proposals could possibly become reality without a much larger rescue force than we now have. Our current small force is already heavily tasked around the globe. Sure, we as rescue professionals will jump at the chance to uphold our motto "That Others May Live," but mostly at the cost of our family relationships due to a constant deployment schedule. Regardless of the rescue force's willingness to participate in new initiatives, senior rescue leadership cannot ignore the impact on our low-density/high-demand forces when volunteering them around the world to do more. If we had the force structure today that we had in the glory days of the old Aerospace Rescue and Recovery Service, there would not even be a debate on this subject.

Lt Col John "JT" Taylor, USAF
Langley AFB, Virginia

COALITION OPERATIONS

I read Lt Col Paul Berg's editorial "Coalition Operations" (Fall 2007) and agree that the United States has enjoyed many close and personal partnerships with other countries; however, based on what I have seen of the war on terrorism over the past few years, I wonder if we have overlooked anyone who might have benefited from working with a multinational force. Did we inadvertently isolate anyone who could have been a team player? For example, Russian president Vladimir Putin is pulling his military arsenal of ships and nuclear-capable bombers out of mothballs and trying to build coalitions with China, Iran, Syria, and North Korea. Russia has also been having military exercises with China. I guess this is Putin's way of reacting to US-led coalitions around the world. I fear that these developments may lead Russia into renewed isolationism and increase the risk of a nuclear-arms race and new form of Cold War. I really do not foresee China being a staunch ally to Russia. China is quickly developing its own independent space, ballistic-missile, and naval programs. So how do we as a superpower tap into those countries for the war on terrorism?

Capt Steven "Schaff" Schaffhouser, USAF
Naval Air Station Joint Reserve Base
Willow Grove, Pennsylvania

REVISITING LEADERSHIP IN THE ARMED FORCES

I liked Air Commodore Aslam Bazmi's article "Revisiting Leadership in the Armed Forces" (Fall 2007) for the clear and concrete guidance he provided on what it takes to become a great leader—guidance that applies in both military and nonmilitary organizations. I appreciated his scholarship, as evidenced by highly relevant quotations from the works of a number of well-respected leaders, and enjoyed his erudite presentation.

In addition, given the times, it struck me that many Americans might be pleasantly surprised to realize the source of this splendid work. There are many, unfortunately, who tend to diminish the capabilities and contributions

of our allies, such as Pakistan. Air Commodore Bazmi's article clearly demonstrates a level of knowledge and professionalism we can all admire, founded on values we all share.

Frank J. Hannaford
Omaha, Nebraska

NASH IN NAJAF

I think that Dr. Hank Brightman's article "Nash in Najaf: Game Theory and Its Applicability to the Iraqi Conflict" (Fall 2007) made a valiant effort to quantify the incentives facing both the Iraqi domestic insurgents and the indigenous security forces (ISF). The author's depth of knowledge in the subject of economics and game theory certainly earns his views great respect. However, I believe that he made a considerable assumption with his weight assignments in figure 1 ("Iraqi conflict as a simple form game"), particularly in the "Active, Active" quadrant. It's impossible to say what the true outcome of this "game" would be for either side, but I would argue that it is at least possible that the ISF's continued resistance against Iraqi insurgents might bring them more benefit than cost, especially within a context of emerging democracy, human rights, and social freedoms for them and their families. Further, the stakes are high for the Free World and our war on terror in the region. Therefore, my hope is that unified persistence in Iraq by coalition forces will create favorable incentives which might prevent ISF defection. For the sake of the great investment and sacrifice our soldiers have made and continue to make in training and equipping the ISF, I hope that Dr. Brightman's prediction proves incorrect.

Brian MacLean
Travis AFB, California

MAJ GEN WILLIAM "BILLY" MITCHELL: A PYRRHIC PROMOTION

I disagree with what Lt Col Donald Rehkopf says in his article "Reply to 'Maj Gen William "Billy" Mitchell: A Pyrrhic Promotion'" (Fall 2007). I deem the demotion and early retirement of Brig Gen Billy Mitchell to have been a great injustice. In my opinion, General Mitchell proved his case, never gave up his integrity, and epitomized our core value of "service before self." I think that he stands alongside the commanding general of the Army Air Forces in World War II, Gen Henry "Hap" Arnold, and should be the second and perhaps only other Air Force general afforded five-star rank. Without the stepping-stones built through General Mitchell's sacrifices, General Arnold's accomplishments might not have been possible.

MSgt Howard White, USAF, Retired
Charleston, South Carolina

DEFINING INFORMATION OPERATIONS FORCES

I agree with the authors of "Defining Information Operations Forces: What Do We Need?" (Summer 2007), who note the numerous information operations career fields within the Air Force and other services. It seems only natural that there should be some consolidation of these career fields. We could then make sound, effective decisions to better prepare for the vast changes that will take place in the future.

Mr. Michael Fleenor
Diego Garcia, British Indian Ocean Territory

LEADERSHIP: AN OLD DOG'S VIEW

"The leader is the first into the traces and the last out. The leader eats last and eats least. The leader treats every member of the team with meticulous fairness. The leader encourages affection for the team but never for himself or herself. The leader is honest, and this bears repeating—the leader is honest. More than any power the leader has, the leader is most judicious with the authority to lead the team into harm's way" (p. 18).

After reading Mr. C. R. Anderegg's article "Leadership: An Old Dog's View" (Summer 2007), I was impressed by the profound depth and wisdom of the above passage, which can be considered a summary of very useful lessons. In my particular case, these lessons will enrich

my performance as a leader in the Colombian Air Force's Combat Squadron 212, which flies the T-27 Tucano, and will support my teaching mission as a team instructor. I also wish to point out that the experiences Mr. Anderegg mentions in his article are the result of a spirit imbued with knowledge that I hope to attain in the future and towards which I am working diligently so I can better understand this new world full of struggles, failures, and successes that is open to women military aviators.

Lt Liliana Paola Vergara Gutiérrez, Colombian Air Force
Villavicencio, Colombia

Editor's Note: Lieutenant Vergara read the Spanish version of Mr. Anderegg's article, available at http://www.airpower.maxwell.af.mil/apjinternational/apj-s/2007/2tri07/anderegg.html.

AIRPOWER'S CRUCIAL ROLE IN IRREGULAR WARFARE

I read with great interest Gen Allen G. Peck's article "Airpower's Crucial Role in Irregular Warfare" (Summer 2007). With his experience and strategic vision, General Peck has crafted a well-considered response and line of thought adapted to the latest questions about how airpower should meet asymmetric challenges. General Peck's article also made me realize there is a shortage of historiography on his topic. While reading the article, I was reminded that aviation employment in asymmetric warfare is nothing new. The Ottoman Turks used it with a certain degree of success in World War I against Lawrence of Arabia's Arab tribes. Additionally, the French victory in the 1925 Riff Rebellion in Morocco cannot entirely be explained without the considerable contribution, in all facets of that war against Abd el-Krim, of the 39th Aviation Regiment of Colonel Armengaud, who wrote about the subject. One could also talk about the 37th Aviation Regiment's operations against the Druze in the Syrian mountains during the early 1930s. However, to my knowledge, few studies have been written about the employment of aviation in these modern, asymmetric wars. One thing is certain, and it shows up clearly in General Peck's article: aviation is an arm distinguished by the global nature of its action, and modern conflicts—most notably World War II and the Cold War—have tended to confine high-altitude air superiority and the clashes of air forces to a remote and almost abstract role. We need to rediscover close-combat aviation and perhaps also complete the range of aerial means with slower, long-endurance aircraft in order to more completely "occupy" the sky during asymmetric conflicts.

Lt Tim Larribau, French Air Force Reserve
Bordeaux, France

FIT (AND READY) TO FIGHT

The Iron Tiger martial-arts concept mentioned by 2d Lt Nickolas Stewart in his article "Fit (and Ready) to Fight: Strengthening Combat Readiness through Controlled-Aggression Training" (Summer 2007) is a great idea. Unfortunately, the USAF seems more focused on sports such as wiffle ball and ultimate frisbee than on close-quarters combat. The troops really need warrior-oriented activities and a hard-core training method to instill a warrior ethos. Gen Curtis LeMay was one of the first to implement such a program with Strategic Air Command's combat judo program back in the 1950s. Many USAF personnel were trained in Japan and sent back to their home units to teach combat skills and the warrior ethos. Merely repeating the mantra "I am a warrior" in our minds will not make us warriors. Instead, we must train combat skills with both our brains and bodies to become warriors. Running and sit-ups will help but are not enough. We must have training in combat to win in combat. Mixed martial arts are not the correct method or solution, however. I think that a classical, proven combat system of any stripe (and there are many) would be a better choice. The troops would love it. They are eager and ready to learn combat skills. Would current leadership back and promote an "Iron Tiger Air Force" combat hand-to-hand training program? I don't know, but one thing I do know

for sure is that General LeMay would be glad to see such a program reborn in his Air Force.

Mr. Perry Pfeiffer
Vandenberg AFB, California

THE EFFECTS-BASED APPROACH TO OPERATIONS (EBAO)

I enjoyed the articles "The Effects-Based Approach to Operations: Questions and Answers" and "Five Propositions Regarding Effects-Based Operations" (Spring 2006). They accurately and objectively clarify the concept and general idea of effects-based operations as the primary element in planning military operations. The authors' presentations are so clear that they turn this theory into an element that is clearly applicable to other disciplines, such as business administration. Being familiar with EBAO as a business consultant has made me ponder the possibility of designing effects-based consulting plans, using as principal elements the constructs presented in the two articles mentioned above. In my opinion, those articles are clear evidence of the quality of the materials presented in *Air and Space Power Journal*. They are valuable, and they represent an important contribution to the community that has access to them. Congratulations on your publication.

Eustorgio Rodado Fuentes
Bogotá, Colombia

Editor's Note: Mr. Rodado read the Spanish version of this article, available at http://www.airpower.maxwell.af.mil/apjinternational/apj-s/2006/4tri06/hunerwadel.html and http://www.airpower.maxwell.af.mil/apjinternational/apj-s/2006/4tri06/carey.html.

Integrity, Service, and Excellence are the enduring touchstones of the United States Air Force, and discipline is at the core of all three. A disciplined force puts mission first; flies, fights, and wins as a team; knows the rules; pays meticulous attention to details; and is accountable for the final results.

—Gen T. Michael Moseley, Chief of Staff, US Air Force

Lt Col Paul D. Berg, USAF, Chief, Professional Journals

Airpower and Irregular Warfare

AIR FORCE DOCTRINE defines irregular warfare (IW) as "a violent struggle among state and non-state actors for legitimacy and influence over the relevant populations," adding that "IW and traditional warfare are not mutually exclusive and both are often present in the same conflict."[1] This guidance clearly reflects IW's complex nature. The United States faces many national-security challenges, but IW demands particular attention in the era following the terrorist attacks of 11 September 2001.

Airpower's proper role in IW has become a controversial topic. Complex challenges typically call for integrated joint and interagency solutions, yet some military doctrine depicts IW as a ground-centric activity in which airpower serves only a narrow, supporting role. Army Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, exemplifies that constricted view by confining airpower to a five-page annex in a nearly 300-page document.[2] Conversely, Gen T. Michael Moseley, US Air Force chief of staff, articulates the broader view that "employed properly, airpower (to include air, space, and cyberspace capabilities) produces asymmetric advantages that can be effectively leveraged by joint force commanders in virtually every aspect of irregular warfare."[3] The new Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, which reflects General Moseley's vision, energizes a more joint conception of airpower's role in IW. Joint approaches often yield synergies not found in narrower military perspectives, so AFDD 2-3 makes an important contribution to the ongoing dialogue about how best to integrate all military capabilities into IW.

Experts at operating in the air, space, and cyberspace domains (all of them vital to IW), Airmen have the necessary perspective for devising innovative ways to exploit them. Airmen do not claim that their areas of expertise can meet all IW needs, but they do question the validity of military approaches that fail to optimally harness the potential of those domains. AFDD 2-3 notes that "the Air Force provides valuable and unique capabilities in IW. In many cases, these capabilities provide flexible and persistent options for dealing with the IW challenges by providing a less intrusive force that can respond quickly and improve commanders' overall situational awareness."[4] Joint force commanders deserve a comprehensive articulation of how all military capabilities relate to IW. We would make a serious mistake by confining our thought to a single operational domain.

No doctrine manual will ever serve as an IW panacea, but, given IW's status as essentially a war of ideas, doctrine can play a key role in that type of conflict. *Air and Space Power Journal* (*ASPJ*), the professional journal of the USAF, is another participant in the ongoing war of ideas. Realizing the importance of IW and the vigorous debate surrounding airpower's role in that struggle, the *ASPJ* staff dedicates this issue to advancing the professional dialogue about both topics. ❑

Notes

1. Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, 1 August 2007, 1 and 8, https://www.doctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd2-3.pdf (accessed 6 September 2007).
2. FM 3-24 / MCWP 3-33.5, *Counterinsurgency*, December 2006, appendix E, "Airpower in Counterinsurgency," http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed 6 September 2007).
3. AFDD 2-3, *Irregular Warfare*, foreword.
4. Ibid., 14.

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 aspj@maxwell.af.mil.*

Israel's Failure

Why?

Lt Col J. P. Hunerwadel, USAF, Retired*

ISRAEL'S 34-DAY CAMPAIGN against Hezbollah in the summer of 2006 had people lining up to place blame for its failure even before it ended. Indeed, Hezbollah's survival and increased influence in Lebanon does seem to indicate that Israel suffered at least a partial strategic defeat in that conflict, despite its claims to the contrary.[1] Regardless, many think there is plenty of blame to spread around. Some believe that Israel's overreliance on airpower contributed to the apparent defeat. Commentators such as Phillip Gordon and Ralph Peters concluded, as summarized by analyst William Arkin (who does not share their views), that "airpower can never be decisive in a war, that an airman cannot command an army, and that airmen live with a pernicious desire to win wars at the exclusion of ground forces."[2]

One of the bugbears that airpower's critics trot out to scare the faithful is the concept of the effects-based approach to operations (EBAO), which they also blame for the failure of the campaign.[3] A number of individuals in the antiairpower crowd represent EBAO as a reductionist model of warfare and claim that its supporters believe it can yield magic answers that eliminate the fog and friction of war.

On the contrary, an effects-based approach does not advocate "immaculate warfare" (to use Peters's phrase), and Israel fought its campaign against Hezbollah in contravention to the effects-based principles advocated by the US military in its own doctrine.[4] This article details the manner in which Israel either misunderstood or violated the principles of EBAO in three fundamental ways: its failure to properly analyze both the problem and the enemy it faced, its reversion to a mind-set focused on servicing a list of targets rather than creating specific desired effects, and, perhaps most importantly, its failure to determine a coherent end state for the campaign. If, in fact, Israel *did* seek to wage effects-based warfare against Hezbollah, then it fundamentally misunderstood and misapplied the tenets of an effects-based approach, and it fundamentally misused both airpower and ground military forces in the process.[5]

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Failure to Analyze the Problem Properly

The first reason Israel failed relates to its apparent lack of analysis—of its situation and of its enemy, Hezbollah. The doctrinal principles of EBAO recognize that knowledge of all actors and the operational environment is important to success and should be based on analysis of the operational environment as a system of systems.[6] The Winograd Commission, an Israeli board charged with determining the causes of the campaign's failure, summed up Israel's performance in this regard: "The decision to respond with an immediate, intensive military strike was not based on a detailed, comprehensive and authorized military plan, based on careful study of the complex characteristics of the Lebanon arena."[7]

By examining Hezbollah's linkages to the world outside the immediate battlespace, a systems-based analysis should have indicated to Israel the relative insensitivity of substate terrorist organizations to civilian damage; in fact, they often consider it an advantage. Civilian casualties that can be blamed on an attacker reinforce the facade of "victimhood" that many terrorist organizations assume in order to garner sympathy in liberal corners of the developed world. Thus, every bomb dropped on a seemingly "civilian" target, however valid that target according to the laws of armed conflict, can represent a small propaganda victory for the terrorist organization. This risk is often outweighed by the target's legitimate military value, but commanders must weigh such risk and, in most cases, Israel Defense Forces (IDF) commanders and Israeli national leadership did not do so.

A systems-based analysis also should have shown that organizations such as Hezbollah are composed of many semiautonomous cells, not subject to strong centralized control and thus inherently resistant to attempts to disrupt command and control (C2)—something that many of Israel's strikes on "civilian" residences in southern Beirut seemed designed to do (by destroying Hezbollah "command centers" contained in the buildings).[8] Israel might have saved itself some measure of international condemnation for attacking residential structures had it realized that doing so could not prove effective in disrupting a "cellular" organization's C2. As it was, Israel seemed content to attack such targets simply because of their inclusion on a target list, not considering the indirect effects that these attacks would have on worldwide public opinion.

Target-Servicing Mind-Set

The principles of EBAO maintain that wars are not tactical exercises writ large (war entails much more than a single engagement or tasking order) and that all operations, from the smallest tactical action to the integration of national instruments of power—military, political, cultural, economic, and informational—require integration into a coherent, adaptive whole.[9] EBAO thus seeks to counter the mind-set that sees warfare as an exercise in servicing a list of targets or simply causing attrition of an enemy and his equipment until he gives up. Several people in the Israeli government, including Prime Minister Ehud Olmert, maintain that Israel won its campaign because it killed upwards of 600 Hezbollah fighters. Victory is not based on body counts, however. Hezbollah suffered tactically but no doubt gladly exchanged the lives of its fighters for increased prestige and influence in Lebanon and the world arena.

The Winograd Commission's report states that "the Prime Minister made up his mind hastily" and that the chief of staff responded to the taking of Israeli hostages "impulsively."[10] What evolved after the initial few hours of retaliatory strikes was not a plan but "the most conventional of approaches, with each individual object justified for its legality and military importance, almost divorced from the overall campaign objective and desired strategic outcome."[11] The campaign thus became a blind effort to service a set of targets that air forces customarily hit, along with an equally blind effort to attrit Hezbollah's fighting forces. Apparently, the Israelis gave little thought to the consequences of hitting this

list of customary targets. They carried out this effort to coerce the Lebanese government in such a manner that it had almost exactly the opposite effect than the one intended.

The target-servicing mentality can become the default position for the use of airpower in the absence of good operational design and planning. This became the norm in Vietnam for the United States, and it contributed to US defeat. When employing airpower, good commanders must always guard against this mind-set. Likewise, the default position for ground military power amounts to pure attrition, usually by the most expedient means available—preferably standoff firepower. Commanders must guard against this mind-set as well. Israeli commanders failed in both respects, and their campaign devolved into a target-servicing, attrition-oriented exercise.

Lack of a Coherent End State

The principle of the objective calls for directing "every military operation toward a clearly defined, decisive, and achievable goal."[12] EBAO takes this principle one step further. Attainment of the goal or a set of such goals should lead to a set of conditions that defines what the operational environment should look like after the conflict. Further, these end-state conditions should not simply represent a moment in time. The US military teaches that operations should be based upon the notion of *continuing advantage*—of gaining and maintaining a state that confers what we want while denying our enemies what they want within the operational environment. EBAO emphasizes that the desired end state should drive all subordinate considerations of planning, execution, and assessment, including the details of targeting. In short, all military operations not only should strive toward a definable and decisive goal but also should contain a plan for what that goal achieves in a continuing sense beyond its attainment.

Throughout the campaign against Hezbollah, Lt Gen Dan Halutz, the Israeli chief of staff; Defense Minister Amir Peretz; and Prime Minister Olmert seemed unable to explain publicly *why* they were doing what they were doing. This may have resulted from the necessities of military security—but more likely because they themselves did not understand the relationship between the tactical assignments they tasked the IDF to carry out and the strategic objectives and end state they wished to achieve. In the words of the Winograd report, "[Israel] authorized the commencement of a military campaign without considering how to exit it."[13] With no clear end state in mind, the Israelis pursued varying goals throughout the campaign.

During the first hours, Israel wanted to secure the return of two reservists taken captive in a raid on a border patrol and to retaliate for Hezbollah rockets fired at Israeli towns and border posts. The first goal led the IDF into an ambush. The second triggered a rehearsed plan—"Hannibal"—to strike Hezbollah's Iranian-supplied long-range missiles. This initial retaliatory strike, however, lasted only 34 minutes.[14] From the end of the first day of the campaign forward, Israel found itself "off the script."

After executing Hannibal, Israel extensively bombed civilian infrastructure in Lebanon in an apparent attempt to coerce the Lebanese government into pressuring Hezbollah to stop its rocket attacks on Israel.[15] Instead of coercing the Lebanese, however, these attacks had the effect of coalescing world opinion against Israel, thus strengthening its enemies. Israel's attacks also may have undermined the credibility of the Lebanese government, which had been acting as a de facto ally in reducing the influence of terror-sponsor Syria in Lebanon. Ultimately, regardless of what Israel wanted, the end state took the form of a strategically strengthened Hezbollah (albeit weakened tactically) and an IDF that saw its perceived reputation as substantially diminished (however much tactical success it may have enjoyed).

Finally, military commanders should have a stake in determining end-state conditions, which they did not during the campaign. As part of operational design, the commander and his or her strategists act like an architect who creates a design for a client or sponsor. In the case of military operations, the "sponsor" is national leadership, and determining the

end state becomes a central part of what the sponsor and the "architect" do through mutual and continuous dialogue. This is the best way to prevent designing an end state that military force cannot deliver. In contrast, regarding his commanders, Prime Minister Olmert explicitly stated that " 'they can't see the entire picture and they don't need to see the entire picture. That isn't their job. Their job is to carry out their mission in the best, most effective way, that is cheapest in terms of the human cost, and in the best way for Israel.' "[16] To the extent that Olmert crafted a strategy at all, he crafted one that his military could not deliver. Dialogue with his commanders while conducting operational design likely would have prevented this.

Ironically, Israeli brigadier general Shimon Naveh spearheaded the entire field of military operational design; indeed, his book on operational-design theory is considered a central text in the field.[17] Israel's leaders would have done well to consult the general, but it appears that his ideas had either fallen from favor or were unknown at the time of the campaign. Naveh emphasizes that constant dialogue between military and civilian leadership is crucial to successful operational design.

The Myth of Failed Airpower

From its first day forward, Israel's campaign against Hezbollah was truly joint, involving air, ground, and naval elements. As mentioned, some critics tendentiously point to Israel's misuse of airpower as evidence of the incapacity of airpower to bring about a decision. From its opening hours, however, the campaign involved ground forces (albeit in a haphazard and uncoordinated fashion), who suffered equally from a lack of coherent operational design and planning.

Airpower's critics maintain that, through "precision-targeting systems and other superweapons," airpower "zealots" promise "bloodless wars" and that perfect information will dispense with the fog and friction of war.[18] This is a straw-man argument. One of the central insights of an effects-based approach (whether applied to air or any other form of military power) holds that the complex and nonlinear nature of systems made up of human beings means that one *cannot* eliminate fog and friction, however "perfect" the intelligence, and that operations must thus be designed so that even the least tactical action can be understood in the context of the conflict's overall desired end state. Clearly this did *not* happen during Israel's campaign against Hezbollah. Indeed, "[the chief of staff] did not alert the political leaders to the complexity of the situation, and did not present information, assessments and plans that were available in the IDF at various levels of planning and approval and which would have enabled a better response to the challenges"; furthermore, he "did not prepare a clear operational plan for the campaign," said Maj Gen Udi Shani, who led a team investigating the General Staff's performance.[19]

When ground operations did start, many units went into combat with inadequate training and supplies, failing to place continuous pressure on Hezbollah and its resources.[20] Speaking of the ground as well as the air effort, retired general Yoram Yair noted that "the basic principles of war were neglected in this campaign. . . . There was no initiative, persistence, onslaught, concentration of effort."[21] One can attribute some of the failure of the ground effort to long neglect of the IDF's ground forces: "The shortcomings in the preparedness and the training of the army, its operational doctrine, and various flaws in its organizational culture and structure, were all the responsibility of the military commanders and political leaders in charge years before . . . Prime Minister [Olmert], Minister of Defense [Peretz] and Chief of Staff [Halutz] took office."[22] It appears that ground forces were ill served by Israel's government for years and that, as it did with airpower, Israeli leadership misused them in the campaign against Hezbollah. All of this resulted from a failure of Israeli grand strategy in the years leading up to the conflict and the failure to strategize at all when the conflict with Hezbollah started.

Alternatives

All of this raises the question of whether Israel could have pursued a coherent strategy that would have achieved its aims in this conflict. One military alternative would have involved executing a much larger ground offensive into southern Lebanon to secure Hezbollah bases and the areas from which rockets were being fired. Prime Minister Olmert apparently came under some pressure, both from within and outside his government, to do precisely this, but Arkin expresses best why the Israeli government chose not to: "Israel indeed showed initial restraint on the ground, a decision that could and should be interpreted not as some airpower daydream or a lack in 'understanding' ground war but as a desire to avoid a protracted battle, an occupation, and all of the subsequent killing and destruction that would follow."[23] Israel occupied southern Lebanon for nearly 20 years following the First Lebanon War, but its occupation failed to prevent the rise of Hezbollah and cost it dearly in blood and treasure.

Another alternative would have called for a combined air-ground campaign focusing exclusively on Hezbollah, concentrated south of the Litani River. An effects-based analysis of the operational environment would have suggested that this was a better option than the campaign that Israel waged, but then Israel still would have faced the problem of the end state: would it have to occupy southern Lebanon again, or would clearing Hezbollah fighting positions and then abandoning them be politically viable and militarily prudent? Such a course of action might at least have had the advantage of creating opportunities for defeating Hezbollah "units" in open combat. This might have reversed the perception that Hezbollah "won" and the IDF "lost." It also might have given the IDF the opportunity to destroy much of Hezbollah's military infrastructure in southern Lebanon. In any event, Olmert's government failed to analyze and plan for any coherent campaign and therefore did not consider this option. Given the short notice it received, Israel's military probably was not prepared for such an operation.

A final alternative might have entailed limiting retaliation to suspected Hezbollah missile-launcher sites, much as occurred during the "34-minute attack" and much as Israel is presently doing in Gaza. This probably would have involved months of tit-for-tat air strikes, as Hezbollah launched missiles into northern Israel and Israel struck back. No doubt political pressure would have mounted on Olmert's government to conduct an assault on launcher positions in Lebanon, but the Israelis thus might have had time to prepare an appropriately joint air-ground operation that properly considered the nature of Hezbollah and the operational environment. Israel still would have faced unpleasant end-state choices, but, again, this might have permitted the IDF to create the perception that it had won.

In summary, effects-based principles should have guided the Israelis into understanding that they could not attain the end state they desired through attrition and destruction alone—that, in fact, an approach based on destruction could rebound into significant strategic damage to the cause for which Israel fought. Effects-based principles also should have directed them away from a target-servicing mind-set and toward a focus on the end state and objectives. Finally, sound principles of operational design should have guided them toward building a framework for the campaign that included the political and cultural effects that their bombing would likely produce. As the campaign played out, Israel caused significant tactical damage to Hezbollah through attrition and destruction, but the strategic outcome, at least in the short run, weakened Israel's reputation and ultimately strengthened Hezbollah. ❑

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Notes

1. For the best overall treatment of the campaign thus far, which makes the case for the defeat of Israel, see William M. Arkin, *Divining Victory: Airpower in the 2006 Israel-Hezbollah War* (Maxwell AFB, AL: Air University Press, August 2007). See also Carol Migdalovitz, *Israel: Background and Relations with the United States*, CRS Report for Congress (Washington, DC: Congressional Research Service, Library of Congress, 26 July 2006), http://vienna.usembassy.gov/en/download/pdf/israel.pdf.

2. Arkin, *Divining Victory*, 140. See also Phillip H. Gordon, "Air Power Won't Do It," *Washington Post*, 25 July 2006, A-15; and Ralph Peters, "The Myth of Immaculate Warfare," *USA Today*, 5 September 2006, http://www.usatoday.com/news/opinion/editorials/2006-09-05-warfare-edit_x.htm.

3. Most notably in Israel itself. See Ron Tira, *The Limitations of Standoff Firepower-Based Operations: On Standoff Warfare, Maneuver, and Decision*, Memorandum no. 89 (Tel Aviv, Israel: Institute for National Security Studies, Tel Aviv University, March 2007), http://www.tau.ac.il/jcss/memoranda/memo89.en.pdf. This monograph sets up a straw-man rubric of standoff firepower-based operations that attempts to "impose effects" versus "classical military operations," which "directly accomplish military aims" (9–13).

4. See, for example, Air Force Doctrine Document (AFDD) 2, *Operations and Organization*, 3 April 2007, chap. 2; see also Joint Publication (JP) 3-0, *Joint Operations*, 17 September 2006, chap. 4; and JP 5-0, *Joint Operation Planning*, 26 December 2006, chap. 3.

5. For principal tenets, see Lt Col J. P. Hunerwadel, USAF, retired, "The Effects-Based Approach to Operations: Questions and Answers," *Air and Space Power Journal* 20, no. 1 (Spring 2006): 56–60, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/spr06/spr06.pdf.

6. AFDD 2, *Operations and Organization*, 19.

7. "The Winograd Report: The Main Findings of the Winograd Partial Report on the Second Lebanon War," *Haaretz.com*, 5 January 2007, 10a, http://www.haaretz.com/hasen/spages/854051.html.

8. Israel also struck cellular-telephone antennas, which similarly had little effect. See Arkin, *Divining Victory*, 115.

9. AFDD 2, *Operations and Organization,* 18–19.

10. "Winograd Report," 12b, 14a.

11. Arkin, *Divining Victory*, 155.

12. JP 3-0, *Joint Operations*, appendix A, A-1.

13. "Winograd Report," 10c.

14. See, for example, Aluf Benn, "Report: IAF Wiped Out 59 Iranian Missile Launchers in 34 Minutes," *Haaretz.com*, 24 October 2006, http://www.haaretz.com/hasen/spages/778485.html.

15. Arkin, *Divining Victory*, 41–42.

16. "Winograd Transcripts: Olmert, Peretz, Halutz Blame Army, and Each Other," *Israel Insider*, 10 May 2007, http://web.israelinsider.com/Articles/Politics/11338.htm.

17. Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (London: Frank Cass, 1997).

18. Peters, "Myth of Immaculate Warfare."

19. "Winograd Report," 14a; and Alon Ben-David, "Debriefing Teams Brand IDF Doctrine 'Completely Wrong,' " *Jane's Defence Weekly*, 3 January 2007, 7.

20. See, for example, Ken Ellingwood and Laura King, "Warfare in the Middle East: Israel Wades into Bloodiest Day," *Los Angeles Times*, 27 July 2006.

21. Ben-David, "Debriefing Teams Brand IDF Doctrine," 7.

22. "Winograd Report," 15c.

23. Arkin, *Divining Victory*, xxiii.

Cyberspace is not just a computer on your desktop. It is the way that we as an Air Force intend to fly and fight.

—Lt Gen Robert J. Elder Jr., USAF

What Do We Do Next Time?

Fighting America's Wars after Iraq

Lt Col Rob Levinson, USAF*

According to Field Manual 3-24/Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*, airpower plays primarily, if not exclusively, a supporting role in counterinsurgency operations such as the ones we are currently conducting in Iraq and Afghanistan.[1] This is not to say that the Air Force's contributions are not significant—only that the Army and Marine Corps do the bulk of the killing, bleeding, and dying. Such is the nature of warfare against small-scale irregular forces, particularly in urban environments. Although we maintain complete air dominance over the battlespace, that alone clearly does not guarantee victory. Rather, the success or failure of the guys wearing muddy boots on the ground will determine the outcome. In the future, however, airpower may become the force of choice—if not by design, then by default.

Granted, the United States may yet pull a rabbit out of its Iraq-shaped hat, but most observers remain rather skeptical that the latest "surge" will have a decisive impact. So far, the boots we have on the ground have not proved decisive, and the addition of 20,000 more personnel will probably not make much of a difference. At this point, the best-case scenario would involve a withdrawal in some sort of orderly fashion, leaving in place a somewhat democratic regime able to maintain at least a modicum of stability. More-likely scenarios run downhill from there. Undoubtedly, a US withdrawal from Iraq will have broad strategic implications, the repercussions of which will be felt for years to come. Although we have paid much attention to how the future of the Middle East will play out in the wake of our withdrawal, we must also consider the future of a post-Iraq US military.

If we fast-forward a few years to the world after Operation Iraqi Freedom, where the next occupant of the White House faces an international crisis of some sort and seeks to explore the available military options, we have to wonder what sort of menu his or her advisers will offer. It seems highly unlikely that any options calling for the deployment and insertion of large-scale ground forces (multiple brigades) into hostile territory for a lengthy period of time will appear attractive, even if the advisers dare serve them up. Tempered by a largely unsuccessful experience in Iraq, and perhaps Afghanistan, our future president, as well as the Army and Marine Corps leadership, will be loath to enter any situation with a high probability of a drawn-out slugfest. The old adage "Never wrestle with a pig in the mud since all you get is dirty, and the pig likes it" will be foremost in their minds. Most likely, the president will look to the Air Force and Navy leadership and say, "What do you have?" Air and naval options will become the weapon of choice, with perhaps a short-term intervention by the Marine Corps a distant second. This same kind of thinking may have already taken hold in Israel, where, given a previous bad experience, leaders selected airpower as the preferred option for the incursion into Lebanon. Once airpower proved unsuccessful, the Israelis tried a ground option with very limited, if any, tactical or strategic success. In this case, a seemingly inferior irregular force defeated—or at least fought to a standstill—a

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sophisticated, highly technological force that had overwhelming conventional military power.

Of course, many people can assert that such contingencies do not apply to the supporting roles played by the Air Force and Navy in Iraq and Afghanistan today and point to many other situations that air and naval power alone can solve. True, but, at least thus far, it is also true that ground power hasn't solved the problem either—and may even have made it worse. Instead of "What's the best mix of sea, air, and land power to deal with a given situation?" the question for the future may become "If I can't do this with primarily air and naval power, is it really worth doing at all?" Although we might like to pretend that in terms of national security, the ends are fixed and that we must use any necessary means to achieve them, the reality is somewhat less black and white. Short of an invasion by Mexico or Canada, or the direct attack on American soil perpetrated by or closely linked to a nation-state, the future president will always have a choice about whether or not to use force—and, as always, some individuals will counsel against it. Like his or her predecessors, this president will engage in some sort of cost-benefit analysis and come to a decision. However, in a post-Iraq world, perception of the cost of a large-scale ground-combat operation will outweigh almost any conceivable benefit.

This cold calculus would seem almost scenario-independent. If we look at the high end of the spectrum involving conventional conflicts between nation-states—say, for example, the armed forces of the United States versus those of a future peer competitor such as China—we will still have a hard time imagining the deployment of large Army formations to the fight. In a dustup over Taiwan, does anyone seriously contemplate putting the US Army on the ground in mainland China—or even in Taiwan, where it could be surrounded and trapped? The Korean Peninsula represents another possibility, but here the Army would have to get to the fight fast enough to make a difference. The North Koreans have overwhelming numerical superiority in ground forces already in place. If the South Koreans, with help from the small contingent of American ground forces already there and backed up by airpower provided by the Air Force and Navy, can't stop the North, then the Army won't have much of a chance to get in the game. We could employ nuclear weapons, a choice that presents a host of additional problems, but even in that event, the Air Force and the Navy would deliver them.

Two other developments, one technological and one demographic, may also make the deployment of large-scale ground forces less likely. Such forces—brigade-sized armor, mechanized troops, and infantry formations—are best suited (indeed, they were the only option in past years) for stopping an enemy's large-scale ground formations. However, in light of the current and future intelligence, surveillance, and reconnaissance capabilities at the disposal of the United States, it would seem virtually impossible for a brigade-sized—or perhaps even a battalion-sized—formation to hide anywhere on the planet for very long. (Our enemies in Iraq and Afghanistan today barely operate at platoon strength, much less company, brigade, or battalion.) Given the precision-strike capabilities available from the air—and in the near future, even from space—if we can find the enemy brigade, we can likely kill it with near impunity. The best way to stop an enemy tank may not call for another tank, according to the former mantra of the armor community, but a precision-guided bomb dropped from an airplane. The combination of technological advances in both sensor and shooter technologies may have brought the era of combat with large-scale ground formations to a close.

In addition to advancing technology, changing demography is also altering the landscape of combat. According to the United Nations, nearly 3 billion people—50 percent of the world's population—live in cities, and that number is growing at a rate of 180,000 per day. Between 1990 and 1995 alone, about 260 million people migrated to cities and towns in the developing world. In the developed world, urbanization has leveled off at approximately 75 percent, but in the developing world, where most future conflict will likely occur, the figure is about 35 percent—but increasing rapidly.[2] We can logically assume that as more people

move to the cities, more conflict will take place there. Short of devastating the place, large-scale ground forces as well as air forces are not well suited to urban environments. The Fulda Gap of Cold War days is being replaced by the Baghdad Alley as the locus of future conflict—and the latter is not a friendly place for either "Big Army" or "Big Air Force," for that matter. But if Big Army and Big Air Force don't have roles to play in the urban fights, maybe we shouldn't get into them at all. Iraq and Afghanistan would suggest not. If we do enter these types of fights, we must rethink the way we do business.

Thomas Barnett has spoken of using a "System Administrator force," and Gen Charles Krulak, former commandant of the Marine Corps, has written about the "Three Block War."[3] Apparently, these tasks are best suited to rangers, special forces, marines, perhaps light infantry, specialized aviation, and various combat-support and combat-service-support capabilities. If we can't take a city using these types of forces cooperating with local allies and if we can't level it with airpower, then we should not attempt to take it in the first place.

Barnett also spoke of needing the "Leviathan" (most likely the Air Force and Navy) when we really have to punch somebody, preferably a nation-state, in the nose.[4] If the crisis calls for a sustained air campaign well inland, the Air Force will be the star of the show. In a sense, this is what economists call playing to our comparative advantage. Despite the reputation of American soldiers on the ground as the best around, the small units of highly motivated insurgents and terrorists they face can probably match them in courage and determination, if not skill and training. Our enemies on the ground also possess asymmetric advantages, in that they know the terrain and people in ways we can never match. Furthermore, their moral code, or lack thereof, enables them to hide behind and kill civilians—something we would never ask American soldiers to do.

In the domains where the Air Force operates—air, space, and now cyberspace—it is the best. (As the service's slogan once said, "No one comes close.") Our capabilities in those mediums remain unmatched. Although that doesn't mean we can rest on our laurels, the combination of our technological base, entrepreneurial and innovative economy, and wealth will likely give us the edge in these areas for some time to come. In short, the current fight may belong to the Army and the Marine Corps, but the future may belong to the US Air Force. When the nation needs overt military force, perhaps airpower will become the weapon of first—and last—resort. ❑

Washington, DC

Notes

1. Field Manual 3-24/Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*, 15 December 2006, E-1 through E-5, http://usacac.army.mil/CAC/Repository/Materials/COIN-FM3-24.pdf.
2. "Homo sapiens to Homo urbanus," *Earthbeat*, 16 November 2002, http://www.abc.net.au/rn/science/earth/stories/s726535.htm.
3. Thomas P. M. Barnett, "Mr. President, Here's How to Make Sense of Our Iraq Strategy," *Thomas P. M. Barnett: Articles and Books*, http://www.thomaspmbarnett.com/published/esquire2004.htm; and Gen Charles C. Krulak, "The Strategic Corporal: Leadership in the Three Block War," *Marines Magazine*, January 1999, http://www.au.af.mil/au/awc/awcgate/usmc/strategic_corporal.htm.
4. Barnett, "Mr. President."

Reply to "Defining Information Operations Forces: What Do We Need?"

Lt Col Kenneth Beebe, USAF*

I READ WITH INTEREST the article "Defining Information Operations Forces: What Do We Need?" (Summer 2007). I've been assigned to a joint information operations (IO) organization for the last two years (including two tours "doing IO" in Iraq) and have served as an electronic warfare (EW) officer since I was a second lieutenant, so I am relatively familiar with IO doctrine.

Anyone who has spent time with IO in the joint environment knows that every service thinks about it a little differently. For the Air Force and the Navy, IO deals with networks, especially the global information grid. For the Army, IO has to do with influence, which to that service means psychological operations (PSYOP). In a business that values words, we have chosen to use a vague and ambiguous phrase (information operations) to describe what we do. Perhaps it is time to use terminology that means something specific—and I believe that "influence operations" does a better job of identifying our objective than "information operations." The technical arts known as EW and computer network operations have their primary effects in the physical domains. PSYOP, military deception, and operations security (OPSEC)—the remaining "pillars" of IO—aim to have their primary effects in the cognitive domain. The term "influence operations" succinctly captures those three activities.

Adding to the confusion, it seems that every person has a different idea of what IO is. For some, it involves hacking into the enemy's networks. For others, it concerns conducting PSYOP against the enemy. For some, it's "spinning the media." Still others consider IO synonymous with information management. In other words, everybody thinks he or she knows what IO is, but few people really know what the doctrine says it is.

As the authors of "Defining Information Operations Forces" point out, these different ideas complicate decisions about how to create a career force. If we as individuals don't know what IO is and if each service has a different conception of IO, then deciding how to create an IO professional becomes a real challenge. I differ with the article's authors regarding their prescriptions for building IO career paths.

Their analysis of the state of the EW career force is cursory, to say the least. Having EW officers trained to operate airborne systems does not constitute a well-established career force that prepares the Air Force to dominate the battlespace. EW entails more than airborne jamming platforms. It touches everything that uses the electromagnetic spectrum, including sensors, communications equipment, and jammers. Integrated management of that spectrum is not the strong suit of the Air Force or any of the other services. The authors' conclusion that "the Air Force does not require additional capabilities or career forces for the EW mission area of IO" (p. 57) is flat-out wrong.

When it comes to influence operations, I think we need to ask ourselves if it makes sense to have a separate "influence" career field in

*The author recently returned from Baghdad, where he served in the Information Operations Cell at Multi-National Force-Iraq. He is currently assigned to the Joint Electronic Warfare Center in San Antonio, Texas.

the Air Force. What does a second lieutenant influence officer do in a fighter or airlift squadron? Since the Air Force's primary PSYOP role involves disseminating the Army's PSYOP products, the authors' prescription makes this individual essentially a deception planner. The best such planners aren't built from scratch. They first did something else in their military careers. How many people would listen to a major or lieutenant colonel who listed "influence officer" as his or her only experience in the military? This doesn't require a career force so much as it requires dedicated planners whom the Air Force can train and educate in influence yet still capitalize on their prior experiences—fully embedded in planning organizations.

The authors make some good suggestions, such as their recommendations not only for a network-warfare-operations career force and OPSEC but also for more effectively integrating IO into the Air Force by improving our education and training and providing more Airmen with IO experience. What concerns me, however, is that our Air Force leadership really hasn't decided what to do with IO. It appears to me that the creation of Air Force Cyber Command represents the beginning of the end for IO in our service. ❑

San Antonio, Texas

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Author's Reply to Lieutenant Colonel Beebe's Comment about "Defining Information Operations Forces: What Do We Need?"

Maj Paul D. Williams, USAF*

I APPRECIATE THE INSIGHTFUL comments made by Lt Col Kenneth Beebe in the preceding article. When we wrote "Defining Information Operations Forces: What Do We Need?" (Summer 2007), my coauthors and I focused on the process of transitioning from how to build an IO force to how to build a cyber force, concentrating on network warfare as the most badly broken piece. We have since served on a team directed by Headquarters USAF to tackle the holistic cyber-force development effort, which involved treating electronic warfare (EW); space; intelligence, surveillance, and reconnaissance; and command and control / battle management as having the same importance as network warfare (NW). The Air Force will use NW and EW forces as the defensive and offensive shooters it provides to combatant commanders as cyber capabilities. We agree with Colonel Beebe's view that EW needs to transform to maximize the individual and integrated effects of EW and NW that we can deliver.

On the other hand, I disagree with his comment that Air Force Cyber Command marks the end of IO for our service. I believe that the Air Force is tackling cyber matters in a manner that will allow us to concentrate on those parts of IO that facilitate our bringing the most capabilities to the fight. The cyber realm's emphasis on achieving effects across the electromagnetic spectrum both capitalizes on and enhances our ability to deliver global strike capabilities across the spectrum of warfare. It also represents an evolution in our understanding of IO versus kinetic warfare. As Lt Gen Robert Elder points out in his article "Effects-Based Operations: A Command Philosophy" (Spring 2007), all warfare ultimately involves influencing the minds and decision processes of both adversaries and nonadversaries (p. 17). To specify influence operations as a capability akin to EW and NW is confusing at best and damaging at worst if we fail to focus our efforts on achieving realistic and meaningful effects. As the Air Force continues to develop in this area, I foresee transformation in both service and joint doctrine to reflect our evolving understanding of both the cognitive and cyberspace domains.

Finally, do we need an influence-operations career force in the Air Force? We don't yet know the answer to this question. Ultimately the Air Force presents the combatant commanders with forces that will need an understanding of how to integrate their service's capabilities—such as public affairs (PA), psychological operations (PSYOP), military deception (MILDEC), and operations security (OPSEC)—into the joint IO fight. Successful operations across the entire war-fighting spectrum will require that senior war fighters understand Air Force PA, PSYOP, MILDEC, and OPSEC roles

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and responsibilities as well as those of our sister services, other US agencies such as the Department of Homeland Security, and coalition partners. Adding those skills to the ones required of our war-fighting kinetic and cyber forces may prove too much—we risk diluting their combat effectiveness by spreading them too thinly. We hope that by applying our analysis of this developing area to a notional career force, we will better cultivate an understanding of which skills we need. Perhaps those skills make sense in a separate career force—or they may fit best into existing forces.

We wrote our article in the hopes of spurring discussion, and Colonel Beebe's analysis and comments provide exactly that! We are in the process of making monumental changes to the Air Force's mission, and now is the right time to grapple with some of these difficult issues. ❑

Wright-Patterson AFB, Ohio

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

En Français http://www.airpower.maxwell.af.mil/apjinternational/aspjfrench.html

中文 http://www.airpower.maxwell.af.mil/apjinternational/aspjchinese.html

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

Comments on "The Hyphenated Airman"

Lt Gen John D. Hopper Jr., USAF, Retired*

WHEN I READ Lt Col Robert Poynor's "The 'Hyphenated Airman': Some Observations on Service Culture" (Fall 2007), I got no further than the fifth paragraph before I was brought up short. How did "multicultural tribalism . . . a contemporary manifestation of cultural Marxism" (23) slip into this discussion? I'm sure the author had the best intentions of setting the stage, but I would like to describe how paragraph five reads to one Airman.

That passage comes across as a rather thinly veiled, one-sided explanation of the social dynamics that make up part of the fabric of America. First, it is very clear that the tribes referenced here could only be African-Americans, Hispanic-Americans, Asian-Americans, and so forth. It is also clear that a description of the dominant culture as "white, male, and Christian" puts women in a tribe. (Interesting choice of words here; in my experience, I have heard or read "white, *Anglo-Saxon* [sorry for the hyphen], and *Protestant*.") The author then goes on to attach "victimhood" to the tribes and assess their motivation as the "restructuring of society, usually through proportional representation (i.e., quotas)," all a rather transparent swipe at affirmative action. Although I am suspicious of the scholarship associated with these statements, I guess I should be satisfied with the author's citing *Wikipedia* as the main source.

Colonel Poynor seems concerned that these tribes would seek redress for "perceived grievances of the past." I would suggest that he return to *Wikipedia* and check "slavery," "Jim Crow," "segregation," "barrio," "migrant workers," and "glass ceiling" for a start. Of course, he would find that these were neither perceptions nor completely in the past. With regard to affirmative action, he might find it useful to look at demographic projections for the America of the future and then review the amicus brief (supported by a dozen or so flag officers from different services) filed in support of the University of Michigan's affirmative-admissions policy.[1]

Passion aside, I share the author's enthusiasm for exploring this topic, but I guess I tripped over my expectations. I thought perhaps he would explore tribalism from the perspective of a military service in which the officer corps does virtually all the fighting. Or take a look at the ramifications of drawing leadership from outside the tribe. Or how about building a "tribal" case study for one of the most amazing feats of organizational management around: kluging Strategic Air Command, Military Airlift Command, Tactical Air Command, Air Force Systems Command, and Air Force Logistics Command into Air Combat Command, Air Mobility Command, and Air Force Materiel Command? I even thought he might dip into the Air University archives and revisit Col Mike Worden's book *Rise of the Fighter Generals: The Problem of Air Force Leadership, 1945–1982*. In my view, this topic is very important—rich with data for mining. Whether it is "black shoes versus brown shoes" in the Navy, "leg infantry versus airborne" in the Army, or "fighters versus bombers" in our Air Force, the services have never needed Karl Marx to key the mike and declare "fight's on" when it comes to "tribalism." Multicultural tribalism and Marxist philosophy as a foundation for our complex social environment was just too much for this old Airman to handle. ❑

Alexandria, Virginia

Note

1. For the text of the amicus curiae brief filed with the US Supreme Court in Grutter v. Bollinger, see http://www.vpcomm.umich.edu/admissions/legal/gru_amicus-ussc/um/MilitaryL-both.pdf.

*General Hopper retired in 2005 as vice-commander of Air Education and Training Command.

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.*

The Paradox of Irregular Airpower

Maj Benjamin R. Maitre, USAF*

THE UNITED STATES Air Force entered the twenty-first century as the most capable purveyor of airpower in history. Following the success of the air campaign in Operation Desert Storm, airpower seemed likely to become a dominant force in all future conflicts.[1] Yet, recent operations in Afghanistan and Iraq have called that assertion into question. Today, technologically superior air assets face significant challenges in engaging dispersed and oftentimes unseen opponents. The Department of Defense has directed the creation of an "irregular warfare" capability to operate within the scope of contemporary conflict.[2] The Air Force must determine how modern airpower can successfully engage an irregular opponent.

One finds a paradox inherent in conceptualizing irregular airpower. Modern airpower relies upon using complex weapons systems to precisely engage designated objectives to produce effects; in short, it literally involves *hitting the bull's-eye.* In contrast, irregular warfare pertains to operations against nonstate actors and opponents that blur the distinction between combatants and innocents. This type of warfare involves *finding the bull's-eye.* This article argues that whereas technologically advanced airpower fosters an inwardly focused perspective of optimizing weapons-system operation to achieve objectives, the challenges of irregular warfare require an outwardly focused perspective that seeks to engage the very definition of an opponent's existence. The paradox lies in combining these two contradictory concepts into an integrated perspective of irregular airpower.

Defining Irregular Warfare

To conceptualize irregular airpower, one must first examine irregular warfare as a whole. According to the *Quadrennial Defense Review Report* of 2006, "Irregular warfare has emerged as the dominant form of warfare confronting the United States, its allies and its partners; accordingly, guidance must account for distributed, long-duration operations, including unconventional warfare, foreign internal defense, counterterrorism, counterinsurgency, and stabilization and reconstruction operations."[3] The report's mandate to foster an irregular-warfare capability defines this type of conflict as "operations in which the enemy is not a regular military force of a nation-state."[4] Thus,

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irregular warfare exists as a certain definition only inasmuch as it resides outside the "conventions" of conventional warfare. Irregular opponents, as seen in operations in Afghanistan and Iraq, utilize guerrilla warfare, insurgency, and terrorism to engage American and allied forces.[5] A review of related terms and their definitions will facilitate a discussion of irregular warfare:

> **guerrilla warfare** — Military and paramilitary operations conducted in enemy-held or hostile territory by irregular, predominantly indigenous forces. . . . See also **unconventional warfare**. . . .
>
> **insurgency** — An organized movement aimed at the overthrow of a constituted government through use of subversion and armed conflict. . . .
>
> **unconventional warfare** — A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities, and unconventional assisted recovery. Also called **UW**.[6]

Though these terms exist as valid, independent concepts, they contain inherent commonalities that define the basic premise of irregular warfare: a struggle for control of an established population, by coercion and/or support, in a specified area—be it a nation or an otherwise defined geopolitical region. When describing such warfare as a fundamental struggle for control, and thus for existence, one must realize that its military dimension exists as part of the whole conflict, not as a sole definition. As stated by a former staff member of the US Commission on National Security, "One of the few areas of consensus among military analysts is that we are sure to see the further blurring of warfare categories."[7] Irregular warfare is more than an operational methodology; it is a perspective of conflict as a whole.

How then does such warfare differ from a conventional perspective? Political-military theorist Edward Luttwak has explored the contrasting relationship between the two views, contending that the essence of armed conflict consists of two distinct concepts: attrition and relational maneuver.[8] By definition, a force that uses attrition seeks to defeat an opponent by means of its numerical or qualitative superiority. It follows that an attrition-oriented force will strive to maximize its internal administration and procedures in order to most efficiently conduct operations on the battlefield. One can consider the perspective of attrition inwardly focused in that it maximizes internal processes and minimizes adaptation to external factors because any large-scale modifications will hamper efficiency, decrease force advantage, and increase risk.[9]

In contrast, relational maneuver espouses adaptive capabilities in response to the external environment. Since a force reliant on relational maneuver has insufficient resources to prevail in direct armed confrontation with the enemy, it must instead strive to modify its capabilities within the operational context, exploiting any weaknesses the environment imposes upon the opponent. The concept of relational maneuver is inherently innovative in fostering an adaptive structure. One can consider such maneuver outwardly focused in the endeavor to ascertain the opponent's weaknesses within the environment. Forces postured in this manner then adapt their own capabilities to compensate for quantitative inferiority.[10]

Though all armed forces incorporate elements of attrition and relational maneuver, the extent to which they favor one or the other is driven largely by their societal context. Powerful nations, such as the United States, gravitate towards the attrition end of the spectrum simply because they have the resources to engage in open battle with an opponent. Lesser opponents, including insurgents and terrorists, favor relational maneuver because they cannot afford to engage the enemy on the open battlefield.[11] Instead, they must engage the larger foe indirectly and strike where least expected, using methods that exist outside conventional military operations. Irregular opponents, whether guerrillas, insurgents, or terrorists, don't fight unconventionally because

they want to but because to do so conventionally would literally lead to self-destruction.

Applying the concepts of attrition and relational maneuver to a spectrum of conflict intensity illustrates the advantages of relational maneuver in irregular warfare. As war becomes less "intense," the number of fielded forces declines, thereby making targets less defined, more dispersed, and harder to quantify.[12] The chances of decisively employing superior firepower become increasingly remote, while the enemy's opportunities to exploit the structural weaknesses of the established authority become more pronounced. As the nature of the conflict trends away from conventional warfare, the advantage continuously shifts towards the irregular opponent, for "not even the most accurate of our precision-guided munitions can be aimed at an atmosphere of terror or at a climate of subversion."[13]

It would appear that conducting a different form of warfare is a simple matter of adaptation. Yet, historically, this has not been the case, as demonstrated by an initially rigid adherence to internalized perspectives of American airpower during operations in Vietnam. "Following independence in 1947, U.S. Air Force leaders inculcated what amounted to an absolute model of airpower in warfare. . . . But in their new orthodoxy, American airmen resisted any adaptation of the central tenets of airpower theory as they understood it in order to respond to novel demands, such as limited and guerrilla war."[14] A conventional, attrition-minded organization requires an inwardly focused perspective that incorporates complex structures to optimize processes and efficiencies. Such structures inherently inhibit innovation because the latter leads to change, which in turn challenges the fundamental premises of the organizational structure itself.[15] The same logic that limits innovation in complex structures applies to complex technologies, a large measure of which defines Air Force capabilities. The very nature of technologically superior assets requires an inwardly focused operator. That nature exists in contrast to the outwardly focused perspective of irregular warfare.

Exploring Modern Airpower

The Air Force has taken significant steps to orient its posture in view of dynamic developments in world affairs. The service's foundational doctrine illustrates the evolution of airpower doctrine over the past 60 years: "The 'American way of war' has long been described as warfare based on either a strategy of annihilation or of attrition and focused on engaging the enemy in close combat to achieve a decisive battle. Air and space power, if properly focused, offers our national leadership alternatives to the annihilation and attrition options."[16] The evolution of doctrine serves to shape the airpower perspective of the men and women in the Air Force. Given the shifting nature of modern conflict towards the arena of irregular warfare, what then are the relevant characteristics of the modern military aviator?

The concept of "airmanship" allows aviators to go beyond simply flying an aircraft to effectively employing it towards a desired objective. A multifaceted idea, airmanship combines cognitive and physical skills in a fundamentally alien (people don't have wings) environment. As both a personal quality and an acquired ability, airmanship can be defined as

> the consistent use of good judgment and well developed skills to accomplish mission objectives. This consistency is founded on a cornerstone of uncompromising flight discipline and developed through systematic skill acquisition and proficiency. A high state of situational awareness completes the airmanship picture and is obtained through knowledge of one's self, team, aircraft, environment, and enemy.[17]

One can assume that any military professional needs "good judgment" as well as "skill acquisition and proficiency." Though these concepts have specific applications when it comes to operating aircraft, the term *flight discipline* is unique to the aviator and plays an important role in the context of modern airpower.

Flight discipline consists of vigilance in complying with an aircraft's flight characteristics, operating limits, and the acceptable flight envelope. The aviator applies it through self-awareness and reinforces it by compliance

with operational and regulatory policy.[18] These variables are particularly applicable in their relationship to the successful operation of modern, technologically advanced aircraft. Complex systems require complex methods, and the aircrew checklist serves as an easily recognizable example of procedural methodology. During the raid on the Son Tay prison camp in North Vietnam on 21 November 1970, "out of necessity, [the pilots] had developed a comprehensive, one-of-a-kind raid checklist. By running it airborne, [they] made sure all the aircraft systems and equipment were properly set, functioning, and available for instant use any time during the flight's demanding needs."[19] The more complex and advanced the aircraft and missions, the more structured and methodical the associated operational procedures.

Aviators are inwardly focused on optimizing aircraft performance to accomplish a particular mission. The successful conduct of irregular warfare requires an outward focus to allow adaptation to the operating environment. The United States in particular has an illustrative background in applying airpower in an irregular context. As previously mentioned, at the outset of US involvement in Southeast Asia during the late 1950s and into the ensuing decades, the focus of American airpower was firmly grounded in a Cold War perspective: the strategic application of strike platforms against a well-defined opponent. "U.S. Air Force thinking about airpower outside of strategic attack was decidedly lacking."[20] Initially, the military services tended to regard the conflict in Vietnam as a conventional war executed on a smaller scale, while retaining traditional means of weapons employment.

Those same means faced significant challenges in the irregular arena, "where the unique juxtaposition of political and operational constraints invariably plays a major role in the application of airpower."[21] The protracted nature of the Vietnam War allowed for graduated efforts to realign airpower employment in response to developments on the battlefield. The predisposition to rely on strategic bombing to force the North into submission was in part supplanted by focused tactical applications of close air support and interdiction operations, both within South Vietnam and along the border with Laos and Cambodia. To the extent that efforts of individual Airmen allowed for adaptation to the battlespace, those aviators succeeded and overcame an inherent "checklist mentality." Yet, such adjustments proved varied and localized; still absent was a servicewide "agreement on how airpower was to be employed, its relationship to other instruments of counter-insurgency, and what practical steps were necessary for airpower to contribute to ultimate victory."[22] This situation produced the paradox (which still exists) identified at the outset of this article: the elusive integration of the contradictory variables of modern airpower and irregular warfare.

Similar challenges face the combat aviator in current conflicts. Adaptive mission employment in Iraq includes the use of fighter aircraft for nontraditional intelligence, surveillance, and reconnaissance while operating in conjunction and communication with ground units.[23] Yet, the term *nontraditional* does not equate to *irregular*. Air operations continue to focus on optimized systems employment to better accomplish the detection, tracking, and destruction of opposition forces. The means of employing airpower may be adaptive, yet the underlying perspective remains internally focused. We need to understand that irregular warfare, and airpower by association, differs fundamentally from conventional operations.

Beyond the Paradox

In common usage, one associates the term *situational awareness* (SA) with an understanding of one's surroundings. In flying, SA concerns the extent to which an aviator can process outside information while maintaining routine tasks necessary for continued flight. Aviation literature suggests that "the most important aspect of understanding situational awareness . . . is the list of steps to take to safely return home in the event of an episode of lost SA."[24] According to this definition, SA exists primarily as a feedback process to correct

flight deviations. Yet, one can also expand the concept to ensure compliance with an entire operational context:

> Remember, there is a great difference between merely perceiving something and noticing it. A [primitive human], put on an American city street, would see the traffic lights just as you do—maybe better. He would probably overlook them and watch instead the flashing neon sign, the lights of cars, all sorts of other clues that are more impressive but much less important; for he would not know what a traffic light means. But we see traffic signs even with bad eyes and while thinking of something else because we watch for them and understand their meaning instantly and know that, though they are not very attention-catching, they are important.[25]

In highlighting how people function within an environment, these remarks describe how SA applies to the irregular-warfare perspective. They come not from literature on irregular warfare but from a definition of the *flying instinct* discussed in Wolfgang Langewiesche's *Stick and Rudder: An Explanation of the Art of Flying*, published in 1944. Clearly, then, the expanded role of SA as encompassing more than the immediate vicinity of an aircraft is not a novel concept. One can enhance SA to allow for an irregular-warfare perspective in modern airpower.

Fostering an expanded definition of SA is not as simple as adding a few checklist items in combat aviation. Doing so would negate the fundamental premise of irregular airpower as a conceptual perspective, as opposed to another step in a set of tasks to be accomplished in order to employ air assets successfully. The process of cultivating SA and airmanship in an irregular-warfare context must continuously occur during a military aviator's career. It lies beyond the scope of this article to prescribe a systemic process for creating irregular airpower, not to mention an "irregular Air Force." Nor is such an outcome desirable because the creation of a new capability does not automatically negate the requirement for an established one. Yet, ongoing operations in the global war on terrorism have demonstrated that the Air Force faces future challenges within itself, particularly in the arena of irregular warfare. Two basic concepts serve to instill a perspective of irregular airpower within the Air Force.

First, the foundation of irregular airpower must remain firmly grounded in aeronautical proficiency. Regardless of how well one conceives an irregular perspective, any iteration of irregular airpower will fail unless Airmen can effectively operate their equipment. The focus of training is the operation of modern weapons systems; aircrews must have familiarity not only with the aircraft themselves but also with the technological capabilities that define those assets. The modern aviator must also be familiar with the operating environment. To that extent, there really is "no substitute for being there." Multilateral exercises, overseas deployments, and foreign-exchange assignments all offer Airmen the exposure necessary to expand an operational perspective from theoretical boundaries to the realities of the global environment.

The second concept rests upon effectively educating the aviator. To conduct irregular warfare, the modern aviator must be able to perceive actions and operations within the overall context of conflict. Such knowledge results from an education that includes regional studies, analysis of historical uses of airpower in irregular conflict, and exposure to sociopolitical debates that define today's dynamic global arena. Education in the varied context that defines modern conflict allows the military aviator to optimally assess those contingencies for which training alone cannot prescribe a solution. Knowledge of the underlying "why" of a situation will allow the successful application of "how" in unforeseen circumstances.[26]

Ongoing efforts in Operations Enduring Freedom and Iraqi Freedom have demonstrated a need for all aspects of airpower in combating irregular opponents. "Hitting the bull's-eye" first requires being able to find it. Within the prevailing era of asymmetric engagements and elusive adversaries, finding the opposition necessitates an understanding of what defines it. Modern airpower requires an inward focus to operate technologically advanced air and space assets, but irregular war-

fare calls for an outward perspective that identifies the true nature of an irregular opponent. The paradox of irregular airpower requires today's Air Force to expand its horizons beyond the instrument panel if it wishes to successfully engage the enemies of tomorrow. ❑

Notes

1. "Summary: The Future of the U.S. Air Force" (see "Panel One: The Air Force in U.S. Military Strategy"), *American Enterprise Institute for Public Policy Research*, 11 October 2005, http://www.aei.org/events/filter.,eventID.1153/summary.asp (accessed 1 February 2007).

2. See *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 6 February 2006), http://www.globalsecurity.org/military/library/policy/dod/qdr-2006-report.pdf.

3. Ibid., 36.

4. Ibid., 11. The Department of Defense is currently developing an irregular-warfare joint operating concept that further defines the term. One should note that the underlying premise of the document is descriptive, rather than prescriptive, in nature.

5. Ibid., 19.

6. Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001 (as amended through 5 January 2007), 229, 263, 558. Though the term *UW* serves to illustrate the concept of irregular warfare (IW), UW does not equal IW. UW is waged by support of an indigenous force; IW includes UW and counterinsurgency as an overall form of conflict.

7. Frank G. Hoffman, "Complex Irregular Warfare: The Next Revolution in Military Affairs," *Orbis* 50, no. 3 (Summer 2006): 398, http://www.fpri.org/orbis/5003/hoffman.complexirregularwarfare.pdf.

8. Edward N. Luttwak, "Notes on Low-Intensity Warfare," in *Dimensions of Military Strategy*, ed. George E. Thibault (Washington, DC: National Defense University, 1987), 336.

9. Ibid. Perhaps the ultimate expression of "attrition" warfare occurred on the western front in World War I. This conflict involved several "advanced" technologies, including the first large-scale uses of machine guns, self-propelled armor, and the submarine.

10. Ibid., 337. The extent to which technological advantage substitutes for quantitative superiority is in this case a moot point since the opponent, dependent upon relational maneuver, is likely to have neither.

11. Ibid.

12. Ibid.

13. Ibid.

14. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 270.

15. Hy S. Rothstein, *Afghanistan and the Troubled Future of Unconventional Warfare* (Annapolis: Naval Institute Press, 2006), 3.

16. Air Force Doctrine Document 1, *Air Force Basic Doctrine*, 17 November 2003, ix, https://www.doctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd1.pdf.

17. Tony Kern, *Darker Shades of Blue: The Rogue Pilot* (New York: McGraw-Hill, 1999), 212, fig. 11-1.

18. Louise Ebbage and Phil D. Spencer, *Airmanship Training for Modern Aircrew* (Bristol, UK: BAE Systems Advanced Technology Centre, 2004), 6, http://stinet.dtic.mil/oai/oai?&verb=getRecord&metadataPrefix=html&identifier=ADA428471 (see "handle/proxy URL") (accessed 14 March 2007).

19. William A. Guenon Jr., *Secret and Dangerous: Night of the Son Tay POW Raid* (Framingham, MA: Freedom Digital Printing, 2002), 31.

20. Corum and Johnson, *Airpower in Small Wars*, 270.

21. Ibid., 274.

22. Ibid.

23. John A. Tirpak, "Eyes of the Fighter," *Air Force Magazine* 89, no. 1 (January 2006): 40–44, http://www.afa.org/magazine/Jan2006/0106fighters.pdf.

24. Kern, *Darker Shades of Blue*, 219.

25. Wolfgang Langewiesche, *Stick and Rudder: An Explanation of the Art of Flying* (New York: McGraw-Hill, 1944), 72.

26. US Senate Committee on Appropriations, *Defense Subcommittee Hearing on FY05 Army Budget: Testimony of the Honorable R. L. Brownlee, Acting Secretary of the Army, and General Peter J. Schoomaker, Chief of Staff, Department of the Army*, 108th Cong., 2d sess., 3 March 2004, http://www.globalsecurity.org/military/library/congress/2004_hr/040303-brownlee-schoomaker.htm (accessed 14 March 2007).

Irregular Warfare and the US Air Force

The Way Ahead

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IRREGULAR WARFARE (IW) in general and counterinsurgency (COIN) more specifically require a particular mind-set and specific talents not entirely applicable or common to more traditional styles of warfare. That does not suggest that COIN represents either a new or separate form of war. As Colin Gray stated during the Air Force Symposium on Counterinsurgency held at Air University, Maxwell AFB, Alabama, in April 2007, "War is war," and COIN is part of that equation. Further, COIN is not new at all. However, the relative lack of predictability in COIN and its indifferent boundaries regarding what each fight constitutes in terms of objectives and resources are troublesome characteristics well beyond the numbers involved. By definition, insurgency offers a weaker opponent an option against a stronger one. Similarly, it is not, by design, a war wherein the stronger opponent can easily bring his major strengths to bear against the weaker enemy—a condition deserving even more emphasis if the stronger opponent is an outside power such as the United States.

Discussion published in a variety of media sufficiently establishes the history of IW as well as the successes and failures of COIN.[1] Pertinent literature has similarly dissected the distance between the terrorist attacks of 11 September 2001 and today. Therefore, using the 2007 Air Force Symposium on Counterinsurgency as a primary source, this article looks to the future and attempts to outline an airpower profile for combating terrorism and insurgency in the continuing long war.

Two fundamental observations drove much of the discussion at the conference. First, the USAF has operated with some success in COIN environments before but has lost the peculiar capacities associated with COIN following drawdowns or conversions after each conflict. This is an unsurprising result, given the fact that budgets for unused tools are a luxury not easily afforded in any era. But the extended lead times required to essentially relearn COIN each time it becomes necessary have significantly affected the USAF's ability to effectively contribute early in the fight. Second, we need to change the USAF's mind-set from *fighting COIN* to *enabling a partner to fight COIN*. In the absence of every other alternative, the USAF may actually become the fighter in COIN, but even at that point, the service should adopt the mind-set that it will conduct a holding action while the supported partner spins up its own capacity. As a practical note, the USAF simply does not have the size to function as the air service for every nation it fights alongside, even if it sounds like a good idea (it is not). Winning strategies are conducted by, with, and through the supported partner. Furthermore, barring annihilation options, no substantial history exists to support the idea that any outside power can win an inside war. The *Quadrennial Defense Review Report* of 2006 provides an important framework for this discussion:

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> Long-duration, complex operations involving the U.S. military, other government agencies and international partners will be waged simultaneously in multiple countries around the world, relying on a combination of direct (visible) and indirect (clandestine) approaches. . . . Maintaining a long-term, low-visibility presence in many areas of the world where U.S. forces do not traditionally operate will be required. Building and leveraging partner capacity will also be an absolutely essential part of this approach, and the employment of surrogates will be a necessary method for achieving many goals.[2]

The use of indigenous forces in COIN does more than build stakeholders in the outcome. As noted, local knowledge translates into very practical intelligence in ways that a satellite image does not convey. Additionally, in terms of understanding the mechanisms for victory, COIN emphasizes the human dynamic to a far greater extent than do traditional conflicts. Differences between COIN and other styles of warfare (e.g., attrition-based depletion of enemy resources in large-scale, state-on-state conflict) accrue largely from differences in the center of gravity and the means necessary to move or control it. Historically, in state-on-state warfare, a fielded army could serve as both a principal threat and the principal shield that allowed the enemy state its freedom of action. Taking away the shield simultaneously removes the threat and exposes the enemy state. However, in COIN, enemy leadership derives its freedom of action not from its "fielded army" per se but from a permissive environment often enabled by the ruling establishment's lack of credibility, legitimacy, and support from its own "governed" population. Ultimately, in COIN, one must win over the population, thereby eliminating the sanctuary and the enemy's freedom to choose where and when to fight.

The 2007 Air Force Symposium on Counterinsurgency

Held at the Air War College and sponsored by Headquarters Air Force, Air Combat Command (ACC), and Air Force Special Operations Command (AFSOC), this venue provided a forum for discussing the use of airpower in COIN; it included 11 workshops, eight speakers in plenary sessions, and over 170 participants.[3] Joint, interagency, international, and civilian participants added substantial value with their insights and perspectives. However, the conference focused not on interaction or interdependence at these higher levels but on what the USAF needed to do to improve its understanding of the fight and its contributions to winning that fight. Seeking to answer these questions, the 11 workshops generated over 220 suggestions.

The USAF is *very* good at what it does, and decades of service and excellence have made *efficiency* a highly prized, highly regarded hallmark of US airpower. But assumptions that automatically tie efficiency to effectiveness can be in stark contrast with the realities of IW and COIN. The kinetic, tactical efficiencies for which the USAF has deservedly become well known—one target, one bomb, one kill—may, in this environment, have to yield to decidedly less efficient means that are ultimately more effective at operational and strategic levels. Balancing effectiveness and efficiency is not a novel concept; USAF planners do it every day.[4] The difference lies in a broader understanding (and acceptance) of the idea that *efficiency* as a principal driver at the tactical level may not support (or may even prove counterproductive to) desired effects at higher levels.

The COIN conference participants noted that the solution for this "two kinds of forces" was not in choosing one over the other but in finding an appropriate balance between the two. The USAF should preserve its current capabilities (if not the same capacity or mass) while creating the same degrees of excellence for actions characteristic of IW and COIN that reside today in its areas of air superiority, global strike, global lift, global connectivity, and global vision.

USAF excellence, really *dominance*, in these areas has ensured that enemies will seek other venues to achieve their strategic objectives.[5] By maintaining these significant advantages, critical to our nation's security, the service has, in effect, chosen where it will *not* fight. But a fight does exist, and will exist, in areas periph-

eral to the USAF's fundamental strengths. USAF leaders need to consider multiple options for engaging the force in these IW arenas. The symposium participants' suggestions for meeting the IW/COIN challenge fell generally into four principal fields for consideration: policy-strategy-doctrine, force development, strategic communication, and building partnership capacity (BPC).

Policy-Strategy-Doctrine

Despite the recent publication of Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, and AFDD 2-3.1, *Foreign Internal Defense* (FID), the USAF has not yet established the institutional and systemic changes necessary to implement these visions for operational art in the long war. Pending such change, the USAF continues to view IW as a lesser included case of peer or near-peer conflicts—a fundamentally flawed concept.[6] Solutions in IW/COIN will be based on unique local circumstances of each conflict and result largely from political rather than military initiatives. Overemphasizing attrition warfare "risks diverting us unduly into a military box canyon, at the expense of short changing the implications of the eternal truth that there is more to war than warfare."[7] In short, no history—barring total annihilation of the enemy—supports the notion that external powers can win intrastate wars. Today's Iraq is neither an anomaly nor an exception to this generalized rule; rather, the situation there confirms it. Victory in Iraq will come when the Iraqis win it. Thus, the major role for external powers entails not winning but *enabling* one side to gain the wherewithal and capacity to win.

But "doing" and "teaching" have different objectives and require different talent sets, each engendering different, at times incompatible, mind-sets and tactics (not to mention inventories of people and equipment). In constructing these mission sets, however, the USAF should keep in mind that *legitimacy* for the partner government serves as the overarching filter or backdrop for great-power mentoring. Legitimacy is the precursor for victory. Any action perceived as undermining the credibility of the host government can feed the perception of its incompetence and thus encourage hostile groups to make demands on or attack the central government.[8] As a general principle, we should set as a goal working *by, with, or through* a partner nation rather than for that nation—or on behalf of or in lieu of that nation. We should conduct good works—even those uncontested by hostile groups—in the framework of an effective communications plan in order to maximize the potential for establishing, sustaining, or enhancing the authenticity of the central government.

If the USAF wishes to become effective in this "standing-in-the-back-row" style of engagement, it should acknowledge the necessity of fulfilling two (sometimes competing) mission sets. One, and in the absence of alternatives, the service should have full capability to directly engage the enemy—to fight COIN or COIN-like engagements as a key component of the national effort. This will inevitably occur in a joint, interagency, and coalition-based context. Two, the USAF should have the capacity to create within the partner nation the requisite skill sets and disciplines in air, space, and cyberspace which enable that partner to realize its national goals without the large footprints or heavy hand of America's airpower.

This principle—to seek common objectives and enable partners—devolves not only from the separate discussions above concerning internal wars and the legitimacy of central government, but also from the very practical realization that the USAF is not (and will not become) large enough to fight as the principal air service for every nation affected by the long war. USAF policy should emphasize early engagement (i.e., during phase zero—shaping) for the purpose of building sufficient partner capacity to mitigate or even eliminate the need for a USAF presence in large numbers later on. The goal is to teach, guide, and advise a host air service without (and without the perception of) usurping the host government's prerogatives.[9]

End-state planning (the aggregate of effects at a strategic level) requires the development of connected efforts to produce a desired political outcome. Further, it envisions the enemy as an interactive and adaptive system that in-

cludes both friendly and hostile elements.[10] By focusing on the problem sets in these ways, effects-based approaches provide the necessary framework to ensure that military operations stay attuned to the nation's strategic goals rather than drift to tactical, close-in targets. Tactical efficiencies should not establish the governing metrics for overall strategy.[11] Similarly, in COIN or COIN-like conflicts, techniques peculiar to an effects-based approach to operations should ensure that military solutions will not become the focus of a fundamentally political problem.[12] To do otherwise would concentrate efforts on a relatively small part of the problem, address no causal factors, and, ultimately, resolve nothing. Operational design in support of a set of defined end-state conditions yields an additional pressure for effectiveness over efficiency and minimizes emphasis on peripheral operations not tied to the effects necessary for the strategic end state. Recent coalition experiences in Iraq and Afghanistan exemplify the futility of military operations adrift from the complementary political, communication, economic, and sociocultural initiatives needed to seal the victory.

AFDD 2-3 and AFDD 2-3.1 have added momentum and visibility to the rise of COIN and COIN-like activities for the USAF, but, as noted by symposium speakers and participants, COIN is not a new phenomenon. Historically, USAF competencies in COIN have simply atrophied as soon as circumstances permitted. Outside of AFSOC, no systemic protection of these capabilities has saved the critical core elements from extinction, and it is a difficult and time-consuming task to resurrect the professional competencies that once existed. AFDD 2-3 and 2-3.1 are a good start to that resurrection but, perhaps, insufficient to genuinely affect the full spectrum of Air Force activities necessary in the long war. A stronger statement might be made if the USAF's topline doctrine document, AFDD 1, *Air Force Basic Doctrine*, also reflected the seriousness of this irregular engagement and the dual-mission nature of the fight (to *do* and to *enable*).[13] Like strategy, doctrine should assume a top-down direction and permeate the entire pyramid so that the USAF can routinely prepare and engage with other than special operations forces.

Force Development

As it transforms, the USAF can be justifiably proud of its close management of skills and personnel requirements. There is a dilemma in personnel management, however, when a particular skill set loses its contribution to the fight. The loss of relevance may occur due to advances in technology that have simply obviated an older methodology and, with it, the requisite skill sets. More problematically, the loss of relevance may stem from a change in circumstance which potentially makes such loss more temporal in nature. In the short term, it would seem reasonable to delete this requirement and use fungible resources in another (previously lower-priority) area. The problem then transitions to one of lead time to recover those skills if the need should rise again. The USAF's (and other services') COIN skills have seen this phoenix cycle repeatedly, and today's strong efforts by US Central Command Air Forces (CENTAF) are leading the rebuilding of this expertise within the USAF's general-purpose forces.

We incur incalculable costs by repeatedly learning, forgetting, and relearning IW/COIN skills. One wonders how much further along the Iraqis might be today if we could have made use of current CENTAF skill sets in 2003. Given the nature of the long war, IW force development in the USAF should assume a long-term posture. Although writing doctrine represents a critical step in creating a durable capacity for winning this war, the synthesis of training, education, and experience will create the necessary mind-set for this fight—and that will serve as the critical enabler, not just for CENTAF, but for all Airmen, who will need the tools to take on a highly adaptive enemy in a constantly changing environment.

Force development is a balance of three core efforts—education, training, and experience—designed to ensure that the USAF has qualified people in place at the right time to fulfill the missions set forth. As stated above, the long war presents a different set of needs and

competencies than peer or conventional warfare. Thus, if the USAF desires capability in this sense, its force-development system should produce people qualified for IW as well as more traditional styles of conflict. The USAF cannot confine IW to a single specialty or set of specialties. A winning strategy in COIN demands transferability of virtually every skill necessary to the USAF in fighting COIN to a partner nation. In short, IW will affect every specialty.

Sanctuaries, for example, provide a degree of safety or anonymity to a weak opponent. For any of a variety of political, physical, cultural, or information reasons, the enemy can stay beyond the reach of the central government. On this basis, ungoverned or undergoverned territory is cause for concern in every area of operations as a potential source of instability and antigovernment initiatives. Not simply a land-centric phenomenon, ungoverned space further extends to all three media noted in the USAF mission. *Air* sovereignty continues as an open issue in Africa and much of Latin America. *Space* is governed, if at all, more by the science, technology, and cost of doing business there than by any enforceable rule set. And only the relative rates of innovation among belligerents (e.g., hackers versus security specialists) govern the *cyber* arena. The Internet has become much more than just a conduit for a fanatic's e-mail. In effect, it functions as a safe house—a sanctuary—for terrorists. Each of these three media poses a real and current problem in IW. The point is this: force development should prepare every specialty (though perhaps not every Airman) for IW. The battlespace is global in every sense, and every medium is affected.

The caution here, however, is more of a reminder. Enemies choose IW, unrestricted warfare, or other asymmetric tactics because they have no alternative. The current force's ability to "do incredible things really well" has shut down any main-force options that may have existed, and this high-end force will not become debilitated to the extent that opponents see any potential in that arena.[14] This remains the force that defends US sovereignty. This is the fight, however unlikely, that we cannot lose. Some force adjustments are practical, but the development of an IW-/COIN-capable USAF should be concomitant with its responsibilities to defend the sovereignty of the nation against peer competitors.

For IW and COIN conflicts in general, the USAF's most fundamental job is to help establish a credible host-nation air force. Today that capability exists on a permanent basis only in one relatively small squadron in AFSOC. The 6th Special Operations Squadron certainly has the talent but lacks the mass necessary for engagement across the breadth of areas affected by the long war. By similar logic, it also lacks the persistence necessary to sustain its own good works. The USAF's general-purpose forces have the necessary mass and, with the appropriate force-development program, can have the requisite talent as well. The USAF should step up to the challenge and shape its force for a winning strategy in the long war Airmen must be able to *assess*, organize, train, equip, *assist*, and *advise* foreign air forces if they are to be successful.[15] What's the bottom line? In Operation Iraqi Freedom, the fastest way home for the USAF is through a credible Iraqi Air Force.

One of the most difficult issues in this future development cycle will involve establishing a culturally and linguistically proficient force. "Assess, organize, train, equip, assist, and advise" is difficult enough as a mission set when everyone speaks a common language. It is much more so when new languages are mixed with new technologies and procedures. Regardless of advantages that might accompany teaching everyone else English, US exit strategies should accept that the teaching and operational systems left behind will likely revert to naturally spoken languages almost immediately—but without the in-kind benefit of the English-based infrastructure upon which the training is based (e.g., tech data). The current alternative, going forward with a just-in-time approach, is similarly bankrupt as a strategy. Language offers the gateway to understanding culture, serving as a critical first step in understanding the center of gravity in COIN—the people. The USAF should actively determine its hard requirements for languages and then plan accordingly. In a break from past practice, force-development planning for lan-

guages and culture should also include a sustainment package to ensure future resource proficiency and availability.[16]

Strategic Communication

Strategic communication, military support to public diplomacy, public affairs (PA), information operations (IO), influence operations, psychological operations (not to mention the peripherally related areas of military deception, electronic warfare, and computer network attack and defense) all currently fall under a single umbrella—a plate critically overfull. More to the point, strategic communication lacks focus at strategic, operational, and tactical levels—an especially critical series of shortfalls, given the highly astute and sophisticated use of all information media by our enemies. The problem starts at the top for the United States with a lack of (whole-of-government) consensus on the who-what-how of strategic communication. US strategic communication, with its emphasis on a persistent, top-down narrative, collides with the reality of timely implementation at the military operational level and below. Current doctrine, training, and practice do not support, in a systemic way, a proactive engagement in a rapidly changing context. True, we have experienced successes—but all too often due to individual effort and individual heroes who have used their situational awareness within these fluid environments to take advantage of some fleeting opportunity.

We should develop IO to the same extent as every other weapon system in the combined air operations center. For example, PA experts should be present at every targeting discussion to ensure that we wrap the proper communication plan around every kinetic operation and, where appropriate, that we schedule kinetic operations in support of the communication efforts. Additionally, an IO weapon alone may constitute the best means of attacking some targets. The key lies in understanding that effects drive the targeting option rather than the other way around. To date, US efforts in IW/COIN have underemployed IO, and every mission suffers as a result.

As a long-term goal for force development, we should ensure that the IO experts mentioned above actually exist. For example, PA officers whom we have stovepiped as specialists in their career field should broaden their understanding of related areas. One option might entail combining PA and intelligence career fields with alternate assignments. Another option, in light of proposed cuts in the number of PA officers, might involve re-creating additional-duty options for operators as PA officers. These 18-month tours (with a 40-hour front-loaded training course) would give individual wings a PA officer chosen by that commander and, over time, would significantly increase the number of line officers with media savvy. Other options exist, but the point is this: we must utilize IO in order to win the long war, and the USAF should acquire and sustain the necessary resources to do so.

Building Partnership Capacity

BPC is not a particularly novel idea. Many coalitions and alliances have formed around similar concepts; in the North Atlantic Treaty Organization, for example, "interoperability" initiatives provided essentially the same effect. With the proper IW/COIN filter, BPC not only extends military tactical and operational proficiency, but also lends itself to the strategic goals of central-government legitimacy and credibility. Ultimately, it also provides part of the solution for a very large and diverse long war in which a relatively small USAF lacks assets to be everywhere at once. To emphasize a point about shaping, however, BPC need not constrain itself to active engagements; rather, we may best view it as a long-range strategy. Building an air force or even improving one is not an overnight venture.

The US Navy Strategic Studies Group published a report in 2006 that spoke of a 1,000-ship Navy—a radically different proposition, however, from the 600-ship Navy of the 1980s advocated by John Lehman, secretary of the Navy at the time. The new concept looks at both the type of vessel required in the long war (perhaps more river/brown-water emphasis and less blue-water emphasis) and who might

provide and/or operate that vessel. A shift or rebalancing in inventory types for the US Navy might occur but certainly not a fivefold increase in hulls—something impossible to achieve and sustain in the current fiscal environment and probably not the most effective solution in IW/COIN. Instead, under this concept, the Navy would increase specific capabilities by looking for partner nations in a comprehensive strategy for engagement. Airmen should ask themselves whether an appropriate USAF version of a 1,000-ship Navy exists.

USAF Airmen are already engaged in BPC in many locations—obviously Iraq and Afghanistan but also in exchange and education programs as well as USAF sections within various embassies and military groups. In too many examples, though, the selection process and preparation for overseas assignments amount to little more than an availability check. The USAF has smart, proficient, and motivated people who have shown remarkable agility in their ability to adapt and learn.[17] Unfortunately, too much of this learning has occurred on the job. Institutionally, the USAF has an opportunity to shape the battlespace. Rather than approaching BPC as a bill to pay, the USAF should adapt its structure to meet a long-term commitment to educate and train foreign air forces. Alternatives to such a strategy are not encouraging.

The protracted, complex nature of insurgency challenges war-fighting institutions who find themselves culturally affixed to high-speed find, fix, track, target, engage, and assess cycles.[18] This pseudoengineering/scientific approach to cause and effect falsely establishes near-term time constraints for success, and these expectations are exacerbated by an omnipresent, high-speed media that needs to report results on a near-continuous basis. These environmental conditions produce a frequently truncated assessment cycle, a lack of patience for cascading or long-term effects, and a spotlight on near-term tactical reporting, in stark contrast to the glacial progress in most historical accounts regarding insurgency.[19] For example, some pundits note the British Malay experience as something of a "gold standard" in how one should conduct COIN. But LTC John Nagl of the US Army points out that if that is true, then the "pool and Olympic record" is about 12 years.[20] Northern Ireland took somewhat longer.[21] As an institution, the USAF has not historically demonstrated a strong willingness to see combat issues in 12-year cycles.

Acknowledging the distinctions between conventional warfare and COIN becomes especially important for Airmen as they assess how to contribute in COIN interventions. In these circumstances, the key—the first—strategic decision calls for determining whether *to fight COIN* or *to enable COIN*. More bluntly, the choice becomes whether to force an existing conventional military template onto a set of largely incompatible circumstances or to build up a partner nation's capacity to win on its own merit. In strong consensus, speakers and symposium participants warned that no history supports the idea that outside powers win internal wars. Thus, we should choose to enable. As counterintuitive as it may seem at first, this reconceptualization of how to frame airpower's contribution is fundamental to actually winning in the long view.

Hence, the USAF operates most effectively at the strategic level when engaged *in support of* COIN rather than directly waging it. Ideally, it can do so with and through the supported government and its institutions before the fighting actually begins. These USAF shaping and deterrence actions involve assess, organize, train, equip, assist, and advise initiatives within the context of other political, informational, economic, sociocultural, and military efforts—ultimately designed to establish and/or sustain a legitimate central government. Well planned, these actions also undermine the support structure and rationale for dissent and/or rebellion. These activities are essential to conflict avoidance or at least mitigation of antigovernment complaints and recruiting. An oft-repeated but subjective assertion regarding the optimal mix of actions states that one spends only about 20 percent of a successful COIN effort on military initiatives; the remaining 80 percent comes from the economic, political, and sociocultural contributions to the overall strategy. Information remains the lifeblood of every effort.

The very practical perspective of USAF participation in IW/COIN activities in the long war maintains that, even if it were a good idea (it is not), the USAF is simply not large enough to serve as the air force for every contested nation or region at risk. The USAF's general-purpose forces should have the ability to create what would have been their own effort from the resources of the host nation. If, in some cases, they should build from the ground up, they will need to draw upon a broad set of talents from throughout the full range of USAF specialties. To enable similar efforts by the supported air force, we should replicate the processes, disciplines, and inventories (people and things) that enable USAF efforts (appropriate to circumstance and culture).

Using an enable strategy produces the immediate benefit of significantly reducing the profile of Americans in a contested nation. As seen recently in Iraq, and repeatedly in history, large-power footprints can become a significant rallying factor for traditionally disparate, antigovernment groups. Even groups that would never work together in normal circumstances have joined efforts to eject the outsiders. Rather than helping the central government, a large US footprint can become a force multiplier for insurgent recruiting and propaganda. An enabling strategy with the proper emphasis on *by, with, and through* the central government diminishes the risk of this footprint virus.

According to Dave Ochmanek, senior RAND analyst and symposium speaker, insurgency or other IW activity now threatens (or has done so recently, or will do so in the future) roughly half of the approximately 190 nations in the United Nations.[22] Potentially this is a very broad arena for BPC engagement, but numbers alone can prove misleading without a keen assessment to establish actual conditions. We commonly err by assuming that the best solution calls for a mirror image of our own force—perhaps true in some circumstances but a poor assumption to make without a validating assessment. Planners therefore not only should understand the target nation's requirements, but also should have a clear understanding of that nation's ability to learn, operate, and sustain programs developed with US assistance. Many nations at risk are not credible candidates for high-tech transfers and sophisticated platforms because they lack either a justifying threat or the structural and demographic capacities to maintain and operate these air, space, and cyber systems. Assuming that only old systems have viability would prove equally wrong. In BPC the correct answer involves providing the *right tech* rather than low tech or high tech. The current USAF inventory emphasizes high tech, thus constraining the available options for BPC through technical transfer. Aircraft do not constitute the sole case for BPC, but they have typically served as the airpower lead-in for the associated training, doctrine, and long-term military-to-military relationships that have enabled both US objectives and host-nation security.

The Vietnam-era platforms that gave the USAF this entry are gone or rapidly disappearing, and potential partners with limited resources and little justification for the high-tech aircraft typically found in the current USAF inventory now look to foreign rather than US suppliers to provide relevant, COIN-capable platforms. Certainly we can employ other USAF competencies in BPC (air traffic control in Africa, for instance), but the diminishing market for US aircraft should remain a concern. Realistically, the new right-tech platform may be an unmanned aerial system, but to create the opening for a long-term enabling plan, the USAF should first develop a strategy for exportable COIN technologies. If the F-20 legacy still applies, it also means that the USAF should operate these platforms in its own inventory.[23]

Recommendations

Naming some suitable platform would be a seductive first choice for beginning discussions of how airpower can contribute to COIN, but USAF expertise and the potential for engagement go well beyond the technical flight-line engagement by operations and maintenance personnel. Actually controlling airspace or maintaining sovereign control of that space, for example, remains an issue in most of Africa outside of terminal areas. In concert with the International Civil Aviation Organization and

Federal Aviation Administration, the USAF is uniquely suited to assess, advise, and assist in this area. Ensuring compliance with international aviation standards for air movement would clearly prove advantageous in the long war, and the USAF could make critical contributions to shaping the battlespace. First, however, the USAF should decide what IW/COIN will look like for the institution. If the service chooses to enable its partners to fight and win on their own, then it should make a near-term investment in ideas and force-development initiatives that will pave the way.

Strategy should remain a top-down function in order to provide coherent guidance in parallel tracks at every level. We should view USAF doctrine no differently; we have much work to do in this arena. AFDD 2-3 (and 2-3.1) represent a good beginning for reestablishing IW activities in the USAF field of view, but third-tier documents will not likely have sufficient influence on the whole doctrine pyramid for this task. We still typically view IW, FID, COIN, and BPC as the purview of special operations forces and outside the full-spectrum USAF mission. But because BPC is strategically fundamental to winning the long war, we should therefore describe it in the USAF's basic doctrine—AFDD 1. Placed there, at the top level of USAF doctrine, BPC can filter appropriately throughout the doctrine pyramid. In this way, doctrine for every specialty will grow. In many ways, the establishment of a long-term relationship may be more important than short-term, concrete changes. Culturally, Americans often find this a hard choice to make because each investment in time or personnel will likely face a bang-for-the-buck assessment, based on tangible rather than intangible metrics. As with the other recognitions of COIN's distinction from conventional warfare, strategic planners should recognize that BPC is not a short-term investment. Again, the USAF's overall strategy will drive how it configures itself.

Structurally, the personnel system is not prepared at this time to find, educate, train, and develop experienced Airmen for a long-term sustained engagement with partner nations. We have no method for identifying development and qualification requirements; nor is the USAF personnel system set up to track these qualifications in a manner consistent with finding the right people for each job in the long war. Additionally, the USAF has adopted a somewhat fractured business model for IW/COIN. ACC houses the USAF Coalition and Irregular Warfare Center of Excellence. The Air Staff (A1D) has recently reorganized to focus on force-development issues; A3/5 and A7 are considering the creation of an IW group. CENTAF has established an expeditionary advisory group. AFSOC is tripling the size of the only "FID squadron" in the USAF. Air University hosted a COIN symposium for its USAF sponsors. All of these are good actions, but do we have an overall strategy? A top-down vector remains the essential starting point for accelerating the USAF's preparation for and contributions to sustained engagement.

As discussed in various RAND reports and based on the service's experience in Iraqi Freedom, today's USAF inventory is largely compatible with much of the kinetic work that we need to do in COIN (by the USAF, not necessarily by a partner nation).[24] The nonkinetic approach, however, has several gaps, and IO represents perhaps the single most important deficit in the US arsenal today. Barring a return to annihilation strategies, the principal difference between military success and political victory seems to lie in convincing the enemy that he has lost or at least that he has better options for the future with our side. We can best attain this human dynamic, or social-engineering effect, through the use of an integrated, persistent, and comprehensive information program closely synchronized with the traditional kinetic operations of the military. We should fully incorporate the entire array of IO capabilities as a weapon system in the combined air operations center and give them equal status as an accountable, selectable, effects-producing option for the commander. The USAF should redesign the relevant planning processes to incorporate these capabilities and then organize and train to exploit them. Finally, every symposium workshop considered two specific questions with regard to how the USAF might posture itself for the long war.

Does the USAF Need a Concept of Operations for Counterinsurgency?

A specific concept of operations (CONOPS) for COIN that uses the current Air Staff model as the reference found little favor at the symposium. Once the USAF decides on its vector for IW/COIN, if the Air Staff needs this function for effective acquisition and implementation strategies, it could create such an office and product. However, workshop participants saw the CONOPS function itself as a mechanical by-product, rather than a precursor, of an effective IW/COIN strategy.

Does the USAF Need a Specialized Inventory for Counterinsurgency?

The COIN symposium participants strongly endorsed BPC as an essential element for the future of the USAF. Given the fact that few of the 80-plus nations potentially at risk would have the capability to operate the USAF's very high-end current inventory, options for incorporating right-technology platforms into the USAF inventory become a logical step. Doing so would create the necessary expertise and a suitable menu of relevant choices for an exportable air force. Platforms alone cannot create an adequate air service in any country, but at least for the foreseeable future, they open an effective path for creating credible institutions.

Conclusion

In IW/COIN, our principal strategic objective calls for a legitimate, credible, and functioning host-nation government. From an effects perspective, the principal military effort should provide a sanctuary wherein the political, information, economic, and sociocultural initiatives of that government can mature and eliminate the hostile environment from which the insurgents operate. This is not a new mission. In fact, the USAF proved instrumental to the success of a very similar operation over five decades ago—the Berlin airlift. Coalition and joint airpower in concert with a massive logistics effort by the Army on each end of the airlift provided such a sanctuary. For essentially a year, airlift fully sustained the Western-occupied portions of Berlin; ultimately, however, airlift per se did not physically open any roadblocks. The Soviets succumbed to diplomatic and economic realities forced on them by the West. Had inadequate airlift limited these other efforts to just a week or a month, the results for Berlin and the West might have been quite different. By emphasizing airpower in this case, the military gave the diplomats an apparently unconstrained time to work, and, ultimately, the risk-versus-gain equation ran against the Soviets—a phenomenon commonly the case in IW/COIN. Building partnership capacity is the functioning tool to reach that end. ❑

Notes

1. See *Terrorism 2007*, Special Bibliography no. 332, comp. Glenda Armstrong (Maxwell AFB, AL: Muir S. Fairchild Research Information Center, July 2007), http://www.au.af.mil/au/aul/bibs/terror07.htm; and *Irregular Warfare*, comp. Joan T. Phillips (Maxwell AFB, AL: Muir S. Fairchild Research Information Center, March 2007), http://www.au.af.mil/au/aul/bibs/irregular.htm.

2. *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 6 February 2006), 23, http://www.defenselink.mil/qdr/report/Report20060203.pdf.

3. The first six "phase-centric" (per Joint Publication 3-0, *Joint Operations*, 17 September 2006) workshops looked at shaping, deterring, seizing the initiative, dominating, stabilizing, and supporting civil authority; four additional "functional" workshops looked at policy-strategy-doctrine, strategic communication, the role of education, and building partnership capacity. The final workshop, a senior-leader forum, looked at various IW/COIN issues. The "role of education" discussions expanded to "force development" in this report. The eight speakers included Gen Ronald E. Keys (ACC), Maj Gen Donald C. Wurster (AFSOC), Maj Gen Dick Newton (Headquarters Air Force A3/5), Colin Gray, Jim Corum, Conrad Crane, Dave Ochmanek, and LTC John Nagl.

4. For example, tanker planners routinely balance fuel required with booms required. The efficient carriage of 200,000 pounds of fuel may necessitate only a single aircraft to refuel a C-5 or B-52. However, "coasting out" with one boom and a squadron of fighters is simply a nonstarter. Separately, C-130 load-outs are routinely in debate.

5. In Operation Iraqi Freedom, the air problem faced by the Iraqis so confounded them that they buried their frontline fighters. More likely in the future, enemies will simply avoid those venues dominated by the United States and/or

allied partners. See also Sr Col Qiao Liang and Sr Col Wang Xiangsui, *Unrestricted Warfare*, February 1999, http://www.fas.org/nuke/guide/china/doctrine/unresw1.htm.

6. See Alan J. Vick et al., *Air Power in the New Counterinsurgency Era: The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND Corporation, 2006), 133–35, http://www.au.af.mil/au/aunews/Articles/RAND_MG509.pdf.

7. Dr. Colin S. Gray, "Irregular Warfare: One Nature, Many Characters" (presentation, 2007 Air Force Symposium on Counterinsurgency, Maxwell AFB, AL, 24 April 2007).

8. For example, a hostile communications campaign could highlight a hospital built from the ground up by a Red Horse team as "another example of the central government's inability to deliver basic services to the people. This corrupt government must go to the Americans who are backing and controlling them to get anything done. Boycott the hospital in protest of the Americans running this puppet government." We should specifically adjoin every such "kinetic" operation in this environment to the communication plan that focuses on delivering the desired effects.

9. For an excellent and concise discussion on working with a "host nation," see T. E. Lawrence, "The 27 Articles of T. E. Lawrence," *The Arab Bulletin*, 20 August 1917, http://net.lib.byu.edu/~rdh7/wwi/1917/27arts.html. For example, number 15 of 27 articles or principles reads as follows: "Do not try to do too much with your own hands. Better the Arabs do it tolerably than that you do it perfectly. It is their war, and you are to help them, not to win it for them. Actually, also, under the very odd conditions of Arabia, your practical work will not be as good as, perhaps, you think it is." Lawrence cautioned that his advice applied to his situation only and that every situation or circumstance engendered different "rules."

10. Including the supported central government, any US forces involved, and so forth. It is patently not true that one can see an enemy system in isolation from elements that interact with it (e.g., the USAF becomes part of the system, and the system reacts to actions, nonactions, presence, nonpresence of this subsystem interface or element).

11. As noted earlier, all military operations clearly strive for efficiency in fighting, but efficiency should not be counterproductive to winning; *effectiveness* should take precedence over *efficiency*.

12. One should not construe this to mean that politics is somehow separate from "war." Clausewitz's fundamental assertion that "war is the continuation of politics with the admixture of other means" has perhaps even more relevance in IW/COIN than the set-piece attrition conflicts with which readers most frequently associate him. And "admixture of other means" certainly provides an opening to discuss the whole-of-government approach with emphasis on the human dynamic.

13. At the symposium, General Newton talked about the "phoenix cycle," referring to the mythical bird that rose from its own ashes. According to him, after World War II and the Korean War, the country disbanded its IW capability and had to resurrect it for the next conflict.

14. Although this is certainly more of a political statement at this point than a military threat, Russia has once again begun long-range-bomber missions as of summer 2007. "President Vladimir Putin said . . . security threats had forced Russia to revive the Soviet-era practice of sending bomber aircraft on patrols beyond its borders. Putin said 14 strategic bombers had taken off simultaneously from airfields across Russia . . . on long-range missions. 'We have decided to restore flights by Russian strategic aviation on a permanent basis.'" See "Russia Restores Bomber Patrols," *CNN.com*, 17 August 2007, http://www.cnn.com/2007/WORLD/europe/08/17/russia.airforce.reut/index.html.

15. "Assess," "assist," and "advise" are unique, specific skills typically associated with special operations forces but are critical talents for the success of USAF general forces in the long war.

16. Languages learned as an adult can atrophy rapidly without an active sustainment plan. For the "less commonly taught" languages, such as those immediate-investment languages found in a memorandum on strategic languages issued by the Office of the Under Secretary of Defense dated 26 October 2005, voluntary maintenance of difficult dialects is indeed a poor investment strategy. The USAF replaced its voluntary fitness programs when it saw the need; language and cultural sustainment needs proactive programs as well.

17. For example, the original cadre of Iraqi Freedom C-130 trainers (or any "in lieu of" returnee). Across the board, they did great work.

18. "Does fast always mean successful?" See Dr. Thomas Hughes, "The Cult of the Quick," *Aerospace Power Journal* 15, no. 4 (Winter 2001): 57–68, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj01/win01/win01.pdf.

19. Although no commander considers killing insurgents the critical point in, or the foundation of, a winning strategy in COIN, "body count" remains the ubiquitous metric reported in every contact with the enemy and, by default, becomes the measure of success or failure.

20. Discussions, 2007 Air Force Symposium on Counterinsurgency, Maxwell AFB, AL, 24–26 April 2007.

21. The British in Northern Ireland have taken 38 years to get "the warring parties to the table" (assuming that 1969 marked the starting point for this conflict—some would say 1922, 1916, or even the middle of the nineteenth century). See Douglas A. Borer, "From Belfast to Baghdad—What Have We Learned?" *Christian Science Monitor*, 16 August 2007, http://www.csmonitor.com/2007/0816/p09s02-coop.html.

22. Dave Ochmanek (presentation, 2007 Air Force Symposium on Counterinsurgency, Maxwell AFB, AL, 26 April 2007).

23. "Despite lobbying by Northrop, the F-20 was never seriously considered for US Air Force service, and the US Navy eventually decided to buy F-16s rather than F-20s for its aggressor aircraft program. These two facts essentially doomed the F-20 foreign military sales (FMS), since international customers tended to buy the F-16 because it was used by the USAF, and the F-20 was not." See "F-20 Tigershark," *GlobalSecurity.org*, http://www.globalsecurity.org/military/systems/aircraft/f-20.htm.

24. See, for example, Vick et al., *Air Power in the New Counterinsurgency Era*.

Chinese Servicemen's Views of USAF Airmen and Education

Editor's Note: In 2006 a delegation from the People's Liberation Army Air Force (PLAAF) visited US Air Force (USAF) facilities, including the USAF Academy in Colorado; Air University at Maxwell AFB, Alabama; and Bolling AFB, Washington, DC. China Air Force *magazine subsequently published three commentaries written by delegation members and graciously permitted* Air and Space Power Journal *to translate and republish them.*

"Understanding US Airmen from Small Details"

Sr Col Qigui Wang, PLAAF
Political Commissar

What combat-training objectives, officer-development structure, and military-base culture does the USAF adopt? Some details that I noticed during our visit to the United States may provide answers.

The US military promotes the notion of joint operations, pursuing the vision of "global reach, global awareness, global power" and training its soldiers in real combat environments. One lasting impression that I had from our US trip was that the US military pays great attention to developing capabilities for joint operations. It believes that war is not the business of any single service, theater, force, or soldier; instead, winning a war requires the joint operation of all people in all dimensions. Each theater has a unified command made up of all the US services. A mixture of students from these services attends training in military schools. For major operations, all services join to form the centralized command. Even in logistics and deployments of armaments within a theater, the US military uses joint supply methods. The USAF designs training with combat requirements and effects in mind. For example, at Maxwell AFB, Alabama, we watched a number of C-130 cargo planes frequently taking off and landing. An officer explained that they were sharpening their skills at landing on short runways in order to strengthen capabilities to project forces and supplies quickly in complex situations.

US armed forces do not have political units or political officers. Instead, each organic unit has one chaplain. Yet, political education and moral mentoring successfully merge into the service members' daily work and lives. In every location, we saw the national flag, service ensigns, and unit banners flying. From the Department of Defense in the Pentagon to a wing on a base—indeed everywhere—we found museums and heritage offices. Meeting rooms, hallways, and lobbies serve as halls of fame, decorated with photos of previous leaders, war heroes, trophies, and all kinds of souvenirs. At Air University in Alabama, a museum dedicated to the heritage of enlisted members displays war heroes and their brave deeds, creating a full image of heroism. Some of the US military bases we visited, such as Maxwell AFB and Bolling AFB, are named after war heroes. But we did not see many slogans posted on the walls of their buildings, except perhaps one that read "Integrity, Service, Excellence."

The US military has a clear vision for personal development. No later than 18 months after their promotion, company-grade officers must go to junior-officer schools to take a six-week course. Then, for every step up, they must attend military schools, some as long as 12 weeks, some as short as two to three weeks. Field-grade officers also must attend military schools for strategic courses as a prerequisite

for promotion. Even general officers must go back to school to take more advanced courses and participate in joint-operation war games. A second lieutenant needs to attend at least 10 trainings at different times before he or she reaches the rank of brigadier general. During the past few years, the US military has added a good deal of curriculum about information-warfare theory and the art of command. The schools invite high-ranking officers with combat experience and renowned specialists to give lectures and speeches. In order to increase their joint-operation capabilities, officers rotate every two to three years, either dispatched to operational forces at the front or assigned to military schools or back offices. Currently, most USAF field-grade officers have had experience in two to three weapon systems and professional positions. The development of noncommissioned officers (NCO) is equally systematic. To progress from the lowest rank to the highest, sergeants must complete a training cycle every five years, on average. Course length ranges from eight days to 18 weeks each time.

During our 15-day stay in the United States, we also observed that the beautifully landscaped military bases attract highly talented people. The USAF bases, military academies, and flying-wing camps that we visited were all very well laid out, with buildings dotted neatly with trees and flowers. The people we met, whether the commandant, a sergeant, or a student, all appeared motivated, proud, and self-confident. Individuals with whom we talked expressed their willingness to deploy to the most dangerous battlefields for the most treacherous taskings and to die for their country. Maj Gen Stephen J. Miller, commandant of the USAF Air War College, told us that in the United States, servicemen and women all voluntarily join the military. Cadets who have finished two years of studies may choose to leave the armed forces or sign an agreement to continue their careers in the military. After voluntarily entering the service, they must unconditionally obey orders, strictly follow rules and discipline, and fulfill personal commitments. No matter where, in what position, or in which profession or stage of personal development they may be, as servicemen, they have no reason whatsoever to compromise their commitment. While visiting the USAF Senior NCO Academy, I asked a chief master sergeant (who appeared close to 50 years of age), "Having served in the military for so many years and all the time staying with soldiers on the grassroots level, have you ever thought about changing careers or seeking positions with better benefits?" "Well," responded the chief, "this is the job that fits me and that I enjoy. I must do it the best I can."

"Selected Thoughts from a Brief Look at the USAF"

Sr Col Wang Ximin, PLAAF
Political Commissar
Guilin Air Force College

As a military-school staff member, I naturally paid more attention to USAF educational institutions during our visit to the United States. Understanding the USAF's modern educational policy, teaching models, and school structures will bring new ideas to our own education and training.

The US armed forces believe that military training must interface with war. As such, the US military often makes its war-gaming environments more complicated than real battlefields. It has adopted a mind-set of joint operations, the concepts of which are reflected fully in system structure as well as command and coordination, all the way down to the tactical level. US servicemen and women understand that they will train to fight for the overall strategic objectives of their country and have an obligation to do so. Soldiers must prepare themselves to win; otherwise, they are fated to lose. Putting aside the justification for launching wars, we can learn something from these service members, who have such a strong sense of mission, dedication, and obligation.

The USAF not only possesses sophisticated weaponry but also heavily emphasizes the human role in high-tech wars. Indeed, that service invests substantially in the development of high-quality Airmen. During our visit, I was

deeply impressed with their military competence, technical capability, and physical as well as mental fitness. Both officers and enlisted members demonstrated a high level of education. Most of the latter have finished high school, and a fairly high percentage of them hold undergraduate or associate degrees. More than 95 percent of USAF officers hold bachelor's degrees.* Officers of field-grade rank and above often have two to three different degrees. Faculties of the military schools consist mostly of professionals with master's and PhD degrees. The US military also stresses the importance of total development. Through situational teaching, role rotation, field training, battlefield deployment, and many other ways, the US armed forces equip their servicemen and women with total capabilities and competencies. Students entering military schools must meet strict requirements. Company-grade officers must graduate from command and staff college to qualify for promotion to field-grade rank.† Field-grade officers normally possess experience in two or three career fields or weapon systems.

Political units and political commissar positions do not exist in the US armed forces, but political and moral education has some distinctive features. During our tour, I asked our host, "How do you educate your soldiers about loyalty to the country, dedication to the national defense, and commitment to duty?" He answered, "Such education starts from high school. When students enter the military schools, they are taught to understand why they serve in the military, how to dedicate themselves to the country, and how to contribute to military development."

The US military holds the national interest above all else and regards serving the country as its sacred obligation. US servicemen and women may attend different military schools multiple times. In fact, education in military duty and responsibility permeates one's entire military career. Despite the absence of dedicated ideological educators, such education is reflected in performing missions and fulfilling obligations. We also noted the compassion and attentiveness to soldiers' actual needs. For example, the military takes care of many necessities for the families of soldiers deployed overseas. On the other hand, people who refuse to fulfill their military service agreements, desert, or break rules may face harsh punishment. My most vivid impression was of the cultural environment of USAF bases. Every unit and school has its own decorated room of honor and hall of fame. Certainly, all of these efforts imperceptibly influence the psyche of USAF officers and enlisted members, nurturing them to develop and grow.

"A Glimpse at the Cultivation of Airmen's Core Values in USAF Schools"

Sr Col Hao Chengming, PLAAF
Political Commissar
Air Force Aviation University

The US military attaches no less importance to moral education than to weapons and equipment. It holds that patriotism, a sense of national superiority, and dedication to national interests are important elements of a soldier's character. These represent the highest personal values, serve as the true foundation of military morale, and are essential to winning future wars. During this study tour, I paid special attention to the US military's cultivation of its soldiers' core values.

The core values of the US military services include "loyalty, duty, respect, selfless service, honor, integrity, and personal courage" (Army); "integrity first, service before self, and excellence in all we do" (USAF); "honor, courage, and commitment" (Marine Corps), and so on. In addition, every college and academy of the

*This percentage reflects the author's understanding, based on his US tour. In fact, a bachelor's degree is a commissioning prerequisite for all USAF officers.

†This comment reflects the author's understanding, but the promotion system actually works somewhat differently.

USAF has its own core values: "integrity, service, and excellence" (USAF Academy) and "institutionalization, service to the country, and excellent dedication" (USAF Senior NCO Academy), for example. The USAF Academy consistently sets as its first educational priority the cultivation of US military ethics and values in every cadet. Both the Center for Character Development and the Cadet Counseling and Leadership Development Center establish the curriculum for the moral development of cadets. The academy emphasizes such core values as "integrity first," "service to the country first," "the supreme honor of sacrifice to the country," and "excellence in all we do." The USAF Academy has summarized and expressed such core values in highly concise words and has embodied these concepts in a variety of patriotic, inherited, religious, situational, moral, and legal forms so that they guide the behavior of all cadets, who internalize them as moral pursuits. All of these educational efforts and their obvious effects left profound impressions on members of our PLAAF study delegation.

USAF colleges and academies do an outstanding job of creating an environment that subconsciously facilitates the education of students through pleasant sights and sounds. At the USAF Academy and each college of Air University, one can see that the meticulous landscaping and displays on campus, on the training grounds, along the corridors, and in every exterior setting all reflect the distinct educational principles and concepts of different schools, conveying an atmosphere of culture, knowledge, and education. On the walls of almost every office, teaching venue, and meeting room at Air University, one can also see pictures and descriptions demonstrating the history of the service and of the school. Important events relevant to the development of the USAF and the school, as well as famous individuals educated by the school, are all on display, offering a rich and colorful historical lesson that influences, inspires, and educates people. Static displays of various types of airplanes are placed at prominent locations as a means of stimulating the students' patriotic feelings as well as their love of and devotion to the USAF. The inscription on the statue of an eagle and fledglings at the USAF Academy serves as a reminder to cadets of the importance of learning: "Man's flight through life is sustained by the power of his knowledge."

The USAF colleges and academies also attach special importance to the development of students' and cadets' leadership and management capabilities as an extension of the cultivation of core values. At Air University's Officer Training School and at the USAF Academy, the cadet wing—responsible for managing, educating, and developing USAF cadets—forges and develops their leadership skills and command and management capabilities. Organized much like an Air Force combat unit, the cadet wing includes various command and staff positions that provide each cadet the opportunity to experience leadership and learn how to manage a military institution. In the wing, seniors serve as cadet officers, and both juniors and sophomores serve as cadet NCOs. Freshmen, however, who have no cadet rank, must respect senior cadets and obey their commands—requirements that cultivate the Airman mentality and an attitude of obedience. Sophomores are held to somewhat less stringent requirements and assume limited leadership responsibilities in the cadet wing, with an emphasis on developing speech skills and communications capabilities. Juniors and seniors focus on developing a sense of responsibility as leaders and learning the various functions of the USAF. Senior cadets serve as instructors for most of the glider and parachute training courses at the USAF Academy; additionally, they must assume at least one leadership position in the summer training program for junior cadets. This model of education and management not only inspires the cadets' initiative regarding self-education and self-management, but also facilitates their acquisition of professional knowledge and command skills necessary for promotion to higher rank. It also enhances their management capabilities and gives consideration to the development of their personality. ❑

Minting COIN

Principles and Imperatives for Combating Insurgency

Dr. Conrad C. Crane*

THE WORLD BECAME aware of the existence of a coherent body of theory about insurgency as a result of the revolutionary upheavals accompanying the deterioration of empires following World War II. Along with the propagation of ideas from Mao Tse-tung, Ernesto "Che" Guevara, Carlos Marighella, and Vo Nguyen Giap came a corresponding attempt by counterinsurgents to develop their own set of practices and principles. The tenets of these mostly British and French writers were a product of many years of struggle in theaters from Algeria to Malaya to Vietnam, along with observation of many case studies. David Galula, Frank Kitson, Robert Thompson, and Roger Trinquier still have much useful information for current practitioners of counterinsurgency (COIN).[1] Of recent note for anyone trying to learn about COIN from history is the comprehensive work of the Naval Postgraduate School's Kalev Sepp, who looks at scores of historical cases to develop his own list of best and worst practices for COIN.[2]

Baseline Principles for Counterinsurgency

When the Army–Marine Corps writing team for Field Manual (FM) 3-24/Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, began their deliberations, they turned to these sages of the past to develop a baseline list of principles upon which to build the new doctrinal manual. Although this search proved very fruitful, the writers who were observers and veterans of recent conflicts in Afghanistan and Iraq perceived that some new tenets also deserved emphasis, based on the evolving nature of modern conflict. As a result, the publication lists not only principles of COIN based mostly on history, but also imperatives derived from more contemporary experience. Together they provide a framework to discuss the pursuit of a successful COIN campaign. With some variation, the principles and imperatives from the new FM/MCWP form the basis for this article. More detailed explanations are available in that document.[3] Although much of the discussion focuses on applications to American examples, these tenets are broadly applicable to the operational conduct of any COIN.

The Importance of Legitimacy

By definition, combatants on opposing sides of an internal war seek political power. Based on their own definition of legitimacy, the people of the contested region will decide upon the victor. That does not mean that illegitimate governments cannot rule. All governments rule by a combination of consent and coercion, and those defined as legitimate rely primarily on the consent of the governed. Governance that relies primarily on coercion is unstable; as soon as the state's power is disrupted, the people cease to obey it. For long-term success, counterinsurgents must aim to foster the development of effective governance by a legitimate government.

However, the local definition of legitimacy may be far different from that of our Western liberal tradition. Some cultures may accept theocratic rule or value security over freedoms we consider essential. Counterinsurgents must

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conduct a thorough sociocultural analysis to determine what the local people perceive as legitimate government. Counterinsurgents must understand and reconcile differing standards, a task that may present difficulties for Americans who place high importance on democratic practices and liberal values. They must realize that local opinions—not ours—will determine legitimacy. However, in situations featuring intense civil strife in which local definitions of legitimacy become exclusionary or genocidal toward competing groups, intervening counterinsurgents may have to coerce belligerents, including a supported government, to create the possibility of political compromise.

The Primacy of Political Factors

Rarely are counterinsurgents successful with purely military action. Usually, peace is restored with some sort of political solution that addresses the root causes of the insurgency or creates broad popular acceptance for the government. The political and military aspects of internal wars are inseparably bound and must always be evaluated in concert. Despite the widely quoted dictum of Gen Chang Ting-chen, popularized by Galula, that revolutionary war is 80 percent political and 20 percent military, that ratio changes by time and place.[4] However, military actions conducted without an assessment of their political outcome at best will result in decreased effectiveness and at worst may prove disastrously counterproductive. Counterinsurgents must stay focused on their vision for the political end state that will establish a legitimate government.

Unity of Effort

The writing team debated extensively about whether the new COIN doctrine should strive for unity of command or unity of effort. The consensus was that even though unity of command is ideal and preferred, it is also impossible to achieve in most COIN. Military commanders will find a myriad of players in their area of operations, ranging from US government agencies to the United Nations to nongovernmental organizations (NGO) (such as Doctors without Borders) to host-nation representatives. At the highest levels in-theater, the US ambassador and country team must be involved in all planning, but it seems apparent in both Afghanistan and Iraq that State Department and Defense Department elements have separate chains of command. Many NGOs actively resist overt involvement with military forces, but some effort at liaison must still occur. The stark reality is that insurgents wishing to sow chaos perceive any agency providing services as a target, and most NGOs realize that fact. However, although they desire security, they won't accept much guidance. The best that one can hope for in many situations is what Gen Anthony Zinni, USMC, retired, calls "HAND [SHAKE] CON (Handshake Control)," an informal arrangement based on personal contact and understanding.[5] The involvement of host-nation contributors at all levels is also essential in order to meet political goals and establish critical legitimacy. Military units must be prepared to commit considerable resources to liaison duties with these various players. They all have a contribution to make in restoring stability and improving conditions.

Understanding the Environment

Contemporary predeployment training for units has changed considerably in terms of extensive orientation on the society and culture of the area of operation. Insurgents begin with a big advantage in local knowledge, and counterinsurgents must quickly immerse themselves in the people and their lives to catch up. Counterinsurgents must understand the power relationships, values, and ideologies within the society in order to understand the nature and nuances of the existing conflict. Accordingly, COIN requires greater emphasis on skills such as language and cultural awareness than does conventional warfare.

Intelligence-Driven Operations

Counterinsurgents need increased cultural understanding to gather, comprehend, and apply intelligence essential for success in COIN. Without timely and accurate intelligence, military actions may be ineffective at best—counterproductive at worst. Effective operations must

be shaped by timely, specific, and reliable intelligence that is gathered, analyzed, and applied at the lowest possible level—and disseminated throughout the force. Properly conducted COIN activities generate more important intelligence. A cycle develops whereby operations produce intelligence to generate and shape subsequent operations. Every counterinsurgent represents a possible intelligence collector, and every person a possible source of important information. Reports collected by unit patrols, members of the country team, and civilian agencies associated with COIN efforts often have greater importance than those from specialized intelligence assets.

Isolating Insurgents from Their Cause and Support

Isolation is a common theme among COIN theorists: it is much easier to cut off an insurgency from its support and let it wither than to kill or capture every insurgent. To achieve long-term success, skillful counterinsurgents must eliminate the source of an insurgency's recuperative power. Social, political, and economic grievances that fuel discontent must be addressed. Population control and border security can shut off physical support. In today's interconnected world, financial support for an insurgency can come from a variety of sources. International or local legal action may be required to dry up those activities. As the legitimacy of the host-nation government grows, so will participation of the population in limiting support for the insurgency. Victory in COIN becomes permanent when the people actively support the isolation of defeated insurgent forces.

Security under the Rule of Law

Regarding the challenges he faced conducting COIN in Vietnam, John Paul Vann remarked, "Security may be ten percent of the problem, or it may be ninety percent, but whichever it is, it's the first ten percent or the first ninety percent. Without security, nothing else we do will last."[6] Counterinsurgents must clear areas of insurgent interference and maintain them that way in order to build facilities and institutions that will improve people's lives and address their grievances. The ability to achieve security serves as a foundation of government legitimacy.

However, how one achieves that security can be just as important as instituting it. Acting in accordance with a legal system established in line with local culture and practices enhances the legitimacy of the government. But illegitimate acts by government officials or security forces can undermine any progress and help fuel the insurgency. These actions include unjustified or excessive use of force, unlawful detention, torture, and punishment without trial. Insurgents often capitalize on abuses by host-nation police or soldiers by making them a key mobilization tool. Participation in COIN operations by US forces must comply with our treaties and laws. Any human-rights abuses or legal violations committed by Americans quickly become known to the local populace and, eventually, to the world—take for example the local and international reaction to the abuses at Abu Ghraib. Illegitimate acts undermine both short- and long-term COIN efforts.

Long-Term Commitment

The new COIN doctrine is designed for application in a theater campaign, but the last principle speaks to decision makers at all levels. Resource intensive, COIN always requires considerable money, manpower, and time. Insurgencies are protracted by nature, designed to wear down opponents who have greater material assets. At the core of many critiques of the US performance in COIN is an assumption that Americans have neither the patience nor the will required for success in protracted conflicts. Insurgents and local populations often believe that a few years or a few casualties will cause the United States to abandon COIN. Bolstering faith in the steadfastness of American support requires constant reaffirmations of commitment by leaders at the national level and in-theater, backed by deeds.

The political activity of maintaining national public support back home properly lies outside the realm of the military commanders of intervening forces conducting a COIN campaign. However, commanders should ensure

that their conduct of operations neither makes it harder for elected leaders to maintain public support nor undermines public confidence. Also, counterinsurgents must set up support structures designed for long-term operations. Planning and commitments must be based upon sustainable operating-tempo and personnel-tempo limits. The United States must also pay attention to extended requirements in order to maintain support for host-nation institutions even after reduction of American force levels.

Imperatives for the Contemporary Counterinsurgency Environment

Although all of the Cold War–era COIN theorists mentioned earlier would recognize these principles, the contemporary environment is not the same as theirs. Insurgencies today are rarely monolithic. More commonly, counterinsurgents face a complex, shifting array of enemies with differing motivations and approaches. Insurgents are often linked through dispersed networks, taking advantage of the Internet and new communications means that they also use to generate support and spread propaganda. These same technologies have not only increased the responsiveness and demands of the global media but also created a myriad of bloggers uncontrolled by anyone. In addition, the end of the Cold War unleashed many old hatreds and conflicts, which combatants can now pursue with a new array of widely available weaponry. So in addition to the historically based principles listed above, contemporary COIN requires considering an additional set of imperatives.

Managing Information

Every action has an information reaction. The old saying "perception is reality" has especial relevance to COIN, in which the attitudes of the populace assume such importance in determining victory. The information-operations logical line of operation—perhaps the decisive one for a COIN campaign—ties together and encapsulates all the others.[7] Insurgents have a substantial advantage in the information arena since they can make exorbitant promises about what they would accomplish if they were in power, while the counterinsurgent must produce actual results, with words matching deeds.

Counterinsurgents have to consider the information impact of their actions on many audiences, including international, regional, and local civilian populations. Additionally, they must keep friendly military forces informed, and they should direct an information campaign at the enemy. For Americans especially, maintaining home-front support is also a factor. But messages to all these audiences must be consistent. In today's globalized information environment, the local populace can access the Internet or satellite television to monitor messages transmitted to the international community and US public. Any perceived inconsistency reduces credibility and undermines COIN efforts.

Managing Expectations

Unmet expectations can fuel popular discontent. Some cultures interpret the failure to keep an overly ambitious promise of improvement as intentional deception—not as good intentions gone awry. To limit discontent and build support, counterinsurgents must create and maintain a realistic set of expectations among the populace, the international community, and even friendly military units. Effective counterinsurgents understand local norms and tailor approaches to control expectations. US forces face a unique challenge in this arena due to their reputation for accomplishment. Some people call this the "Man on the Moon Syndrome," referring to the disbelief expressed by inhabitants of a battered village that a nation able to land a spaceship on the moon can't quickly restore basic services or get everyone jobs.

Agencies involved in reconstruction can find themselves especially prone to rosy promises. Counterinsurgents must remember that they must match their words with deeds. Proper management of expectations to build legitimacy does require demonstrating political and economic progress to show the populace how life is improving. Successful COIN operations increase the number of people who believe they have a stake

in the success of the state and its government. Eventual victory results in large measure from convincing a solid majority of members of the population that their lives will be better under the government than under an insurgent regime. The United States has experienced apparently greater success in maintaining local support in Afghanistan than Iraq because initial expectations in the former country were much lower than those in the latter and because Afghans have been more appreciative of small improvements.

Using the Appropriate Level of Force

During the many drafts of the new doctrine, the imperative regarding the use of force evolved from "minimum force" to "measured force" to "appropriate level of force." Many contemporary writings about COIN stress the use of the minimum possible force in any situation. It is neither efficient nor effective to conduct a military operation that, by its unintended effects, creates more insurgents than it eliminates. However, at times a show of force becomes necessary to demonstrate commitment or to intimidate enemies. Furthermore, some implacable foes must be killed or captured. But counterinsurgents must carefully analyze the type and amount of force to use in any operation. Commanders should adopt appropriate, measured levels of force and apply that strength precisely so that it fulfills the mission without causing unnecessary loss of life or suffering.

The wielder of that force is also important. The populace will more likely view urban raids as legitimate if local police rather than foreign soldiers conduct them, as long as the former have a reputation for competence and impartiality. If the populace sees the police instead as part of an oppressive sectarian group, their use may prove counterproductive. Effective counterinsurgents must understand the character of the local police and popular perceptions of both police and military units. These factors are all part of the process to determine the most appropriate way of applying force.

Learning and Adapting

The true unifying theme of FM 3-24/MCWP 3-33.5 involves learning and adapting. The new doctrine is just part of a broader process to change the way the military thinks. There are new scenarios at training centers, new curricula at schools, and new programs to prepare units for deployment. Contemporary insurgents are networked for adaptation, just as our own forces strive to be. Successful tactics with improvised explosive devices in Iraq soon appear in Afghanistan. Counterinsurgent tactics that work in one time at one location will be nullified in another location at a different time. Skillful counterinsurgents must adapt at least as fast as their opponents. Every unit must make observations, draw and apply lessons, and assess results. Commanders must have a process to distribute best practices throughout their commands and to exchange them with other units. Because insurgents will shift their operations, looking for weak links, a counterinsurgent force must enjoy widespread competence.

Empowering the Lowest Levels

Contemporary COIN is a mosaic war. Commonly, in seminars at war colleges, two former battalion commanders from Iraq or Afghanistan will disagree strongly about the course of the war they observed. That is understandable because they did not see the same war. Different zones have different sets of conditions and enemies who employ a different combination of approaches. Local commanders should have the authority and resources to shape their own situations. They must have access to or control of resources necessary to produce timely intelligence, conduct effective tactical operations, and manage information and civil-military operations. An atmosphere of trust and understanding should permeate the force—one that allows the decentralized operations essential for effective COIN. Higher commanders owe it to their subordinates to push as many capabilities as possible down to their level and to encourage and enable initiative. This is a prominent characteristic of any COIN force that can adapt and react as least as quickly as the insurgents it is combating.

Supporting the Host Nation

No matter the effectiveness of an intervening counterinsurgent force, the host nation will have to bring about and maintain final suc-

cess. The long-term goal of any US COIN effort will entail leaving a legitimate government able to stand by itself. This requires the development of viable local leaders and institutions. Although it may be easier for US forces to conduct military operations themselves or for international civilian agencies to conduct development programs on their own, it is better to work to strengthen local forces and institutions and then assist them. In the end, host-nation governments have the final responsibility to solve their own problems. Eventually, the indigenous population will see all foreign armies of liberation or assistance as occupiers or interlopers, so the sooner the counterinsurgent force can transfer the main effort to host-nation institutions without unacceptable degradation, the better.

Conclusion

The new doctrine reflects the principles and imperatives described above. In an attempt to shape the future, members of the writing team did their best to combine the wisdom of the past with an appreciation for current realities. In accordance with the imperative to learn and adapt, however, these ideas can't be locked in stone. As the long war continues, we must continue to perfect and refine them.

Some US Air Force critics of the new doctrine have decried it as "ground-centric." Though one might reasonably expect such a focus in an Army–Marine Corps publication, that label is really a misnomer. Instead, the doctrine should be characterized as "population-centric." A recent meeting of NATO doctrine writers in Paris exhibited universal agreement that this represented the proper way for militaries to pursue COIN—within a comprehensive approach that utilizes all elements of national power and with the participation of a broad spectrum of government, international, and host-nation agencies.[8] There is still a role in achieving security for "warheads on foreheads," to use a John Nagl term, but long-term success depends on a much wider array of activities than traditional "enemy-centric" approaches require. The challenge for the world's mightiest air force lies in how to best adapt its impressive set of capabilities to work with that myriad of participating agencies in the comprehensive approach required for COIN. Everyone already recognizes and appreciates the advantages of air mobility. Plenty of room remains for innovative applications of intelligence, surveillance, and reconnaissance assets to make significant contributions to COIN as well. The Air Force can also wield significant influence in cyberspace. No service has a better record of learning and adapting in wartime. And we need that ability again today. ❑

Notes

1. David Galula, *Counterinsurgency Warfare: Theory and Practice* (London: Praeger, 1964); Frank Kitson, *Low Intensity Operations: Subversion, Insurgency, Peace-Keeping* (London: Faber and Faber, 1971); Sir Robert Thompson, *Defeating Communist Insurgency* (1966; repr., St. Petersburg, FL: Hailer Publishing, 2005); and Roger Trinquier, *Modern Warfare: A French View of Counterinsurgency*, trans. Daniel Lee (New York: Praeger, 1964).

2. Kalev I. Sepp, PhD, "Best Practices in Counterinsurgency," *Military Review* 85, no. 3 (May–June 2005): 8–12, http://calldp.leavenworth.army.mil/eng_mr/2006080808030243/2005/May_Jun/04_sepp.pdf#xml=/scripts/cqcgi.exe/@ss_prod.env?CQ_SESSION_KEY=QRSTPUMYTHEQ&CQ_QH=125622&CQDC=5&CQ_PDF_HIGHLIGHT=YES&CQ_CUR_DOCUMENT=3. Dr. Sepp has just been named a deputy assistant secretary of defense for special operations and low intensity conflict.

3. FM 3-24/MCWP 3-33.5, *Counterinsurgency*, December 2006, 1-20 to 1-26, http://usacac.army.mil/cac/repository/materials/coin-fm3-24.pdf.

4. See Galula, *Counterinsurgency Warfare*, 89.

5. See Tom Clancy with Gen Tony Zinni and Tony Koltz, *Battle Ready* (New York: G. P. Putnam's Sons, 2004), 215.

6. Quoted in Neil Sheehan, *A Bright Shining Lie: John Paul Vann and America in Vietnam* (New York: Random House, 1988), 67.

7. For more on the information-operations logical line of operation, see FM 3-24/MCWP 3-33.5, *Counterinsurgency*, 5-3 to 5-11.

8. Workshop on Counterinsurgency and Stability Operations: US, French, British, and German Approaches, Institut Français des Relations Internationales, Paris, 4 June 2007.

Air-Minded Considerations for Joint Counterinsurgency Doctrine

Maj Gen Charles J. Dunlap Jr., USAF

Editorial Abstract: According to the author, the recent publication of Army Field Manual 3-24 / Marine Corps Warfighting Publication 3-33.5, Counterinsurgency, *reflects a distinctly "surface-minded" perspective. Since airpower possesses unique capabilities, such as speed, range, flexibility, and persistence, he proposes exploiting these "air-minded" viewpoints to enlarge and enhance what is currently a service-centric doctrine. General Dunlap suggests that doing so would produce a much-improved and well-rounded joint approach.*

WHAT WOULD JOINT counterinsurgency (COIN) doctrine that includes "air-mindedness" look like? The Army and Marine Corps have issued COIN doctrine—Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*—that clearly articulates what one might call a "surface-minded" perspective.[1] Unfortunately, that doctrine relegates airpower to a five-page annex in a 282-page document. However, an effort is now under way to draft joint COIN doctrine that, presumably, not only will include a full exploitation of airpower per se, but also be informed by an air-minded perspective.[2]

"Air-minded" does *not* mean "air-centric" or even dominated by air, space, and cyberspace power. Rather, one should look to Gen Henry

H. "Hap" Arnold's use of the term to characterize an Airman's "particular expertise and . . . distinctive point of view."[3] According to Air Force doctrine, an Airman's "perspective . . . is necessarily different; it reflects the range, speed, and capabilities of aerospace forces, as well as threats and survival imperatives unique to Airmen."[4]

Air-mindedness actually means more than that. It includes, for example, an Airman's predilection to especially value technology when seeking advantages over enemy forces. It reflects an Airman's desire to avoid the carnage of ground-force engagements wherever possible. Moreover, whereas soldiers and marines may seek the "close fight," airmen look for opportunities to obtain the desired effects from long distance—that is, without giving the enemy the opportunity to close. Properly applied, an air-minded approach provides many opportunities to create what COIN experts Steven Metz and Raymond Millen say is needed to win: an "effects-based approach designed to fracture, delegitimize, delink, demoralize, and deresource insurgents."[5]

Providing a full-blown draft doctrine lies well beyond the scope of this article. Nevertheless, one may identify some considerations that an Airman might bring to the development of joint COIN doctrine, as outlined in the following examples.[6]

Exploit the Psychological Impact of Contemporary American Airpower on Adversaries

As thorough a job as FM 3-24 / MCWP 3-33.5 does in reviewing previous conflicts involving nontraditional adversaries, it does not incorporate the implications of the psychological dimension of today's airpower. This is not a discussion about the much-debated effect of airpower on civilian morale but about how current precision capabilities influence the morale of combatants. It concerns the targeting of insurgents' "hearts and minds."[7] Understanding how airpower drove the Taliban and their al-Qaeda allies from power in Afghanistan, for example, is essential to designing the effective use of the air weapon in future COIN operations.

Accomplishing this feat proved a considerable challenge. Afghanis, numbered among the world's most fearsome fighters, have enjoyed that reputation for thousands of years. The Soviets sought to tame them with an enormous application of raw combat power but ultimately failed. Yet, the United States managed to oust the Taliban and al-Qaeda from power in a matter of weeks. How? By inflicting helplessness as only the newest developments in airpower can.

Technology that the Soviets did not possess in the 1980s enabled airpower's decisiveness in the downfall of these adversaries. Russian aviators had neither the sensor suite nor the precision technology of today's US airpower. Typically, Soviet pilots had to fly low enough to acquire their targets visually, which caused devastating aircraft losses once the mujahideen acquired American-made Stinger antiaircraft missiles.[8] Although the Russians devised various tactics to counter that threat, the missiles eventually forced them to the safety of higher altitudes that, in turn, caused accuracy and combat effectiveness to suffer.[9]

Unlike Soviet airpower in the 1980s, that of the United States in the twenty-first century can inflict devastating, highly accurate attacks not only by tactical aircraft, but also by heavy bombers flying at altitudes that rendered the Taliban's already meager air defense completely ineffective. According to Gen Tommy Franks, USA, retired, the newly acquired linkage of ground-based controllers to "B-52s orbiting high above the battlefield had proven even more lethal than military theorists could have imagined."[10] Enemy forces in long-held positions often never saw or heard the plane that killed them. This new-style air onslaught rapidly collapsed enemy morale and resistance.

Moreover, it did so with minimal risk to US personnel. One discouraged Afghani told the *New York Times* that "we pray to Allah that we have American soldiers to kill" but added gloomily that "these bombs from the sky we cannot fight."[11] The Taliban found the precision fire of AC-130 gunships—another weapon the Soviets did not possess—equally dispirit-

ing. An Afghan ally related to General Franks that this "famous airplane . . . [has] destroyed the spirit of the Taliban and the Arabs."[12]

These capabilities capture one of the foremost features of contemporary American airpower in COIN situations: its ability to impose the psychology of "engagement dominance" on otherwise dogged adversaries.[13] Death per se does not extinguish the will to fight in such opponents; rather, it is the hopelessness that arises from the inevitability of death from a source they cannot fight.

Sheer impotence in the face of superior weaponry and the denial of a meaningful death will crush war-fighting instincts. Essentially, this amounts to exploitation of an inherent fear of soldiers of all cultures: confronting technology against which they cannot fight. Even experienced soldiers can be driven to near panic, as happened when British soldiers faced German tanks during World War II with inadequate weaponry.[14]

The psychological effect of air attack's infliction of helplessness may exceed the physical effects. Commenting on British use of airpower to suppress insurgencies in Arab territories during the 1920s and 1930s, Sir John Bagot Glubb concluded that although aircraft do not generally inflict heavy casualties, "their tremendous moral effect is largely due to the demoralization engendered in the tribesman by his *feelings of helplessness and his inability to reply effectively to the attack*" (emphasis added).[15]

One might say that American precision airpower is analogous (on a much larger and effective scale) to the effect that insurgents try to impose on US and other friendly forces through the use of improvised explosive devices, the most deadly weapon faced by COIN forces.[16] The seeming randomness, unpredictability, and persistence of these attacks are just as effective at destroying morale as causing casualties. Airpower, though, uses what might be called "devised" explosive devices that nevertheless share many of the same morale-destroying and stress-inducing qualities. The Air Force, however, uses these devices against legitimate military targets and can employ them in vastly greater numbers.

Properly employed, the air weapon can impose friction and extreme psychological stress on insurgents.[17] Airmen may soon have a new weapon to carry out such devastating attacks—the MQ-9 Reaper unmanned aerial vehicle.[18] With a weapons load equivalent to that of the F-16, the Reaper represents a new generation of "hunter/killer" aircraft that can relentlessly pursue insurgents at *zero risk* of losing an American.

None of this suggests that Airmen believe they should resolve COIN operations in the twenty-first century exclusively through the use of force. It does say that there is still a place for its aggressive, offensive use as an important part of a holistic COIN doctrine, even in today's highly scrutinized operations. Nor does it mean that one should use only airpower when force is required. As Operation Enduring Freedom has demonstrated, airpower—along with allied forces on the ground and enhanced by tiny numbers of US special forces—can produce results that minimize risk to Americans.

Clearly, however, not all air-minded approaches to COIN involve kinetic attacks against insurgents. Airmen can also help devise nonkinetic approaches to aid the host-nation population caught in the violence.

Consider Air-Minded Approaches to Securing Fixed Locations

Of particular relevance to COIN operations—especially with respect to securing fixed locations—is the transformation undergone by Air Force security forces. It is quite true that "today's security forces career [field] barely resembles its own Air Force specialty code from a decade ago."[19] As a result of policy decisions in the 2005 time frame now enshrined in joint doctrine, the Air Force assumed responsibility for defending air bases "outside the wire."[20]

Airmen have shown that ground defense of a fixed location can succeed by applying airmindedness. Specifically, the Air Force applied its own organizational theory and technological expertise to develop a unique approach to air

base defense, as it did with great success at Balad Air Base, Iraq, during Operation Safeside, a 60-day drive to quell hundreds of mortar and rocket attacks launched from a particularly vexing sector of the perimeter.[21] According to the Airmen involved, the operation's achievements "dispelled the perception that Army units are better organized, trained, and equipped than Air Force security forces to conduct such operations. Unlike previous Army units, the task force achieved the desired effect."[22] The Air Force now has specially trained ground-force units, including the airborne-capable 820th Security Forces Group, ready to apply its distinctive approach to securing particular areas from insurgent attacks—an obvious advantage in COIN situations.[23]

The Air Force continues to look for other technological solutions especially suited for the COIN environment. Currently, security forces are testing the Active Denial System, technology originally developed by the Air Force Research Laboratory and designed to "engage and repel human targets by projecting a beam of energy that creates an intolerable heating sensation on the skin."[24]

An additional technique for offsetting insurgent tactics against logistical lines of communication for fixed locations involves airlifting vital materials so as to minimize the need for surface resupply. One could send air-landed materiel to those fixed locations with airfields. As Gen Barry McCaffrey, USA, retired, tells us, American airlift "flew 13,000 truck loads of material into Iraq for pinpoint distribution last year."[25] Such "pinpoint distribution" by air, however, no longer requires an actual airstrip. High-technology has reached airdrop processes, which could significantly reduce risk.

Specifically, US airpower is undergoing a "revolution in airdrop technology."[26] Although the Army serves as technical manager for the Joint Precision Air Drop System (JPADS), which enables precision airdrop from 24,000 feet and higher—well above the threat altitudes that bedevil rotary-wing operations—it was developed from Air Force basic research.[27] The JPADS diminishes the enemy's opportunity to inflict casualties. *USA Today* reports that "the precision airdrop system is seen as a way of minimizing danger to convoys, which are frequent targets of roadside bombs. It can also quickly resupply troops on the far-flung battlefields."[28] Although the JPADS will probably never replace surface convoys, experiments will soon begin with bundles weighing up to 60,000 pounds, leading experts to conclude that "the sky is the limit on where this can go for improving operations on the battlefield."[29]

Maximize Airmen's Expertise in Cyberspace and Information Operations

Cyberspace—the "physical domain within the electro-magnetic environment"—is the newest entry in airpower's portfolio.[30] The Air Force has established a cyberspace command aimed at maintaining not only dominance in communications and information technology, but also "superiority across the entire electromagnetic spectrum."[31] Given the "inherently technical . . . nature" of cyberspace operations, it fits naturally with the culture of Airmen.[32]

Moreover, cyber operations are a direct expression of an air-minded approach. As the Air Force's doctrine on irregular warfare points out, "Like air operations, cyber operations can strike directly at nodes of interest."[33] Properly executed, cyber operations minimize the enemy's opportunity to inflict casualties that might otherwise result from close combat.

Consequently, in perhaps no other area are the antitechnology views espoused by some individuals more off target.[34] Actually, in the cyber arena, high tech is both central to twenty-first-century peer-competitor conventional war and one of the most revolutionary features of putatively "low-tech" contemporary COIN environments. Max Boot points out that Islamist insurgents rely heavily on information technologies that "barely existed in 1980."[35] Gen Ronald Keys, USAF, retired, former commander of Air Combat Command, provides more detail: "The terrorists are using cyberspace now, remotely detonating roadside bombs. Terrorists use global positioning satel-

lites and satellite communications; use the Internet for financial transactions, radar and navigation jammings, blogs, chat rooms and bulletin boards aimed at our cognitive domain; e-mail, chat and others providing shadowy command and control [C2]; and finally overt and covert attacks on our servers."[36]

Airmen work to place an " 'information umbrella' over friends and foes alike."[37] Although one encounters legal constraints in many areas regarding what one may do in cyberspace, such restrictions may prove less of an issue in Iraq. Lt Gen Abboud Gamber, Iraqi commander of the Baghdad security effort, declared that under Iraqi law, the government could "search, control, and seize all parcel post, mail, telegraphs, [and] communication devices as needed."[38]

Integral to cyberspace capability are information operations (IO), which Airmen, especially in the Air Force, consider a "key operational function" of their component.[39] Thus, an air-minded approach would look for opportunities to exploit technological means to "influence, disrupt, corrupt, or usurp" the unconventional kinds of C2 systems used by insurgents.[40]

Cyber operations may present opportunities to limit the vulnerability of US troops. As one of its central means of assisting the host-nation population, FM 3-24/MCWP 3-33.5 advocates a "clear-hold-build" strategy that requires COIN forces to "eliminate insurgent presence" in selected areas, followed by efforts to keep the location secure and rebuild host-nation institutions.[41] Unfortunately, these clearing operations are very high risk. To minimize that risk, one might do better to focus on the "build and hold" portions in more benign and cooperative areas.

That said, one may need an aggressive air-minded approach to prevent "uncleared" areas from becoming electronic C2 sanctuaries. One author offers an "extreme proposal" perhaps worth considering: "to completely shut down the information technology grid in the insurgent areas—telephones, cellular towers, and so on."[42] The proposal raises complex issues but does have the attractive feature of being virtually casualty free.

For Airmen, IO includes influence operations (although they are separate from traditional public-affairs functions).[43] Unfortunately, the United States has enjoyed little success in this area. In January 2007, the title of a *Newsweek* article accurately noted that the United States is "Losing the Infowar" in Iraq.[44] Granted, this difficulty is not a new one, but the fact that the insurgents are exploiting *technology* to defeat American efforts (as General Keys also noted) is especially frustrating.[45] Specifically, *Newsweek* observes that "insurgents using simple cell-phone cameras, laptop editing programs and the Web are beating the United States in the fierce battle for Iraqi public opinion."[46]

As suggested above, one can take extreme measures to deny insurgents access to or use of these technologies. Some situations, such as an unauthorized television station broadcasting from within Iraq, ought to be relatively easy to interdict technically (although it has evidently proven difficult).[47] This particular station's anti-American invective has made it the "face" of the insurgency within Iraq, so shutting it down would clearly benefit the COIN effort and would seem to be in keeping with democratic values.[48]

In any event, this may be the only way to control enemy propaganda that is dangerously inciting violence in certain areas. If we take such action, we might use a low-tech airpower means (e.g., air-delivered leaflets—a technique used successfully in Iraq in the past) to partially replace information that the host-nation population in the affected area would lose.[49] Additionally, Commando Solo aircraft can broadcast appropriate messages to otherwise denied areas.[50]

Utilizing military deception at this point in Operation Iraqi Freedom would prove more problematic. Although such deception remains an internationally accepted means of warfare, one must take care to ensure it complies with US and Iraqi law, as well as the political aims of both countries.[51] Still, COIN expert Bard O'Neill advises that "propaganda and disinformation campaigns" to discredit insurgent leaders can be effective.[52]

Again, this idea is not especially new. Back in 1995, Thomas Czerwinski, then a professor

at National Defense University's School of Information Warfare, postulated one scenario: "What would happen if you took Saddam Hussein's image, altered it, and projected it back to Iraq showing him voicing doubts about his own Baath Party?"[53] If it can be updated effectively to apply to today's insurgent leaders in Iraq, the concept deserves careful consideration.

Influence operations must also have positive, accurate messages—what one might call a "compelling counter-narrative."[54] Such a narrative will help separate insurgents from sources of support, an aim of many COIN strategies.[55] In Iraq, this becomes an especially complex task because, as one analyst puts it, there may be as many as four "wars" occurring simultaneously, which may overlap and vary widely.[56] Designing messages and selecting targets for them that would have the effect of disrupting or even severing the insurgents' support are extremely difficult tasks.

One segment, however, cuts across all the groups and sects and might serve as a potential US ally—women, who arguably represent the largest oppressed group in Iraq.[57] Indeed, war widows suffer especially now, and women stand to lose much if extremists take hold.[58] The idea of reaching out to women has resonance in classic COIN theory. David Galula's book *Pacification in Algeria, 1956–1958* discusses just such an effort with the subjugated Kabyle women during France's Algerian COIN operation.[59] Furthermore, recent scholarship indicates that the empowerment of women leads to clear economic and political gains, particularly when they assume leadership roles.[60] In today's Algeria, Muslim women are emerging as the nation's "most potent force for social change . . . [and are] having a potentially moderating and modernizing influence on society."[61]

Positive messages to women about the value of a democracy that respects individual rights and offers opportunities for participation must be matched with complementary action. One innovative possibility would entail establishing secure compounds explicitly designed to aid women. Among other things, providing a secure environment for women's educational and organizational opportunities could catalyze the process of winning the hearts and minds of a potentially decisive part of Iraqi society.

To be sure, many influential Iraqis oppose women's rights. According to Edward Luttwak, clerics say that women's rights are "only propagandized [by the United States] to persuade Iraqi daughters and wives to dishonor their families by imitating the shameless nakedness and impertinence of Western women."[62] Nevertheless, we may have a real opportunity to reach out to such a substantial portion of the population that could benefit so greatly.

Develop a Truly Joint Approach to Counterinsurgency That Respects the Airman's Expertise

FM 3-24 / MCWP 3-33.5 also raises the serious and persisting issue of the control of airpower, indicating that the ground commander should exercise that authority. According to *Air Force Magazine*, FM 3-24 / MCWP 3-33.5 argues, in effect, "that airpower is best put under control of a tactical ground commander or, at the highest level, the multinational force commander, but not an airman."[63]

It is remarkable that FM 3-24 / MCWP 3-33.5 chooses to resurrect a debate that has been a source of acrimony almost from the beginning of the history of the air weapon. Airmen hold as an article of faith, embedded in doctrine, that "Airmen work for Airmen" so as to preserve the principles of unity of command and simplicity.[64] The air-mindedness of Airmen can ensure that the full capabilities of airpower are brought to bear on the COIN challenge.

Airmen believe that US ground forces are the finest in the world. Unfortunately, that feeling evidently is not mutual. Many members of the ground component have an entrenched belief that the Air Force disdains close air support of ground forces—an ironic notion since, for example, about 79 percent of the targets struck by airpower during Iraqi Freedom fell into that category.[65] Also troubling is the report of Lt Gen Tom McInerney, USAF, retired, regarding signs that the Army wants to build, in effect, its own air force even though it has not always demonstrated, as dis-

cussed below, the same level of expertise in handling aviation assets as it has with its ground forces.[66]

A recent example from Iraqi Freedom might prove instructive. In a *Joint Forces Quarterly* article, Maj Robert J. Seifert points out that AC-130 gunships are controlled by ground commanders who limit them to providing air cover to specific units. This makes the aircraft unavailable to attack emerging targets in another unit's area of operations. Major Seifert contends that this situation represents something of a reversion to the airpower-control practices that proved so inefficient in North Africa during World War II. He suggests a more air-minded approach that would allow the gunships to achieve their full potential by putting the weapon in an on-call status, continually linked to joint terminal attack controllers in several units (or other aircraft), thus optimizing each sortie.[67]

In reality, American ground-force commanders often do not understand how to use airpower effectively and efficiently. Consider the Army's nearly disastrous Operation Anaconda in Afghanistan. Seymour Hersh's book *Chain of Command* suggests that Army leaders mistakenly thought that they "could do [the operation] on [their] own," with little assistance from the air component.[68] As a result, the air component entered the planning process very late, forbidden to conduct major preparatory strikes.[69] Although fixed-wing airpower eventually rescued the operation from serious difficulties and accounted for most of the terrorists killed in the operation, the Army commander nevertheless denigrated the Air Force's efforts in a subsequent magazine interview.[70]

That interview really demonstrates the degree to which this senior Army commander lacked sufficient understanding of airpower capabilities to ensure optimal planning. Although Ben Lambeth's analysis of Anaconda in his book *Air Power against Terror* was too gentle, it still concluded that "those who planned and initiated Operation Anaconda failed to make the most of the potential synergy of air, space, and landpower that was available to them."[71] Indeed, that unfamiliarity—reflected in the airpower annex of FM 3-24 / MCWP 3-33.5—evidently persists.

Today's airpower capabilities can amaze ground commanders engaged in the COIN fight. One candidly expressed his astonishment about an incident in Iraq in which an F-15 used its sensors to follow individual insurgents as they tried to hide in reeds near a river: " 'I'd walked in the dark within ten feet of one guy and [the aircraft] sparkled the target right behind me, told the [ground controller] to tell me to turn around.' "[72] He was then able to capture the otherwise-hidden insurgents.

Given the approach to airpower in FM 3-24 / MCWP 3-33.5, it is not surprising that ground commanders fail to appreciate its potential—a situation that hurts the COIN effort. One battalion commander admitted that in his first few months in Iraq, he " 'rarely put air into [his] plan . . . because [he] did not understand how it could assist . . . in a counter insurgency fight.' "[73]

When it does consider airpower, FM 3-24 / MCWP 3-33.5 clearly favors rotary-wing options. For example, it speaks of "technological advances" that "greatly [increase] the accuracy and utility of helicopter airdrops" for sustainment.[74] Unfortunately, the survivability of helicopters in hostile COIN environments is becoming increasingly suspect. One of the few Iraqi successes during the conventional phase of Iraqi Freedom occurred in March 2003, when Iraqis used ordinary cell phones to orchestrate an ambush of Apache helicopters that left 27 of 33 unable to fly.[75] Even more disturbing are reports that Iraqi insurgents are fielding capabilities that exploit rotary-wing vulnerabilities.[76] Although enthusiasts of the Army attack helicopter continue to argue for the efficacy of that weapon in the close fight, it seems that the Air Force's fixed-wing aircraft such as the A-10 (highly survivable in the COIN environment) are more prudent choices for the strike mission.[77]

Having Airmen control airpower produces a unique benefit for the COIN fight because it enables COIN forces to capitalize on a gap in insurgents' understanding of military power. In fact, COIN forces can dominate airpower's asymmetric advantage *if* Airmen are allowed

to exercise their advantage in expertise. Doing so has great potential because few insurgents really understand the capabilities of airpower that the United States can field today. Such gaps have caused insurgents to make catastrophic mistakes.

In 1968, for example, Gen Vo Nguyen Giap of North Vietnam lay siege to the Marine position at Khe Sanh. He mistakenly assumed that American airpower would prove no more effective than French airpower during the 1954 siege of Dien Bien Phu, the surrender of which spelled the end of France's colonial empire in Southeast Asia.[78] The result of this "insurgent" misperception of airpower? Destruction and defeat. Under ferocious air attack called, appropriately, Operation Niagara (B-52s alone showered over 59,000 *tons* of bombs on enemy forces), Giap's troops abandoned their attempt after 77 bloody days.[79]

There is no reason to believe that Iraqi insurgents have any particular airpower expertise, even among members of the former regime. In the aftermath of the destruction of the Republican Guard by air attack during Iraqi Freedom, a stunned Iraqi Army officer expressed his frustration about his leadership: "They forgot that we are missing air power. . . . U.S. military technology is beyond belief."[80]

And More. . . .

Many other possibilities exist for creatively exploiting airpower and technology to the benefit of the COIN effort—especially those capabilities that would reduce reliance on American boots on the ground. The following represent some of the innovations already occurring or nearing readiness to enter the fight.

Protecting Iraqi infrastructure has been a major challenge—one that COIN efforts historically have faced.[81] Modern airpower, however, has the persistence and ability to use technology to leverage the ratio of force to space—elements critical to effective COIN strategies.[82] Thus, techniques such as employing alert fighter aircraft to conduct "infrastructure-security missions" instead of simply orbiting while awaiting calls is the kind of innovation that can help secure vital Iraqi oil and electricity systems.[83] To do so successfully still requires "boots on the ground," but in smaller numbers than would otherwise be required because of the size of the areas involved.[84]

Most COIN studies emphasize the need for border security.[85] In a new preface to his classic history, *A Savage War of Peace: Algeria, 1954–1962*, Alistair Horne notes that, just as in the Algerian conflict, insurgents in Iraq rely on support from other countries.[86] Airpower can assist in degrading the insurgents' ability to obtain that assistance from abroad by surveilling borders and interdicting unauthorized transits. Like infrastructure protection, airpower has the ability to obviate the need for large numbers of surface forces. The newly fielded MQ-9 Reaper appears ideally suited to provide the persistence required by this surveillance mission and to take decisive kinetic action when needed.

Besides interdicting cross-border transits, airpower can also deter nations disposed to assist the insurgency. Even if one assumes, as do James S. Corum and Wray R. Johnson in their book *Airpower in Small Wars*, that COIN conflicts "rarely present lucrative targets for aerial attack, and even more rarely is there ever a chance for airpower to be employed in a strategic bombing campaign or even in attack operations on any large scale," that is not the case with nation-states supporting insurgents.[87] They present a surfeit of targets and have economies vulnerable to air-delivered coercion.[88]

This latter truth raises another aspect of airpower: it is the ultimate "Plan B." FM 3-24 / MCWP 3-33.5 identifies "protracted popular war" as one of the common insurgent approaches. In phase three of this method, the insurgents "transition from guerrilla warfare to conventional warfare."[89] Because insurgents rarely have much capability or experience with airpower, they are especially vulnerable to the air weapon during this stage.[90]

Not every insurgent movement passes through this conventional stage—it is even questionable whether some ever intend to take over the governments they are attacking.[91] Nevertheless, at some point most insurgencies seek to assume power. If for some reason they

succeed, airpower can debilitate—if not destroy—their ability to function as a government or threaten US interests. What Col Jeffery Barnett argued in 1996 is just as true today: "It's important to emphasize *the ability of high-technology airpower to deny insurgent victory over an extended time with minimal risk of US casualties*" (emphasis in original).[92]

Finally, Professors Metz and Millen contend that containment strategies may be "more logical" than other approaches in "liberation" insurgency scenarios such as in Iraq.[93] Air and naval power proved quite effective in enforcing the no-fly zones and sanctions against Iraq; in conjunction with ground-force raids and strikes, it could again provide a way to protect US interests by containing the effects of an insurgency in Iraq or elsewhere.[94]

Obviously . . .

This article has certainly not included a complete list of all the possible considerations an Airman would bring to an air-minded COIN doctrine—or, quite possibly, not even the most important ones. One might properly view some or all as tactics, techniques, and procedures rather than doctrinal elements. At best, the article has offered a few illustrations of how an Airman's perspective might *enlarge and enhance* a more joint approach in a doctrine that superbly represents the ground-force conception of addressing the very difficult problem of COIN in the twenty-first century. ❑

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To Bomb or Not to Bomb?

Counterinsurgency, Airpower, and Dynamic Targeting

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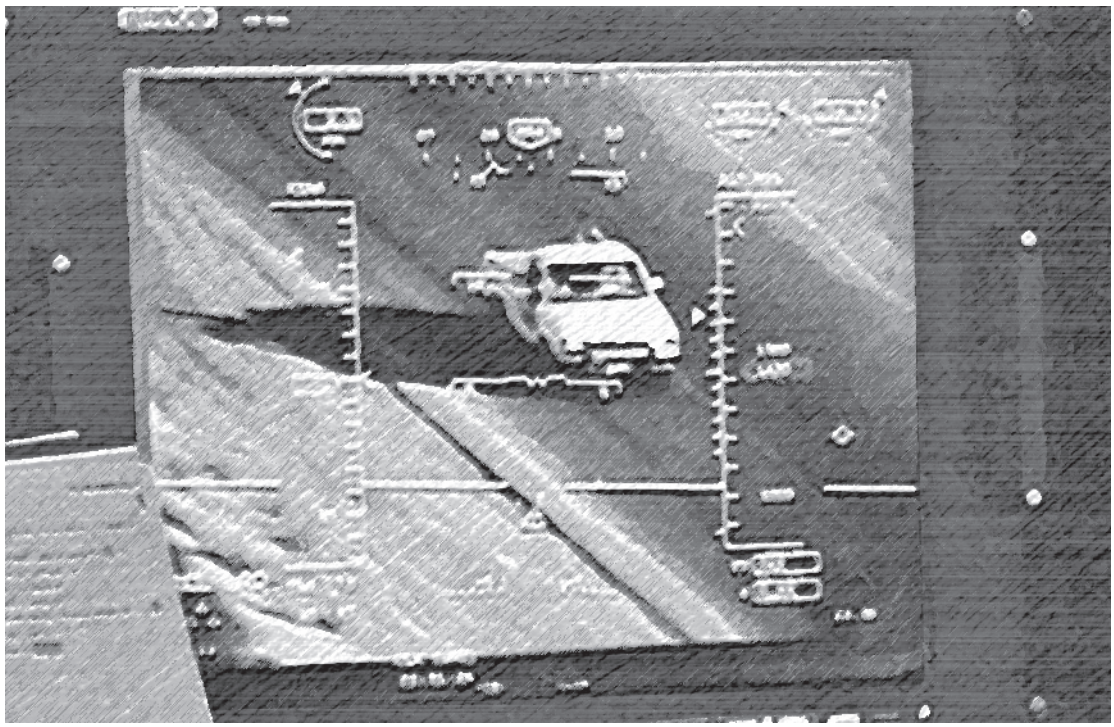
Editorial Abstract: Air strikes, independent from ground operations, are known as "dynamic targeting." These types of strikes have typically been counterproductive in counterinsurgency campaigns due to subsequent collateral damage, whether real or perceived. However, Major Brown asserts that commanders and planners who integrate dynamic targeting into the counterinsurgency campaign using careful target selection; quick, precise employment; and solid assessment of the enemy and population will produce positive, tangible results.



SINCE THE "BANANA wars" of the early twentieth century, airpower has played an important role in counterinsurgency campaigns. Armed forces have used all forms of airpower—airlift; close air support; intelligence, surveillance, and reconnaissance (ISR); and so forth—in counterinsurgency campaigns to gain advantages over insurgents. Airpower in the form of air strikes occurring independently of ground operations has proven controversial in small wars. We now call such strikes "dynamic targeting."[1]

Historically, this type of targeting has generally been counterproductive in counterinsurgencies due to real or perceived collateral damage.[2] Yet, the US military and others have good reasons for using airpower for these operations. First, as marines in Al-Anbar Province have seen, kinetic operations are necessary to remove determined extremists in order to conduct security, social services, and economic development.[3] Thus, in certain situations our forces—like NATO's in Afghanistan—will need the advantages airpower brings.[4] Second, in well-publicized cases, air strikes have generated good results for government forces, such as the air campaign against Hamas leaders and the elimination of Abu Musab al-Zarqawi.[5] Third, the combination of using high-fidelity ISR feeds and guided weapons has given militaries a limited ability to distinguish insurgents from the population and strike them with precision, while mitigating collateral damage.[6]

Such reasoning carries dangers, however. Airpower capabilities may cause counterinsurgency forces to overemphasize combat operations and the elimination of high-value targets. Also, when operational-level commanders can "watch" insurgents in real time by means of ISR feeds, they tend to fall back to the tactical level, thus reinforcing the "we must do something now" mentality.[7] This reactive approach can quickly devolve into a game of "whack a mole," which can cause commanders to neglect other important lines of operation and lose focus on the strategic end state.[8] Even today, traditional problems in using airpower to target insurgents can easily emerge.

To avoid these pitfalls, commanders and planners must integrate the use of airpower for dynamic targeting into the operational design of a counterinsurgency campaign.[9] Successful conduct of the latter depends upon whether commanders and their staffs (1) determine appropriate targets during planning; (2) ensure that air strikes are quick, lethal, and precise; and (3) accurately assess the friendly action, enemy reaction, and response of the population.

Determining Appropriate Targets

In order to link specific actions to objectives that support the strategic end state, the targeting process identifies appropriate targets and the best means of engaging them.[10] Effective targeting of insurgents requires understanding the unique characteristics of insurgent networks, which reveals critical elements and nodes, and knowing how the population's attitude and behavior affect the targeting process.

Our forces are well versed in analyzing traditional target systems such as an Integrated Air Defense System. When looking at traditional systems, we typically focus on the equipment. The basic element of the insurgent network—the human being—has mobility, flexibility, survivability, and predictability not limited by the equipment or facilities associated with traditional target systems. These characteristics make target-system analysis for insurgent networks very challenging. To overcome the difficulty of analyzing these complex, adaptive systems, we sometimes attempt to model, classify, or lump insurgencies into groups, applying labels such as "Maoist" or "modern" to them in order to frame their behavior and characteristics. Trying to make an insurgency fit a specific model is difficult. No two insurgencies are alike because the conditions to which they must adapt are never entirely the same.

Understanding that insurgencies adapt and evolve over time, we have attempted to model their evolutionary process. Mao Tse-tung believed that successful insurgencies had to pass through three phases of evolution, culminating with insurgents becoming a regular force fighting a positional war with counterinsurgency forces.[11] Although this concept worked for the Chinese communists in the late 1940s, there is little chance that the Taliban and Iraqi insurgencies will evolve into a regular force that can directly challenge the United States. Each insurgency takes a different evolutionary path. Insurgents will assume whatever form they believe will achieve their common political goal and adapt to the conditions that exist in their

environment. That may or may not include large-scale forces and tactics. Even if we can find an appropriate model that fits an insurgency to aid in targeting, it will be short-lived because of the insurgency's adaptability.

Rather than looking to preset models to find appropriate targets in an insurgent network, analysts could better understand how insurgents adapt and evolve by using the concepts of sociobiology. Jeffrey White, a former Defense Intelligence Agency executive, identifies traits, adaptation, selection/environmental pressure, fitness, reproduction, competition, cooperation, and survival as useful concepts that can illuminate behavior and the prospects for insurgency.[12] An insurgent network's function, evolution, and success are tied to these factors. When conducting operational design, commanders and planners should determine the best method to influence these elements—directly, indirectly, kinetically, nonkinetically, and so forth. Targets appropriate for kinetic engagement with airpower are tangible and distinguishable, which means we can likely find them in the traits of the network, such as the ones White identifies as important to the success of an insurgency:

- *Structure*—centralized, decentralized, flat
- *Nature/identity*—kinship, ideological/religious, personal (based on an individual), party/faction, foreign/indigenous, composite (a blend of several identities)
- *Purpose/function*—operational, support, integrated
- *Scope*—narrow or broad relative to functions, geographic range, and/or goals
- *Knowledge, skills, and abilities*—held by group leaders and members
- *Membership and recruitment base*—kinship, other forms of association, local, foreign, indigenous
- *Resources*—arms, money, connectivity (to important social structures), status (within the social system)
- *Adaptability*—ability to learn, ability to change behavior based on learning, preadaptation[13]

Every insurgency places different importance on each of these traits. The ones that the insurgency values most are likely critical elements and nodes that offer the greatest potential for targeting. Valued, tangible traits offer the best opportunities for targeting with airpower. For example, if an insurgent group uses a centralized command structure, its leaders would serve as critical nodes—potentially ideal targets for air strikes.

The criticality of leadership nodes depends entirely on structural centralization—not standard for all insurgencies. We tend to assume the appropriateness of targeting an insurgent network's structure through a "leadership attrition" or "[high-value target] strategy."[14] Martin J. Muckian argues that the structure of the Iraqi insurgency differs from that of Maoist insurgencies, the former so disparate that targeting leadership would not have the same effect. Its critical nodes are function- rather than leadership-based. Individuals with the most importance and least amount of redundancy have rare skills, such as bomb making, or serve as the only links between insurgent organizations.[15] Their elimination would have a greater disruptive effect than the loss of a leader.

Counterinsurgency forces also need to assess the population's attitude toward the insurgency, which may prove hard to do. The bulk of a population falls somewhere along a spectrum defined by support for the insurgency at one end and support for the government at the other, with a neutral zone in between.[16] Military leaders should understand where the population falls on that spectrum. An insurgency receiving significant support from the population can disperse, duplicate, and potentially decentralize critical elements and nodes, thus making it more survivable. Hezbollah insurgents, for example, evolved in this manner and became integrated into the population.

Israel has experienced both success and failure in determining appropriate targets during its small wars with Hamas and Hezbollah. The Israelis succeeded in disrupting Hamas in the Palestinian territories from 2003 to 2004. Israel's high-tempo air campaign against Hamas leadership and other targets incapacitated the organization, but the Israelis learned the wrong lessons from their success when

they decided to engage Hezbollah in Lebanon in 2006. Hezbollah had spent the previous six years preparing, dispersing, and decentralizing its logistics and command and control (C2). Furthermore, Israel certainly did not have the same quality of human intelligence in southern Lebanon that it enjoyed in the Palestinian territories. Israel's limited capacity for assessing the effects of the air strikes impaired its ability to adapt to Hezbollah's countertargeting techniques.

These examples show how the effectiveness of air strikes relates to understanding the insurgents' network structure and integration with the population. The hierarchical structure of Hamas made it vulnerable to air strikes, whereas the decentralized structure of Hezbollah enabled it to remain combat effective despite the destruction of many fighters and much equipment.[17] Israel's experience shows that, much like treating a cancer, combat operations prove more effective on an immature and isolated insurgency.

In a counterinsurgency campaign, understanding what targets to hit represents just the first step. The second involves the way we strike them—arguably a more vital process in irregular than in regular warfare. Because insurgents operate within a population, they are difficult to distinguish from innocent civilians and can disappear quickly. When targeting them, counterinsurgency forces cannot afford delays, multiple attacks, and occasional misses. Attacking insurgents requires speed, lethality, and precision.

Speed, Lethality, and Precision

In 2004 the presence of a few Marine snipers, reacting quickly and using deadly accuracy, wreaked havoc on insurgents in Fallujah, Iraq.[18] Airpower cannot match the speed, lethality, and precision of a sniper, but the sniper example shows the importance of these factors in engaging insurgents kinetically. Historically, airpower has fallen short with regard to these criteria when engaging insurgents on its own. Beginning in the 1980s, however, the Israelis developed tactics using unmanned aerial vehicles and precision-guided munitions to counter mobile surface-to-air-missile systems.[19] They eventually adapted these tactics to target terrorist leaders in Lebanon and the Palestinian territories, giving airpower a new role in counterinsurgency warfare. Although technology has made airpower more viable in targeting insurgents and terrorists, we must improve our processes to achieve the level of speed, lethality, and precision needed to fight them.

The first criterion, speed, is especially critical in counterinsurgency because of insurgents' mobility and ability to melt away quickly into the population. We have only fleeting opportunities to strike them. If a commander decides to engage an insurgent target, he or she usually does so when the target is distinguishable, stationary, and vulnerable to attack with low risk of collateral damage. The target situation can change very rapidly, however, especially in an urban environment. Insurgents can move, and civilians can become a factor at any time. When commanders see an opportunity to strike, their forces must do so in seconds or minutes, not hours.

Col John Boyd argued that the individual who observes, orients, decides, and acts (OODA) at a faster tempo than his enemy will succeed in combat. This notion is just as relevant in irregular warfare as it is in regular warfare. The OODA loop deals not only with combat success but also with adapting to survive.[20] Therefore, insurgents must make every effort to keep their loop short. In looking for ways to accelerate our loop, we tend to focus on technical, logistical, and tactical improvements. These can improve aspects of the observe, orient, and act phases, but the decide portion consists of cognitive processes and comprises the nexus of "Clausewitzian friction."[21] This makes the decision phase the most time-consuming process during the dynamic targeting of insurgents with airpower. In 1928 Wing Cdr R. H. Peck of the Royal Air Force discussed his experience in dealing with decision-making delays while fighting insurgents in Iraq:

> Long delays have sometimes and in recent times taken place before permission to take air action has been given, and the whole advantage of the

> rapidity of air action has been completely thrown away, and the original trouble has spread. On other occasions, when air action has been approved in principle, authority to engage particular targets found has had to be obtained from distant superiors, and even through two or three successive authorities, when the targets found have of course dispersed long before this permission could be obtained.[22]

To increase the tempo of dynamic-targeting operations, commanders should focus on improving processes tied to decision making and collaboration. Decision making for targeting insurgents with airpower is a joint process, which creates unique challenges when multiple components operate in the same nonlinear battlespace. Unfortunately, doctrine does not give us a consistent picture of how the targeting process should work in these cases.

Published in June 2006, Air Force Doctrine Document (AFDD) 2-1.9, *Targeting*, recognizes the problems that "stability operations" create for the targeting process, but they are not reflected in the dynamic-targeting methodology. The document defines a six-step dynamic-targeting "kill chain" consisting of finding, fixing, tracking, targeting, engaging, and assessing (F2T2EA).[23] Unfortunately, deciding is not a major step but a subset of targeting, which focuses on finding a targeting solution, reviewing restrictions, and validating the target. Combining multiple, disparate processes into one can result in the air component's focusing on getting the right weapons and platforms in place to strike but glossing over the critical validation step.

The dynamic-targeting process illustrates the Air Force's tendency to favor technical rather than human solutions to problems. When Gen John Jumper, former Air Force chief of staff, established the goal of "single-digit minutes" for dynamic-targeting timelines, the Air Force focused on finding technical ("machine-to-machine"), tactical, and logistical solutions.[24] Even if coordination, logistics, and target-development timelines improve, the political sensitivity of combat operations and the ambiguous nature of targets in counterinsurgency campaigns will cause decision-making timelines to extend well beyond single-digit minutes. In a counterinsurgency effort, we should concentrate on refining decision making and using an F2T2*D*EA kill chain, thus emphasizing the importance of the decide step in these operations.[25]

Field Manual (FM) 3-60.1, *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets* addresses many of the challenges involved in dynamic-targeting operations. It adopts the Air Force's F2T2EA kill chain but also discusses many joint C2 and decision-making processes applicable to counterinsurgency operations, such as understanding the capabilities and limitations of the joint force, decentralizing and simplifying C2, and anticipating requirements in order to conduct processes in parallel. Written for a regular, linear type of warfare, however, FM 3-60.1 does not discuss the unique dynamic-targeting challenges that insurgencies present to decision makers.[26]

The new FM 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, treats the decide step as a major part of the targeting process (decide, detect, deliver, and assess) but includes only a very limited discussion of targeting. It erroneously states that "the targeting process occurs in the targeting cell of the appropriate command post."[27] When we target insurgents with airpower, multiple cells collaborating from multiple command posts—including the air and space operations center—conduct the targeting process. FM 3-24 / MCWP 3-33.5 simply refers readers to Joint Publication (JP) 3-60, *Joint Doctrine for Targeting*, for the joint targeting process. However, that publication, updated in April 2007, has only fleeting references to insurgency and does not get to the level of detail one would find in a field manual, which is the level needed for this discussion.

Since doctrine lacks comprehensive guidance for joint targeting in counterinsurgencies, commanders must determine which aspects of current doctrine apply and find other ways to reduce friction and improve decision-making timelines. By improving the capabilities and processes of their staffs, commanders can improve decision-making efficiency considerably. They can have their personnel in intelligence and those with the staff judge advocate de-

velop and work through realistic scenarios that cause dilemmas for decision makers. For example, should our forces strike a house occupied by a high-level insurgent leader and other unknown occupants or attack a funeral attended by large numbers of insurgents?[28] (Both of these scenarios have actually occurred.) Commanders should prepare themselves and their staffs for these common dilemmas.

They should also have their targeting personnel continually develop targets appropriate for air strikes and anticipate how they will detect and identify them. Most importantly, commanders should encourage their staffs to build relationships with staffs at higher headquarters and other components in order to facilitate the cross flow of information during dynamic-targeting operations. Ultimately, the artistry of commanders and their understanding of the enemy and themselves will have the greatest effect on the decision process.

If airpower can get to the target in time, it needs to strike with lethal force. Although this shouldn't seem much of a concern, terrorists and insurgents frequently survive air strikes.[29] Since insurgents can occupy various types of structures and move away at any time, weaponeering and flexibility will determine the lethality of the strike.

The weaponeering process determines the number and types of weapons we need to obtain the desired effect when our forces attack a target.[30] Particularly challenging, weaponeering for insurgent targets requires a great deal of artistry. Insurgents survive air strikes for several reasons. First, targeteers often underestimate the strength of the houses occupied by the adversary. Weaponeering programs and methods model military targets and functions but do not account for attacking typical insurgent targets, such as individuals hiding in a safe house or rural compound. Second, targeteers often focus on destroying the facility instead of killing the insurgents inside. Finally, commanders may automatically favor smaller weapons in order to avoid collateral damage.[31] This article does not argue that we should bomb insurgents into oblivion to ensure their death; rather, it illustrates the commander's dilemma of approving enough force to kill the target yet limit collateral damage. Ultimately, the plethora of potential target scenarios and weapons available requires experienced targeting "artists" to confidently produce a solution that will result in the insurgents' (not the facility's) destruction while minimizing collateral damage. Otherwise, commanders must either exercise restraint or risk the political price of an air strike with nothing to show for it.

As mentioned, because of humans' unpredictable movements, we require a great deal of operational flexibility to make airpower consistently lethal. Despite the ability of tactical-level personnel to conduct targeting functions reliably with current technologies in many situations, the target-development process typically remains time-consuming, inflexible, and centralized at the operational level.[32] Decentralizing these processes has the potential to shrink our OODA loop considerably and could eventually improve both the flexibility and lethality of airpower, especially against mobile targets. Of course, commanders will always have to balance these advantages with their ability to mitigate collateral damage and hit the right target precisely.

Precision is perhaps the most important factor in executing an air strike against insurgents. FM 3-24/MCWP 3-33.5 warns that "needlessly harming innocents can turn the populace against the counterinsurgency (COIN) effort. Discriminating use of fires and calculated, disciplined response should characterize COIN operations. Showing kindness and compassion can often become as important as killing and capturing insurgents."[33] If the population believes that we care more about killing insurgents than about the safety of civilians, it may support the insurgency. Therefore, we should consider precision engagement of paramount importance.

Precision does not simply entail a calculation of weapons' capabilities although this is certainly an important factor. Rather, it involves many variables that go into the positive identification of an insurgent target. Insurgent signatures often appear ambiguous, even to snipers on the ground. Dynamic targeting with airpower presents even more ambiguity and uncertainty, requiring high confidence in

the intelligence sources and analysis used to pinpoint an insurgent target's location. Many intelligence sources have target-location errors so large that we cannot confidently determine an insurgent's position. Intelligence personnel should avoid overreliance on a single source to ascertain positive identification. Using multiple sources can refine target-location errors and increase precision. Recognizing insurgent signatures through old-fashioned analytical techniques can have the same effect as well.

Obviously, we face many challenges in achieving speed, lethality, and precision for airpower as we fight insurgents. Although the capabilities and limitations of technology play a role in each of these aspects, they are not the deciding factor in success or failure. Because success depends more on targeting processes than on technology, we must strive to improve them continuously.

US forces improved coordination processes and response timelines during their three-year hunt for Zarqawi, ultimately achieving success. Following a quick, lethal, and precise dynamic-targeting operation, ground forces immediately occupied Zarqawi's safe house to assess damage and exploit intelligence, leading to more raids against al-Qaeda in Iraq.[34] Beyond showing the necessity for a quick, lethal, and precise strike, the operation demonstrated the vital role assessment plays in conducting a successful air attack.

Assessing the Strike

Until recently, any Airman asked to define the assessment process would focus on traditional battle damage assessment (BDA), a reductionist process that calls for acquiring imagery of targets attacked by aircraft. Airmen have also attempted to consistently find technological ways to get "real-time BDA" to their commanders.[35] Although latter phases of BDA focus on analyzing effects on the target system, this is a long, often-ignored process centralized at the level of Combined Forces Command.[36] These approaches to assessment are simply inadequate in a counterinsurgency campaign. Assessment should focus on all aspects of friendly action, not just the performance of weapons. It should address the adaptation of the insurgents—not simply their initial reaction, destruction, or survival.[37] Finally, it should place most of its emphasis on the response of the population affected by the air strike.

An air strike against a dynamic target is always a complicated process that needs thorough debriefing and assessment after execution. Knowing how a weapon performed against a target certainly remains important, especially before approaching other aspects of assessment. However, to avoid the traditional BDA paradigm when considering the friendly action, commanders and their staffs should look at all aspects of the OODA process, paying close attention to timelines. Criteria for operational assessment may include logistical, coordination, and C2 aspects. Most importantly, commanders should identify both the amount of time they spent on deciding to strike and any causes of delay.

An air strike will likely cause the insurgent network to react by adapting in some fashion to the loss of a critical element or node. We cannot easily anticipate how or when this adaptation will occur, but our counterinsurgency forces should attempt to observe and understand it. Posturing ISR before, during, and after the strike can assist in this process. Again, analysts should not limit this effort to BDA but watch how the other links and nodes adjust over time. Noting how quickly the adversary replaces these leaders or other critical nodes will provide insight into the adaptability of the insurgency.

A successful air strike can cause insurgents to change their emphasis on certain traits, decentralize their leadership, or expand their operations in order to become more survivable. Writing in 1929 about his experiences fighting "bandits" in Nicaragua, Marine Corps aviation pioneer Rusty Rowell said, "Occasionally the enemy may establish a large stronghold that would be a suitable target for bombardment. It is certain, however, that he would never make that mistake twice."[38]

Targeting planners must constantly watch for changing links and nodes of an insurgent network and avoid reductionist approaches in

their targeting methods. Of course, the insurgents may not adapt at all, especially if a high-tempo counterinsurgency operation does not allow them time to do so. Not all insurgencies have proven as adaptable as the current ones in Iraq and Afghanistan, but counterinsurgency forces should always assume they are until they conduct a thorough assessment.

A very adaptive insurgent network will react to air strikes by quickly dispersing and integrating into the population. Assessing the population's response can help determine the success of insurgents at adapting. We must observe how the population may have shifted in its support of the insurgents or the government after an air strike. Most importantly, we must understand the impact of collateral damage.

For either political or practical reasons, the United States has avoided incorporating civilian casualties into its assessment processes.[39] This seems logical in large wars, but in small wars counterinsurgency forces need this information if they want to prevent insurgents from gaining further support of the population. Heavy reliance on airpower, as in Afghanistan, will inevitably lead to (real or perceived) collateral damage and can quickly undermine a government.[40] If such damage occurs, counterinsurgency forces need to be on the ground, assessing the facts to challenge false claims of the insurgents and addressing the needs of the victims. Although extremely difficult, this mission has proven successful in rebuilding relationships with people whom we otherwise would have lost to the insurgent cause.[41]

Without a vigorous attempt at assessment, commanders can find themselves caught in the trap of attrition warfare—something not feasible for the United States in counterinsurgency campaigns. During the buildup to the second battle of Fallujah in late 2004, we used airpower repeatedly to strike insurgent safe houses throughout the city. The strikes began in June 2004 and steadily increased over the next several months. Although Lt Gen Ricardo Sanchez, the outgoing commander of the joint task force in Iraq, believed in July 2004 that only massive force, not precision strikes, could win in Fallujah—a politically unacceptable concept at the time—the strikes continued.[42] Since we had no forces on the ground in the city, we could conduct only traditional BDA. The insurgents continued to tighten their grip on Fallujah and its population during this time. In Fallujah's dense urban environment, collateral damage occurred frequently. Rather than dissuading the insurgents, the air strikes created a sense of paranoia. The insurgents responded to this situation by executing civilians as well as increasing their concealment and dispersal efforts to avoid air strikes.[43] Although the strikes took out several insurgent targets, they generally proved ineffective in achieving lasting results that made a difference to the marines who attacked the city in November 2004.

Understanding the limitations of traditional BDA, the Air Force has adopted a new, comprehensive approach to assessment in AFDD 2-1.9 that goes beyond the tactical level. The doctrine even recognizes the challenges of assessment in counterinsurgencies by stating that "these operations will require analytical skills ranging far beyond weapons effects into political, socio-economic, cultural-ideological, psychological and international arenas. It will also require coordination with analytical and academic centers outside the [Department of Defense]."[44] Unfortunately, the discussion stops there, and despite the attempt to distance itself from traditional BDA, the US military has found it difficult to move on.

Conclusion

Although kinetic operations alone will not win the war, they can slow down or suppress the insurgency while political efforts gain strength and momentum. Thus, we should make combat operations persistent enough to eliminate insurgents' critical nodes and elements faster than they can replace them.[45] Airpower can play an important role in this effort through dynamic targeting; however, we have often employed it in these operations without understanding the consequences of incorrect planning, execution, or assessment. We tend to call on airpower hastily in an effort to take out the bad guys we see on a Predator's video

feed. Commanders and their staffs should resist the temptation to do something simply because they can. They first need to determine if they are hitting the right target in the correct manner and if they have postured themselves to learn from their effort so they can adapt faster than the enemy.

They could do this more effectively if the US military implemented the following proposals. First, targeting is a joint process, yet no comprehensive joint doctrine exists for conducting it in a counterinsurgency. Because of the lengthy timeline for updating joint doctrine, the Air Land Sea Application Center should develop multiservice tactics, techniques, and procedures for targeting time-sensitive targets specific to counterinsurgency in the short term; it should focus on C2 processes to speed up decision making; and, recognizing that the air strike is just the beginning of the engagement, it should concentrate on flexible tactics to engage fleeing targets and on efforts to conduct a comprehensive assessment.

Second, we should provide targeteers the tools and education they need to make effects-based weaponeering predictions in counterinsurgency environments. The Joint Technical Coordinating Group for Munitions Effectiveness should update weaponeering models with regional information that includes typical residential structures as well as other potential insurgent facilities and provide a tool that calculates probabilities of killing the personnel inside these structures. Until we develop these tools, the Air Force should design a short targeting top-off course that can educate targeteers deploying into theater on the art of killing insurgents with the multitude of weapons now available. It should also teach them to balance the requirements of avoiding collateral damage, becoming aware of the population and its culture, and making assessments.

Finally, our forces need to understand what the insurgents value and determine whether or not kinetic airpower can affect it without alienating the local population. The solution to this complicated problem requires input from several disparate groups, many of them isolated from each other in both doctrine and practice. They include air component strategists, planners, targeteers, and ISR personnel as well as human-intelligence experts, counterterrorist/counterinsurgent analysts, and ground forces. Such a problem requires the kind of constant discourse that personal, face-to-face relationships can promote. This currently exists in the air support operations group (ASOG) construct, but its staff does not have the manning, experience, or expertise to serve as all-encompassing airpower advocates.[46] In order to achieve the kind of relationships and decentralized execution of dynamic targeting described in this article, the air component should establish robust planning and targeting nodes at the level of an Army division, piggybacking on the ASOG organization. We should staff these nodes with graduates of the USAF Weapons School, targeteers, and ISR experts who could develop the kinds of relationships needed for comprehensive planning, decentralized execution, and thorough assessment. ❑

Notes

1. Air Force Doctrine Document (AFDD) 2-1.9, *Targeting*, 8 June 2006, 114, https://www.doctrine.af.mil/afdcprivateweb/AFDD_Page_HTML/Doctrine_Docs/afdd2-1-%209.pdf.

2. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 428–30.

3. Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, December 2006, 4-7, http://usacac.army.mil/cac/repository/materials/coin-fm3-24.pdf.

4. David S. Cloud, "The Reach of War: U.S. Airstrikes on Increase to Aid NATO in Afghanistan," *New York Times*, 17 November 2006.

5. Ed Blanche, "Hammering Hamas," *Middle East*, December 2003, 28–31.

6. These include the AGM-114P Hellfire missiles, the 250-pound GBU-39 small-diameter bomb, or the venerable AC-130 gunship with its suite of direct-fire cannons.

7. Benjamin Lambeth, *Air Power against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), 350.

8. Senator John McCain defines "whack a mole" in the context of Iraq. "Transcript for Aug. 20: John McCain, Barry McCaffrey, Vali Nasr, John Harwood," *Meet the Press*, 20 August 2006, http://www.msnbc.msn.com/id/14390980 (accessed 20 February 2007).

9. Commanders and planners who influence and/or direct dynamic targeting in counterinsurgency operations are often located in multiple components at the operational or tactical level—or both. This article does not argue for specific command relationships in these situations, but it does argue for the importance of effective collaboration. It also does not explore which level—operational or tactical—is more appropriate to conduct these operations. Overall, we must often carry out many functions at the operational level, but commanders should delegate as many of them as practical to the tactical level in order to attain the necessary operational tempo needed to fight insurgents.

10. AFDD 2-1.9, *Targeting*, 3.

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13. Ibid., 6.

14. Ibid., 15.

15. Martin J. Muckian, "Structural Vulnerabilities of Networked Insurgencies: Adapting to the New Adversary," *Parameters* 36, no. 4 (Winter 2006–7): 19, http://www.carlisle.army.mil/usawc/Parameters/06winter/muckian.pdf.

16. Christopher M. Ford, "Speak No Evil: Targeting a Population's Neutrality to Defeat an Insurgency," *Parameters* 35, no. 2 (Summer 2005): 53, http://www.carlisle.army.mil/usawc/Parameters/05summer/ford.pdf.

17. Anthony H. Cordesman, "Preliminary 'Lessons' of the Israeli-Hezbollah War," working draft (Washington, DC: Center for Strategic and International Studies, 2006), 2–23, http://www.csis.org/media/csis/pubs/060911_isr_hez_lessons.pdf (accessed 20 February 2007).

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23. AFDD 2-1.9, *Targeting*, 49.

24. Adam J. Hebert, "Building Battlespace Awareness," *Air Force Magazine*, 87 no. 9 (September 2004): 66–71, http://www.afa.org/magazine/sept2004/0904Isr.pdf (accessed 21 February 2007).

25. Lt Col Phillip Pratzner, USAF, interview by the author, 15 February 2006.

26. The manual mentions neither insurgencies nor small wars. Many techniques recommended in the document to aid in decision making such as time-sensitive-targeting matrixes and lists are infeasible due to the changing and ambiguous nature of insurgent targets. See FM 3-60.1, *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets*, 20 April 2004.

27. FM 3-24 / MCWP 3-33.5, *Counterinsurgency*, 5-29.

28. US forces decided not to strike a group of over 100 members of the Taliban, including several high-value targets, because of their location in a cemetery, considered a "culturally sensitive area." Yet, they bombed the house where Zarqawi was hiding even though the other occupants were unknown (three women died in the air strike). See NBC News and News Services, "U.S. Passes Up Chance to Strike Taliban," 13 September 2006, http://www.msnbc.msn.com/id/14823099 (accessed 21 February 2007).

29. During multiple dynamic-targeting operations, the author has seen insurgents crawl out of half-destroyed buildings and others move away seconds before impact, escaping certain death.

30. For the definition of "weaponeering," see Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001 (as amended through 13 June 2007), 579, http://www.dtic.mil/doctrine/jel/new_pubs/jp1_02.pdf.

31. Counterinsurgency forces may develop a bias toward smaller munitions such as the AGM-114 Hellfire or the GBU-39 small-diameter bomb, which limit collateral damage but may not pack enough punch to obtain desired effects in certain scenarios.

32. According to Maj Kasandra Traweek, USAF, PhD, a "field collateral damage estimation" is an alternative occasionally available to tactical-level commanders when they can determine with available resources that the estimation is mitigated in accordance with the rules of engagement. Major Traweek, to author, e-mail, 19 February 2007. One option calls for allowing aircraft to derive their own "Joint Direct Attack Munition–quality coordinates," currently possible with advanced targeting pods. See Lockheed Martin, "Sniper: The World's Most Advanced Targeting Pod," 2005, http://www.lockheedmartin.com/data/assets/7820.pdf (accessed 21 February 2007).

33. FM 3-24 / MCWP 3-33.5, *Counterinsurgency,* 5-12.

34. Sean D. Naylor, "Inside the Zarqawi Takedown: Persistent Surveillance Helps End 3-Year Manhunt," *DefenseNews.com*, 12 June 2006, http://www.defensenews.com/story.php?F=1861193&C=landwar (accessed 17 February 2007).

35. Lt Col John T. Rauch Jr., "Assessing Airpower's Effects: Capabilities and Limitations of Real-Time Battle Damage Assessment" (thesis, School of Advanced Airpower Studies, Maxwell AFB, AL, 2004), passim, http://

www.maxwell.af.mil/au/aul/aupress/saas_Theses/Rauch/Rauch.pdf (accessed 21 February 2007).

36. AFDD 2-1.9, *Targeting*, 57.

37. Maj Lee K. Grubbs and Maj Michael J. Forsyth, "Is There a Deep Fight in a Counterinsurgency?" *Military Review* 85, no. 4 (July–August 2005): 29, http://calldp.leavenworth.army.mil/eng_mr/2006080808030243/2005/Jul_Aug/06grubbs.pdf#xml=/scripts/cqcgi.exe/@ss_prod.env?CQ_SESSION_KEY=WVYLNZTSQFEQ&CQ_QH=125432&CQDC=5&CQ_PDF_HIGHLIGHT=YES&CQ_CUR_DOCUMENT=1.

38. Ross E. "Rusty" Rowell, "Aircraft in Bush Warfare," *Marine Corps Gazette* 14, no. 3 (September 1929): 186.

39. Mark Garlasco, interviewed for "What's in a Number?" *This American Life*, WBEZ Chicago, 28 October 2005.

40. Rachel Morarjee, "Air War Costs NATO Afghan Supporters," *Christian Science Monitor*, 18 December 2006, http://www.csmonitor.com/2006/1218/p01s02-wosc.html (accessed 20 February 2007).

41. CPT Ryan Gist, USA, interviewed for "What's in a Number?" *This American Life*, WBEZ Chicago, 28 October 2005.

42. Bing West, *No True Glory: A Frontline Account of the Battle for Fallujah* (New York: Bantam Books, 2005), 234.

43. Ibid., 228.

44. AFDD 2-1.9, *Targeting*, 62.

45. White, *An Adaptive Insurgency*, 15.

46. The ASOG has tactical air control parties throughout the Army corps structure, consisting of air liaison officers (ALO) and/or enlisted joint terminal attack controllers (JTAC) whose primary expertise is close air support (CAS). Dynamic targeting in counterinsurgency is being mistakenly used as a form of CAS because of the nonlinear nature of the battlefield, thus placing a considerable burden on the ALOs and JTACs to provide more sophisticated targeting advice than their area of expertise normally requires. To better understand the new roles expected of ALOs and JTACs in counterinsurgency, see Col Howard D. Belote, "Counterinsurgency Airpower: Air-Ground Integration for the Long War," *Air and Space Power Journal* 20, no. 3 (Fall 2006): 55–64, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/Fal06.pdf.

Maritime Homeland Defense

A Role for Land-Based Airpower?

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Editorial Abstract: Given the increasing frequency and resourcefulness with which terrorists have planned and carried out attacks, it is reasonable to believe that maritime operations at US ports and on the high seas are in danger. Lieutenant Colonel Grynkewich contends that airpower can and should assist in countering this threat, and could do so with modest increases in personnel and/or equipment by using currently available manned and unmanned aircraft and space platforms.

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IN JULY 1921, eight of the Army's Martin bombers, participating in a series of joint Army-Navy tests, sank the captured German battleship *Ostfriesland*.[1] Shortly thereafter, Brig Gen William "Billy" Mitchell, deputy chief of the Army Air Service, declared that "the problem of destruction of seacraft by [air] forces has been solved and is finished."[2] This declaration proved premature, however: attacking ships from the air remains complex. The sequential requirements of finding the target ship, identifying it as a hostile enemy vessel, and neutralizing it still pose significant tactical and technical problems. The challenges become especially salient when one faces an asymmetric threat. Nonetheless, examining each of these steps can identify areas in which the inherent flexibility of land-based airpower might enhance US maritime defenses. At the same time, it reveals several command and control (C2) issues that the government must resolve if it decides to use land-based airpower in a maritime-defense role. Prior to addressing these issues, however, this article briefly examines the contemporary maritime-defense environment.

The Contemporary Maritime-Defense Environment

The conflict in which the United States finds itself today differs significantly from earlier wars. In previous conflicts, conventional forces waged a largely symmetric war. In contrast, the 2003 *National Strategy for Combating Terrorism* correctly noted that today's enemy "is a flexible, transnational network structure, enabled by modern technology and characterized by loose interconnectivity both within and between groups."[3] The attacks of 11 September 2001 (9/11) demonstrated the potential power of this new way of war. On that day, "transnational terrorists, organized in widely dispersed, networked nodes, . . . swarm[ed] together swiftly, on cue, then pulse[d] to the attack simultaneously."[4]

Although terrorists used aircraft to attack on 9/11, they could easily adapt this highly effective mode to the maritime domain by using commercial vessels to clandestinely deliver weapons of mass destruction, detonating their cargo once in port. Lacking such weapons, terrorists could take control of an ocean freighter and use its cargo or even the ship itself as a weapon.[5] Detonation of a large tanker carrying liquefied natural gas in port could destroy a major US city.[6] Less dramatically, attackers could use any large ship "as a collision weapon for destroying a bridge or refinery located on the waterfront."[7]

Al-Qaeda understands and appreciates the potential modes of attack from the maritime domain. The group reportedly has as many as 23 freighters at its disposal, one of which may have delivered explosives to Saudi Arabia for a car-bomb attack in 1995.[8] Another may have transported bomb-making materials for the attacks on US embassies in Kenya and Tanzania in 1998.[9] Closer to home, Richard Clarke, former White House counterterrorism director, asserted that terrorists affiliated with al-Qaeda "infiltrated Boston by coming in on liquid natural gas tankers from Algeria."[10] Others report that terrorist-affiliated pirates have forcibly boarded vessels and practiced steering "at varying speeds for several hours."[11]

As the United States defends against this new kind of enemy, it must also adapt to a changing operational environment. Prior wars had defined combat zones. In today's conflict with terrorism, however, the combat zone defies attempts at geographic confinement. Accordingly, maritime-defense activities must comply with peacetime international law. The Law of the Sea, based on various international norms and treaties, including four 1958 conventions to which the United States is a party, seeks to facilitate and encourage global commerce, and the United States shares this interest.[12] Both the *National Security Strategy* and *National Strategy for Maritime Security* recognize that the "safety and economic security of the United States depends upon the secure use of the world's oceans."[13] In this context, traditional US doctrine that calls for the application of overwhelming force does not always work. Simply put, blowing up ships that appear to threaten the homeland is incompatible with facilitating global commerce.

In 2003 approximately 6,000 vessels made roughly 60,000 stops in US ports.[14] The United States must maintain this global commerce yet also protect its 98,000 miles of shoreline; 3.5 million square miles of ocean area; 1,000 harbor channels; and approximately 300 ports.[15] In the contemporary operational environment, finding, identifying, and neutralizing the enemy requires a far different skill set from that developed for conventional conflicts. Despite some progress, the United States still faces several critical gaps between its required and resident capacities. Fortunately, the speed, range, and flexibility of land-based airpower have the potential to close or eliminate many of these gaps.[16]

Finding the Threat

For maritime homeland defense, finding a threat means detecting its existence and locating it with enough precision to allow follow-on steps in the engagement chain. To fulfill this objective, the US government has outlined the maritime domain awareness (MDA) initiative, defined by Homeland Security Presidential Directive (HSPD)13 as "the effective understanding of anything associated with the global Maritime Domain that could impact the security, safety, economy, or environment of the United States."[17] An effective MDA surveillance system identifies threats by looking for anomalous patterns of behavior and fusing that information with other intelligence, such as that derived from human or technical sources.[18] For example, vessels that failed to comply with standard procedures, those operating from nonfriendly ports, or those crewed by suspect personnel would trigger a flag in the MDA system, prompting a response.[19] Primary responsibility for fusing and analyzing maritime intelligence under MDA belongs to the National Maritime Intelligence Center, which includes intelligence elements from the Navy, Marine Corps, Coast Guard, Drug Enforcement Agency, and US Customs Service.[20]

MDA is attempting to solve two parts of the maritime-defense problem: an ability to track maritime traffic in general and an ability to discern which specific maritime track constitutes a threat. Land-based airpower could provide significant enhancements to the first of these problems.[21] In the best-case scenario, intelligence will identify a specific vessel of concern, at which point commanders can task assets to fix its location and track it. Space-based assets have some utility in this regard, but orbital patterns generally do not meet capabilities requirements for persistence, timing, or location. Although the space-based radar program could potentially eliminate this shortfall, at present, adjusting orbital patterns in order to image emerging targets requires significant time.[22] Additionally, "most low Earth Orbit (LEO) satellites have a specific target in view for less than 10 minutes at a time and revisit the same sites only infrequently."[23]

Unmanned aerial vehicles (UAV) possess the range, altitude, and payload to bridge this capability gap. For example, the RQ-4A Global Hawk can fly 1,200 miles and still have an on-station time of 24 hours, during which the aircraft's synthetic aperture radar as well as its electro-optical and infrared cameras "can image an area the size of Illinois."[24] With a reported one-foot radar resolution and a ground moving target indicator (GMTI) mode able to track moving targets down to four knots, the RQ-4A is more than capable of finding and tracking most seaborne vessels.[25]

Manned aircraft also offer a means of finding threats to maritime defense. For example, the U-2 reconnaissance aircraft reportedly has the following range capabilities: electro-optical imaging of 120 kilometers (km), radar-imaging of 180 km, and signals intelligence out to 280 km.[26] Additionally, although primarily known for its ability against ground targets, the E-8C Joint Surveillance Target Attack Radar System has a potential maritime search-and-track capability as well.[27] The E-8's radar field of view covers over 19,000 square miles and can detect targets over 250 km away.[28] Finally, despite their limited utility for searching broad areas, most fighter and bomber aircraft can use radar, infrared, and television imaging to generate high-quality targeting information on surface tracks.[29] Once cued to a target's general loca-

tion, aircrews can use these systems to aid in its identification.

Unfortunately, no concepts of operation currently exist for using long-range manned aircraft or UAVs to track maritime vessels. Today most UAV platforms belong to the Air Force although the Coast Guard and Navy both have programmed future purchases. The Coast Guard plans to acquire four Mariner aircraft, a derivative of the Predator B, as part of its Integrated Deepwater Initiative.[30] The Navy's Broad Area Maritime Surveillance (BAMS) program has a requirement for "enough systems to cover five major areas of the world 24 hours a day, year round."[31] Although the Navy has not further quantified the number of UAVs it plans to purchase, estimates suggest that the BAMS will "require dozens of aircraft and associated systems that could cost more than $50 million each."[32]

For the short term, using Air Force assets for sea surveillance offers a partial solution to the challenge of finding maritime-defense threats. However, each current Air Force platform has to make trade-offs among persistence, resolution, and wide-area coverage. For the longer term, the near-space platform (operating above an altitude of 75,000 feet but below 62.5 miles) may be able to overcome these limitations. Such platforms—usually some type of blimp or rigid airship—can provide more persistence than space-based assets and UAVs. Since "near-space platforms are 10–20 times closer to their targets than a typical 400-kilometer LEO satellite," they "can be 10–20 times smaller for similar performance, or the same size optics can get 10–20 times better resolution."[33] Near-space platforms cruise "more slowly than most air breathers, so getting to their assigned stations will take longer. However, once there they can stay for a very long time," perhaps as long as six months.[34] Furthermore, because of their extreme altitude, near-space assets have an especially wide field of view. At 120,000 feet, a near-space platform would have a sensor footprint 1,700 miles in diameter.[35] Finally, near-space platforms are relatively cost-effective. According to a spokesman at the US Air Force Space Battlelab project, at a cost of $500,000 for each 175-foot near-space airship, "you could probably roll about 40 of these off the line for the price of one Global Hawk."[36]

Identifying the Threat

The United States reportedly used a combination of space-based and Navy assets in December 2002 to track the *So San*, a North Korean vessel carrying a cargo of Scud missiles between the reclusive Pyongyang regime and Yemen.[37] To some extent, this capability mirrors that required for nontraditional maritime-defense missions. However, it is important to note that US intelligence provided advanced knowledge of the *So San* prior to its departure from North Korea, enabling the United States to position its orbital and surface assets appropriately in order to track the vessel once it departed for Yemen. Another significant difference between the *So San* episode and certain maritime homeland-defense scenarios is that in the *So San* case, intelligence provided a specific vessel as a target to fix and track. In maritime homeland defense, it is more likely that intelligence will indicate only the existence of a threat without precise information on the specific vessel. For example, a foreign intelligence service might inform the US government that it has credible information that a group of terrorists had stowed away on a vessel bound for the West coast sometime in the last 48 hours. More precise information on the type of vessel may or may not be available, leading to a high number of suspect vessels.[38]

Standoff sensors—whether space based, air breathing, surface, or subsurface—will have only limited utility in these circumstances. In a conventional maritime battle, signals intelligence or imagery intelligence can "find" targets of significance: a conventional naval vessel emits various signals, making it detectable by signals intelligence, and any imagery of the vessel will likely reveal its type, if not specific identification. Against an asymmetric maritime homeland-defense threat, however, few if any external indicators exist that will distinguish the actual threat vessel from surrounding suspect vessels. A vessel used as a launch

platform conceivably could have some visual or emission-based distinguishing features, but, just as likely, no such features will exist at all. Similarly, onboard explosives or weapons of mass destruction may or may not be visible via spectral or air-sample analysis. Cases involving a band of unconventional fighters on board a vessel (with the intent to commandeer it or use it to infiltrate personnel) also present problems. Except when members of the group foolishly expose themselves—either to visual observation on the vessel's surface or through some type of exploitable communications link such as a satellite phone—stowaway groups of fighters will likely remain undetected and undetectable from standoff sensors.

MDA aims to overcome this shortfall by fusing information on vessels, cargo, and crew members to identify unconventional threats to maritime defense. Still, it likely will not reveal them all. The asymmetric maritime enemy will seek to maintain anonymity against the backdrop of a massive volume of legitimate maritime traffic, thus creating a problem similar to that found in other types of unconventional warfare. Mao Tse-tung noted that guerrillas are the "fish" that swim in the "sea" of a country's population.[39] In the case of maritime homeland defense, the fish are threat vessels that hide in the sea of legitimate traffic. To defeat all or part of the MDA system, a hostile force merely needs to avoid suspicious behavior. By following all appropriate procedures, operating from friendly (or at least nonenemy) ports, crewing ships with personnel traveling under aliases, or stowing away on a ship with a legitimate crew, unconventional bands of fighters could slip under the MDA radar and carry out their mission prior to detection.

These limitations suggest that, for the foreseeable future, boarding parties will remain the most effective means for distinguishing between friendly and hostile maritime traffic. Recent maritime-defense scenario modeling at the Naval Postgraduate School revealed that, with nominal intelligence warning, parties would need to board and search about 20 vessels in order to find the actual threat. Unfortunately, modeling also revealed two significant capability shortfalls: (1) delayed intelligence warning resulted in inadequate time to board and inspect all suspect ships, and (2) a simultaneous attack from multiple ports increased the number of vessel-boarding requirements, overwhelming current capabilities.[40] In both instances, the size of the maritime domain did not allow the limited number of boarding forces to move with enough speed to meet operational requirements.

To solve this problem requires rapid delivery of a long-range boarding party. With a top speed in excess of 45 knots, the Littoral Combat Ship (LCS) partially meets these requirements.[41] In modeling of single-axis, single-vessel attack scenarios, the increased speed of the LCS either decreased the number of boarding teams required (since the same team can leapfrog through a series of suspect vessels) or, alternatively, increased the available search time per vessel.[42] Nonetheless, because we need even faster boarding-party delivery, the Navy is considering maritime-defense missions using the MH-60, including helicopter delivery of boarding teams in rigid-hull inflatable boats.[43] Using the LCS (or legacy vessels) to ferry boarding teams to within helicopter ranges and then employing helicopters to deliver them would provide an additional four hours of search time per boarding.

The V-22 Osprey could further increase available search time. The Air Force and Marine Corps are testing their respective versions of the V-22, an aircraft that can take off like a helicopter and then tilt its rotors forward to cruise like a fixed-wing aircraft at approximately 250 knots.[44] With aerial-refueling support, land-based V-22s could lengthen search time by an order of magnitude. Current procurement plans call for 348 Marine Corps MV-22s, 50 Air Force CV-22s, and 48 Navy HV-22s. Marine Corps variants will perform the heavy-lift mission, replacing older helicopters. The Air Force version is slated for special operations. The Navy will use its HV-22s for search and rescue as well as logistics.[45] Adding the mission of maritime defense to any of the services' V-22 fleets would require additional aircraft purchases at a cost of approximately $40 million each. Still, delivery of boarding teams using V-22s would allow the United States to rapidly discern

whether or not a specific vessel presented a maritime threat to homeland defense.

Neutralizing the Threat

Finding and identifying a threat comprise only the first half of the maritime-defense problem. During limited scenarios in which command authorities declare a vessel hostile (implying kill authority), aerial-refueled fighters, long-range bombers, or UAV platforms could provide rapid, lethal response over the vast distances inherent in the maritime realm. The Air Force has demonstrated its ability to act against moving maritime targets with the Affordable Moving Surface Target Engagement (AMSTE) program (which uses the Joint Direct Attack Munition guided by the global positioning system, updated by aircraft with GMTI-capable radar) and the CBU-97, a guided cluster munition also known as the sensor-fuzed weapon.[46] Other weapons capable of striking moving maritime targets include the AGM-65 Maverick and AGM-114 Hellfire missiles.[47] Finally, the Navy's P-3 and F/A-18 aircraft and the Air Force's B-52 bomber can employ the AGM-84D Harpoon antiship missile.[48]

Destroying a vessel is the option of last resort, however. Commanders probably would not approve such action without perfect intelligence—a chimerical commodity. This suggests that the largest gap in the US military's ability to engage maritime threats is a lack of nonlethal or ship-disabling weaponry. Since boarding teams can use the minimum required force to subdue a threat, they themselves represent a potentially nonlethal or ship-disabling weapon. Thus, we can improve this capability through faster delivery of these teams. Accordingly, the LCS, helicopter, and V-22 options for rapid and long-range delivery discussed above also would add capability to the neutralize phase of engagement.

In certain scenarios, delivering a boarding party to a suspect vessel might prove impossible because small arms or man-portable missiles could threaten air- and surface-based insertion methods.[49] Alternatively, a noncooperative vessel might maneuver to imperil the lives of the team during its boarding attempts. Ironically, acts of noncompliance without hostile behavior—resulting from the crew's desire to conceal illegal activities (e.g., smuggling) rather than its intent to carry out an act of war—present the greatest problem. In such ambiguous situations, destroying the vessel is not an option, thus suggesting an urgent need for nonlethal or ship-disabling standoff weapons.

Because one can most effectively disable a ship by neutralizing its propulsion or steering system, a small-warhead kinetic weapon that homes on a ship's screws, engine room, or bridge would serve as an appropriate attack tool. Capable of applying this type of small warhead and highly accurate firepower, the AC-130 gunship "incorporate[s] side-firing weapons integrated with sophisticated sensor, navigation and fire control systems to provide surgical firepower or area saturation during extended loiter periods, at night and in adverse weather. The sensor suite consists of a television sensor, infrared sensor and radar."[50] "With its extremely accurate fire control system, the AC-130 can place 105mm, 40mm and 25mm munitions on target with first round accuracy."[51] Strafing from fighter and attack aircraft offers another option. In general, however, gunfire from a fighter/attack aircraft is somewhat less accurate than that from a gunship. With fixed gun positions and limited systems to assist in cueing, the accuracy of such strafing depends primarily on visual acquisition of the target and the pilot's gunnery skills.

Nonkinetic weapons could also disable a vessel. The Coast Guard has experimented with nonexplosive devices for fouling propulsion or steering systems, including both surface- and air-delivered entanglement systems. To date, it has focused on small boats, but the Joint Non-Lethal Weapons program is examining future entanglement devices, and larger versions lie within the realm of possibility.[52] The nonnuclear electromagnetic pulse (EMP) weapon—a second nonkinetic option for disabling a ship—produces a short but intense pulse that "can result in irreversible damage to a wide range of electrical and electronic equipment, particularly computers and radio or radar receivers."[53] Using such a weapon

against large commercial vessels that depend on onboard computer systems for control and navigation would significantly degrade those functions. The Los Alamos National Laboratory first demonstrated EMP weapons in the 1950s, and "since that time a wide range of [EMP-weapon] configurations has been built and tested, both in the US and [Russia]."[54]

Nonlethal entanglement or EMP weapons have the potential to quickly neutralize any potential maritime threat to the homeland without destroying the vessel, compromising any evidence or intelligence on board, or threatening the lives of noncombatants. Air delivery of these systems would enable rapid employment over long distances. Nonetheless, these nonlethal options must undergo testing and analysis to confirm their effects, particularly with respect to the possibility of collateral damage from EMP employment near other ships or in port. Ideally, using a nonlethal weapon would leave the suspect threat vessel adrift without significant collateral damage, allowing boarding parties to search it at their leisure.

Despite the promise such weapons hold for simplifying the maritime homeland-defense problem, mission complexity increases exponentially as intelligence specificity decreases. An especially problematic scenario emerges when intelligence indicates that an attack is in progress without knowing either the specific target or its port of origin. In such cases, every ship is suspect. Such a scenario effectively precludes maritime interdiction. Without stopping and inspecting every vessel bound for the United States, we have no way of knowing which vessel is hostile. Furthermore, by remaining hidden until shortly before the actual attack, stowaway terrorists can limit our response time to as little as 20 minutes. With no indicators to distinguish the attacking ship from others until endgame and inadequate time to deploy boarding teams, the latter become largely ineffective. One solution to this problem calls for using nonlethal shore batteries as a defense of last resort. If authorities suspect that a ship has come under hostile control, an in-place and on-call shore battery could respond in time to disable it.[55] Unfortunately, we are years away from such a capability.

Rather than waiting for development of a static defensive system based on shore batteries, land-based airpower offers a flexible-response capability. Aircraft on combat air patrol (CAP) could rapidly engage vessels that emerge as threats as they approach or enter US ports. Command authorities can stand aircraft CAPs up or down and move them to different geographic locations as the threat dictates. Intelligence would determine which ports to defend and how long to maintain the CAP. Until the fielding of nonlethal weapons, the 20–30 mm cannons on most fighter/attack aircraft or the various-caliber weapons on the AC-130 gunship (or perhaps even attack helicopters) could disable threat vessels by targeting screws, bridges, or engine rooms. When nonlethal weapons become available, slow movers—including manned or unmanned helicopters and light fixed-wing aircraft—represent the best choice for their employment. Thus, we should consider fighters, bombers, or gunships only an interim solution until nonlethal weapons reach full maturity.

Command and Control Considerations

Using Air Force assets for maritime defense raises several C2 issues. Although the Department of Defense (DOD) has responsibility for maritime defense in the forward areas, the *Maritime Operational Threat Response for the National Strategy for Maritime Security* gives the Department of Homeland Security (DHS) authority to interdict maritime threats in waters subject to US jurisdiction.[56] Nonetheless, if the DHS asks the DOD for assistance, the maritime homeland-defense mission would then fall under the jurisdiction of US Northern Command (NORTHCOM) and US Pacific Command. Unfortunately, current maritime homeland-defense capability exists largely on an ad hoc basis. NORTHCOM in particular has received criticism for not devoting enough attention to the maritime mission.[57] Because the command does not have assigned naval forces, it relies "on contingency planning for future events and theoretically acts as a coor-

dinating bridge between the Navy and Coast Guard for Maritime Homeland Defense / Security issues."[58] Furthermore, although the North American Regional Aerospace Defense Command agreement between the United States and Canada recently expanded to include a maritime-surveillance role, the command "will not exercise operational control over maritime assets."[59]

The question then arises as to who *will* exercise operational control over maritime assets. One option would have combatant commanders assign all forces performing the maritime-defense mission to their joint force maritime component commander (JFMCC). Air Force and joint doctrine account for situations in which the JFMCC might "plan and direct limited Air Force support operations."[60] Another option calls for the combatant commander to establish a Joint Task Force for Maritime Homeland Defense (JTF-MHD). In this case, land-based air assets could remain under a separate subordinate component command at the discretion of the JTF commander. In either case, having all surface- and air-based maritime-defense forces under the authority of a single commander (e.g., the NORTHCOM JFMCC or JTF-MHD commander) would ensure unity of effort during maritime-interdiction missions.[61]

Another C2 question in maritime homeland defense concerns how DOD forces under the combatant commander should interact with the Coast Guard. Confusing the issue somewhat is the fact that the Coast Guard could serve as the supported or supporting command, depending on whether or not the maritime mission took the form of homeland security or homeland defense.[62] The president makes this decision when he assigns lead-federal-agency authority during a crisis, but the Coast Guard is taking steps to integrate its forces with those of the DOD in order to make the transition from supported to supporting command as seamless as possible. These include pursuing changes to the law that clarifies the Coast Guard's role as a force provider to the combatant commanders under the Goldwater-Nichols Department of Defense Reorganization Act of 1986; adapting Coast Guard doctrine, plans, and policies to reflect the service's integration into the combatant-command structure; and detailing personnel to the Office of the Secretary of Defense, Joint Staff, and the combatant commands.[63] Indeed, a Coast Guard rear admiral currently serves as NORTHCOM's deputy director of operations (J-3).[64]

The final—but perhaps most challenging—question with respect to C2 for maritime homeland defense has to do with which service or services should have responsibility for organizing, training, and equipping the land-based air forces intended for the maritime-defense mission. On the one hand, the Coast Guard's dual role as a law-enforcement agency and military force under Title 14 might make it the logical steward of such forces. On the other, the Navy, with its long history of performing maritime-intercept operations, might qualify as the service with the greatest knowledge of how to conduct maritime-defense missions. Although both arguments have merit, we must consider whether or not the Air Force should assume responsibility for employing land-based airpower assets for maritime defense.

One of Phillip Meilinger's propositions regarding airpower is that "airpower's unique characteristics require centralized control by airmen."[65] He notes that, historically, the Air Force has felt that without centralized control, airpower would be parceled out to surface commanders who would jealously guard their air assets to the detriment of the theaterwide effort.[66] An analogous concern exists with respect to airpower in the maritime homeland-defense mission. Most of the air assets that have a potential maritime-defense role could also be used for other missions critical to the war on terror. In this type of warfare, persistent surveillance, precision targeting, and long-range delivery of personnel constitute critical airpower capabilities regardless of the composition of the surface underneath. Giving responsibility for air assets used for maritime homeland defense to maritime services might constrain their use either in other theaters or for other missions. We could avoid this problem by assigning responsibility for organizing, training, and equipping these forces to the Air Force.

Conclusion

The Air Force needs to start thinking about its role in maritime defense now. The fact that Air Force forces are already spread thin by virtue of air defense requirements at home and the war on terror abroad may drive resistance to picking up a new mission. Upon close inspection of this matter, however, we find that only modest investments of current Air Force assets can produce a significant increase in maritime-defense capability. We would need a limited number of long-range surveillance missions for prescribed time periods (defined by intelligence and availability of the surface fleet) to find and track suspect vessels. Similarly, placing a single long-range bomber on 24-hour alert status for maritime interdiction would ensure rapid, immediate, and long-range firepower. In both cases, these aircraft could operate out of their home bases, with no need to forward deploy to the coasts. We would have to make a slightly larger investment to provide maritime CAPs over US ports as the last line of defense. Although aircraft (whether fighter/attack, gunship, UAV, or helicopter) would need to fly CAP only a limited number of times, this mission would necessitate additional training. Regardless, placing limited numbers of aircraft (and required tanker support) on 24-hour alert status for CAP over major ports would guarantee minimal disruption. If intelligence ever indicated an increased maritime threat, aircraft could be added to the alert packages.

Over the longer term, the service that gains responsibility for developing land-based airpower capabilities for maritime defense will need to innovate. The enemy is adapting, and the threat of a maritime 9/11 is real. Innovative concepts of operation—such as using the V-22 for long-range maritime insertions—could significantly enhance maritime defense. Likewise, innovative technological advances—such as the development of nonlethal weapons—would increase military flexibility and bolster the nation's security. Although legitimate reasons exist for assigning responsibility for developing such innovations to the maritime services, equally valid reasons suggest giving this responsibility to the Air Force. Either way, we must act now. The armed forces and their civilian leadership must decide which service should provide airpower capabilities to defend the maritime domain against asymmetric threats. Failure to do so delays the development of the maritime defense that we so desperately need. ❑

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58. Carlos Urbizu, "Shielding Achilles' Heel: Challenges Facing Northern Command in the Maritime Domain" (master's thesis, Naval Postgraduate School, March 2004), 1.

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Air Force Mission Statement

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.

Dawn of the Cognetic Age

Fighting Ideological War by Putting Thought in Motion with Impact

Lt Col Bruce K. Johnson, USAF

Editorial Abstract: Colonel Johnson uses the term "cognetic" to mean putting thought into motion, ideally with global impact. Militant Islam has proven very adept at exploiting the cognetic realm to foment disillusionment and advance its agenda. The author urges the United States, starting with policy makers responsible for national security, to adopt and apply cognetic thinking in order to reorient US grand strategy so that the nation can wage and win ideological warfare.

THIS ARTICLE INTRODUCES the term *cognetic*, coined by the author from the root words *cognitive* (relating to thought process) and *kinetic* (relating to, caused by, or producing motion). Currently, the term lacks a single, accepted meaning. I intend to use it in a unique way in order to define the essence of today's fast-moving, unrestrained, nonstop global media (the Internet and transnational television) and their effect on public opinion and behavior. To be cognetic is to put *thought* in *motion* with *impact*. Thought takes the form of messages created by specific arrangements of images, sounds, and words. Motion signifies the global media's unrestrained and rapid movement of messages to a target audience. Impact represents the effect on public opinion and behavior

caused by perceptions generated by the message. Violent public reactions in the Muslim world to the publication of cartoons depicting Muhammad in the Danish newspaper *Jyllands-Posten* and to Pope Benedict XVI's remarks about Islam epitomize the term *cognetic*—putting thought in motion with a global impact.[1] Unlike bombs and bullets—the effective conventional weapons of the Industrial Age—imagery, sounds, and words serve as the effective ideological weapons of the Cognetic Age.

The US government recognizes the importance of the ideological component of its war with militant Islam, calling it a battle of ideas, but lacks a shared, systematic way to conceptualize, communicate, and carry out this type of war. Top-level US strategy documents, such as the *National Security Strategy*, *National Strategy for Combating Terrorism*, and *Quadrennial Defense Review Report* all state the importance of countering militant Islam's ideology.[2] However, the United States continues to emphasize tangible, conventional military solutions to fight an intangible war of ideas while pursuing security policies counterproductive to building and maintaining public support. Symptomatic of an unsustainable and ineffectual grand strategy, these facts are largely responsible for increasing the strain on the military and for rapidly decreasing domestic and international support for the "long war."

This article advocates adopting cognetic thinking to create a shared, systematic way of conceptualizing, communicating, and carrying out ideological warfare against militant Islam. It does so by applying principles of maneuver warfare so that we can understand our enemy's use of global media as an ideological weapon of mass influence. Additionally, it encourages the use of cognetic thinking to conduct a rigorous risk-versus-return analysis of post-9/11 security policies vis-à-vis militant Islam in an effort to create a sustainable and effective grand strategy to win the long war. This requires championing policies that constructively build and maintain US and allied resolve to fight, attract the uncommitted to our side, and drain away militant Islam's desire to continue fighting.

Understanding militant Islam's use of global media as an operational weapon of mass influence requires understanding the nature and dynamics of ideological warfare in the Cognetic Age. Doing so necessitates building a lens to see the underlying operational doctrine used by enemy forces to carry out ideological war. Looking through this lens, national-security policy makers will find themselves in a better position to formulate policies, strategies, and doctrines needed to promote an effective wartime grand strategy for the long term with an eye toward shortening the war. To build this lens, we need shared terminologies, concepts, and principles to help us think differently and communicate clearly about the ideological war.

Think Differently—Communicate Clearly

Adopting shared terminologies, concepts, and principles is critical to developing a new capability for ideological warfare if the military services and various government agencies wish to avoid the misperceptions and negative baggage associated with old terminology and thinking. Many terms and concepts held over from the Industrial Age prevent us from thinking and communicating clearly about new threats we face in the Cognetic Age. For example, *propaganda* does not fit today's *decentralized* information-communication environment because we associate it with the *centralized control* and management of information and communications that reflected the concentration of power during the Industrial Age. With the advent of the Internet and globalization, this concentration of power no longer exists in the hands of the few; indeed, many people now have access to it. This shift in power is the defining feature of the Cognetic Age. Moreover, considerable negative baggage has attached itself to *propaganda*, a word continually used to describe almost any activity having to do with influencing perceptions, whether for good or ill. This intellectual burden stifles our ability to fight ideological war by tying our minds and tongues to the dogmas of the past. By providing perceptually neutral terms and concepts, cognetics eliminates the knee-jerk reaction to propaganda, thus freeing our

minds and enabling us to think differently as well as communicate more clearly about the ideological battle we face.

Cognetics is a new concept of ideological warfare, based on principles of maneuver warfare. Referred to as "blitzkrieg of the mind," it occurs in a virtual place created by global media. Time and space, which constrain physical maneuver, are almost nonexistent here. The term *cognetic effect* expresses how the emotive content of messages delivered by global media influences public opinion and behavior. A force multiplier, cognetic effect empowers nonstate actors to influence public opinion and behavior on a global scale. By means of cognetics, the United States can win ideological warfare by advancing truth, dispelling rumors, correcting misinformation, and combating enemy psychological operations and perception influence. For militant Islam, the cognetic effect offers disproportionate power to drive people to action. Seen most vividly, the cognetic effect of the *Jyllands-Posten*'s Muhammad cartoons struck the Muslim world like a meteor, setting off shock waves of anger and sparking violent demonstrations from London to Lahore.

Nature and Dynamics of the Cognetic Age

Opening the window of understanding to this dawning age requires a new interpretation of warfare—one better suited for the nonstop global-media environment. In this environment, the nature and dynamics of warfare take on different forms and emphases as the conventional concepts of ordnance, delivery platforms, and targets quickly morph from the physical to the virtual.

Warfare

The nature of warfare in the Cognetic Age is ideological—something inherently antithetical to conventional war because "an idea cannot be destroyed with a bullet or a bomb; it must be replaced by a better idea."[3] On a deeper level, militant Islam's belief system runs counter to that of the civilized world. A self-admitted al-Qaeda member, commenting on the Madrid train bombings in 2004, summed up the opposing systems by saying, "We choose death while you choose life."[4] Given this mind-set, threatening militant Islamists with death will not deter them because that is what they seek.

Furthermore, under the intense media spotlight of the Cognetic Age, just a flash of an image can neutralize conventional military power. Pictures of dead women and children, the "collateral damage" of war, carry more explosive weight than a B-52—a weight measured not in tons of explosives but in negative perception, which translates to reduced public support for government policies and initiatives. Acting like a ball and chain, reduced support impairs the ability of governments to prosecute a long-term war without suffering significant political consequences. Likewise, unintended killing and maiming of civilians only motivate the uncommitted to join the fight, creating an uncontainable spiral of events that depletes limited resources and hinders the ability of the United States and its allies to sustain the level of effort required to kill and capture new recruits. An operation that kills five insurgents is counterproductive if collateral damage leads to the recruitment of 50 more.[5]

The US defeat in Vietnam, as well as continuing political and military difficulties in Afghanistan and especially Iraq, underscores the limits of America's hard-won conventional military supremacy. That supremacy has not delivered decisive success against nonstate enemies who practice protracted irregular warfare. On the contrary, America's conventional supremacy and approach to war—especially its paramount reliance on firepower and technology—often prove counterproductive.[6]

It follows, then, that our overreliance on conventional war—the kind for which we have spent trillions of dollars to organize, train, and equip—cannot produce the decisive results we seek. In fact, this overreliance prolongs the war by continually feeding new recruits into the Islamic cult of death. Conventional warfare in the Cognetic Age has clearly lost its efficacy. Internalizing this stark reality is the

most important step in changing the way we think about and approach the current war.

Ordnance and Content

The physical weapons of the Industrial Age—plane, tank, and rifle—use a wide variety of ordnance, including bombs, shells, and bullets specially designed to create specific effects on specific targets. Similarly, the virtual weapons of the Cognetic Age (the Internet and transnational television) have a wide variety of content (imagery, sounds, and words) specially designed to create specific psychological and behavioral effects on specific audiences. Cognetics offers a needed alternative to conventional-warfare thinking; it provides the means to effectively engage militant Islam ideologically by using images, sounds, and words—the ordnance of choice in this new age.

Delivery Platforms: Global Media

Many terror groups have media capabilities to propagate their ideology and launch cognetic attacks against their enemies. Hezbollah was the first organization of its kind to establish its own international television station, Al-Manar, for use as an operational weapon and an integral part of its plan to reach not only the citizens of Lebanon but also the broader Arab and Muslim worlds.[7] Al-Manar employs sophisticated methods to influence public opinion and behavior, targeting every segment of Palestinian society, beginning with children. Hezbollah seeks to incite and mobilize people to take action against Israel and the United States, specifically by propagating repetitive messages of hate and violence designed to induce the young and impressionable to join the cult of death or, at a minimum, induce sympathy for Hezbollah's cause.

Al-Manar officials assert that they strive to create music videos with the level of professionalism that they see on US television networks, specifically Music Television (MTV). The videos tend to feature violent images and incendiary language designed, by the station's own admission, to foster suicide operations by inciting individual viewers to violence. Ayat al-Akhras, a young Palestinian, reportedly watched Al-Manar incessantly before blowing herself up in front of a Jerusalem supermarket in March 2002, killing two Israelis and wounding 28—a chilling example of cognetics putting thought into motion with a deadly impact.[8]

Like Hezbollah, al-Qaeda promotes its long-term strategic agenda through a public-relations and media production company known as As-Sahab. Osama bin Laden uses As-Sahab to address the governments and citizens of Europe as well as the United States directly in an effort to discourage support for their foreign policies in the Islamic world. In the absence of major attacks, As-Sahab has become al-Qaeda's only means of making a strategic impact on the world outside the Afghan-Pakistani border region.[9] Al-Manar and As-Sahab are examples of the multitude of militant organizations that make use of global media to promote their strategic goals. The absence of a capability to defend the United States against cognetic attacks means that these organizations go unchallenged as they influence public opinion and behavior with their messages of hate and incitements to violence.

Target: Public Opinion

Abraham Lincoln once observed that "our government rests in public opinion. Whoever can change public opinion, can change the government, practically just so much."[10] His message cuts to the heart of a major lesson of war, namely, that those who most effectively master the medium of communication which influences public opinion can determine the outcome of wars. Many examples from our own short history reinforce this statement.

During the London blitz of World War II, CBS reporter Edward R. Murrow effectively built US public support for coming to the aid of Great Britain by bringing the war and stories of British heroism into the living rooms of America: "He was just a journalist, but he realized he could use the young medium of radio to galvanize public opinion and push US policy makers."[11] One analyst noted that "the Tet Offensive of February 1968 had a huge impact on American public opinion and led to substantial changes in American support for the

[Vietnam] war."[12] North Vietnamese leader Ho Chi Minh, enabled by widespread television reporting, grabbed a psychological victory from the jaws of military defeat. His perceived victory decisively undermined American public support for continuing the war, leading to the eventual withdrawal of US forces in 1973 and the collapse of South Vietnam in 1975.

Viewing today's situation in the context of these past examples underscores the use of global media—the most effective communication means available—by adherents of militant Islam as a strategic weapon of mass influence. They use these weapons to attack America's spirit, morale, and value system—our psychological center of gravity—to influence public opinion and behavior. The enemy seeks to do so through tactical, media-amplified terror and intimidation operations in an attempt to force us to do his will by abandoning our vital strategic interests in the Middle East.

Ironically, mainstream media becomes an accessory to militant Islam's messages of terror and hate through repetitive broadcasting to the Western viewing public. The number of mainstream-media channels massively amplifies and disperses terror, directly aiding the assault on America's psychological center of gravity. Furthermore, US government actions perceived to run counter to its culture and values offer militant Islam opportunities to exploit the moral level of war to its advantage. Hot-button issues such as the abuses at Abu Ghraib prison, indefinite detention and alleged torture at Guantánamo, secret CIA prisons, and apparent favoritism toward Israel, among others, fuel a highly negative, charged background, opening the United States up to increasingly powerful cognetic attacks.

Building the Cognetic Lens

Throughout military history, two distinct styles of warfare have existed: attrition, based on firepower, and maneuver, based on movement.[13] These fighting styles reside at opposite ends of the spectrum of warfare. Attrition-style warfare includes such bloody slugfests as the American Civil War and World War I, whereas Hannibal's victory over the Romans at Cannae and Germany's blitzkrieg invasions of Poland and France during World War II typify maneuver warfare.[14]

Warfare by maneuver stems from a desire to circumvent a problem by attacking it from a position of advantage rather than meeting it straight on. With its goal the application of strength against weakness, maneuver, by definition, relies on speed and surprise because without either, one cannot concentrate strength against an enemy's weakness. Tempo, itself a weapon—often the most important—in turn requires decentralized control. Although attrition operates principally in the physical realm of war, maneuver produces both physical and moral results. Maneuver seeks not so much to destroy physically as to shatter the enemy's cohesion, organization, command, and psychological balance.[15]

Maneuver warfare focuses on the human (moral-psychological) element—the true center of gravity of any type of warfare—making it an excellent basis for cognetics. On close inspection, the principles of maneuver warfare largely apply to the way militant Islam employs global media to carry out cognetic attacks on public opinion. Drawing on these similarities, the following five principles help build a lens needed to see how militant Islam uses global media as an ideological weapon.

Principle One: Speed and Surprise to Pit Strength against Weakness

In the opening stages of World War II, Germany launched surprise invasions of Poland, Norway, Denmark, Belgium, Holland, and France. The Germans bypassed enemy strong points—such as the Maginot Line—and, using tanks and airplanes with radio communication, punched through enemy weaknesses. They followed the path of least resistance, drove deep into the enemy's rear, cut lines of communication, disrupted movement, and paralyzed command-and-control systems. German forces moved so fast that the enemy simply could not understand what was happening and came unglued.[16]

Unable to attack the United States directly since 9/11, al-Qaeda uses global media to bypass the strength of our homeland defenses, follow the path of least resistance through our open society, and attack our psychological center of gravity. Because we do not censor the Internet or transnational television, images of death and destruction from terror attacks speed unimpeded (like Germany's tanks and aircraft) across the flat plains of the global media directly to our TV screens and computer monitors, delivering a mental blitzkrieg attack measured not in explosive weight but in the weight of perception.

Principle Two: Tempo

The decisive application of maneuver warfare requires operating at a faster tempo by staying one or two steps ahead of the enemy—specifically by acting inside the enemy's time scale, generating a rapidly changing environment by engaging in quick, disorienting activity that appears uncertain or ambiguous to the enemy. A sufficiently fast tempo inhibits the adversary's ability to adapt and creates confusion, which in turn causes the enemy to over- or under-react. Whoever can handle the quickest rate of change survives.[17]

Members of militant Islam can easily stay two steps ahead by using the speed of global media to launch cognetic attacks. They do so unimpeded and with great speed, enabling them to lash out at their enemies worldwide with near-instantaneous psychological effect. Unencumbered by the physical size and weight of conventional military hardware or the endemic sloth of government bureaucracy, they set their own tactical and operational tempo and compress time by generating a rapidly changing environment. Conversely, strategically speaking, militant Islam uses a longer time scale. By its own admission, al-Qaeda employs a strategy of exhaustion, forcing the United States to expend resources and effort in an open-ended struggle outside our time scale.

Principle Three: Decentralized Control

Unleashing the power of maneuver warfare requires breaking the centralized command-and-control system into multiple, independently acting, decentralized elements focused on the same goal. For decentralization to work, subordinate commanders must make decisions on their own initiative, based on their understanding of the senior's intent, rather than pass information up the chain of command and wait for a decision. Further, a competent subordinate commander at the point of decision will naturally have a better appreciation for the true situation than a senior at some distance removed. Individual initiative and responsibility are of paramount importance.[18] Similarly, militant Islamic groups use the decentralized nature of the Internet to launch cognetic attacks simultaneously on many fronts. Broadly, these groups share the same goal—to overturn the current order of things and replace it with one of their choosing.

Principle Four: **Fingerspitzengefuhl**

Someone possessing the quality of *Fingerspitzengefuhl*, literally "fingertip feeling," has such a high level of competence that he or she can make decisions without hesitation, based on intuitive competence at all levels—from private to general. In addition to proficiency with weapons at the individual level, "intuitive competence" also applies at command level, where it refers in general to the "feel" that great commanders have for the progress of the battle and in particular to their seemingly uncanny abilities to detect and exploit openings while they still present opportunities. It comes from years of practice at ever-increasing levels of complexity.[19]

Principle Five: **Schwerpunkt**

Carl von Clausewitz introduced the term *Schwerpunkt*, sometimes loosely translated as "center of gravity," in his classic book *On War*.[20] Over time, the word shifted in meaning somewhat until by World War II, German general Heinz Guderian used it to orchestrate a new form of decentralized warfare called blitzkrieg. For Guderian, *Schwerpunkt* represented a unifying concept that provided a way to rapidly shape focus and direction of effort as well as harmonize support activities with combat operations,

thereby permitting a true decentralization of tactical command within centralized strategic guidance—without losing cohesion of the overall effort.[21]

In terms of cognetics, successfully applying these principles requires first knowing the *Schwerpunkt* to bring a decentralized group together for a common cause. Once each independent element of the group understands the focus of effort, it is free to act according to the on-scene commander's feel for the situation (*Fingerspitzengefuhl*). Doing so helps the entire enterprise achieve harmony of action, allowing on-scene commanders to take the initiative, control tempo, and maximize speed and surprise to pit strength against weakness when opportunities present themselves. In today's relentless media environment, employing these principles will enable national-security policy makers to first see and understand the contours and dynamics of the Cognetic Age. Once they understand, they will find themselves in a better position to mitigate cognetic effects and employ cognetic thinking to wage ideological warfare.

Looking through the Lens

Samuel B. Griffith's translation of *The Art of War* offers insight into how Sun Tzu sought to win without fighting, eerily paralleling how militant Islam and other US foes employ cognetics to divide and conquer America and its allies. According to Griffith, "The master conqueror *frustrated his enemy's plans* and *broke up his alliances*. He *created cleavages* between sovereign and minister, superiors and inferiors, commanders and subordinates. His spies and agents were active everywhere, gathering information, sowing dissension and nurturing subversion. The enemy was *isolated and demoralized*; his *will to resist broken*. Thus *without battle his army was conquered, . . . his state overthrown*" (emphasis added).[22]

By examining a cross section of significant terrorist attacks since 9/11 through the cognetic lens, one clearly sees that militant Islam is pursuing a cohesive and comprehensive strategy similar to Sun Tzu's. This strategy relies upon the media amplification of violence and threats of violence to divide and conquer the "coalition of the willing" and create cleavages between the American government and its people. The following examples exhibit principles of cognetics used to carry out Sun Tzu's strategy of winning without fighting.

Frustrate Plans

The daily news is filled with negative stories about Iraq and Afghanistan, giving a strong perception that US plans to bring democracy to the Middle East are being frustrated. Unquestionably, both Iraq and Afghanistan remain central to the war on terror; Pres. George W. Bush has said so repeatedly. Al-Qaeda and its affiliates understand this and do their utmost to confound US plans. Allowing democracy to take root would signal a major strategic blow to our adversaries. Conversely, failure of democracy to take hold in Iraq and Afghanistan would stymie the American goal of promoting it as the antidote to militant Islam's ideology.

Break Up Alliances

On 11 March 2004 and again on 7 July 2005, loosely affiliated terror groups inspired by al-Qaeda's *Schwerpunkt* of resurrecting the Islamic caliphate carried out large, well-coordinated surprise attacks that struck at the hearts of Madrid and London, killing hundreds and wounding thousands of civilians. The attacks galvanized the populations of each country, aided by widespread, real-time media coverage. The repeated images of death and destruction magnified the psychological effect of each attack. Both were timed for maximum impact.

In terms of *Fingerspitzengefuhl*, al-Qaeda made the most of leveraging the Madrid train-bombing terror attacks immediately before the Spanish election by successfully focusing the weight of Spanish voter perception against the pro-American ruling party of José Maria Anzar to elect the antiwar Socialist José Zapatero. Shortly after the election, Spain pulled its troops out of Iraq. As for the British, large-scale opposition to the war jumped to new heights following the attacks of 2005. The online newspaper *Telegraph* reported one year

after the London bombings that 80 percent of those polled believed that England should split from the United States and pursue its own course in the war on terror.[23] Both examples highlight militant Islam's use of cognetics to pursue its strategic goals by attacking populations directly and amplifying the psychological effect of vulnerability through the media in an already negatively charged atmosphere to undermine US foreign policy.

Cause Cleavages

In terms of causing cleavages within the American electorate and government, a quick tour of the headlines since 9/11 bears witness to Griffith's observation of Sun Tzu's methods. A significant turn of events marks the years since 9/11. Initially, President Bush attained a popularity rating in excess of 80 percent, along with solid bipartisan support for an aggressive response to the terrorist attacks. Fast-forwarding to November 2006, we see a deeply divided electorate dropping that rating to less than 40 percent, resulting in a tectonic shift in leadership that transferred power from Republicans to Democrats in both the House and Senate.[24]

Conclusion

By its very nature, every form of warfare is competitive. Winning requires finding and employing the most effective means of gaining an advantage over the opponent. In the Cognetic Age, the global media's power to influence vast numbers of people worldwide gives militant Islam an advantage over the West in the ideological war.

Continuing at a disadvantage by emphasizing conventional military solutions to fight an ideological war will only draw out this conflict. Thus, counteracting the long-war premise requires a decisive change in thinking to reorient our current grand strategy away from its heavy emphasis on conventional military force toward one that focuses on fighting an ideological war. This does not mean abandoning the punishing stick of military force. We will still need it for coercive effect to some degree, but it will not win the war. To win, we must neutralize militant Islam's advantage in the global media.

Doing so takes new thinking. Cognetics gives us both the system to think within and a way to conceptualize ideological warfare. Based on the well-known doctrine of maneuver warfare, cognetics lends itself to the decentralizing world. Business, finance, manufacturing, and the service industries, to name a few, are undergoing massive change due to the decentralization of information and the pressure to compete in a dynamic environment.

After six-plus years of war, the time has come for the US government to take advantage of decentralization by employing global media to fight the ideological war. To do so, it must adopt the new terminology, concepts, and principles of cognetics. More importantly, our leadership must leave behind the Industrial Age–centralized mind-set, along with its outdated terminologies and concepts, and embrace a new way of thinking better suited to fighting ideological war in the Cognetic Age by putting *thought* in *motion* with *impact*.

Recommendations

We must adopt cognetic thinking to create a shared, systematic way of conceptualizing, communicating, and carrying out ideological warfare against militant Islam. The top US strategy documents all recognize that winning the war against this foe requires winning the battle of ideas. Cognetics provides the terminology, concepts, principles, and system needed to harmonize diverse government entities into a coherent and cohesive whole, thus enabling the government to mount a well-coordinated and effective ideological assault on militant Islam.

Moreover, we must reorient US grand strategy to create a sustainable and effective strategy needed to win the long war by conducting a thorough risk-versus-return analysis of post-9/11 security policies that apply cognetic thinking. We must ask tough questions to determine whether our policies promote or hinder our ability to maintain the vital support of the American people and our allies for con-

ducting a long war. Our leadership plainly states that we are engaged in such a war, possibly lasting a generation or longer. Our grand strategy must reflect this basic assumption. Therefore, policy objectives must bolster our resolve to continue the struggle, attract the uncommitted to our side, and drain away militants' resolve to continue the struggle. If our policies support the objectives, we should stay with them; if they do not, we must change them. ❑

Notes

1. The *Jyllands-Posten* controversy began after 12 editorial cartoons, most of which depicted the Islamic prophet Muhammad, were published in this Danish newspaper on 30 September 2005. *Wikipedia: The Free Encyclopedia*, s.v. "Jyllands-Posten Muhammad Cartoons Controversy," http://en.wikipedia.org/wiki/Mohammed_cartoons. The Pope Benedict XVI controversy arose from a lecture he delivered on 12 September 2006 at the University of Regensburg in Germany. The lecture received ample doses of both condemnation and praise from political and religious authorities. *Wikipedia: The Free Encyclopedia*, s.v., "Pope Benedict XVI Islam Controversy," http://en.wikipedia.org/wiki/Pope_regensburg_speech.

2. According to the national security strategy of 2006, "In the long run winning the war on terror means winning the battle of ideas." *The National Security Strategy of the United States of America* (Washington, DC: The White House, March 2006), http://www.whitehouse.gov/nsc/nss/2006/nss2006.pdf. See also *National Strategy for Combating Terrorism* (Washington, DC: Executive Office of the President, September 2006), http://hosted.ap.org/specials/interactives/wdc/documents/wh_terror060905.pdf; and *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 6 February 2006), http://www.defenselink.mil/pubs/pdfs/QDR20060203.pdf.

3. Insight provided by Col Gary L. Crone, chief, Air Force Reserve Strategy Division, Pentagon, Washington, DC.

4. Steven Stalinsky, "Dealing in Death: The West Is Weak Because It Respects Life? Too Bad," *National Review Online*, 24 May 2004, http://www.nationalreview.com/comment/stalinsky200405240846.asp. On the morning of Thursday, 11 March 2004, 10 explosions occurred at the height of the Madrid rush hour aboard four commuter trains, killing 200 people and wounding scores more. *Wikipedia: The Free Encyclopedia*, s.v. "2004 Madrid Train Bombings," http://en.wikipedia.org/wiki/Madrid_Train_Bombing#Description_of_the_Bombings.

5. Field Manual 3-24 / Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*, December 2006, 1–25, http://www.fas.org/irp/doddir/army/fm3-24.pdf.

6. Jeffrey Record, *The American Way of War: Cultural Barriers to Successful Counterinsurgency*, Policy Analysis no. 577 (Washington, DC: CATO Institute, 1 September 2006), 1, http://www.cato.org/pubs/pas/pa577.pdf.

7. Avi Jorisch, *Beacon of Hatred: Inside Hizballah's al-Manar Television* (Washington, DC: Washington Institute for Near East Policy, 2004), xiii, xiv.

8. Ibid., xv–xvi.

9. "As-Sahab: Al Qaeda's Nebulous Media Branch," *Stratfor Crisis Center*, 8 September 2006, https://www.stratfor.com/offers/alerts/index.php?ref=FOX&camp=stratforalert&.

10. Douglas L. Wilson, *Lincoln's Sword: The Presidency and the Power of Words* (New York: Alfred A. Knopf, 2006), 145.

11. Philip Seib, *Broadcasts from the Blitz: How Edward R. Murrow Helped Lead America into War* (Washington, DC: Potomac Books, 2006), ix.

12. John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: University of Chicago Press, 2005), 167.

13. US Marine Corps Staff, *Warfighting: The U.S. Marine Corps Book of Strategy* (New York: Doubleday, 1994), 35.

14. Hannibal's Carthaginian army annihilated a numerically superior Roman army. Although the battle failed to decide the outcome of the war in favor of Carthage, today it is regarded as one of the greatest tactical feats in military history. *Wikipedia: The Free Encyclopedia*, s.v. "Battle of Cannae," http://en.wikipedia.org/wiki/Battle_of_Cannae. Kenneth Macksey, *Guderian: Panzer General*, rev. ed. (Mechanicsburg, PA: Stackpole Books, 2003), 80–96, 97–126.

15. Ibid., 36–37.

16. Ibid., 333.

17. Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (Boston: Little, Brown and Company, 2002), 328.

18. US Marine Corps Staff, *Warfighting*, 78–79.

19. Chester W. Richards, *A Swift, Elusive Sword: What If Sun Tzu and John Boyd Did a National Defense Review?* (Washington, DC: Center for Defense Information, May 2001), 27, http://www.cdi.org/mrp/swift_elusive_sword.rtf.

20. See *Vom Kriege* (Berlin: Dümmlers Verlag, 1932), http://www.clausewitz.com/CWZHOME/VomKriege/VKTOC2.htm. The English version translates *Schwerpunkt* with a number of subtle variations ranging from *center of gravity* and *center of attraction* to *center of effort*.

21. John R. Boyd, "Patterns of Conflict [December 1986]," slide 78, *Defense and the National Interest*, January 2007, http://www.d-n-i.net/boyd/patterns.ppt.

22. Sun Tzu, *The Art of War*, trans. Samuel B. Griffith (Oxford: Clarendon Press, 1963), 39.

23. Toby Helm and Philip Johnston, "Ditch US in Terror War, Say 80pc of Britons," *Telegraph.co.uk*, 17 August 2006, http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/08/17/nterror17.xml.

24. "President Bush: Job Ratings," *PollingReport.com*, http://www.pollingreport.com/BushJob1.htm.

Doctrine Note

New USAF Doctrine Publication

Air Force Doctrine Document 2-3, *Irregular Warfare*

Michael Dietvorst

AS AIRMEN, WE have a unique warfighting perspective shaped by a century-long quest to gain and maintain the high ground. We must be able to articulate Air Force capabilities and contributions to the irregular warfare [IW] fight, with its unique attributes and requirements. Employed properly, airpower (to include air, space, and cyberspace capabilities) produces asymmetric advantages that can be effectively leveraged by joint force commanders in virtually every aspect of irregular warfare." So reads a portion of the foreword by Gen T. Michael Moseley, chief of staff, to the new Air Force doctrine publication: Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, 1 August 2007.

The new publication notes that "the United States' overwhelming dominance in recent conventional wars has made it highly unlikely that most adversaries will choose to fight the US in a traditional, conventional manner. Thus, for relatively weaker powers (including non-state entities) irregular warfare . . . has become an attractive, if not more necessary, option. IW presents different challenges to our military and to the Air Force. . . . It will also increase Airmen's understanding of the different nature inherent in IW" (1).

Embracing the definition of the IW joint operating concept, AFDD 2-3 defines IW as "a violent struggle among state and non-state actors for legitimacy and influence over the relevant populations," adding that it "is not a lesser-included form of traditional warfare. Rather, IW encompasses a spectrum of warfare where the nature and characteristics are significantly different from traditional war. . . . Traditional warfare and IW are not mutually exclusive; both forms of warfare may be present in a given conflict" (1, 3). Along with ongoing counterterrorism, shaping, and deterring activities, the document includes information about counterinsurgency (COIN); support to COIN; and support to insurgency activities.

AFDD 2-3 highlights Air Force capabilities and outlines how they should be employed, addressing seven of the 17 Air Force functions (described in AFDD 1, *Air Force Basic Doctrine*, 17 November 2003):

- building partnership capacity: a strategy to obtain "international cooperation and commitment" (27).
- intelligence: "may constitute the primary function of . . . [airpower] in IW" (30).
- information operations: "the integrated employment of . . . influence operations . . . [with] electronic . . . and network warfare operations" (36).
- air mobility: "essential when . . . supporting US ground forces . . . and enabling [partner nation] capabilities" (40).
- agile combat support: "a unique support capability of the Air Force" (41).

- precision engagement: "includes the full spectrum of capabilities . . . to precisely achieve effects in support of the desired end state" (44).
- command and control: "not only critical to Air Force operations but . . . also critical for [building partnership capacity]" (46).

AFDD 2-3 also includes a chapter on strategy and planning as well as an appendix on the topic of understanding insurgencies.

The doctrine in this document is authoritative but not directive. Therefore, when carrying out their missions, commanders need to consider both the contents of this AFDD and the particular situation. Airmen should read the document, discuss its content, and put its guidance into practice. AFDD 2-3 describes Air Force capabilities and operations required to effectively defend and counter adversaries. Due to the political nature of IW, Airmen must be able to articulate those capabilities to civilian leadership and decision makers. Although this document focuses on Air Force doctrine, IW inherently remains a joint and interagency fight. ❑

The Airman's Creed

I am an American Airman. I am a warrior. I have answered my nation's call.

I am an American Airman. My mission is to fly, fight, and win. I am faithful to a proud heritage, a tradition of honor, and a legacy of valor.

I am an American Airman, guardian of freedom and justice, my nation's sword and shield, its sentry and avenger. I defend my country with my life.

I am an American Airman: wingman, leader, warrior. I will never leave an Airman behind, I will never falter, and I will not fail.

Book Reviews

Vietnam Diary: From inside Air Force Headquarters by Dr. Herman L. Gilster. RoseDog Books (http://rosedogbooks-store.stores.yahoo.net/index.html), 701 Smithfield Street, Pittsburgh, Pennsylvania 15222, 2005, 370 pages, $30.00 (softcover).

Herman Gilster was a lieutenant colonel with a Harvard PhD in economics when he left the faculty at the Air Force Academy for Vietnam. He arrived at Headquarters Seventh Air Force outside Saigon in November 1970. The air war had been raging for over six years by that point; the cataclysmic Tet offensive that broke American political will was two years past; and the bulk of US attack sorties were directed against enemy supply lines—the Ho Chi Minh Trail—stretching through Laos and into South Vietnam. The bombing of North Vietnam had halted in November 1968. Gilster served on the headquarters staff for one year, attempting to analyze the effects of those thousands of interdiction sorties. Clearly, it was a frustrating experience, and this book reproduces his diary of that year.

Like many Americans, by 1970 Gilster had begun to lose faith in the utility and perhaps even the morality of the Vietnam War. The first impression of his new home was not favorable: "This base is one of the ugliest, filthiest, dirtiest places I have seen. . . . Sandy was also right about it smelling so bad over here" (p. 11). As for our South Vietnamese allies: "This is really a good-for-nothing lazy bunch of people and it makes me mad to be over here away from my family defending them and they won't do a thing for themselves" (p. 73). Remember, however, that Gilster saw very little of Vietnam or its people beyond the confines of the air base at Tan Son Nhut.

This is a rather numbing account of each of the 365 days Gilster spent in Vietnam, attempting to understand air operations, analyze them, and pass on useful advice to his superiors. In truth, there are few insights here into how the air war was planned and conducted. It appears that Gilster spent the bulk of his time preparing briefings and slides for his boss, who in turn briefed the Seventh Air Force operations chief and the commander. His boss, a colonel referred to here simply as D1, is portrayed as a bit of dunderhead, seldom taking Gilster's advice or sharing his insights. Consequently, the war continued to lurch along with little purpose and even less positive effect: "The trouble is no one thinks. Everyone is just stewing around with numbers trying to justify their existence" (p. 162).

Surprisingly, Gilster provides almost no statistics in this book dealing with statistical analysis. He mentions econometric concepts and regression analysis, complaining that most commanders and high-ranking staff officers did not understand such things. But he never makes a case as to why such methodologies should have been used or explains that they would have produced different air-campaign plans—and, more importantly, different results. Nonetheless, he raises some useful thoughts. What was the meaning and importance of the reams of statistics generated by intelligence agencies during the war? Reading Gilster's account, one is forced to conclude that the majority of such statistical analyses were grossly in error—various offices and agencies could not even agree on the most basic numbers, such as the number of sorties flown and the types of ordnance dropped. Yet entire books have based their arguments on these tainted numbers. I might add that Gilster's account does not indicate whether the numbers were slanted either deliberately or in a particular direction (i.e., it does not appear that the books were cooked to make US air operations appear more or less successful than they actually were). They were simply wrong.

One must also say that the people generating the statistics were not fools; nor were they limited to counting on their fingers—computers were available both in-country and in Washington. Yet,

argues Gilster, the data amassed were generally of the wrong type, erroneously crunched, and improperly analyzed. How could the most powerful and most technically advanced nation in the world make such amateurish blunders?

Gilster provides no clear answers, but the question remains a vital one. The United States is now engaged in a global war on terror, and the enemy is ubiquitous, clever, and adept at using the most modern information technology. Are our present analytical tools and methods any better today than they were during the Vietnam War? Let us hope so.

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The Regulars: The American Army, 1898–1941 by Edward M. Coffman. Belknap Press of Harvard University Press (http://www.hup.harvard.edu/index.html), 79 Garden Street, Cambridge, Massachusetts 02138, 2004, 528 pages, $35.00 (hardcover); 2007, $21.95 (softcover).

With the publication of *The Regulars*, Dr. Edward M. Coffman—professor emeritus of history at the University of Wisconsin–Madison—has completed his two-volume social history of the US Army from 1784 to 1941. The current book is a fitting and worthy companion to the first volume, *The Old Army: A Portrait of the American Army in Peacetime, 1784–1898* (Oxford University Press, 1986). In the present book, Coffman charts the lives of Army officers and soldiers, specifically regarding their efforts in transforming their institution from a frontier constabulary force to a modern army. Coffman argues that this transformation was due to the managerial revolution at the turn of the century, a revolution that affected almost every aspect of American society.

Coffman demonstrates once again his mastery of historical research. He not only exploited the vast riches in the National Archives, US Military History Institute, and Special Collections and Archives Division of the US Military Academy at West Point, New York, but also conducted more than 75 interviews. Furthermore, in the 1970s, he developed his own questionnaire, which garnered over 320 replies. Coffman has accumulated research material that only few other people—perhaps none—ever have. In short, it is an impressive achievement, and, fortunately, he has put his research to good use.

The book is extremely well written and convincingly creates a composite biography of the Army in the first half of the twentieth century as officers and soldiers morphed from an old service to a modern one, organized around management ideas that have played such an important part of this century as well as the last. Coffman is not content, however, with analyzing the combat arms of the Army (infantry, cavalry, artillery, air corps, and armored force); he takes the reader into the private lives of his subjects and re-creates their world. We are introduced to the early lives of such men as Joseph W. Stillwell, Omar Bradley, Forrest Harding, George S. Patton Jr., Jacob Devers, William H. Simpson, and many others. With these men, we are taken back to see what life was like serving in the Philippines, fighting in Europe during World War I, living during the lean years of the Great Depression, and mobilizing for total war in the late 1930s and early 1940s. In all, it is a compelling tale of an important phase of US Army history—one that contains many lessons about a military organization's response to vast social changes. Even an Airman would profit from this examination.

Coffman spends considerable time examining the birth of aviation within the Army. The story of this development helps explain much of the current organizational culture of the US Air Force. In addition, Coffman's analysis will render great service to the Airman who must work in an increasingly joint environment. After all, understanding the unique perspectives of fellow services and, subsequently, how these services can work together is one of the fundamental requirements for efficient and effective joint warfare. For the Airman or for those interested in a thorough understanding of Army history in the first half of the twentieth century, Coffman's *The Regulars* is the best place to start.

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Carriers in Combat: The Air War at Sea by Chester G. Hearn. Praeger Security International, Greenwood Publishing Group (http://psi.praeger.com), 88 Post Road West, P.O. Box 5007, Westport, Connecticut 06881-5007, 2005, 336 pages, $49.95 (hardcover).

Chester G. Hearn has published 18 books, most of them about maritime affairs and the American Civil War. *Carriers in Combat* purports to be the history of naval aviation, mostly that of the United States, with some attention to the subject in the Japanese and British navies. The first combat for

American naval aviation came in 1914 at Vera Cruz, Mexico. That makes the story over 90 years old. Hearn discusses the first 30 years or so in 228 pages and the last 60 in 52 pages. The whole book is not authoritative, but that part covering the postwar period is strictly superficial.

The author devotes the bulk of his attention to World War II, and it certainly behooves Air Force professionals to know something about naval aviation in that period. The naval officers that they will meet in joint assignments will be well versed in that part of their history, and Air Force officers can develop good relations if they too are conversant with the story. Moreover, since World War II, command of the sea has hardly been contested, and the mission of the Navy has increasingly become power projection ashore, especially since the collapse of the Soviet Union. Thus, aside from the takeoff and landing location, the missions of the two services have largely converged. But Air Force officers should look elsewhere for their knowledge.

At least Hearn does nothing to hide his prejudices, identifying aviators with all that is good and true in the Navy and painting everybody else as incompetent or worse. He is especially hard on Adm Raymond Spruance but is a stout fan of Adm Marc Mitscher. Spruance was not an aviator; Mitscher belonged to the first generation of aviators. Yet Spruance—victorious air leader of the Battle of Midway—comes in for criticism with regard to the Battle of the Philippine Sea because all of the Japanese carriers were not sunk, though by far the greater part of their airplanes went down, and three of the flattops followed them to the depths of the ocean. That was really the last chapter in the winning of air superiority in the Pacific (aside from the kamikaze problem). As Hearn reluctantly admits, the point is that Spruance's mission was the protection of the landing forces in the invasion of the Mariana Islands—which was accomplished. The author criticizes Adm Harry Fletcher for abandoning the landing forces at the time of the Guadalcanal invasion, and here he condemns Spruance for not abandoning them. It now appears that Spruance could have chased off after the retiring Japanese, but that is easier to see now than it was then. That is but one example of Hearn's blatant bias—never sufficiently recognizing that Adm Chester Nimitz was the Pacific commander. He too was not an aviator but seems to have done well enough. Furthermore, Adm Ernest R. King—chief of naval operations, stationed in Washington—escapes the author's wrath. King won wings, but he never served as a crew member since he was an O-6 (captain) when he went through pilot training at Pensacola.

Like the Bible, the *United States Strategic Bombing Survey* (*USSBS*) is so voluminous that it can be used to justify all sorts of sin. Hearn, who seems not to have delved very deeply into it, uses it to buttress his claim that aircraft carriers are the greatest conventional weapon in history without noting that the *USSBS* credits a combination of the submarine campaign and strategic bombing as being decisive against Japan. According to Hearn, the Army and Air Force (when he recognizes them at all) also ran in a minor way in that war, as well as in the combat we have had since then.

Bias and imbalance are not the only problems with this book. Every reviewer can nitpick every bibliography there ever was for its omissions. However, there are simply too many important ones here to ignore that problem. Hearn frequently refers to Adm U. S. Grant Sharp in connection with his tirades against Pres. Lyndon Johnson, who gets all the blame for the Vietnam fiasco. Yet he does not refer at all to Sharp's own book on that subject. He sides strongly with Sharp's view of things but does not point out that the good admiral was not an aviator any more than Spruance had been. Both the Navy and Air Force came out of the Vietnam War with the determination to change many things about their approaches to air war, yet Hearn seems to be building a stab-in-the-back legend, heaping all the blame on politicians in Washington. Here, he depends heavily upon secondary sources (almost all of them coming from naval people), especially articles in the US Naval Institute *Proceedings* (a worthy journal that every Air Force professional should know, but there is more to research than that). The author also omits Clark Reynolds's fine biography of Adm John Towers, whose story covers most of the same ground as this work—but does so authoritatively. Granted, Hearn cites the definitive work of Norman Friedman in his bibliography but does not show much evidence of having read it, as is the case with the work of Norman Polmar. I could go on and on with this, pointing to the works of Jeff Barlow, Eliot Cohen, Robert Futrell, and Conrad Crane, all of whom would make much better fodder for the Airman's professional reading program.

Finally, *Carriers in Combat* is full of mistakes of both a technical and historical nature. To cite only a few, Hearn at least implies that the *Saratoga* and *Lexington* of 1927 were powered by diesel engines; in fact, both were driven by steam turbines. He later says that the *Saratoga* suffered the flooding of three firerooms as a result of torpedo attack—without wondering why a diesel-powered ship would

need a fireroom! He mistakenly seems to identify the Navy's conversion from coal to oil with conversion to a diesel engine. Sometimes he calls the 20 mm gun a machine gun and elsewhere a cannon. (It is a cannon, with the dividing line at .60 caliber.) He suggests that the two great ships came on the line with 16 five-inch guns each. Actually, they did so with eight-inch cruiser weapons that were removed at the beginning of World War II in favor of more antiaircraft guns, those of the five-inch caliber among them. Later he confuses the USS *Enterprise* with the *Saratoga* and elsewhere equips them with 22 mm (instead of 20 mm) antiaircraft artillery guns. He calls sonar waves "supersonic" even though we know that the speed of sound is much faster underwater than in the air. He calls the Skyraider an evolution of the Dauntless. Far from it; the latter was a scout bomber, and the former came along much later, designed not only for bombing but also for the delivery of torpedoes. He claims that Nimitz went to Germany to study diesel engines to facilitate the conversion of the Navy from coal to oil. Quite wrong; the conversion had begun long before and had nothing to do with those engines. Rather, they were being studied as the surface power plants for submarines in a Navy that had already largely converted to oil. The author claims that the TBD Devastators were old and sluggish at the onset of war; they were sluggish all right—but not old. They had come on the line in 1937 and were only four years old at the time of Pearl Harbor, when the Royal Navy was still flying open-cockpit biplanes as torpedo bombers. In one place, Hearn asserts that tactics determined the outcome of the Battle of Midway (from time to time, he made me worry about whether he knows the difference between tactics and strategy); elsewhere he credits the victory to luck or the breaking of the Japanese codes. He credits the escort carrier with winning the campaign against German submarines but ignores the importance of breaking their code. Hearn describes the *Valley Forge* as having a displacement of 36,000 tons and the *Leyte* 21,000. Both were of the *Essex* class, the standard displacement of which was 27,000 tons. When he gets around to the Korean War, he misspells Gen Matthew Ridgway's name every time he uses it.

Again, I could go on and on. It is not good form to nitpick an author's work, but the errors in *Carriers in Combat* occur so frequently that one must suspect that Hearn simply did not do his homework, a problem which disqualifies this book from inclusion on Airmen's professional reading lists. Instead, they should try Raymond Buell's biography of Ernest R. King or that of Reynolds on Towers, cited above.

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Protecting Liberty in an Age of Terror by Philip B. Heymann and Juliette N. Kayyem. MIT Press (http://www-mitpress.mit.edu), 55 Hayward Street, Cambridge, Massachusetts 02142-1493, 2005, 160 pages, $20.00 (softcover).

Authors Heymann and Kayyem seek to provide specific guidelines for appropriate application of democratic principles to the prickly aim of finding and targeting substate terrorist networks, both at home and abroad. Far from a light read, *Protecting Liberty in an Age of Terror* is the updated culmination of debate, discussion, research, and policy recommendations by Harvard's Long-Term Legal Strategy Project for Preserving Security and Democratic Freedoms in the War on Terrorism. Comprised of an impressive list of legal minds, mid- and cabinet-level administration officials from both political parties, and British consultants, this panel met periodically over an 18-month period to discuss "the fundamental changes in domestic and international laws and accepted practices that have occurred since 9/11" (p. 2). Although the terrain is easily political, the authors have removed all traces of partisan sentiment to let the applicable laws, treaties, and traditionally accepted practices speak for themselves. Most people agree that war against terrorists should not compromise democratic liberty; nevertheless, the devil is in the details.

The authors, directors of the Harvard project, admirably address the obligatory lightning-rod issues of torture and detainment. No circumstances warrant disregarding the "due process prohibition against actions that U.S. courts find 'shock the conscience' " (p. 11), and there are no acceptable conditions allowing extradition to countries that will likely engage in torture. Substantive domestic and international precedents illuminate the blurry line between acceptable "highly coercive interrogation" (HCI) techniques and torture. Recognizing the inherent difficulty of the topic, the panel recommends that the US attorney general provide specific definitions of allowable HCI techniques, subject to congressional review and public scrutiny. Perhaps the most restrictive recommendation calls for requiring issuance of case-by-case HCI permission by a senior government official, a stipulation that

may severely reduce tactical intelligence available to troops in an active combat zone.

The panel also recommends clear application of US constitutional protections to noncitizen detainees unless a specific privilege would pose a threat to national security. Aside from the debate over civil liberties, a very practical motivation underlies this recommendation as well: a state cannot demand legal protection of its citizens abroad unless that state demonstrates similar consideration. If individuals are detained within an active combat zone, then they should be afforded the right of a tribunal to review justification for such detainment; if individuals are collected in an active combat zone but detained elsewhere, then they should be afforded the widest range of Fifth Amendment rights practicable. Finally, the panel recommends strongly against collecting individuals for detainment from within a cooperative foreign sovereignty. If adopted, these recommendations will drastically change the landscape of current American detainment policy.

Other less-publicized areas of the post-9/11 civil-liberty debate involve the government's right to obtain and use electronic data on citizens, corporations, religious and political groups, and legal aliens. The majority of the panel's conclusions are reasonable and well articulated, but one surprising recommendation gives pause: the board argues against collection or surveillance on US soil without specific judicial warrant, as in a criminal case. Although this requirement is certainly appropriate for individual surveillance, the counterterror proceeds of sophisticated data-analysis tools should not be legally excluded if they point coincidentally to origination on US soil. It seems counterproductive to make US territory the enemy's best communication sanctuary.

Perhaps the most structurally significant recommendation entails establishing an executive-oversight body whose sole purpose is review of the substance and application of extraordinary measures taken in times of crisis and war. Such a board would monitor, document, and evaluate the conduct and effectiveness of extraordinary measures that have the capability to erode established civil liberties. Rather than approve individual actions, the board will advise legislative and executive officials regarding the legality and effectiveness of exceptional actions undertaken in special circumstances. The panel would help both branches of government determine whether and to what extent extraordinary measures ought to continue.

Heavily legalistic and somewhat academic, this work nevertheless speaks authoritatively on the contentious clash of civil liberty with national security in extraordinary times. It often indicts policies adopted by both the executive and legislative branches in the wake of 9/11, advocating systematic and public review. Although commendably apolitical and moderate in tone, the work challenges the current administration's opacity since "the core principle of the U.S. government is that ultimate accountability is and must remain in the hands of an informed citizenry" (p. 6). An important effort with long-term civil and international implications, *Protecting Liberty in an Age of Terror* is a valuable resource for policy makers and commanders charged with prosecuting the current unconventional conflict without compromising civil liberties.

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Finding Amelia: The True Story of the Earhart Disappearance by Ric Gillespie. Naval Institute Press (http://www.usni.org/press/press.html), 291 Wood Road, Annapolis, Maryland 21402-5034, 2006, 296 pages (with DVD supplement), $28.95 (hardcover).

Finding Amelia is an exhaustively researched account of the disappearance of famed aviator Amelia Earhart on 2 July 1937. A serious historical work, the book contains many details and documents, but author Ric Gillespie succeeds in making it approachable for the average reader. Executive director of the International Group for Historic Aircraft Recovery, he draws upon the work of his organization in analyzing more than 5,000 documents related to the Earhart disappearance. Although the loss of Amelia Earhart and her navigator Fred Noonan remains an unsolved mystery, *Finding Amelia* marshals available data to paint a picture of the doomed flight and subsequent futile searches that captivated the press and public in the late 1930s.

Finding Amelia provides a look back to a time when everything about aviation made news and the country followed developments in flight with great anticipation. Earhart's flight marked a transition from a unique aspect of American culture, such as the publicity stunts of aviation pioneers like Billy Mitchell and Jimmy Doolittle, to the routine of civilian airlines and commercial aircraft production. Amelia Earhart turned out to be one of the last of the great aviation barnstormers and showmen of the aviation-as-novelty era. Indeed, one could argue that the pressure to complete her transworld flight derived in part from her reasonable fear that

some other aviator or, worse, Pan Am would meet this daunting challenge.

The book offers contemporary lessons as well. Intense media scrutiny and significant financial pressure demanded a very strict timetable for the Earhart flight, and Gillespie makes a strong case that these external forces led to important lapses in training and preparation. The author notes, with some measure of understatement, that "as in most aviation accidents, the loss was not due to a single catastrophic event, but rather to the snowballing of a number of mishaps and errors" (p. 103). Some interesting details emerge about the flight, particularly in the way of miscommunication and lapses that may have contributed to the tragedy. For instance, neither Earhart nor Noonan (an aviation pioneer in his own right) were conversant in Morse code (the radio-communications standard at the time). Furthermore, when rebuilding the aircraft after her first failed transworld effort, Earhart chose not to reattach a low-frequency antenna that might have allowed her to navigate by radio beacon. Inexplicably, Earhart and her team indicated that they planned to navigate by high-frequency radio beacon—more or less a technical impossibility at the time.

For the serious history buff, both the book and accompanying DVD are invaluable resources. The DVD includes over 5,000 messages, telegrams, letters, maps, government and aircraft-manufacturer reports, Navy and Coast Guard logs, technical studies, and newsreel footage about the Earhart case. Readers can examine *Finding Amelia* on more than one level: casually, for those interested in taking a look back at a well-known tragedy that captured the public's imagination, or seriously, for those interested in separating myth from reality regarding the disappearance of and subsequent search for two great aviation pioneers.

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The Limits of Air Power: The American Bombing of North Vietnam by Mark Clodfelter. University of Nebraska Press (http://unp.unl.edu), 1111 Lincoln Mall, Lincoln, Nebraska 68588-0630, 2006, 312 pages, $16.95 (softcover).

The first edition of *The Limits of Air Power* (1989) sought to challenge traditional Air Force thinking on airpower's failure in Southeast Asia. That book began by outlining the view that blamed Washington for diluting the war effort through unnecessary restraint, quoting as an example Gen William Momyer, commander of Seventh Air Force at the time, who complained in 1969 that "we had the force, skill, and intelligence, but our civilian betters wouldn't turn us loose" (p. 145). Clodfelter then looks closer at the nature of the conflict, concluding that although civilian restraints played an important role, airpower's effectiveness changed most dramatically as the war itself changed—from an insurgency in 1963 to a conventional campaign in 1968 and beyond. His conclusion warned airpower advocates to be cautious because airpower has limited utility against nonconventional forces.

This new edition reiterates this warning and adds a new introduction and epilogue. The introduction points out that the situation in both Iraq and Afghanistan today "resemble[s] that encountered by Johnson in Vietnam—an intensely motivated but sporadically waged insurgency employing guerilla warfare methods and receiving resilient assistance from outside sources" (p. xi). Indeed, in some respects it does—meaning that understanding Clodfelter's message is even more critical today than in 1989.

The epilogue (originally a journal article: "Airpower versus Asymmetric Enemies: A Framework for Evaluating Effectiveness," *Air and Space Power Journal* 16, no. 3 [Fall 2002]: 37–46) uses his original analysis of Vietnam to create a generalized framework for analyzing airpower. This framework provides detail to his concept of "positive" objectives (those that seek to accomplish a specific goal) and "negative" objectives (those that seek to avoid an undesired outcome). It also proposes a set of "key variables": the nature of the enemy, type of war waged by the enemy, nature of the combat environment, magnitude of military controls, and nature of the political objectives. His model maintains that understanding these factors means understanding the conditions under which airpower must operate—and therefore its likely effectiveness.

Applying this framework to current conflicts, he points out that negative objectives remain crucially important. In fact he suggests that in attempting to balance the positive objective of eliminating terrorists against the negative one of losing the hearts and minds of the Islamic world, "the long term harm of applying lethal airpower is likely to eclipse its short-term benefit" (p. xi).

Whatever one's opinion on that assertion, Clodfelter's revision of the original edition is timely, and the new sections are brief and readable. Although massive differences remain between Vietnam and Afghanistan/Iraq (most notably regarding levels of the counterair threat faced in Vietnam), the com-

parison is worth considering—and the updated edition of *The Limits of Airpower* offers an excellent place to start.

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The North Korean People's Army: Origins and Current Tactics by James M. Minnich. Naval Institute Press (http://www.usni.org/press/press.html), 291 Wood Road, Annapolis, Maryland 21402-5034, 2005, 164 pages, $27.95 (hardcover).

The occurrence of certain events over the past decade has resulted in the publication of many books on North Korea's nuclear program, diplomacy between North Korea and the United States, and the geopolitical problems created by Kim Jong Il's Stalinist regime. For the most part, the literature has lacked a work that offers in-depth, scholarly analysis of the North Korean People's Army (NKPA)—a military force that remains the world's fifth largest and continues to pose a threat to the stability and security of the Korean Peninsula. This work, written by a US Army foreign-area officer, attempts to fill that void.

Minnich divides his book into two parts. Chapters in the first portion address the NKPA's partisan lineage; its original, formal organizing under the close tutelage of the Soviets; the expansion that occurred prior to the invasion of South Korea; and the status of the NKPA in 1950. The surprisingly short chapters lack the important depth and detail that would allow readers to truly understand the origins of the NKPA, the driving forces behind its formulation and capabilities, and the reasons for its initial stunning successes in the first months of the Korean War. The second section addresses current tactics in chapters that examine national strategy and the formulation of military policy, offensive and defensive tactics, and artillery-grouping tactics.

The second section is particularly disappointing because it does not consider the large-scale changes to North Korean conventional military forces that have occurred since Kim Jong Il came to power in 1994. Because of a changing geopolitical environment and resource constraints beyond Pyongyang's control, the military's offensive capabilities have largely evolved so that they now threaten South Korea with asymmetric forces such as long-range artillery, special operations units, and a ballistic missile corps that boasts at least 600 Scuds and other short-range ballistic missiles in its inventory. The author does not address in detail how missile forces have now become integrated doctrinally with artillery units to form a lethal "first punch" in any war with South Korea. Nor does he examine how the significant increase in the number of large-scale artillery systems that North Korea has deployed along the demilitarized zone has largely altered the status quo of conventional military forces on the peninsula. In the book's second part, the author seems to make the assessment that North Korea would attack the South in nearly the same way it would have 20 years ago—a very unlikely prospect.

This short text is interesting in that it provides some context for the history and philosophy of the NKPA in its early stages. It runs into problems in its later chapters because Minnich does not address important issues such as doctrine, evolving organization, the impact of materials and resources on training, leadership development of personnel, and the ability (and motivations) that the NKPA has for large-scale aggression, based on the current capabilities of its conventional military forces. For readers seeking a book that will educate them on the current readiness, capabilities, and threat of North Korea's conventional military forces, *The North Korean People's Army* falls far short of the mark. For those who would like a short, broad-brush look at the history and early philosophy of the NKPA, the text provides some useful context. On the whole, this book does not fill the void in the scholarly literature for readers who desire in-depth analysis of North Korea's military threat.

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Space Warfare: Strategy, Principles and Policy by John J. Klein. Routledge (http://www.routledge.com), Taylor and Francis Group, 2 Park Square, Milton Park, Abingdon, Oxford OX14 4RN, United Kingdom, 2006, 196 pages, $115.00 (hardcover).

Extremely provocative? No. Earth shattering? Probably not. Needed? Definitely. Meaningful? Time will tell, but the possibility certainly exists. John J. Klein has arguably achieved what many others have only attempted in the past. He has developed a "comprehensive" set of space principles that captures the unique aspects of the space medium. In response to his perceived need—which many share—and based on a thorough review of existing space literature, Klein tries his hand at establishing

an in-depth space bible from which doctrine and tactics development can build. He exhibits a solid grasp of past military strategic thinking as he systematically develops his strategy.

Sir Julian Corbett's maritime strategy is the model for *Space Warfare*, but Klein also draws frequently from other strategists such as Carl von Clausewitz, Henri Jomini, and Mao Tse-tung for critical aspects of his strategy. Despite the relatively short length of the work, he covers a vast set of issues. He begins with the role of space as an aspect of national power, describes its unique features as well as those common to other mediums, and finally articulates a systematic and relatively comprehensive series of constructs to shape the discussion of space. He introduces or redefines such terms as *celestial lines of communication*, *strategic positions*, *dispersal*, and *concentratio*n. The principles, in total, are sufficiently comprehensive to underpin the majority of specific operational-level activities that one can imagine in space over the next few decades.

Because Klein clearly grasps many of the unique aspects of the space medium, he does not give in to the temptation to rely on one specific set of historical principles to ensure complete labeling of various space missions and attributes—as Air Force and joint doctrine have done often in the past. Instead, in many areas he brings a fresh perspective that forces a different angle on space thinking. From this thinking flow a significantly modified space vocabulary and some concepts different enough from conventional writing as to approach novelty. However, very few of his specific recommendations are new; in fact, most go back years. Despite this, his framework builds an underpinning that, *if accepted*, would drive the US national-security space community in new directions.

As he develops various principles within the strategy, Klein predominantly uses examples of existing capabilities or ongoing activities to explain particular aspects of his structure. Here, however, the effort falls short. Many career space professionals, others who have worked closely with the space community, or those who have relied heavily on space capabilities will grasp his principles and may resonate with his argument that they call for new lines of reasoning in several areas. However, these individuals may find themselves feeling less than satisfied with the depth and creativity exemplified by his examples. More explanation of how the various principles fit together as a strategic whole would have added to the work. One has a sense that Klein is very capable of providing a more in-depth description and of tying together his concepts, but the reader may feel somewhat like the college student in an advanced math class where "the proof is left to the student." This book is listed as first in the publisher's Space Power and Politics series, so perhaps the follow-on works will satisfy this need. However, the titles of the books comprising the rest of the series do not encourage confidence.

Klein compares his strategy to the various space "schools of thought," current joint doctrine, and the *Space Commission Report*. His discussion of the schools of thought offers convincing support for his argument that a more comprehensive approach is needed. The doctrinal discussion points out deficiencies and the eternal need, often ignored, for strategy *and* doctrine. Certainly the *Space Commission Report* is the most thorough effort yet undertaken to analyze national-security space topics and to prescribe policy initiatives. However, regarding the commission report and joint doctrine, Klein seems overly concerned with explaining away differences in terms and concepts rather than articulating the greater need for a fundamentally new framework. One then wonders, "Why the new model if the differences are not significant?"

Finally, *Space Warfare* goes beyond this new framework for space and dives into the more dangerous waters of specific policy options and recommendations, the latter well grounded and flowing reasonably well from the articulated strategy. They also shed additional light on the strategy by describing natural outcomes one might foresee if the strategy is adopted. He argues for the incorporation of a more defensive strategy as the "stronger" form of warfare. Strategic positions for defense, he maintains, ensure "a significant level of access" and a "measure of self-defense against surprise attack" (p. 149). Klein persuasively argues that greater emphasis on the concept of dispersal, an idea not sufficiently captured in previous writings, is critical to any future strategy. He also calls for the establishment of a Space War College based on the need for military "culture and strategy . . . to acknowledge that space is a relevant medium of warfare" (p. 151). Such a move, he believes, would "foster a conducive environment where more fully developed strategies for space warfare can be contemplated" (p. 152).

The significance of *Space Warfare* will depend on the degree to which its terms and principles are adopted. While the space community certainly has its own technical language, with multiple dialects, a need exists for a strategy language to underpin policies, doctrine, acquisition decisions, and tactics development. John J. Klein has given us, at minimum, an alphabet and a structure from which that language could evolve. As with Jomini and Alfred Thayer Mahan, some—as this reviewer has done—

will point to shortcomings with the arguments. But members of the space community may perceive, as naval- and land-warfare professionals did in the past, that in the end the benefits of having the basis for a strategy—to support development of detailed policies and to guide decisions—eventually overcome the value of continuing debate over its merits. Time will tell.

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Into the Unknown Together: The DOD, NASA, and Early Spaceflight by Lt Col Mark Erickson, USAF. Air University Press (http://www.maxwell.af.mil/au/aul/aupress), 131 West Shumacher Avenue, Maxwell AFB, Alabama 36112-5962, 2005, 682 pages, $50.00 (softcover). Available free from http://www.maxwell.af.mil/au/aul/aupress/Books/Erickson/erickson.pdf.

Into the Unknown Together is a comprehensive review of the political and management terrain involved in the early US space program—especially those aspects dealing with human spaceflight. Indeed, the work is encyclopedic, coming in at a hefty 682 pages, including endnotes. Primarily covering the period from the birth of the National Aeronautics and Space Administration (NASA) in 1958 to the end of the Apollo program in 1972, the book discusses in great detail the complex, sometimes byzantine, interactions that characterized the relations among NASA, the Department of Defense (DOD), and the Air Force. The book is particularly strong in its tracing of the development of these interactions and the manner in which each presidential administration put its own stamp not only on the overall US space program, but also on the nature of the relationship between NASA and its DOD counterparts. These interactions varied in time and intensity, ranging from cooperation to conflict and benign disregard. The work certainly represents an important contribution to the serious academic literature relating to space history, clearly refuting any notion that NASA was merely a puppet of the DOD or the Air Force. The 108-page bibliography alone, current through the early 2000s, is a most impressive resource for the writer on space issues.

As happens many times in life, a strength can also represent a weakness—and we see this, I think, in Erickson's work. Because of the great detail in the narrative, it is not an easy read and thus is perhaps more suited to the serious academic or policy researcher than someone wanting to obtain a broad overview of the development of early US space policy. In this regard, Benjamin S. Lambeth's RAND report of 2003, *Mastering the Ultimate High Ground*, is much shorter and covers many of the main points that Colonel Erickson treats in significantly greater detail for the early US space program. The initial chapters of William E. Burrows's *This New Ocean* (1998) would also serve as a good alternative for anyone seeking a quick overview.

In addition, this work focuses squarely on organizational, bureaucratic, doctrinal, and management issues. As a result, much of the personal dimension, even drama, of this history is not represented. Important characters such as army general John Medaris, presidential science advisor James Killian, DOD science policy maker Herbert York, first NASA administrator James Webb, Air Force general Bernard Schriever, and many others come and go as characters, but we really don't learn much about what made them tick or how they formed their ideas and visions for US spaceflight or military space issues.

In sum, for the professional space-policy "wonk" or historian of US space (and science) policy, *Into the Unknown Together* is a must reference for a study or library. Colonel Erickson has done the academic fields of space history and policy a great service.

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Finding the Target: The Transformation of American Military Policy by Frederick W. Kagan. Encounter Books (http://www.encounterbooks.com), 900 Broadway, Suite 400, New York, New York 10003, 2006, 432 pages, $29.95 (hardcover).

Historian Frederick Kagan has captured the essence of transformation in the United States military from the experience of defeat in Vietnam, through an overwhelming victory in Operation Desert Storm, to recent operations in Afghanistan and Iraq. Various authors have characterized changes in the military over the last three decades as a "revolution in military affairs," "transformation," "reinvention," and "military reform."

Kagan begins his treatment of military transformation by describing in detail the changes in strategy, technology, organization, training, and military doctrine that occurred after the Vietnam War. This transformation was "all encompassing" and threat

based, focusing on the Cold War. Thus, true transformation took place because of the lessons of Vietnam; Kagan warns that attempting to transform while at the "height of power and success" after Desert Storm is the "most difficult of undertakings" (pp. 70–71).

Throughout the book, one finds a number of interesting threads that strengthen the author's arguments. One of the most striking (and satisfying) is the treatment of transformation in the military services. Each has transformed in its own way, particularly in terms of equipment and organization, although one finds striking parallels among the services regarding some transformation activities, such as training.

The author's treatment of the "Value of Diversity" also proves interesting. He describes different solutions that each service developed for some of the problems of warfare as well as the apparent redundancy of systems resulting from multiple responses. Kagan sees this phenomenon as a source of great strength—for example, the overlapping capabilities of the F-16, F-15, and F-14, and the Apache's "daunting array of capabilities" that "ensures that there is no single threat that can unhinge the U.S. air campaign" (pp. 66–67). Having a single "perfect" aircraft would have involved compromises whereas our current suite of systems provides complementary capabilities.

The author addresses the contributions of military theorists, most notably those of John Boyd and John Warden, particularly the revolution-in-airpower theory initially developed by Boyd and expanded by Warden during Desert Storm—together with lessons from that operation. He concludes that the key to success in Desert Storm was a "well-prepared ground offensive . . . launched in a timely manner to take full advantage of the disruption and disaggregation caused by the well-planned and skillfully conducted air campaign" (p. 141).

Critical of network-centric warfare, Kagan notes its three fundamental flaws: it is a solution in search of a problem, the technical requirements needed to produce the capabilities sought and promised are unattainable in the real world, and it proceeds from a misunderstanding of the nature of war (p. 353). He describes this type of warfare as an indicator of the "movement away from the political objective of war toward a focus on killing and destroying things" (p. 356).

The book concludes by proposing a "new way" of approaching transformation efforts in the US military and provides some possible scenarios for conflict in the future, including potential scenarios in China, Pakistan, North Korea, and Iran. Not surprisingly, Kagan recommends increases in both the defense budget and manpower levels of the ground forces as well as shifting from a capabilities-based approach for military development to a threat-based approach on obvious current threats (pp. 389–90).

Finding the Target is an exceptional book, well researched and relevant for military audiences. For those who have served in the military during the 1970s and 1980s, it provides an excellent treatment of the remarkable transformation that took place in the services during that period, while making a chilling comparison to current transformation efforts.

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All Roads Lead to Baghdad: Army Special Operations Forces in Iraq by Charles H. Briscoe et al. USASOC History Office (http://www.gpo.gov), Fort Bragg, North Carolina 28307, 2006, 517 pages, $45.00 (softcover).

Written by people involved in Operation Iraqi Freedom, *All Roads Lead to Baghdad* is an eye-opening account of that operation, including the occupation of Iraq. The staff of the United States Army Special Operations Command (USASOC) History Office has composed a superb picture of this war and its aftermath.

The book relates the importance and effect of special forces in Iraq through the eyes of the soldiers involved, from planners and generals to operatives in various special-forces teams. Despite the subtitle, the study deals not only with USASOC but also with many of the conventional operations during the war, including deployments and the history of Iraq under Saddam Hussein. USASOC also provides a wide variety of information, much of it conveyed by charts, graphs, and maps, as well as firsthand accounts of soldiers and airmen.

The first chapter, one of the book's most valuable sections, explains the importance of Iraq to the Middle East and the United States. Many Americans still have false perceptions of the state of Iraq before coalition forces invaded in 2003. It describes Saddam and his regime as "not a toothless lion" (p. 6), explaining that he could call on 400,000 regular forces and twice that number of reservists. The author also discusses Saddam's fedayeen and the capabilities of these fanatically dedicated brigades. This discussion includes diagrams of the Iraqi order of battle prior to Iraqi Freedom. I was surprised to see

that, at that time, Iraq boasted 325 combat aircraft. Only 20 of them remain operational today.

Another section of the book that I found fascinating addresses the employment of Combined Joint Special Operations Task Force-North and the trouble experienced by coalition special forces because of Turkey's refusal to allow their deployment during Iraqi Freedom. This impasse led to the creation of Operation Ugly Baby, a flight path so ugly "only a mother could love it" (p. 117). The war would have proceeded much more quickly with Turkey's support.

Written chronologically, the study covers details down to the hour when the planning stage began and provides a "five-month snapshot" of Iraqi Freedom (p. 451). Some portions seem repetitive, however, and several times the authors' clear recounting of operations makes the summaries unnecessary.

All Roads Lead to Baghdad gives readers a chance to see Iraqi Freedom through the eyes of the people who fight on and behind the front lines. It also allows them to understand how special forces of all branches affect the outcome of major operations. Overall, I would highly recommend this book to anyone who has any interest in special operations and Iraq.

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Flying through Midnight: A Pilot's Dramatic Story of His Secret Missions over Laos during the Vietnam War by John T. Halliday. Scribner, imprint of Simon and Schuster (http://www.simonsays.com), 1230 Avenue of the Americas, New York, New York 10020, 2005, 432 pages, $27.50 (hardcover).

Flying through Midnight is the personal account of a C-123 pilot flying Operation Candlestick missions in 1970 and 1971 to illuminate enemy targets by dropping flares over the Steel Tiger area of southern Laos and the Barrel Roll area of northern Laos. The author tells several entertaining stories before he arrives at the central focus of his book—a night landing at Long Tien, Laos, and the subsequent takeoff the next day.

A reader not familiar with air operations during the war in Southeast Asia might find Halliday's book quite amusing. However, I am intimately familiar with those operations, having spent 27 months there as a forward air controller (FAC), a Raven (a particular breed of very independent, volunteer FACs who flew unconventional but highly successful missions in Laos), and an RF-4 pilot. I found so many errors in fact in the first 100 pages that I began to doubt that Halliday was ever in Southeast Asia. The fact that he was indeed there makes things even worse. I found his accounts irritating. The events may have happened more than 35 years ago, but even at a distance of three decades, one does not confuse Barrel Roll's night airborne battlefield command and control center (Alley Cat) with the one in Steel Tiger (Moonbeam). Nor does one forget the name of Udorn Royal Thai Air Force Base—a primary recovery base for Barrel Roll missions that went badly. Dozens of other questionable recollections in this book will make any veteran of that time and place wonder about the author's veracity.

Flying through Midnight provides some light entertainment. However, for readers knowledgeable about the events Halliday describes in this book, I suggest a ready supply of antacid tablets.

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Raven 45, 1969
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Imagined Enemies: China Prepares for Uncertain War by John Wilson Lewis and Litai Xue. Stanford University Press (http://www.sup.org), 1450 Page Mill Road, Palo Alto, California 94304-1124, 2006, 384 pages, $60.00 (hardcover).

John Wilson Lewis and Litai Xue have written a superbly researched and enlightening history of the transformation of Chinese military power since 1949 and the birth of the People's Republic of China. They smartly detail the evolution of its defense philosophy—from Mao and his extreme paranoia over perceived enemies and their inevitable attack on China to the present day. What makes this book unique, relative to others addressing the subject, is its depth of firsthand information, analysis, and interpretation of the inner workings of the Chinese government and military leadership that influenced the development of China's foreign policy and its version of a national security strategy. The study delves into the nation-state friendships China has forged over the years out of military necessity or for political leverage against a more pressing foe.

Regarding strategic challenges and the struggle for power, the authors candidly reveal how infighting, internal rivalries, mistrust, repeated purging of the senior leadership, shifting defense priorities relative to perceived enemies, and defense budgetary

limitations have adversely shaped China's defense posture: "Foreign conflicts and crisis seldom take precedence over internal stability and the political power of the established rulers" (p. 26). Lewis and Xue describe government and military leadership hierarchies in a relevant and purposeful manner—how they have evolved and influenced defense capability's priorities. They pay particular attention to the Chinese air force and second artillery (strategic rocket forces)—forces/capabilities perceived as critical to China's active defense strategy.

Imagined Enemies effectively presents a comprehensive articulation of contemporary defense and foreign-policy challenges facing China in light of their ever-increasing complexities. The authors emphasize such challenges as the technological superiority of the US military and its proven effectiveness in Iraq and the Balkans, coupled with the growing obsolescence of Chinese military equipment, inadequate levels of relevant operational training, and the struggles of its military to operate jointly. China's pressing concerns over the ongoing North Korean crisis and its precarious relationships with Russia and Japan further push China onto the international/regional diplomatic stage. These issues are underpinned by China's domestic and international economic aspirations, its emergence in the global economy, and its growing account balance: "While many current powers can still boast an edge in such critical areas as science and technology, China is working to lessen that advantage through favorable business deals, strategic technology acquisitions, and targeted scientific programs. Should that effort continue unimpeded, China's race to greatness could succeed within the next twenty years" (pp. 1–2).

Lewis and Xue also assess the sensitivity and uneasy tolerance over the Taiwan situation, the probability of US military intervention in response to military conflict between China and Taiwan, or the likely response of China if Taiwan declared itself an independent nation. Furthermore, they postulate the likely military responses of China, Taiwan, and the United States under varying circumstances and their likely outcomes in a thought-provoking way.

Imagined Enemies will leave readers with a meaningful appreciation of the Chinese struggle for a stable existence and the extent to which China has gone in securing its borders, as well as the hardships and sacrifices it has endured to do so. The book is a great professional read for anyone interested in the evolution of Chinese defense philosophy and the psychology behind it, as well as individuals wanting a sound vantage point in understanding what the future may hold in US/Taiwan/China relations on the international stage.

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Al enemigo primero lo descerebramos by Comodoro Miguel Angel Silva, Fuerza Aérea Argentina, retired. Revista de la Escuela Superior de Guerra Aérea (RESGA), Argentina, 2003, 168 pages. (Not sold commercially.)

Al enemigo primero lo descerebramos, a primer published by the Fuerza Aérea Argentina (Argentine air force), deals with command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). Divided into two chapters and three appendices, it emphasizes how C4ISR concepts affect conventional warfare. Chapter 1, "First Analysis: The New Way of Waging War," derives basic doctrinal concepts from a brief survey of past wars. Most of the discussion is serious, but one lighthearted passage quips, "When talking about information warfare, the image that comes to mind for most people is a teenager seated in front of a computer, holding a soda in his hand as the cheese from his hamburger drips on the keyboard" (p. 18). Chapter 2, "Second Analysis: Information to Degrade/Protect," makes insightful comments about many topics, including the dangers of information overload (pp. 71–72). Written from the perspective of a country that possesses limited military resources, the study cautions against "trying to imitate the USA, which is a utopia for countries like ours" (p. 77). The appendices offer concise technical overviews of the radar, laser, infrared, and other types of sensors that operate in the electromagnetic spectrum.

The book is not about information warfare per se but systematically analyzes C4ISR concepts and technologies. Much of the book deliberately adopts a repetitive, didactic style to drive home precepts such as "Everything that transmits can be intercepted. Everything that can be intercepted can be degraded" (p. 49). Although a handy reference that examines its topic primarily from an air force perspective, it focuses more on the component parts of information systems than on the synergies that can result from integrating those systems as envisioned by network-centric warfare. The author also says little about how the Internet relates to information operations or about how one uses information systems against terrorists, organized criminals, or other nonstate threats. Readers seeking more in-

formation about the topics discussed will find neither footnotes nor a bibliography, but the glossary, index, and simple illustrations are helpful. However, the book's very fine print will be hard for some people to read. Most of the information is factually accurate, but a few minor errors do intrude themselves. For example, the text states that the human eye can see only 64 colors (pp. 56 and 70); in reality, the number is in the millions. And the 1942 battle of Alam Halfa occurred in North Africa—not in a place that is now part of Israel, as the author asserts (p. 71).

This primer is useful in at least two different ways. First, it is designed as a textbook for military audiences such as war-college students in Spanish-speaking countries. Second, the appendices offer military readers who are not scientists or technicians an understandable explanation of the basic technical characteristics of typical C4ISR systems. The underlying scientific principles discussed have enduring value; nevertheless, C4ISR technology and operational methods evolve quickly. The book uses many historical examples to illustrate its points about the changing nature of warfare, but, although published in 2003, it does not refer to the terrorist attacks of 11 September 2001 or to subsequent events. Hopefully the Argentine air force will update the text in light of recent warfare experience.

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General George Washington: A Military Life by Edward G. Lengel. New York: Random House Publishing Group (http://www.randomhouse.com/rhpg), 1745 Broadway, 18th Floor, New York, New York 10019, 2005, 496 pages, $29.95 (hardcover); 2007, 512 pages, $16.95 (softcover).

Thousands of books on George Washington are available. Researchers study him as much as they do Abraham Lincoln. Why would anyone waste time on yet another biography of the nation's number-one founding father? Well, maybe because Washington's biographers have gotten off track and are presenting a false or partial portrait of the man. Maybe because there is a large collection of primary documents just begging to be used. Actually, for both reasons.

As author Edward Lengel notes, for a century the focus remained on Washington as the political and military leader, particularly during the Revolutionary War. Then in the twentieth century, historians and biographers began looking at aspects of Washington as the fashion shifted to "the-man-and-his-times" or psychohistory. Historians either turned to history from the ground up or turned inward and deconstructed history into meaninglessness, and other fads came and went. Good, old-fashioned military/political studies fell by the wayside.

Meanwhile, the University of Virginia began an effort to make the Washington collection the most complete in the world. Tens of thousands of documents poured in. Presumably, most of them added only bulk to the collection, but others provided new insights into Washington's leadership during the revolution and earlier.

General George Washington uses the new material to create an old-style portrait of the man. Though incorporating scholarship of the twentieth century to create more nuance than did the earlier warrior/leader portraits, it stays firmly in the school that defines Washington, in Thomas Flexner's term, as the "indispensable man." By no means does indispensability mean that all works in this school are little more than hagiography. Washington, after all, was merely a man—one with flaws. Vain and cold, he kept a watchful eye out for both his accounts and his place in history. He made all sorts of poor strategic and tactical decisions and could well have come down as the loser of America's aborted war for independence had it not been for a bit of luck and a couple of British generals whose errors proved more egregious or more disastrously timed than his.

The book follows a standard chronological structure, beginning with Washington's childhood and youth and touching on his formative relationship with his older stepbrother, who died prematurely. It recapitulates his early career and ambition to become a British officer—in keeping with his urgent need for status. Another key element of that need is his dedication to self-improvement. Connections, favors, and occasional rewards for merit were also important to the young Washington, elements that continued throughout his life.

Most of the narrative naturally deals with the wars—first the French and Indian War but mostly the American Revolution. The approach remains chronological, with no side tours or flashbacks. Old-fashioned though straight narrative might be, when an author wishes to move clearly and simply from one point to the next, it works. Lengel writes with enthusiasm and clarity, telling an old story well enough to engage the attention of those who have heard it many times before. He narrates with ample explanation and depth; those new to these events will come away with a good grasp of Washington

and the revolutionary era. His explanation of the military structures of the competing forces is particularly impressive. Still thrilling and compelling are the descriptions of battle and camp life—hardships unimaginable in today's military.

There is no mystery as to why *General George Washington* is on the chief of staff of the Air Force's reading list. It is not the most sophisticated scholarship available on Washington, but it is as good a work as exists on him and the American Army during the Revolutionary War. It is a must-read.

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Sky Walking: An Astronaut's Memoir by Tom Jones. HarperCollins Publishers (http://www.harpercollins.com/hc), 10 East 53rd Street, New York, New York 10022, 2006, 369 pages, $26.95 (hardcover).

Most readers of *Air and Space Power Journal* probably wanted to be astronauts at some point in their lives. Some may still strive for this goal, and a select few others may actually be astronauts. Readers who fall into any of these categories or simply have an interest in manned spaceflight will love *Sky Walking*. Written by former astronaut Tom Jones, a veteran of four space-shuttle flights and holder of a PhD in planetary sciences, this exceptional book captures both the technological and human aspects of a profession so many aspire to yet so very few attain.

The memoir relates a chronological journey of astronaut life, from the decision to apply to the National Aeronautics and Space Administration (NASA), through the five days of interviews and testing, selection and initial training, to assignment of the first mission. It also offers detailed descriptions of all flights. Jones avoids using a redundant, cookie-cutter approach to recounting each of his four missions. Instead, he describes precisely the eight-minute, 40-second launch sequence on one flight; the minutely scripted schedule of daily life in orbit on another; the 45-minute plunge through the heat of 3,000 degrees of reentry, which he took for granted until *Columbia* incinerated in 2003; and the ballet-like series of maneuvers involved in successfully docking with the International Space Station (ISS) on his last mission.

The author skillfully describes both the technological aspects of each shuttle mission in layman's terms (a feat in itself for most PhDs) while simultaneously providing plenty of information about the human elements of astronaut life. His first two shuttle missions—Space Transportation System (STS) 59 and 68, launched in April and September 1994, respectively—utilized his unique academic background with the Space Radar Laboratory, which mapped Earth's surface while it remained in the shuttle's large cargo bay. During these missions, he proved himself—something astronauts continuously do because of the keen competition and small margin of error in their work. This mind-set is summarized in the astronaut's prayer "God, please don't let me screw up" (p. 172).

Engineers, scientists, and other technical professions are often criticized for their lack of humanness, but Jones is clearly an exception. Some of the most memorable aspects of his memoir are his descriptions of the "office" and home life of astronauts. Although training for missions makes for long days, when astronauts are awaiting a crew assignment, they involve themselves in various projects: assisting crews in training, escorting family members during missions, making public appearances, and so forth. Clearly, astronauts experience few dull moments and contend with many demands on their families.

For Jones, a very human aspect of spaceflight is his deep faith. He recounts celebrating mass with his crew in orbit and receiving communion. He also describes how his parish priest attended the launches and had a prayer service on the beach at Cape Canaveral for the crew, their families, and friends. His descriptions from space reflect his strong beliefs: "Never have I felt so insignificant, part of a scene so obviously set by God" (p. 316).

His third mission involved dispatching and retrieving an ultraviolet spectrometer satellite and an aborted extravehicular activity (EVA), or space walk, when the shuttle's pressure door jammed, the latter described as the biggest disappointment of his astronaut career. His fourth mission (and the book's finale) included docking with the ISS and his long-awaited and intensely trained-for EVA, which he terms "sky walking." These missions, STS 80 and 98, flew in November 1996 and February 2001, respectively. The thrill of sky walking on STS 98 compensated for the lost opportunity on STS 80.

Jones's ability to relate the absolute wonder and thrill of spaceflight is captured in his description of sky walking around the ISS during his third and final EVA:

> Pivoting around my grip on Destiny's forward handrail, I drank in the panorama unfolding around me. Directly in front of me, twenty feet away, the tail of Atlantis split the Earth's horizon. Straight up, the glittering solar panels of the Space Station spread like

> golden wings across the black nothingness of space. To either side of the now-empty payload bay, the royal blue of the ocean and its swirling white clouds rolled past. Behind me, the bulk of the Station plowed forward like a vast, unwavering star cruiser, slicing through the heavens toward a horizon a thousand miles distant (p. 316).

This memoir reveals many additional fascinating points: the ineptness of NASA management at times, the poor planning and management of the ISS, the incredible difficulty of working with the Russians, the one-in-76 chance of a catastrophic failure that astronauts face each time they fly, and the fact that Republican administrations supported NASA more strongly than Democratic ones.

Although the book provides many other exceedingly interesting stories and superb descriptions of the challenges and thrills of a shuttle astronaut, it does suffer from a few minor flaws. The ending seems a bit abrupt and fails to give readers enough insight into the future of manned spaceflight after the shuttle program concludes. Also, the descriptions of scientific experiments occasionally bordered on the tedious. But Jones's exceptional writing skills, logical organization, and thoroughness make these blemishes very minor and easily overlooked.

Sky Walking is an outstanding memoir that anyone even remotely interested in manned spaceflight will find difficult to put down. I highly recommend it, especially to the next generation of astronauts who will fly the crew exploration vehicle, the successor to the space shuttle, which will take men and women to the moon, Mars, and beyond.

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The Age of Total War, 1860–1945 by Jeremy Black. Praeger Security International, Greenwood Publishing Group (http://www.praeger.com/psi), 88 Post Road West, Westport, Connecticut 06881, 2006, 216 pages, $44.95 (hardcover).

The term *total war* frequently conjures up mental pictures of intense suffering and death, mass destruction, widespread conflict, and perhaps a national commitment to prosecuting war bordering on fanaticism. Jeremy Black, in *The Age of Total War, 1860–1945*, does a magnificent job of illustrating the complex ties to each image and demonstrating why, even within these stark illustrations, wars may or may not be "total."

Black's premise is that one must have a focus of time as well as place to say whether or not a given war is a "total war." Many factors must come together to culminate in an experience that would inarguably become a total war (summarized on p. 1). He evaluates a block of history, from 1860 to 1945, which provides a wide sampling of conflicts that in many ways reflects some or most of the elements he describes on page 1.

Through the first two chapters, the author walks the reader through examples of total war in a microcosm. This introduction is important to understand why Black states that there is more to the totality of war than simply what the beholder perceives. Each case study, covering conflicts worldwide from 1860 to prior to World War I, sets the stage for the following chapters.

The Age of Total War's discussions of World Wars I and II positively shine. First, in describing World War I, Black gives the reader examples of the player states' commitments to the war in terms of treasure, blood, territory, national pride, mobilization, and industrial capability. He discusses the Versailles settlement at length, including the carving up of Germany and Austria; the creation of new states; the number of dead and wounded; and reparations due from Germany. "[The Versailles settlement] was a settlement without compromise. Insofar as total war was a matter of outcomes, this was total war" (p. 100).

Black then turns to World War II. Drawing from several fellow historians' work and setting the stage by using Versailles, he argues that World War II was a kaleidoscopic conflict of totality, depending on how one views segments of the conflict. For example, the British and Americans preserved the "civilized inhibitions of their societies" in their fighting on the Western Front (p. 144), suggesting a more limited conflict; this contrasts with the level of brutality experienced on the Eastern Front between the Germans and the Soviet Union, which suggests that both parties waged a total war (pp. 146 and 147).

Black sums up this work by saying that "the understanding of war in terms of campaigning—the operational approach to war—is far too narrow. Instead, it is more appropriate to understand war as a cultural process that focuses on the imposition of will. . . . People are beaten when they understand that they have lost" (pp. 169–70).

The extent to which a state commits itself to impose its will on another ultimately defines the totality of a conflict. One could argue that today's global war on terrorism is a limited conflict from the US/coalition perspective—but a total war from almost any one of the opposing parties' views, based on

their level of commitment and desire to impose their will. I heartily recommend *The Age of Total War* for planners at all levels, who would do well to reflect on the application of its lessons to adaptive plans for future operations.

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Atlas: The Ultimate Weapon by Chuck Walker with Joel Powell. Apogee Books / Collectors Guide Publishing (http://www.apogeespacebooks.com), 1440 Graham's Lane, Unit no. 2, Burlington, Ontario L7S 1W3, Canada, 2005, 304 pages, $29.95 (softcover).

In *Atlas: The Ultimate Weapon*, Chuck Walker tells the story of the development of the Atlas intercontinental ballistic missile (ICBM) from an insider's perspective. The work captures well the importance of the Atlas rocket as both a ballistic missile and space-launch vehicle. One of three major launch systems developed in the 1950s by the Department of Defense (DOD) that found both military and commercial uses, Atlas began with the US Army Air Corps' request for proposal in October 1945. By 10 January 1946, Consolidated-Vultee's (Convair) engineers, under the leadership of Belgian-born Karel Bossart, had submitted their proposal for a 6,000-nautical-mile ballistic missile. New technologies proposed for the missile included extremely low structural weight through the use of steel-monocoque, single-wall construction tanks kept rigid by internal tank pressure; a state-of-the-art rocket motor with unique gimbals to help control attitude; a detachable payload or warhead section; and nearly single-stage-to-orbit performance through the "stage-and-a-half" approach of jettisoning the booster engines rather than a full stage during the ascent. On 19 April 1946, Convair received a contract in the amount of $1,893,000 for fabricating and testing 10 missiles to verify Bossart's innovative concepts. But the Atlas program was stillborn; DOD cutbacks forced termination of the contract in July 1947.

With renewed international tensions in 1951, the DOD gave Convair a new contract to design a ballistic missile incorporating the basic features already validated. In 1953 Convair presented a plan to the Air Force for a full-fledged development program, and in January 1955 it received the go-ahead to develop what was called at the time MX-774. At Convair the project was known as Model 7 (in Russia, Korolev was then working on the competing R-7 ICBM—evidently both sides wanted to use the lucky number). In September 1955, faced with intelligence reports of the Russians' progress on their ICBM, the DOD gave Atlas the highest national development priority. The project became one of the largest and most complex production, testing, and construction programs ever undertaken. Benefiting from the hard-driving management of Brig Gen Bernard A. Schriever, who managed the project for the Air Force, Atlas became the first ICBM in the US arsenal. It underwent its first test-fire on 11 June 1955, and a later-generation rocket became operational in 1959.

Although replaced as a ballistic missile in 1965, the Atlas has enjoyed a significant career as a space launcher thereafter, with more than 440 launches to its credit. It served as the launch vehicle for the orbital Mercury flights, sending John Glenn, Wally Schirra, Scott Carpenter, and Gordon Cooper into orbit in 1962–63. With the use of Agena and Centaur upper stages, the Atlas also became the medium-lift workhorse for American human, planetary, and geosynchronous-orbit space missions. After a reengineering effort in the last decade of the twentieth century, Atlas V continues to operate as one of the critical expendable launch vehicles flown by the United States.

As should be obvious, this important story is worthy of serious historical attention. Unfortunately, *Atlas: The Ultimate Weapon* gives it only a partial telling. Essentially a memoir of an engineer who worked on the program, the book relates certain aspects of the Atlas story involving Chuck Walker quite well but gives short shrift to the larger context for the weapons system's development and employment. It is almost exclusively an account of the Convair experience, based on personal recollection and interviews with colleagues. This is especially disappointing because of the broadness of the Atlas history. The study should examine not only the technical issues that Convair wrestled with (which it does relatively well) but also many other aspects of the rocket's history. For instance, it should cover the political story of Atlas's origins and development by exploring the interservice rivalries between the Air Force and Army concerning ballistic-missile development (such as the challenging of Atlas's inflatable structure concept by the Army's Wernher von Braun) and the interorganizational rivalries between the Atlas project and the competing Titan effort. Also critical is discussion of the management of the Atlas program—the first to use the systems-management concept and configuration control, with Simon Ramo (of what would eventually become TRW, Inc.) overseeing systems integration.

A number of good books address the history of ballistic-missile development and operations, David K. Stumpf's *Titan II: A History of a Cold War Missile Program* (University of Arkansas Press, 2000) representing the gold standard for recording one ICBM program's history. Although *Atlas: The Ultimate Weapon* provides some useful technical details about the missile's development, it does not measure up to Stumpf's outstanding work on the Titan. The history of the Atlas program remains to be told.

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The Tet Offensive: A Concise History by James H. Willbanks. Columbia University Press (http://www.columbia.edu/cu/cup), 61 West 62d Street, New York, New York 10023, 2006, 272 pages, $29.50 (hardcover).

In every American war, one battle defines the conflict in our national memory. Yorktown, Gettysburg, Normandy, and Inchon are seared into our minds as representative of the courage of our fighting men and their commitment to victory in the American Revolution, Civil War, World War II, and Korean War, respectively. Regarding the Vietnam War, one need only mention the Tet offensive to evoke memories of courage but not of victory. Tet has become the symbol of the futility, if not the outright failure, of our war in Vietnam. *The Tet Offensive: A Concise History* is the latest attempt to examine what happened and how it came to be interpreted as a defeat.

This book is thorough, well written, and uniquely constructed. Of its six parts, the narrative comprises the first two ("Historical Overview" and "Issues and Interpretations") but less than half of the entire work. These two parts provide a solid foundation of facts critical to understanding how Tet was a US tactical victory and strategic defeat—but one encounters much more here.

Readers will find themselves regularly returning to part 3, an almost daily chronology of events through 1967 and 1968, and will thank the author for including it because such a reference helps keep events in the proper order. Part 4, "The Tet Offensive, A to Z," an exhaustive glossary that complements the chronology, includes military terms, personal names, and locations that even the most erudite student of the Vietnam War will find useful. Part 5 is a compendium of 10 important documents pertaining to the Tet offensive from North Vietnamese, US military, and media sources. Reading these documents provides background usually lacking in lesser works.

The final part includes a list of resources. Much more than a simple bibliography, it offers a catalogue of books, papers, and media divided into specific categories relating to the Tet offensive. Additionally and most usefully, Willbanks includes a short commentary about each source. These commentaries will help guide readers in expanding their study of the events.

Rather than just a simple rendition of the offensive, this book is truly a reference work that can be read in whole or in part, depending on one's needs. The narrative itself, although short, is excellent. The author segments the discussion in order to provide specificity without sacrificing overall clarity. His coverage of the tactical, strategic, and perceptual issues of the Tet offensive gives readers a complete portrait.

Unlike some writers, who leave Khe Sanh out of the Tet offensive as if it were a completely separate operation, Willbanks includes a discussion of the siege there, recognizing it as a significant element of Tet. Regarding the question about whether Khe Sanh was meant as a diversionary attack or a main element of Tet, the author presents both sides of the argument, allowing readers to draw their own conclusions.

Interestingly, the author's strict adherence to objectivity may frustrate some readers since one encounters such a stance so rarely. This is especially evident in the discussion about the role of the media in interpreting the events and meaning of Tet. It is common to blame the media for misrepresenting the offensive and turning American public opinion against the war. However, one can make a strong argument that the media did not shape public opinion but was shaped by it. The author takes no specific position on this matter, citing evidence that could support either position. Once again readers must weigh the facts and decide for themselves.

The Tet Offensive: A Concise History would appeal to either casual military-history buffs or serious students of the Vietnam War. The former will gain insight into a very important part of our military and political history, while the latter will find themselves reevaluating previously held beliefs. Any book capable of doing that is well worth the investment of one's time and money.

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Mission Debrief

Air and Space Power Journal, the US Air Force's professional journal, is published in English, Spanish, Portuguese, Arabic, French, and Chinese. Each version is independent and has an editor—a native speaker of the particular language and an expert in the region of coverage—who selects its content. We're always looking for good, thought-provoking articles up to 5,000 words in length, written in any of our published languages. All submissions will be edited in accordance with the standards set forth in the *Air University Style and Author Guide* (available online at http://aupress.maxwell.af.mil/Resources/style/austyle_guide.pdf). For details, please see our guidelines for submitting articles at http://www.airpower.maxwell.af.mil/airchronicles/howto1.html. You can contact us by e-mail at aspj@maxwell.af.mil; regular mail at *Air and Space Power Journal*, 401 Chennault Circle, Maxwell AFB AL 36112-6004; phone at DSN 493-5322 (commercial [334] 953-5322); or fax at DSN 493-5811.

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