

Distribution A: Approved for public release;
distribution is unlimited.

Air Force Chief of Staff

Gen John P. Jumper

**Commander, Air Education
and Training Command**

Gen Donald G. Cook

Commander, Air University

Lt Gen Donald A. Lamontagne

**Commander, College of Aerospace
Doctrine, Research and Education**

Col Bobby J. Wilkes

Editor

Col Anthony C. Cain

Senior Editor

Lt Col Malcolm D. Grimes

Associate Editors

Lt Col Michael J. Masterson

Maj Donald R. Ferguson

Professional Staff

Marvin W. Bassett, *Contributing Editor*

Larry Carter, *Contributing Editor*

Mary J. Moore, *Editorial Assistant*

Steven C. Garst, *Director of Art and Production*

Daniel M. Armstrong, *Illustrator*

L. Susan Fair, *Illustrator*

Ann Bailey, *Prepress Production Manager*

Air and Space Power Chronicles

Luetwinder T. Eaves, *Managing Editor*

The *Air and Space Power Journal*, published quarterly, is the professional flagship publication of the United States Air Force. It is designed to serve as an open forum for the presentation and stimulation of innovative thinking on military doctrine, strategy, tactics, force structure, readiness, and other matters of national defense. The views and opinions expressed or implied in the *Journal* are those of the authors and should not be construed as carrying the official sanction of the Department of Defense, the Air Force, Air Education and Training Command, Air University, or other agencies or departments of the US government.

Articles in this edition may be reproduced in whole or in part without permission. If they are reproduced, the *Air and Space Power Journal* requests a courtesy line.



<http://www.af.mil>



<http://www.aetc.randolph.af.mil>



<http://www.au.af.mil>



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

Visit *Air and Space Power Journal* on-line
at <http://www.airpower.maxwell.af.mil>
or E-mail to aspj@maxwell.af.mil

| | |
|---|----|
| <i>A Word from the Chairman: Shift to a Global Perspective</i> | 5 |
| Gen Richard B. Myers, USAF | |
| Prelaunch Notes | 11 |
| Flight Lines | |
| <i>Regional Security and Air and Space Power</i> | 12 |
| Richochets and Replies | 13 |
| Ira C. Eaker Award Winners | 14 |
| Features | |
| <i>Who We Are and What We Do: The Evolution of the Air Force's Core Competencies</i> | 15 |
| Col Chris J. Krisinger, USAF | |
| <i>Cost-Benefit Economics: Enhancing National Security and Air and Space Power</i> | 27 |
| Lt Col Michael R. Weeks, USAF | |
| <i>Latin American Countries with Space Programs: Colleagues or Competitors?</i> | 39 |
| Lt Col Robert D. Newberry, USAF | |
| <i>Air Expeditionary Access: The African Connection</i> | 47 |
| Col Brian K. Hall, USAF | |
| <i>Africa Contingency Operations Training Assistance: Developing Training Partnerships for the Future of Africa</i> | 57 |
| Col Russell J. Handy, USAF | |
| <i>China and India: Friends or Foes?</i> | 65 |
| Lt Col Mona Lisa D. Tucker, USAF | |
| <i>The Chinese Air Force and Air and Space Power.</i> | 73 |
| Lt Col Thomas R. McCabe, USAFR | |
| <i>Iraq, Preemption, and the Views of Poland, the Czech Republic, and Hungary</i> | 84 |
| Col Gordon R. Hammock, USAF | |
| <i>The Benelux Deployable Air Task Force: A Model for EU/NATO Defense Force Integration</i> | 93 |
| Lt Col Dave L. Orr, USAF | |
| <i>Words and Weapons: The Power of Discourse</i> | 99 |
| Lt Col Edith A. Disler, USAF | |

Net Assessment

- American Airpower Comes of Age: General Henry H. “Hap” Arnold’s World War II Diaries*** 107
Maj Gen John W. Huston, USAF, Retired, ed.
Reviewer: Dik Alan Daso
- On War and Leadership: The Words of Combat Commanders from Frederick the Great to Norman Schwarzkopf*** 108
Owen Connelly
Reviewer: Lt Col Robert B. Kane, USAF
- P-40 Warhawk Aces of the MTO*** 109
Carl Molesworth
Reviewer: Lt Col Robert Tate, USAFR
- Billy Mitchell*** 109
James J. Cooke
Reviewer: Col Phillip S. Meilinger, USAF, Retired
- American Military Aviation: The Indispensable Arm*** 111
Charles J. Gross
Reviewer: Lt Col Paul D. Berg, PhD, USAF
- A Dance with Death: Soviet Airwomen in World War II*** 111
Anne Noggle
Reviewer: Guillaume de Syon
- Air Power History: Turning Points from Kitty Hawk to Kosovo*** 112
Sebastian Cox and Peter Gray, eds.
Reviewer: Dr. David R. Mets
- The Warriors: Reflections of a Fighter Pilot, Test Pilot, and Veteran of the Air Wars over Vietnam*** 113
Robert E. Ross
Reviewer: Capt Jay Hemphill, USAF
- Knights of the Air: Canadian Fighter Pilots in the First World War*** 114
David L. Bashow
Reviewer: Lt Col Martin A. Noel Jr., USAF, Retired
- Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914–1945*** 114
Tami Davis Biddle
Reviewer: Dr. William Dean
- Arms Control: Cooperative Security in a Changing Environment*** 116
Jeffrey A. Larsen, ed.
Reviewer: Lt Col Charles E. Costanzo, USAF
- We Have Capture: Tom Stafford and the Space Race*** 118
Thomas P. Stafford with Michael Cassutt
Reviewer: Lt Col Merrick E. Krause, USAF

| | |
|--|-----|
| <i>Vietnam Air Losses: United States Air Force, Navy and Marine Corps Fixed-Wing Aircraft Losses in Southeast Asia, 1961–1973</i> | 119 |
| Chris Hobson Reviewer: Ron Fuller | |
| <i>Swedish Signal Intelligence, 1900–1945</i> | 120 |
| C. G. McKay and Bengt Beckman Reviewer: Capt Gilles Van Nederveen, USAF, Retired | |
| <i>Beyond Terror: Strategy in a Changing World</i> | 121 |
| Ralph Peters Reviewer: Lt Comdr Youssef H. Aboul-Enein, USN | |
| <i>War of the Aeronauts: The History of Ballooning in the Civil War</i> | 121 |
| Charles M. Evans Reviewer: Col Allan W. Howey, USAF, Retired | |
| <i>The Clinton Wars: The Constitution, Congress, and War Powers</i> | 122 |
| Ryan C. Hendrickson Reviewer: Maj Paul Niesen, USAF | |
| <i>Airwar: Essays on Its Theory and Practice</i> | 123 |
| Phillip S. Meilinger Reviewer: Kenneth P. Werrell | |
| Mission Debrief | 126 |

Air and Space Power Journal Board of Reviewers

Prof. Tami Davis Biddle

US Army War College

Lt Col Price T. Bingham, USAF, Retired

Melbourne, Florida

Col Matthew Caffrey, USAFR

Operations Directorate
Headquarters USAF

Brig Gen Phillip D. Caine, USAF, Retired

Monument, Colorado

Dr. Don D. Chipman

USAF Squadron Officer College

Dr. Clayton K. S. Chun

US Army War College

Dr. Mark Clodfelter

National War College

Dr. James Corum

USAF School of Advanced Air and Space Studies

Dr. Conrad Crane

Strategic Studies Institute
US Army War College

Dr. Dik A. Daso

National Air and Space Museum
Smithsonian Institution

Dr. Lee Dowdy

Alabama State University

Col Dennis M. Drew, USAF, Retired

USAF School of Advanced Air and Space Studies

Brig Gen Charles Dunlap Jr., USAF

Staff Judge Advocate
USAF Air Combat Command

Dr. Stephen Fought

USAF Air War College

Col David M. Glantz, USA, Retired

Journal of Slavic Military Studies

Col Thomas E. Griffith Jr., USAF

USAF School of Advanced Air and Space Studies

Dr. John F. Guilmartin Jr.

The Ohio State University

Dr. Grant T. Hammond

Center for Strategy and Technology
Air University

Prof. Daniel Hughes

USAF Air War College

Dr. Thomas Hughes

USAF School of Advanced Air and Space Studies

Lt Col Mark P. Jelonek, USAF

Space Division
USAF Weapons School

Dr. Tom Keaney

School of Advanced International Studies
Johns Hopkins University

Prof. Theodore Kluz

USAF Air War College

Dr. Charles Krupnick

US Army War College

Dr. Benjamin S. Lambeth

RAND

Lt Col David MacIsaac, USAF, Retired

Montgomery, Alabama

Dr. Karl P. Magyar

Montgomery, Alabama

Col Edward Mann, USAF, Retired

Colorado Springs, Colorado

Dr. Jerome V. Martin

Peru State College

Col Phillip Meilinger, USAF, Retired

Science Applications International Corporation

Prof. John H. Morrow Jr.

University of Georgia

Dr. Daniel Mortensen

USAF College of Aerospace Doctrine, Research
and Education

Prof. James Mowbray

USAF Air War College

Dr. Karl Mueller

RAND

Dr. Richard R. Muller

USAF Air Command and Staff College

Col Robert Owen, USAF, Retired

Embry-Riddle Aeronautical University

Dr. Reina J. Pennington

Norwich University

Dr. James Smith

USAF Institute for National Security Studies

Col James Spencer, USAF

USAF Academy

Col Richard Szafranski, USAF, Retired

Toffler Associates

Dr. James Titus

USAF Academy

Col Mark Wells, USAF

USAF Academy

Dr. Kenneth P. Werrell

Christiansburg, Virginia

Dr. Harold R. Winton

USAF School of Advanced Air and Space Studies

A Word from the Chairman

Shift to a Global Perspective

GEN RICHARD B. MYERS, USAF
CHAIRMAN, JOINT CHIEFS OF STAFF

In ancient India, six blind men encountered an elephant for the first time and quickly began to squabble about the nature of elephants.

The first blind man bumped into the elephant's side and declared that the beast was like a wall.

The second, discovering the ear, concluded it was like a fan.

The third blind man came across the tail and thought the elephant to be very much like a rope.

The fourth, encountering the elephant's leg, was sure the animal resembled a tree.

Finding the tusk, the fifth blind man proclaimed the elephant to be like a spear.

And the sixth, grasping the elephant's trunk, concluded the giant pachyderm most resembled a snake.

WE ALL KNOW from the ancient Oriental story of the six blind men and the elephant that how we perceive something determines our understanding of it and, by implication, our response to it. With that in mind, the US military must shift from a regional to a global view of our security environment in order to better understand and respond. In the past, America's security needs were served adequately by having its uniformed leaders in Washington maintain the global vision, while the majority of US military organizations maintained a regional or functional focus. However, to provide effectively for the nation's defense in the twenty-first century, we must all come to understand and appreciate the global perspective. Examining trends in the global-security environment and the ways in which the US military has organized to deal with past challenges provides the foundation for understanding the implications for America's armed forces today, as we transform our military into one that is ready to effectively provide missile defense, information operations (IO), space operations, and other capabilities that do not respect our traditional regional boundaries.

Trends in the Global-Security Environment

During the last decade of the twentieth century, we witnessed dramatic shifts in the global-security environment. Revolutionary technological advances and monumental political changes rendered our world safer in some ways, though less predictable and arguably less stable. While students of international affairs debated the broader meaning and impact of globalization, defense professionals worked to understand the security implications of these global trends.

Technological changes since 1990 have occurred at an extraordinary pace. Consider for a moment where you were and what you were doing as the Berlin Wall came down. How many people at that time owned a cellular phone or a personal computer, had logged onto the Internet, or knew what a global positioning satellite system was? Whereas television news coverage of the Vietnam War took 36 to 48 hours to reach American viewers, stories of the Gulf War were broadcast around the world instantaneously. During the Gulf War, Cable News Network was unique in providing continuous coverage of global news. Now, sev-

eral major networks in the United States cover global events as they happen—24 hours a day, 365 days a year—not to mention the variety of international news programs produced and broadcast by foreign broadcast corporations. Al-Jazeera provides programming that shapes perceptions of the United States in much of the Arabic-speaking world. Imagery satellites capable of better than one-meter resolution were at one time the sole purview of superpowers but are now operated by companies in the United States and Europe for the benefit of whoever is willing to pay for the images. In August 2002, commercial-satellite images of airfields in the Horn of Africa were broadcast around the world, allegedly showing potential staging areas for attacks against Iraq. For those who missed the news, the satellite photographs were available on the Internet.

Political changes in the 1990s were no less staggering. As a fighter pilot, I spent the first 25 years of my Air Force career studying Soviet fighter aircraft that the North Atlantic Treaty Organization (NATO) would have to confront in deadly combat if the Cold War ever heated up. Now Soviet fighters that could be seen in the West only in classified photos are performing at air shows over America's heartland. Today, officers from the former Soviet Union attend professional military education at our staff colleges and war colleges, and three former Warsaw Pact members have joined NATO. The end of the Cold War lowered the threat of nuclear Armageddon and brought an end to many of the proxy wars through which the two sides struggled to exert their influence. But the Cold War imposed a certain element of stability and predictability to international affairs that no longer exists. Alarming numbers of customers—including state and nonstate actors—seek to acquire weapons of mass destruction and the means to deliver them, including long-range ballistic missiles. In short, the technological and political changes that have improved our quality of life and brought us all closer together can also be perverted to empower those who would do us harm.

Historical Context

As we chart our way ahead, we do not begin with a clean sheet of paper. We must first know how we arrived at our current way of organizing for national security in order to understand why we are better off organizing functionally or globally for some mission areas rather than relying entirely on regional combatant commands. At the same time, we should appreciate, not abandon, the value of regional expertise in implementing our national security strategy and national military strategy.

The experiences of the Second World War and early Cold War helped dispel lingering illusions about America's security and its proclivity for isolationism; those experiences drew America's new international responsibilities into tighter focus. Responding to America's changed role in the world, Congress passed the National Security Act of 1947, creating the National Security Council, the Central Intelligence Agency, and the Department of Defense (DOD). While Congress legislated the overarching security structure, President Harry Truman established the first Unified Command Plan (UCP), which established our regional and functional combatant commands. Among these newly created commands were US European Command (USEUCOM), US Pacific Command (USPACOM), US Atlantic Command (USLANTCOM), and Strategic Air Command (SAC). The containment policy our armed forces helped to support was a global one, but, arguably, little need existed for our regional commanders to focus globally. In any case, the regional commanders lacked the technological means needed to gain and maintain a global perspective.

The first UCPs merely codified the command structures that existed at the end of the Second World War. What had once been Gen Dwight Eisenhower's command became USEUCOM; Gen Douglas MacArthur's command became Far East Command; and Adm Chester Nimitz's command became USPACOM. Other regional commands had responsibility for Alaska, for the Caribbean, and for guarding the northeastern air approaches to the United States, but vast areas of the world re-

mained unassigned to any combatant command.¹ When our first combatant commands were established, the service chiefs played an active role in the commands and served as the Joint Chiefs of Staff's (JCS) executive agents in overseeing the commands.

From the outset of the Cold War, regional commands focused on their regions while the JCS kept a global perspective. Although this arrangement served the nation well enough to see us through the Cold War, signs of trouble appeared as early as 1951, when President Truman dismissed General MacArthur in the midst of the Korean War. After serving as chief of staff of the Army in the 1930s, MacArthur lived in Asia until his dismissal. He first served as military advisor to the Philippine government and then was made commander of US troops in the Southwest Pacific area during the Second World War. After the war, MacArthur became military governor of Japan, overseeing its occupation and reconstruction. With the outbreak of the Korean War, General MacArthur's Far East Command provided the US underpinning to the war effort of the United Nations. In response to MacArthur's protest against limited objectives in the Korean War—"no substitute for victory"²—Gen Omar Bradley, chairman of the JCS, informed Congress that he and the joint chiefs unani- mously agreed that in the global struggle against communism, a wider war in Asia represented "the wrong war, at the wrong place, at the wrong time, and with the wrong enemy."³ Though partly a clash over the utility of limited objectives in war, the disagreement largely reflected the two sides' differing perspectives—MacArthur's Asia-centric regional view and the joint chiefs' global outlook, which had to account for Europe as well as Asia.

In the 56 years since the first UCP, our combatant-command structure has been expanded geographically and empowered legally. The Goldwater-Nichols Department of Defense Reorganization Act of 1986 strengthened the role of our combatant commands, and with UCP '02, the last remaining unassigned regions of the world—Russia, the Caspian Sea, Antarctica, and the countries of North America—

were finally placed within our combatant commanders' areas of responsibility (AOR). Now, the entire globe is encompassed within the AORs of our five regional combatant commands—USEUCOM, USPACOM, US Central Command (USCENTCOM), US Northern Command (USNORTHCOM), and US Southern Command (USSOUTHCOM).

In addition to regional combatant commands, the United States has had functional combatant commands since the inception of the UCP. In fact, SAC was technically the first, formally becoming a combatant command just two weeks before USPACOM, USEUCOM, and USLANTCOM did so. Still, today's functional, unified combatant commands are relatively recent creations that began with the establishment of US Space Command (USSPACECOM) in 1985.⁴ In the 15 years that followed, successive administrations established US Special Operations Command (USSOCOM), US Transportation Command (USTRANSCOM), US Strategic Command (USSTRATCOM), and US Joint Forces Command (USJFCOM). The rise of these functional commands highlights the reality that some military missions or responsibilities can be better fulfilled by carving out functions from our regional commands' responsibilities than by having the functions dispersed among our regional commands.

The newly established USSTRATCOM—formed by joining its capabilities and resources with those of USSPACECOM—is taking on some missions that have been unassigned previously and that overlap the responsibilities of our regional combatant commands. USSTRATCOM's nuclear focus broadened considerably with the latest Nuclear Posture Review (NPR), signed by the secretary of defense in December 2001. In addition to specifying the road ahead for America's nuclear arsenal, the 2001 NPR introduced a new strategic triad. The old triad of intercontinental ballistic missiles, long-range bombers, and submarine-launched ballistic missiles has given way to a triad of strategic offensive capabilities, strategic defenses, and the infrastructure and research and development

needed to sustain America's strategic capabilities. Strategic offensive capabilities include nonnuclear, even nonkinetic, strikes as well as the traditional employment of nuclear force. As described in the NPR, the new triad is enabled by command and control (C2), intelligence, and planning capabilities. The president's decision to join USSPACECOM and USSTRATCOM to form a new US Strategic Command was a major step in fulfilling the vision for a new strategic triad. Despite the familiar name of the new command, it is as different from the former USSTRATCOM as it is from the former USSPACECOM. It is an entirely new command—and greater than the sum of its two predecessors. Obviously, the new USSTRATCOM will have global responsibilities, and its commander and staff must have a global perspective for dealing with threats to US security.

USSOCOM has also been given new responsibilities and a greater role in the global war on terrorism. The very phrase *global war on terrorism* highlights the global approach needed for dealing with the problem of terrorism. At the first DOD press conference of 2003, the secretary of defense announced the change of focus at USSOCOM, pointing out that "Special Operations Command will function as both a supported and a supporting command."⁵ In the past, USSOCOM, with very few exceptions, has been the supporting command to our regional combatant commands. Obviously, terrorist networks today have a global presence, with members and cells around the world, and we can no longer adequately counter the scourge of terrorism by relying solely on regional strategies. We also need a global approach to the problem.

Implications for the US Military

The establishment of a new USSTRATCOM and an expanded role for USSOCOM does not come at the expense of our regional combatant commands. This is not a zero-sum equation. Our regional combatant commands provide essential regional expertise; they represent an enduring basis for US pres-

ence around the globe; they are the keys to successful theater-security cooperation with our allies and friends; and they form the basis for pursuing multinational interoperability and military coalitions. In both peace and war, our regional combatant commands give direction to and exert C2 over US military activities around the world. The challenge for our armed forces today is to balance these regional responsibilities with the need to address missions that are global in nature.

Whether we divide our combatant commanders' responsibilities and authorities along functional lines and address them on a global basis or whether we choose to deal with them along regional lines, we create seams—discontinuities where one command's responsibilities end and another's begin. These are unavoidable unless we take the impractical step of making one commander responsible for everything, everywhere, all the time. However, seams can become vulnerabilities that our adversaries might exploit. Therefore, when organizing our combatant commands, we strive to place seams where it makes the most sense to place them—where they provide us the greatest effectiveness and efficiencies and present our adversaries with the least opportunity to do us harm.

Missions that cross all regional boundaries require a global approach. One of those is computer-network defense. Electrons do not respect geographic boundaries, and requiring each of our geographic commands to plan independently for protecting computer networks would create unacceptable seams. Thus, we assigned the lead for computer-network defense to USSPACECOM in 1999. This assignment of a global mission to a commander with a global perspective was a precursor of the new missions assigned to the new USSTRATCOM.

Many inherently global military-mission areas are of increasing importance to our security and cannot be addressed well from a regional perspective. Such inherently global areas include (1) integration of missile defense across AORs; (2) certain elements of IO; (3) space operations; (4) global strike operations; (5) certain intelligence, surveillance, and re-

connaissance (ISR) activities associated with global strike, missile defense, IO, and space operations; and (6) counterterrorism.

Missile defense is a responsibility of all of our regional combatant commands. However, no such command, including the newly established USNORTHCOM, is more suited than any other to integrate missile defense operations across AORs in support of the president's stated goal of providing protection for deployed US forces, allies, and friends. When missiles in a distant theater can be used against targets anywhere on the globe, the United States needs global ISR and global C2 to integrate its missile defense capabilities, which, by the way, include offensive capabilities to preempt or prevent missile attacks. We cannot afford to think of missile defense merely in terms of actively intercepting missiles after launch.

Similarly, certain elements of IO require a global perspective and better integration of our nation's capabilities. Although IO should become a core war-fighting capability of all our combatant commands, certain IO activities could create effects of such magnitude that focusing on regional consequences would become unnecessarily restrictive and ultimately unhelpful. Even when the effects of IO are limited to a single AOR, we will need a global perspective to ensure that theater IO is compatible with IO in other AORs. A global perspective will often provide the essential starting point for success, whether we are attempting to get a message across to an audience that spans more than one theater, conducting electronic warfare (EW) activities to inhibit long-distance communications, performing computer-network operations, or carrying out military-deception programs. Even within a single theater, USSTRATCOM will add value to the regional combatant commands by integrating efforts previously stovepiped in different organizations (e.g., C2 warfare, psychological operations [PSYOP], EW, and computer network attack [CNA]).

Space operations present another military-mission area requiring a global perspective rather than a regional focus. Given the vital

role space operations play in global communications, one cannot always determine precisely where space operations end and IO begins. In the past, the supported-supporting relationships between regional combatant commands and USSPACECOM were predominantly one way, with the latter supporting the regional commands. In the future, we are much more likely to see regional commands supporting the new USSTRATCOM to ensure the success of military operations taking place in space. This change in roles will require our regional combatant commands to develop a deeper appreciation for the global perspective of America's security needs.

Given the nature of threats facing America in the twenty-first century, including fleeting targets such as mobile ballistic missiles or leaders of terrorist networks, we must develop the ability to take appropriate military action rapidly, anywhere on the globe. The instruments of such action include today's long-range bombers, shipborne weapon systems, and special forces, but we will need new global capabilities in the future. Regional combatant commands could play either supported or supporting roles in global strike operations, depending on the scenario and weapon systems involved. However, one need look no further than our current global war on terrorism to appreciate the need for a global perspective in planning for and prosecuting global military operations.

We will need global ISR activities for gathering indications and warning data and for otherwise enabling global strike, space operations, certain elements of IO, and integrated missile defense. Moreover, we need global C2 capabilities to enable integrated global missile defense, facilitate global strike, integrate regional operations with global operations, and integrate regional operations in one AOR with those of another. Knitting together various regionally focused ISR activities is unlikely to yield a coherent global perspective. Simply put, we cannot obtain a relevant global perspective without ISR activities that, to some degree, are globally coordinated and directed—a function performed by the Defense

Intelligence Agency. The new factor is that, given the low-density/high-demand nature of many of our ISR resources, regional combatant commands are more likely than before to be required to conduct ISR activities in support of global operations tasked to USSOCOM or USSTRATCOM.

Conclusion

Often, discussions about the need to shift from a regional focus to a global perspective lead to debates about supported-supporting relationships. Inevitably, someone will make the claim that functional combatant commands should always support regional combatant commands. Implied, if not stated, is the belief that conducting operations or executing missions is the sole purview of regional combatant commands and that no functional combatant command should conduct operations in a regional combatant commander's AOR. Such hard-and-fast rules have never existed, and supported-supporting relationships continue to depend on the situation and mission objectives. That is why supported-supporting relationships are spelled out in planning orders, deployment orders, execution orders, the Joint Strategic Capabilities Plan, operations plans, and concept plans. Moreover, the term *supported* does not imply sole responsibility for execution. A supporting combatant commander can execute or conduct operations in support of the supported commander—something USTRANSCOM does every day. Ultimately, our combatant commanders support the president and secretary of defense in the

pursuit of American security, and the array of possible command relations between combatant commanders should not be constrained unnecessarily. To the extent we can harness the ability to observe and operate globally, without self-imposed artificial limitations, we will generate new military capabilities to add to the ones we have today, thereby yielding a greater number of military options from which the president can choose.

The president and secretary of defense must maintain a global perspective, and so must the military officials charged with supporting them. Communications from the president and secretary of defense to the combatant commanders normally pass through the chairman of the JCS, but the joint chiefs and the chairman are not in the chain of command. If ever a time existed when our nation's security could be adequately provided for by having uniformed leaders in Washington maintain a global perspective while commands around the world focus exclusively on their regions, that time has long since passed into history. To fulfill faithfully the "commander's intent" from the president on down, combatant-command staffs, service staffs, the Joint Staff, and US officials serving on allied staffs must appreciate our commander in chief's perspective—a global one. If we attempt to do otherwise, we will surely end up like the six blind men of the ancient Eastern parable in their first encounter with an elephant, endlessly disputing the nature of something we fail to perceive fully. By shifting our view from a regional to a global perspective, we will better comprehend and respond to America's security needs in the twenty-first century. □

Notes

1. Ronald H. Cole et al., *The History of the Unified Command Plan, 1946–1993* (Washington, D.C.: Joint History Office, February 1995), 11–15.

2. Gen Douglas MacArthur, speech before Congress, 19 April 1951, reproduced in Douglas MacArthur, *Reminiscences* (New York: McGraw-Hill, 1964), 459.

3. Gen Omar Bradley, testimony to Congress, 15 May 1951, cited in Omar N. Bradley and Clay Blair Jr., *A General's Life: An Autobiography* (New York: Simon and Schuster, 1983), 640.

4. Prior to the formation of USSPACECOM in 1985, purely functional combatant commands tended to be specified com-

mands (i.e., all of their forces came from a single service). SAC was an example of a specified command. The last specified command, US Forces Command (USFORSCOM), became the Army component to USLANTCOM in 1993 (USLANTCOM became US Joint Forces Command [USJFCOM] in 1999).

5. Secretary of Defense Donald H. Rumsfeld, transcript of a DOD press conference, the Pentagon, Washington, D.C., 7 January 2003. See Elizabeth G. Book, "Rumsfeld: Special Operations Command Slated for Growth," *National Defense*, February 2003, on-line, Internet, 13 June 2003, available from <http://www.nationaldefensemagazine.org/article.cfm?Id=1033>.



Prelaunch Notes

COL ANTHONY C. CAIN, EDITOR

SUMMER WAS A very busy time for the staff of the *Air and Space Power Journal*. In June we bid farewell to the director of the Airpower Research Institute (AR), Col Allan W. Howey, who retired from the Air Force. He will be greatly missed! We take this opportunity to welcome his replacement, Col Dale Hayden, to Maxwell Air Force Base. Col onel Hayden will assume the responsibilities of running the day-to-day business of AR at the College of Aerospace Doctrine, Research and Education (CADRE). Additionally, he will utilize his extensive experience as an Air Force Fellow at Harvard University to oversee AR's Air Force Fellows Program.

We also welcome Lt Col Michael J. Masterson, our new associate editor, to *ASPJ*. Colonel Masterson comes to us from Headquarters Air University, where he was the military assistant to the chief academic officer. He brings with him 20 years of operational and analytical intelligence work in his Air Force career, as well as a

PhD in management information systems from Auburn University and extensive college teaching and research experience.

We on the *ASPJ* editorial staff look forward to a new academic year, anticipating many new, insightful articles and reviews in our quest to publish *the best in air and space power thought*. We are always seeking quality articles. If you are interested in submitting an article for publication, please refer to our guidelines in the "Mission Debrief" section of this issue, or check the submission instructions on our Web site: <http://www.airpower.maxwell.af.mil/airchronicles/howto.html>. Additionally, we invite you to sample some new and very exciting books that are appearing on the market by reading our reviews, both in the published version of *ASPJ* and on-line at <http://www.airpower.maxwell.af.mil/airchronicles/bookmain.html>. If you would like to write a review for us, please refer to the guidelines on our Web site. As you can see, you have many opportunities to contribute to your *Journal*. □

Be unabashedly proud in your passion for your profession, your relentless commitment to the mission, and your readiness to lead flawless execution. That commitment and attitude thus far has earned the deep respect of superiors and leaders of the entire US Air Force.

—Gen Michael P. C. Carns, USAF, Retired



Regional Security and Air and Space Power

AS THIS ISSUE of *ASPJ* goes to press, the strategic and operational situation in much of the world has changed once again. The challenges to US security and interests are simultaneously real, intense, and ill defined. US forces find themselves engaging a wide spectrum of military tasks from training to humanitarian relief, peacekeeping, small-scale contingency operations, combat, and both conventional and nuclear deterrence missions. All of these tasks occur against the backdrop of the ongoing global war on terrorism, tensions on the Korean peninsula, and the search for a peace process in the Middle East. The challenges that characterize this environment compel air and space power professionals to be intimately familiar with security issues in nearly every region. Air and space power's global reach and the imperative of establishing what Gen Gregory S. Martin calls "geopresence" provide the rationale for our focus on regional-security issues as seen from an air and space power perspective.

Each academic year, the Air War College class completes a Regional Studies course as part of the core resident curriculum. Faculty and students study the most important economic, social, strategic, military, and cultural issues within various regions. These seminars plan site visits to countries within their assigned regions to conduct firsthand research into relevant air and space power issues. The course culminates with a research paper that captures lessons from the classroom and the on-site visits. In this issue we include some of those students' papers to share with the rest of the Air Force the insights they gleaned from such an intense experience.

Although we can publish only a small selection of the findings from this year's Regional Studies program, what emerges is an impression of the com

plexity that challenges policy makers daily. The daunting problems of security, terrorism, internal strife, disease, and humanitarian relief that confront African nations provide airmen the impetus to consider how to plan for access and for the capabilities that forces may require to participate in rapidly changing conditions on that continent. The volatile security situation on the Asian subcontinent represents more than just a nuclear standoff between India and Pakistan. Air and space power planners must understand the long-term perceptions of Hindu, Muslim, Indian, Chinese, Pakistani, and European parties if they are to anticipate how to support US interests in that region.

It would be an understatement to declare that policy makers may not yet fully understand the strategic and operational implications for the Middle East that will occur as a consequence of the dramatic collapse of Saddam Hussein's regime and military in Iraq. The articles that explore questions related to this region reveal the interconnected global-security concerns that one must understand in order to employ force effectively in that troubled area of the world. Additionally, we may see a new factor emerging in Eastern Europe as Poland, the Czech Republic, and Hungary engage in global affairs in new ways.

Thus, air and space power advocates and practitioners face a paradox—the capabilities that we have advertised for nearly the entire history of our field appear to be within our grasp just as we must transform our understanding of those capabilities to meet the demands of a dramatic shift in the international-security environment. We have refined our technological capability to affect the full spectrum of combat and noncombat tasks to a point that few would have imagined 10–15 years ago. The demand for those capabilities, however,

stretches our forces beyond limits that we may have thought possible. Now more than ever, airmen must spend time reflecting on what air and space power brings to the strategic, operational, and tactical fight. The stakes are so high with every deploy-

ment in nearly every region that we must approach the tasks set before us as a unified team—a team equipped intellectually and technically to do the right mission the right way at the right time. □



Ricochets and Replies

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

EMOTIONAL INTELLIGENCE

I was so inspired by Lt Col Sharon Latour and Lt Gen Bradley Hosmer's article ("Emotional Intelligence: Implications for All United States Air Force Leaders," winter 2002) that I felt compelled to write a short message of thanks! To be honest, I was delighted to see the *Journal's* dedication to the leadership topic in this issue, and it was interesting to read this article in particular. With a psychology background and interest in human behavior, I wanted to learn more about emotional intelligence (EI), so I ran out and purchased two books by Dr. Daniel Goleman: *Emotional Intelligence: Why It Can Matter More Than IQ* (his original book on EI) and *Primal Leadership: Realizing the Power of Emotional Intelligence* (written with Richard Boyatzis and Annie McKee). I had heard about EI before, but this was the first I had heard about its application to leadership—and, of course, it makes perfect sense. Thanks again for the spark needed to ignite my passion to learn more about EI. I look forward to seeing Air Force leaders continue to embrace EI.

Capt Alejandro "Alex" Garcia Jr., USAF
Hickam AFB, Hawaii

DIRECT ATTACK: A NEEDED CONCEPT

My compliments to Lt Col Phil Haun on his well-written article "Direct Attack—A Counterland Mission" (summer 2003). Well done. Your readership may be interested to know that this particular subject was raised at the Hap Arnold Doctrine Symposium of spring 2002. It was raised as a direct result of air operations experience in Afghanistan, but it is not a new issue—there are many examples from

Desert Storm, Deliberate Force, Allied Force, and now Iraqi Freedom, in which the interdiction and close air support mission categories did not capture airpower's contribution to counterland operations.

The intent of raising the issue was to establish an appropriate mission area entitled "battlefield air operations (BAO)" for all the reasons that are identified in Colonel Haun's article. With respect to the name, "direct attack (DA)" will work just as well as BAO. As a result of discussion of the issue with the Chief and the general officers present at the spring 2002 conference, a white paper was written on the subject. The bottom line for why we need to formally establish this new mission category is to highlight a critical capability for joint force commanders; to ensure proper organization, training, and equipping for the mission; to ensure that appropriate supported/supporting relationships are established for execution; and to provide appropriate command and control arrangements.

Air Combat Command (ACC) recently hosted (June 2003) an Air Force-wide conference to update AFDD 2-1.3, *Counterland*. The conclusions were as follows: (1) the USAF needs to add a new mission area, *direct attack*, to *Counterland*, (2) *killboxes* should be established in joint and Air Force doctrine as the primary Airspace and Fire Support Coordination Measure, and (3) *strike coordination and reconnaissance* (SCAR) should replace *Killer Scout*. These issues will now be fully developed at the Air Force Doctrine Working Committee (AFDWC) session for AFDD 2-1.3, *Counterland*, on 5-7 August 2003.

While there are those who do not believe that some of these changes are necessary, I believe that the preponderance of the empirical data and the logic, with respect to how these initiatives can enhance the war-fighting capability of a joint force commander, will carry the day. Keep those great ideas and articles coming!

Maj Gen Dave Deptula, USAF
Director, ACC Plans and Programs
Langley AFB, Virginia



Ira C. Eaker Award Winners for the 2002–2003 Academic Year



First Place

Lt Col Kenneth Keskel
“The Oath of Office:
A Historical Guide
to Moral Leadership”
(Winter 2002)



Second Place

Lt Col (sel) S. Didi Kuo
“High Ground over the Home-
land: Issues in the Use of Space
Assets for Homeland Security”
(Spring 2003)



Third Place

Lt Col Merrick E. Krause
“Attack Operations: First
Layer of an Integrated
Missile Defense”
(Spring 2003)

Congratulations to this year’s winners! The award honors airpower pioneer Gen Ira C. Eaker and is made possible through the sponsorship of the Arthur G. B. Metcalf Foundation. If you would like to compete for the Ira C. Eaker Award, submit a feature-length article to the Editor, *Air and Space Power Journal*, 401 Chennault Circle, Maxwell AFB AL 36112-6428 or via E-mail at aspj@maxwell.af.mil. All US military personnel below the rank of colonel (O-6) or US government civilian employees below GS-15 or equivalent are eligible.



Who We Are and What We Do

The Evolution of the Air Force's Core Competencies

COL CHRIS J. KRISINGER, USAF

Editorial Abstract: Colonel Krisinger analyzes the process that produced the Air Force's original core competencies and offers insights into how recent changes to them will affect the air and space power culture. The degree to which airmen can communicate their culture and capabilities both to themselves and others will determine the scope and persistence of transformation initiatives.



Air Force core competencies are who we are and what we do.

—Lt Gen John Jumper, 1996

IN THE INAUGURAL issue of his policy letter, *The Secretary's Vector*, Secretary of the Air Force James Roche publicly debated an evolving construct for the Air Force's core competencies.¹ A similar statement by the Air Force chief of staff in an issue of the *Chief's Sight Picture* closely followed this pronouncement.² Influenced by the corporate-management style of today's Department of Defense (DOD) as well as his own experiences in the defense industry, the secretary helped explain the change to the service's own assertion of its identity by saying that "just as our

concepts of operations and capabilities continually evolve, so also does the way we articulate Air Force competencies."³

The new definition hinges on perceiving three new core competencies—*developing airmen, adapting technology to war fighting, and integrating operations*—as a deeper refinement of the fundamental elements that identify the Air Force as a service. Further rationale offered in support of the new definition notes the retention of the previous six core competencies but characterizes them as "distinctive capabilities." In fact, this definition points out that

the three new underlying institutional core competencies make the six distinctive capabilities possible.

One of the underpinnings of the Air Force's current war-fighting doctrine publications, as expressed in the keystone Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, is the delineation of six core competencies (now capabilities): *air and space superiority, global attack, rapid global mobility, precision engagement, information superiority, and agile combat support*.⁴ This set of core competencies, whose introduction coincided with the Air Force-wide invigoration of war-fighting doctrine and the establishment of the Air Force Doctrine Center at Maxwell Air Force Base, Alabama, in the mid-1990s, lay "at the heart of the Air Force's strategic perspective and thereby at the heart of the Service's contribution to our nation's total military capabilities," according to AFDD 1. They were a statement of functions "that can be accomplished only by air and space forces" and "that confer advantages to the nation when performed by air and space forces."⁵ Put simply, the Air Force intended its core competencies to encapsulate what distinguished the Air Force from the other services in terms of war fighting.

These evolving Air Force perspectives on the concept of core competencies and capabilities are more substantive than any codification of a definition of the service's identity. The new intellectual course will manifest itself across the full range of efforts to "organize, train, and equip," and will affect budgets, force structure, operations, training, and command-level decisions. More specifically, the new definition could complicate the Air Force's continuing search for optimum alignment of its organizations and structure for managing and employing air and space power. The first noticeable manifestation of the changed perspective on core competencies—tied to "developing airmen"—is the recent announcement of the new force-development initiative, which will fundamentally change the way the service prepares its future leaders and will include substantially increased resources devoted to officer development.⁶

With so much riding on the core-competency concept, such a course correction should be the topic of robust Air Force discussion, possibly conducted through the more formalized and accepted doctrine-development process of today, to ensure that the changes are well understood and used for maximum institutional advantage. This article represents *one* voice in the discussion of the new competencies by reaffirming the value and soundness of the basic idea behind core competencies and by remembering that the earlier Air Force work to define the six core competencies was visionary, contains much that remains valid, and passes the doctrinal test of "learned experience." Retaining the original six competencies as distinctive capabilities affirms their value as parts of a framework that (1) defines the key components of air and space warfare, (2) identifies unique Air Force contributions to war fighting, (3) assists the Air Force in managing the intellectual properties of air and space warfare, and (4) shapes the Air Force budget as well as plans and programs for the future.

To correlate the concepts of competencies with capabilities, the new definition goes to the very heart and soul of the Air Force. The service must understand that the new competencies are intuitively necessary but not necessarily unique to it. As defined, the core competencies have much that could apply to the other services. Thus, failure to fully grasp the new core competencies may result in a missed opportunity to help airmen understand the separate but interlocking components that comprise the conduct of air and space warfare and distinguish the Air Force's contribution to joint warfare. In other words, the common language implied in the new core competencies enhances a larger DOD joint vision, but airmen must be articulate enough to merge the new language with the six capabilities to communicate airpower's unique contribution to the joint force.

Origins of the Air Force's Core Competencies

In 1995 the secretary of the Air Force introduced the idea of core competencies to

the service in an article published in *Armed Forces Journal International*; they appeared in their final six-item format in 1996 (table 1).⁷

Table 1

**Air Force Core Competencies:
Original (1995) and Present (since 1996)**

| <i>Air Force Core Competencies (1995)</i> | <i>Air Force Core Competencies (1996 to Present)</i> |
|---|--|
| Air Superiority | Air and Space Superiority |
| Space Superiority | Global Attack |
| Global Mobility | Rapid Global Mobility |
| Precision Employment | Precision Engagement |
| Information Dominance | Information Superiority |
| | Agile Combat Support |

One can also trace their origins to the Air Staff's Strategy Division, directed by Maj Gen Robert E. Linhard during Gen Ronald R. Fogleman's tenure as chief of staff.⁸ Additionally, germination of the competency concept was spurred by the Air Force's internal intellectual debates on the service's place in joint warfare, brought on by work of the Commission on Roles and Missions in the mid-1990s, as well as the first publication of the Joint Staff's *Joint Vision 2010* in November 1995. The concept's development included efforts by both civilian and military agencies, coordinated with the secretary and chief of staff. Much effort, study, and thought went into the development of the core competencies, and even the current set underwent continual evaluation from within the Air Force. Introduction of the core-competencies construct also coincided with a concerted effort to invigorate the Air Force's corporate focus, its understanding of war-fighting doctrine centered on the air campaign, and establishment of an Air Force Doctrine Center, mentioned above. Evolution of the core competencies spurred debate marked by inputs from a cross section of the Air Force and attracted senior-level involvement seeking to influence how the service thought of itself.

Business-School Definition of *Core Competence*

The new Air Force definition draws upon "The Core Competence of the Corporation," an article written by professors C. K. Prahalad and Gary Hamel in the prominent business-school journal *Harvard Business Review* in 1990.⁹ At the time of its publication, many considered it a landmark article in the field of strategic management—and arguably one of the most influential published in the 1990s. Later reviews of its relevance were mixed, primarily due to questions about the long-term profitability of corporations held up as models, but generally the article had a strong effect on diversified organizations such as the Air Force. The entrance of the term *core competency* into the lexicon and the timing of its introduction suggest the article's influence on the Air Force's search to define its own core competencies.

Military professionals should use caution in applying lessons from the private sector (where profit is the driving motive) to government institutions, particularly when scholarly work appears to support one's own beliefs. With that caveat in mind, after reading Prahalad and Hamel's article, one is struck by how its examples, assertions, and conclusions could contribute to Air Force discussion and debate on the relationship between (obviously) competencies and capabilities, even though the authors do not specifically discuss capabilities.

Their central argument is that corporations should not view themselves as "bundles of businesses" that make products. Rather, companies must fashion themselves around a handful of specialized and unique talents at which they must excel. The authors maintain that top executives need to "identify, cultivate, and exploit the core competencies that make growth possible."¹⁰ Such unique specialties are neither the products they sell nor the production process for those products. Instead, these "core products" take the form of specialization in key and integral areas, including a full understanding of their advantages and limitations, coupled with deep insight

into how these areas can be integrated with each other to produce new products.

A case study that compares corporate decisions by the electronics companies GTE (now Verizon) and NEC (originally, Nippon Electric Company) in the 1980s provides the point of departure for the article's thesis. On the one hand, the authors acknowledge NEC's wise corporate decisions, which articulate a strategic intent to "exploit the convergence of computing and communications," with success dependent upon acquiring competencies—particularly in semiconductors. NEC's management made expertise in semiconductors the company's most important core product and acquired the specialty of staying ahead of its competitors in fully comprehending semiconductors. On the other hand, Prahalad and Hamel chide GTE, saying that "no such clarity of strategic intent and strategic architecture appeared to exist at GTE."¹¹

By themselves, semiconductors were *not* the products NEC sold to consumers; however, the competency to produce and integrate them into the production of superior products such as TVs, telecommunications equipment, and computers was the core product integral to NEC's overall business. *Core competencies* help exploit *core products*.

The new Air Force definition of core competencies clearly draws from the business example. Prahalad and Hamel define their core competencies as the "collective learning in the organization" (i.e., developing airmen); the ability to "coordinate diverse production skills" (i.e., integrating operations); and the ability to "integrate multiple streams of technology" (i.e., adapting technology to war fighting).¹²

Although one can apply many points of this NEC-GTE study to the Air Force and the idea of competencies rooted in air and space power, one must be careful about transferring a business/industry interpretation to the military case. As with NEC, the original Air Force concept used core competencies to help exploit core products. However, the difference now lies in the mix of the terms *core products* and *core competencies*, along with the entrance of the term *capabilities* into the dialogue. The

Air Force has articulated six specialized capabilities for airmen to understand fully, cultivate, and exploit in their creation of the core product (i.e., applying air and space power to achieve strategic, operational, and tactical objectives). The superiority of that product stems from the necessary and effective fusion of the six distinctive capabilities with the core competencies, which produces the Air Force's ability to employ air and space power like no other air force in the world.

Our service's contribution of air and space power to an integrated, effective joint campaign by combining the six distinctive capabilities then becomes the service's core product provided to the military "businesses." Continuing the analogy, these businesses include such entities as the combatant commanders of US European Command (EUCOM), US Pacific Command (PACOM), or US Central Command (CENTCOM). The creation of additional markets, customers, and products in the air and space power example involves the ability to conduct tailored operations across the spectrum of conflict to meet the combatant commanders' requirements for varying contingencies and crises (e.g., noncombatant evacuation operations [NEO]; humanitarian relief operations [HUMRO]; intelligence, surveillance, and reconnaissance [ISR]; and interdiction). Similarly, air and space operations are also effectively integrated into joint operations as part of the overall US military effort. Put simply, air and space power is to a combatant commander what semiconductors are to televisions, telecommunications, and computers.

One can translate this relationship among core competencies, capabilities, core products, businesses, and end products discussed in the business example to the military air and space power example (figs. 1 and 2). One can use the corporate model, as represented in the Prahalad and Hamel article, to depict how the Air Force's core competencies and capabilities are integrated in order to create the core product (air and space power), which is then made available to the combatant commanders. The ability of the Air Force to pro-

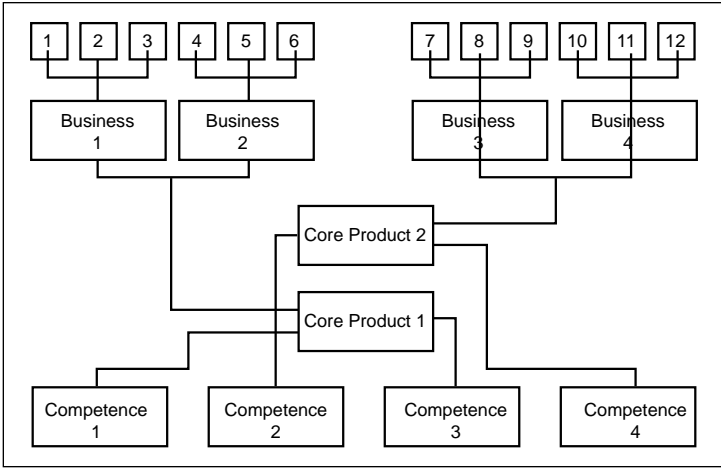


Figure 1. The Corporate Model (Adapted from C. K. Prahalad and Gary Hamel, “The Core Competence of the Corporation,” *Harvard Business Review* 68 [May–June 1990]: 84). Businesses use core competencies to help exploit core products, which they then use to develop new markets and products.

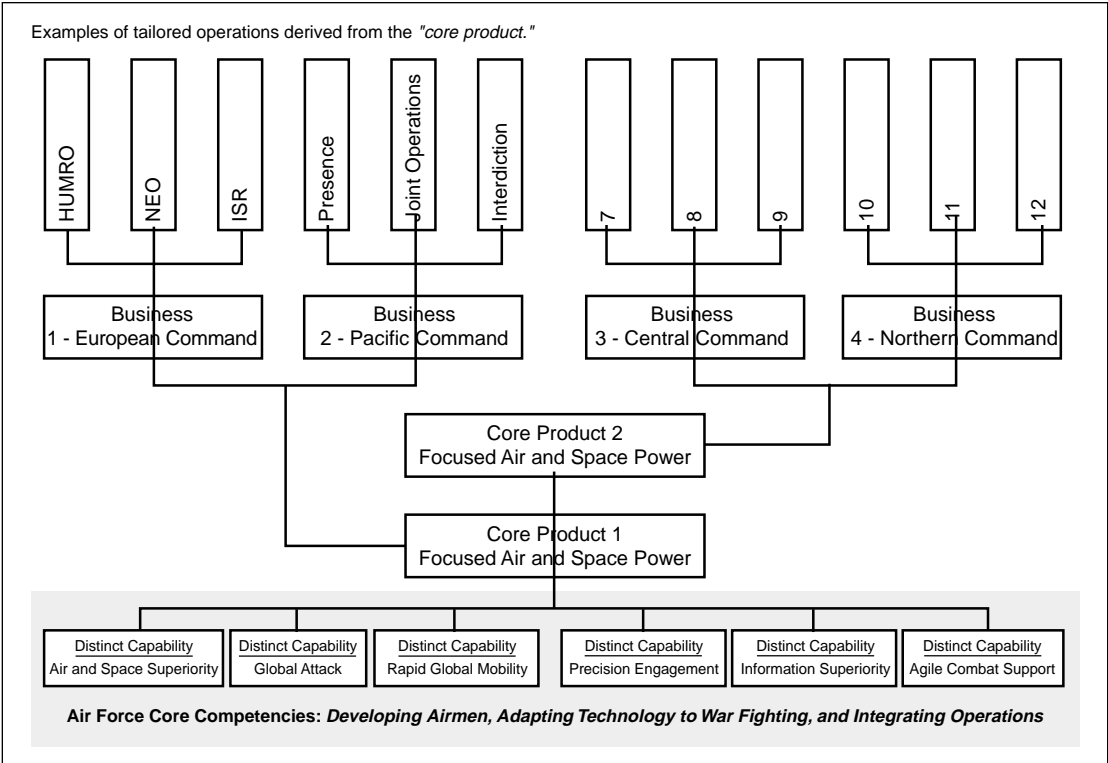


Figure 2. The Air Force Example. Core competencies are fused with the six distinctive capabilities and then applied to the creation of the core product: focused air and space power.

vide focused air and space power comes from the appropriate fusion of the six distinctive capabilities and is influenced by the core competencies. Focused air and space power—the core product provided to the combatant commanders—can be further tailored to necessary operations across the spectrum of conflict.

Different Interpretations of Core Competence

The inclusion of the original six core competencies in current published doctrine is decidedly centered around air and space power, but the message can be externally focused to assist the Air Force in communicating the message of its unique contribution to our nation's total military capabilities. Indeed, a major theme of today's war-fighting doctrine defines for airmen and the public what the Air Force uniquely brings to the joint war-fighting capability of the United States through the employment of air and space power.

Nowhere was this message more noticeable than in the budget process. When the Air Force introduced core competencies in 1995, they were recognized for their value in communicating the service's priorities to the body with the greatest influence over Air Force requirements: the Joint Requirements Oversight Council, which decided whether Air Force requirements were valid. Core competencies were the vehicle for transmitting what the Air Force could bring to the joint table. Core competencies extend the template for the Air Force to plan and think about its future; however, they must now remain inseparable from the distinctive capabilities in any discussion of what distinguishes the Air Force from the other services.

Admittedly, AFDD 1 notes that the original six core competencies are not doctrine per se but "are at the heart of the Air Force's strategic perspective and thereby at the heart of the . . . contribution to our nation's total military capabilities." They are the "basic areas of expertise or the specialties that the Air Force brings to any activity across the spectrum of military operations." The document goes on

to say that, because the core competencies are "not optional" for the Air Force, they serve as a mandate for its "organize, train, and equip" efforts and thereby guide key Air Force and DOD decisions on personnel, force structure, and operations.¹³

Correspondingly, the newly minted definition of core competencies has a more inward, institutional focus. That is to say, its three components—*developing airmen, adapting technology to war fighting, and integrating operations*—focus on how the Air Force internally develops its capabilities for joint war fighting. The new definition further reasons that, in fact, these "underlying competencies" make the six distinctive capabilities possible. In the new language, "these three [new] air and space core competencies form the basis through which we organize, train, and equip and from which we derive our strengths as a service."¹⁴

Airmen must become fluent in the relationship between competencies and capabilities so they can convey characteristics that distinguish the Air Force from other services, as well as communicate to the larger defense community areas in which the Air Force has chosen to excel. The best example is the first new competency, developing airmen, which is not particularly different than what all services *must* accomplish. It is definitely not an optional task; however, it is similar to feeding troops three times a day—something every organization must do. All of the services must recruit, train, educate, and retain competent and qualified personnel. The other services take similar actions to develop soldiers, sailors, and marines. One can debate how well the Air Force develops airmen, but the Air Force corporately decides the importance of doing it well at each step. If the Air Force wishes to thrive both today and tomorrow, then the importance of developing airmen is intuitively understood.

The other two new competencies—*adapting technology to war fighting and integrating operations*—have a similar internal focus, intuitive importance, and commonality to other services (although in their own service-unique forms). History's respected military

forces have placed great importance on developing new technology and speeding it to the war fighter. Similarly, the great captains of history have intuitively understood the need to integrate multiple aspects of operations effectively and effectively.

There is no doubt about the importance of these three concepts to the Air Force. Yet, by themselves, these new competencies cannot provide all the clarity and vision needed for the priority of efforts. Because the competencies are so important, yet so woven through all that the Air Force does, they cannot become the sole source of the service's answer to its own critical question, What are the priorities for the "organize, train, and equip" mission of the Air Force? In that regard, the six distinctive capabilities provide the priorities and guidance so the Air Force can frame its "organize, train, and equip" efforts around the ability to provide focused air and space power. If a new technology, initiative, or mission does not contribute to the distinctive capabilities necessary for war fighting, the Air Force would cast a very jaundiced eye on pursuing the resources necessary for implementation.

Defining and Understanding *Competence and Capability*

Another aspect of the discussion about the newly launched core competencies is simply the common understanding and context for using key words to shape the overall concept. The new definition clearly differentiates *core competencies* from *capabilities*, yet Air Force people must understand the inseparable but subtle relationship between the terms if they are to take maximum advantage of the possible internal and external messages they represent. In this regard, the Air Force may have more institutional work ahead to refine its own understanding of the concepts.

Here is why. If one uses root forms of the word (e.g., *competent* and *capable*) instead of variations and plural forms, a possible disconnect appears. This is particularly noticeable in understanding the term *capabilities*, a word widely used throughout DOD and one that

may connote other ideas to individuals outside the Air Force. Analogies with sports and business can make the military usage easier to understand.

For example, one might say, "He is a *competent* quarterback" or "He is a *competent* weight lifter." What makes the player a *competent* quarterback? The answer is that he has certain *capabilities* that contribute to that *competency*. For instance, he is *capable* of throwing the football 60-plus yards, *capable* of avoiding the rush, and *capable* of running a 40-yard dash in 4.3 seconds to outrun defenders. Similarly, what makes a *competent* weight lifter? An individual who knows everything about training, nutrition, and equipment can be a talented, *competent* weight lifter but can still be only *capable* of lifting a certain number of pounds. Proper weight-lifting technique would be another *capability* required of this individual.

An assertion from these analogies is that a capability is bounded. It has elements of quantification, so one knows with some precision what exactly can be done. Another assertion holds that a competency involves a set of capabilities and that one can learn how to fuse those capabilities most effectively for a greater purpose. To use an Air Force analogy, one might say, "Air Mobility Command (AMC) is *competent* at the air-refueling mission" or "Air Combat Command (ACC) is *competent* at precision engagement." What makes AMC *competent* at the air-refueling mission? AMC is *capable* of refueling "X" number of aircraft, or, conversely, AMC is *not capable* of refueling every fighter in the Air Force at once. A KC-10 Extender is only *capable* of off-loading X-thousand pounds of fuel on one flight. Likewise, ACC is *competent* at precision engagement or the ability to deliver weapons to an intended target with great accuracy. The *capabilities* associated with precision engagement are defined by more precise measurements, such as circular error probable or by the precise accuracy and tolerances of the Global Positioning System.

In the air-refueling analogy, as in the sports example, a *capability* is bounded and can be measured and defined. *Competency* implies pos-

sessing a set of *capabilities* and a learned knowledge of how to use them effectively. The dictionary definition of *competency* describes having a "suitable or selective skill" (e.g., air refueling), but a *capability* is bounded by specific abilities. One does not say that a person has "unlimited competency" but that he or she has limited, or unlimited, or X amount of capability. For a corporation—such as the local power company—customers presume that it is *competent* to deliver power to them, but its *capability* can be measured by the number of megawatts of power it can generate.

Examples of the importance of definitions distinguishing competency from capability include the annual programming and budgeting decisions. In the more common vernacular of everyday usage, the Air Force knows what competencies it must have to prosecute air and space warfare, regardless of resource constraints. However, faced with finite resources, it must prioritize and then decide how much of each capability to buy. For each particular competency, the service needs several associated capabilities. For instance, the concept of rapid global mobility requires multiple capabilities, such as aerial refueling, airdrop, and en route structure. Information superiority requires capabilities in such areas as computers, electronics, and telecommunications. Service leaders and airmen at all levels must translate the new language of competency and capability for each other and for the joint community. They must understand that a competency *uses* a set of capabilities; it *is not overtly based on* a set of capabilities.

Competency describes what one must be able to do in a certain specialized area, while capability indicates the bounded limits of what can or cannot be done. Also, specific capabilities could change but not the requirement for the competency. For example, *information superiority*, *rapid global mobility*, and *agile combat support* (previously defined as core competencies) will always be critical to the Air Force's success, yet the capabilities comprising those competencies may undergo changes, either in technology advancements or resource availability.

Why are these definitions so important? Communication and language are based on the shared understanding of words. Writers of the original Air Force definition of *core competencies* were truly visionary in their understanding of the opportunity to explain "who we are and what we do," not only to an Air Force audience, but also to the larger DOD. The new definitions represent an attempt to refine the original vision. As the Air Force embraces the new language, a more complete institutional understanding of the meaning and relationship between *competencies* and *capabilities* must evolve so that the service's message to both the users of its core products—the combatant commands—and the public understand air and space power's unique contribution. The Air Force, therefore, should not discount the valuable service that today's six distinctive capabilities perform by communicating to both an internal Air Force audience and larger DOD audiences the specialized contributions made by air and space power to the American way of war.

Aligning Air Force Organizations and Structure with Intellectual Properties

The concepts behind the new distinctive capabilities also perform another important role, based on their ability to communicate the message of "who we are and what we do." The Air Force (as do all the services in their own ways) constantly evaluates itself to improve its expertise in air and space power. It does so by making decisions that align organizations and structures to develop, nurture, and care for the intellectual properties (e.g., missions, roles, tasks, functions, concepts, capabilities, technologies, etc.) of air and space power. Even with the newly minted six distinctive capabilities, the existing alignment of Air Force organizations and structures with the intellectual properties of air and space power deserves further attention.

Prior to the new definition, the Air Force had six core competencies, seven programming-

function concepts of operations (CONOPS) that did not correspond to the core competencies, and seven Air Force-wide battle labs that did not match either the core competencies or the seven CONOPS. Further interspersed within the Air Force are 17 defined air and space power functions (ideas) and several warfare centers (organizations). These intertwined organizational structures, competencies, CONOPS, and so forth also do not necessarily align with the existing major commands (MAJCOM), several of which are functionally oriented (table 2).

As the Air Force institutionalizes the new definition of the core competencies, it must realize that the competencies could complicate the service's pursuit of optimum alignment of

its organizations and structures with the intellectual properties of air and space power. Adding three new core competencies to the mix could increase pressures to focus an additional or a disproportionate share of resources on the new competencies themselves, even though they are intuitively necessary for the Air Force. Doing so could potentially lead to a loss of focus on the critical components necessary to construct the air campaign.

If one accepts the idea that the key contribution of the Air Force to joint war fighting is the ability to apply airpower to a broad range of strategic, operational, and tactical challenges, then it follows that the newly defined distinctive capabilities are the necessary components for that campaign. Therefore, it may

Table 2

Current Air Force Organizations/Structures Related to the Intellectual Properties of Air and Space Power

Six Core Competencies

Global Attack
Rapid Global Mobility
Information Superiority
Air and Space Superiority
Precision Engagement
Agile Combat Support

Seven CONOPS

Air and Space Expeditionary Forces
Global Mobility Task Force
Global Strike Task Force
Air and Space Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance Task Force
Global Response Task Force
Homeland Security Task Force
Nuclear Response Task Force

Seven Battle Labs

Air Expeditionary
Air Mobility
Information Warfare
Space
Unmanned Aerial Vehicle
Force Protection
Command and Control

17 Air and Space Power Functions

Strategic Attack
Airlift
Air Refueling
Counterinformation
Space Lift
Command and Control
Counterair
Counterspace
Counterland
Countersea
Combat Search and Rescue
Navigation and Positioning
Special Operations Employment
Weather Services
Intelligence
Surveillance
Reconnaissance

Nine MAJCOMs (Four Functional)

Air Combat Command
Air Mobility Command
Air Education and Training Command
Air Force Materiel Command
Air Force Space Command
Air Force Special Operations Command
Pacific Air Forces
United States Air Forces Europe
Air Force Reserve Command

be worthwhile to explore the connections and alignment of the 17 air and space power functions under the six capabilities. In fact, these capabilities may actually be better focal points for the programming and budgeting cycles than the relatively new CONOPS. In any case, the three new competencies by themselves may not be able to contribute to a better organizational scheme to manage these relationships.

Use of the Doctrine-Development Process

If the Air Force is to embrace the revised definition of its core competencies, its current doctrine publications, as well as other public documents, will need revision. The concepts behind the six redesignated distinctive capabilities have proved valuable, and the capabilities themselves have held up well since their original introduction as competencies. Indeed, they remain in a variety of publications, such as AFDD 1 (which is awaiting revision), where they are prominently discussed, and they appeared as recently as 2002 in the Air Force Posture Statement. Even more recent publications, such as *50 More Questions Every Airman Can Answer*, include the six core competencies.¹⁵ They have gained institutional acceptance and influence by the doctrinal definition of "knowledge gained primarily from . . . experience."¹⁶

The Air Force appears poised to institutionalize the revised definition of core competencies without having used an institutional vetting process and a public-information campaign to allow for discussion, debate, and earned acceptance by the larger Air Force community. If it does so, it will have bypassed the current doctrine-development process that has taken time, effort, and command focus to establish. Assurance and validation of widespread acceptance of such a conceptual idea require that vetting within the air and space power community take place. We must remember that the original set of Air Force core competencies developed over a period

of time with myriad inputs, albeit without today's formal doctrine development.

Since the introduction of the core-competency concept in the mid-1990s, the Air Force has adopted a more formal and mature doctrine-development process that utilizes continuous evolution to develop, deploy, and employ air and space power doctrine, as well as clarify the service's positions on joint and multiservice doctrine. Lessons learned through corporate Air Force experience over time are key components of this process, which entails intellectual investigation as well as practical application. It employs a variety of mechanisms to develop Air Force doctrine, including the academic resources of the service's educational system and the operational experience gained in the field through actual operations, exercises, war games, and periodic assessments.

As this cycle works in the full development and understanding of the three new core competencies, we Air Force members can reasonably expect to witness discussion of the relationships between competencies and capabilities. We should consider the impact on possible programming and budgeting decisions; compare the new competencies to the originals and discuss the differences, as well as determine if there are advantages to the new definitions; and take the new language to the joint community and gauge its reaction for new insights. But, above all, we must use the intellectual rigor of the educational and doctrine-development vetting processes to make sure the Air Force "has it right" for this stage in its evolution.

Conclusions and Recommendations

No matter how the evolution of the Air Force's core competencies proceeds, they remain a significant influence on today's service, as well as on tomorrow's. There is no doubt that the three new core competencies are essential and intuitively necessary for the success of the Air Force. Institutional understanding of the symbiotic relationship between competencies and capabilities will also

have an enormous impact. Taken together, these concepts will remain integral to the ability of the Air Force to employ airpower—the service’s central contribution to joint war fighting. Therefore, people affiliated with the Air Force and air and space power must understand this relationship.

Does the new evolutionary construct for core competencies and capabilities offer complete understanding of the Air Force’s identity? No. Does it raise additional, important questions? Yes. Nonetheless, the articulation of today’s new core competencies, combined with further acknowledgement of the value of the concepts behind the six redesignated Air Force distinctive capabilities, takes advantage

of an opportunity to frame the contributions of air and space power to joint warfare. Together they help explain air and space power to the war-fighting combatant commanders. For airmen, they provide a sensible construct whereby the components necessary for employing airpower are identified and fused. They also help reveal the core of institutional foundations that are intuitively necessary for the Air Force and all the services. The Air Force should continue to embrace the important concept of core competencies. The early sound byte that touted their institutional value still applies. The core competencies truly contribute to the definition of “who we are and what we do.” □

Notes

1. Dr. James G. Roche, secretary of the Air Force, *The Secretary’s Vector*, 14 January 2003.
2. Gen John P. Jumper, chief of staff of the Air Force, *Chief’s Sight Picture*, 15 January 2003.
3. Roche, 1.
4. For a more complete definition of the current Air Force concept of core competencies and an explanation of the six core competencies, see Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 27–35.
5. *Ibid.*, 27.
6. Gordon Trowbridge, “Shooting for the Stars,” *Air Force Times*, 11 November 2002.
7. Sheila Widnall, secretary of the Air Force, “Beyond the Drawdown: U.S. Air Force Is Prepared to Support the National Military Strategy,” *Armed Forces Journal International*, September 1995, 43–45.
8. Maj Steven G. Seroka, “In Search of an Identity: Air Force Core Competencies” (thesis, School of Advanced Airpower Studies, Maxwell AFB, Ala., June 1997), 10.
9. C. K. Prahalad and Gary Hamel, “The Core Competence of the Corporation,” *Harvard Business Review* 68 (May–June 1990): 79–91.

10. *Ibid.*, 79.
11. *Ibid.*, 82. Interestingly, GTE surpassed NEC in terms of profitability throughout the 1980s and 1990s. By the mid-to-late 1990s, NEC found itself struggling after it replaced its chief executive officer (who championed NEC’s “core competence”) and the new one steered the company away from its core competence in attempts to regain profitability.
12. *Ibid.*, 81–83.
13. AFDD 1, 27.
14. House Armed Services Committee, *Posture Statement of the Honorable James G. Roche, Secretary of the Air Force, and General John P. Jumper, Chief of Staff, United States Air Force, before the 108th Congress, House Armed Services Committee, 108th Cong., 1st sess., 27 February 2003*, on-line, Internet, 17 April 2003, available from <http://armedservices.house.gov/openingstatementsandpressreleases/108thcongress/03-02-27airforce.html>.
15. Frederick L. “Fritz” Baier, *50 More Questions Every Airman Can Answer* (Maxwell AFB, Ala.: Air Force Doctrine Center, distributed by Air University Press, April 2002), 12–13.
16. AFDD 1, 1.

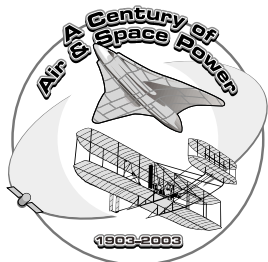
This is what I think is the essence of transformation: to leverage the nation’s technology to create the maximum asymmetrical advantage.

—Gen John P. Jumper
Chief of Staff of the Air Force

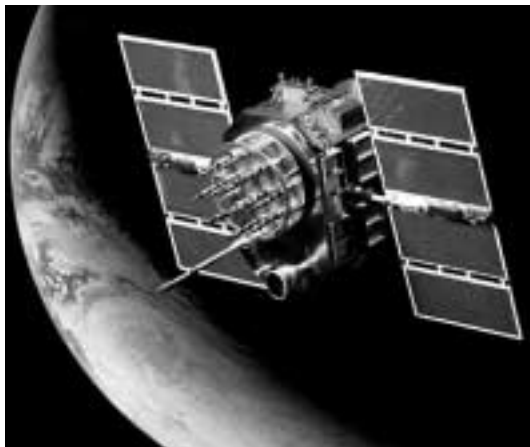
NAVSTAR GPS

"Where Am I? Are We There Yet?"

ASPJ STAFF*



For centuries, military commanders and travelers have wanted to know their location, objective, and—perhaps more commonly—whether they had yet arrived. The answers to their questions became clearer and more precise in the 1960s with the deployment of the Navy Navigation Satellite System, also



known as the Transit System, developed at Johns Hopkins University. Transit proved invaluable to military planners and operators, but demands for greater accuracy set the stage for the Navigation Satellite Timing and Ranging (NAVSTAR) Global Positioning System (GPS). Still in the experimental phase in 1990-91, the system nevertheless proved its worth when it helped coalition forces find their way through Iraq's vast, faceless desert during Operation Desert Storm.

NAVSTAR GPS is a dual-use system consisting of a constellation of 24 satellites, plus spares, orbiting at an altitude of approximately 12,600 miles. Initially built by Rockwell and declared fully operational in April 1995, the radio-based system's ability to pinpoint objectives accurately enables military planners to use weapons such as the Joint Direct Attack Munition in highly lethal attacks that produce devastating effects.

Civilian use of NAVSTAR GPS has grown significantly in the decade since it became operational. At first, the military intentionally degraded the system's signal for all non-US military/allied users, restricting its accuracy to 100 meters. In 2000, however, the government permitted capable civilian systems to obtain accuracies of three meters or less, thus opening NAVSTAR GPS to use by law-enforcement personnel, outdoor enthusiasts, travelers, and traditional maritime/aviation civilian counterparts. New applications that capitalize on the technology continue to appear on the market. Some current and future military/civilian applications of NAVSTAR GPS include the following:

- Indoor-outdoor personnel-location/lost-child systems.
- Antisubmarine warfare.
- Nationwide joint operations with civilian emergency responders in the homeland-security environment by virtue of the common grid (Military Grid Reference System/US National Grid).
- Determination of current and remote position by special-forces forward observers.
- Delivery of Joint Direct Attack Munitions and Joint Standoff Weapons.
- Updating and improvement of maps for military/community planning and the placement/location/relocation of utilities.
- Mine/minefield location.
- Precision, all-weather navigation of military/commercial ships, vehicles, and aircraft.
- Pedestrian navigation.
- Remote control of unmanned land vehicles.
- Weather sensors for weather forecasting and sea-state determination.
- Unmanned aerial vehicles such as Global Hawk.

To Learn More . . .

GPS World. On-line. Internet. Available from <http://www.gpsworld.com/gpsworld>.

Lachow, Irving. "The Global Positioning System: Managing the Tensions between Defense Needs and Civilian Applications." PhD diss., Carnegie Mellon University, 1994.

Rip, Michael Russell, and James M. Hasik. *The Precision Revolution: GPS and the Future of Aerial Warfare*. Annapolis: Naval Institute Press, 2002.

Sellers, Jerry Jon. *Understanding Space: An Introduction to Astronautics*. New York: McGraw-Hill, 1994.

Spires, David N., et al. *Beyond Horizons: A Half Century of Air Force Space Leadership*. Rev. ed. Maxwell AFB, Ala.: Air Force Space Command in association with Air University Press, 1998.

*The information presented here is adapted from material available in various USAF NAVSTAR GPS fact sheets and from Michael Russell Rip and James M. Hasik's *The Precision Revolution: GPS and the Future of Aerial Warfare* (Annapolis: Naval Institute Press, 2002).

Cost-Benefit Economics

Enhancing National Security and Air and Space Power

LT COL MICHAEL R. WEEKS, USAF*

Editorial Abstract: The changing calculus of direct and indirect costs associated with warfare implies a need to alter strategy and doctrine. New technologies, the varying character of competition between states, and the proliferation of nonstate actors increase the difficulty of defining the effects desired during military operations. Viewing such strategic elements through a cost-benefit lens helps refine critical decision-making tasks for those who participate in the process.

To defeat this [terrorist] threat we must make use of every tool in our arsenal—military power, better homeland defenses, law enforcement, intelligence, and vigorous efforts to cut off terrorist financing. The war against terrorists of global reach is a global enterprise of uncertain duration.

—President George W. Bush
*The National Security Strategy
of the United States of America*

THE LATEST VERSION of the national security strategy is a sweeping document that lays the groundwork for traditional defense roles as well as the campaign against terror operations and terrorists.¹ After the Bush administration published its new security strategy, the mainstream press focused on the idea of preemptive action.² Michael Kelly referred to this new strategy as “nothing less than a re-imagining of the American role in the world.”³ Although this idea of preemptive action may be new to the words of the security strategy, it is certainly not new to the deeds. The actions in Grenada and Panama were preemptive in nature but did not spur this level of debate. Even Kelly admits as much when he says that “preventive wars are not new, and neither is the American impulse to better the world by air power.”⁴ The preemptive aspect of the strategy might not be completely new; nevertheless, the preemptive nature of the strategy, as well as other aspects of the document, should spur



*I would like to thank Lt Col Scott Dierlam, USAF, and Col Edward Mann, USAF, retired, for their helpful comments and suggestions on earlier drafts of this article.

some reflection. If this new national strategy is going to better the world through the use of airpower (in the context of joint operations), how might we airmen contribute to this cause?

The new strategy also reflects some current realities. Technological improvements have lowered the costs of warfare for developed nations, both in terms of dollars and human lives, but they have also lowered the costs for terrorists.⁵ This economic situation requires that we reexamine how we decide on appropriate courses of action—especially in situations that have traditionally resulted in long-term sanctions. National security decisions are not necessarily economic in nature; however, an economic framework can provide a clearer picture for analysis of the choices inherent in many security dilemmas. This article examines how the use of an economic view can help develop air and space power doctrine to support the national security strategy. Toward that end, it examines direct costs, indirect costs, marginal costs, and investments.

The Evolution of Doctrine

Do not let us split hairs. Let us not say, "We will only defend ourselves if the torpedo succeeds in getting home, or if the crew and the passengers are drowned." This is the time for prevention of attack.

—President Franklin D. Roosevelt
11 September 1941

Modern concepts of the application of airpower are represented in *The Air Campaign: Planning for Combat* by Col John A. Warden III, USAF, retired.⁶ Technological advances have meant that even a relatively recent book such as this one, with its discussion of the serial destruction of centers of gravity, has become somewhat dated. However, *The Air Campaign* laid the groundwork for more refined doctrine that uses effects-based warfare. Maj Gen David Deptula, for example, advocates a forceful case for parallel warfare with precision weapons.⁷ Further work fo

cuses on General Deptula's idea that absolute destruction may not be necessary to achieve the effects required for the campaign.⁸ Despite widespread discussion of these ideas, US forces have not applied such concepts with any degree of consistency.⁹ As technology improves, the ability to make more precise decisions with more reliable results means that our doctrine must continually evolve.

Direct versus Indirect Costs

General Deptula's work reflects the natural evolution of doctrine, given the technical progress made in all areas of warfare. The nuclear age gave us the ability to annihilate an enemy completely, yet that power has been held in check for over 50 years. The paradox of the nuclear age stemmed from the perception that using nuclear weapons spelled doom—not only for the enemy, but also for the entire world. Improved targeting technologies have led to a reduction in the collateral damage of conventional warfare. The next step is a more careful examination of the desired effects of a given action. Is complete destruction required, or will incapacitation be sufficient to achieve the desired objective?

Frequently in the past, only destruction could assure incapacitation, but that may not always be the case as we move forward technologically. We must make new assessments of our capabilities and consider both direct and indirect costs. In this context, direct costs are the traditional costs of war, including those for equipment, transportation, and human casualties that always accompany war's violence. Indirect costs include such items as improved homeland-security initiatives and lives lost through the actions of totalitarian regimes. Collateral damage of direct military action could be considered either a direct or an indirect cost, depending upon one's perspective.

Improved targeting accuracy brings two dilemmas of warfare to the forefront. The first is the fact that improvements in technology lower the direct costs of warfare. For example, we require fewer bombs and sorties to achieve a given objective. The traditional economic

consequence is that lower cost increases demand. The fact that we can do much more with fewer resources may lead to hasty decisions to use military force—a situation akin to the risk of “moral hazard” presented by many types of commercial-insurance situations. The reduction in collateral damage (indirect costs) may have the same effect. Moreover, the lower direct costs of warfare also mean that, when it needs to, the United States can take action (preemptive or otherwise) against enemies who have formerly remained inviolable.

Unfortunately, technological advances that lower the costs of warfare for developed nations do the same for terrorists, which causes the second dilemma. Because terrorists have the ability to wield massive destructive power with very few resources, the indirect costs of inaction for developed nations have increased dramatically. In other words, because most terrorist groups operate without the constraints of legal conventions that govern war between states, they can achieve potentially greater indirect effects against the societies they target. Terrorist attacks can cause widespread damage but also create huge ancillary costs—for example, the massive expenditures necessary for improving airline security in the United States.

Doctrinal Implications

The changing calculus of the direct and indirect costs of warfare means that our strategy and doctrine must evolve. The [Caspar] Weinberger- [Colin] Powell Doctrine requires overwhelming force as a prerequisite for action, but new technology has changed our perceptions of overwhelming force. With precision weapons, we can achieve more effective results with less cost than was possible a mere 10 years ago. Even if one commits to the overwhelming-force doctrine, one must continually reevaluate what constitutes the threshold for overwhelming force.

Even though technology has improved dramatically since the Gulf War of 1991, we now face a problem that is common in some high-technology industries—the fact that technological advances outrun the organization’s

ability to harness the new capabilities. For example, Intel continues to improve micro-processor technology in line with Moore’s Law;¹⁰ however, many customers find that new processors do not help them improve the performance of common business applications such as spreadsheets and word processing.¹¹ Similarly, our modern Air Force has the ability to target with extreme precision in all-weather conditions. Future improvements in weapons-delivery technology are not likely to pay the large dividends that we have reaped in the past few decades. We can already put a 500-pound bomb through a window; will choosing a particular windowpane within the window improve our performance? Further, potential adversaries have devised new countermeasures that thwart some of the advantages of stealth and precision. For example, some states have opted to place their most important resources in deeply buried facilities, thus reducing the effectiveness of conventional aerial attack. Work remains to be done with precision weapons, but future results are unlikely to have the transformational effects of the past. Previously, improvements in precision weapons have driven the revolution in military affairs, but as we move into the twenty-first century, improvements must come from other fronts.

In order to continue our advance as a fighting force, the principles of effects-based warfare must also move forward to achieve our objectives. Improved targeting technologies demand that we also improve data-collection and data-processing capabilities (i.e., intelligence and command/control) in order to make the right decisions at the right time, as well as meet the demands of the modern geopolitical environment and the new national security strategy. As previously mentioned, we have the ability to put a bomb through a particular window. What we don’t always have is the technology to decide which window we should choose. We talk of information dominance, but we have yet to find a way to truly achieve it.¹² Clearly, this area must become a priority for future doctrine efforts.

Evolution of the National Security Strategy

We no longer live in a world where only the actual firing of weapons represents a sufficient challenge to a nation's security.

—President John F. Kennedy
Cuban missile crisis

Some of the concepts that we need to develop in order to use this economic view include direct and indirect costs (mentioned earlier), as well as marginal costs and investments. During the Gulf War, the US administration identified its objectives (among them, the liberation of Kuwait) and sought to achieve them with overwhelming force. Such limitations on the war's purpose created a postwar situation that left Saddam Hussein in power, still able to threaten both the region and the world.

Thus, during the course of the war, the United States had a clearly articulated goal of removing Iraqi forces from Kuwait. Its objectives did not include a regime change in Iraq, which did not seem necessary for accomplishing US aims in the region, even though the Iraqi leadership clearly constituted a center of gravity. Indeed, Warden points out that "command is a true center of gravity and worth attack in any circumstance in which it can be reached."¹³ Moreover, Gen H. Norman Schwarzkopf, commander of the coalition forces, makes the point that, although killing or removing Saddam was not an aim of the war, he "wouldn't have shed any tears" if the Iraqi dictator had been killed during the course of the war.¹⁴ However, the concept of limited war that prevailed at the time meant that, once the coalition had liberated Kuwait, it could not set its sights on Saddam.

At the time, risking military and civilian lives to remove the Iraqi regime seemed unnecessary. After all, we had established our objective and achieved it. Why risk destabilizing the region and setting ourselves up for a nation-building responsibility? The first Bush administration took what appeared to be the sensible approach. We would contain Iraq

through the use of international sanctions, which would weaken Saddam and, hopefully, lead to his downfall or at least keep him in check. Unfortunately, we miscalculated. A rigorous economic examination of the situation might have resulted in a different outcome.

First, we erroneously believed that sanctions would weaken the regime's power over the Iraqi people. Sanctions have rarely affected a totalitarian regime enough to force its capitulation. North Korea has endured sanctions for 50 years, but its fundamental form of government remains unchanged.¹⁵ Sanctions against Cuba have yielded similar results. Such dictatorial regimes become stronger because the general populace—weakened by famine, lack of access to medical care, and other problems brought about by sanctions—can neither resist nor overthrow the oppressing government.

Coercive economic measures can have other perverse effects, such as the creation of smuggling activities and black markets. In fact Gen Wesley Clark, supreme allied commander Europe during the Balkans campaign, points out that "in the Balkans, for example, the economic sanctions implemented against Serbia during the early 1990s are widely credited with helping Serb President Slobodan Milosevic strengthen his control through the encouragement of black market and smuggling activities. At the same time these sanctions imposed burdens on neighboring countries like Bulgaria, Macedonia, and Romania, whose leaders were unanimous in opposing any extension of the sanctions regime."¹⁶

Second, we mistakenly counted on sufficient consensus to ensure international compliance with the sanctions program. Evidently, the sanctions had some effect on Saddam's ability to maintain his weapons programs, but his constant search for sources yielded some fruit—specifically, the revelation that the Ukraine supplied antiaircraft systems to Iraq.¹⁷ Although such systems are not weapons of mass destruction, it seems that, given enough time and money, the determined dictator was able to find sources for such materiel.

The third miscalculation assumed the effective monitoring of developments within Iraq. But Saddam's government, willing to lie at every turn, easily manipulated the inspection plan. Germany also circumvented the utility of sanctions after World War I by using many of the same tactics.¹⁸

Rogue States and Preemptive Action

As noted previously, the media focused on the apparent sanctioning of preemptive action by President Bush's national security strategy. Such action certainly seems an attractive strategic option in some cases to ensure national security. The rise of nonstate actors (i.e., terrorist organizations) means that unless our containment efforts with "rogue states" are effective, the release of weapons of mass destruction into the wrong hands could happen quite easily.

The efficacy of containment operations is extremely difficult to predict; therefore, once we decide to take action (preemptive or otherwise) we should have a strong bias toward regime change as a necessary condition for success. If a regime's actions are so provocative that they require armed intervention by the United States, we should give strong preference to removing that regime as part of the intervention. Clearly, every case does not call for regime change, but it seems to be a good "default" position. The British did not force a regime change after the Falklands War, but neither did they see a need to continue sanctions in order to contain Argentina in the future. A discussion of the costs of the Gulf War later in this article will explain how an economic view can lead to this proposition.

What defines provocative actions? The *National Security Strategy* spells out five attributes that rogue states tend to share. Specifically, they

- brutalize their own people and squander their national resources for personal gain of the rulers;

- display no regard for international law, threaten their neighbors, and callously violate international treaties to which they are a party;
- are determined to acquire weapons of mass destruction, along with other advanced military technology, to use as threats or offensively to achieve their aggressive designs;
- sponsor terrorism around the globe; and
- reject basic human values and hate the United States and everything for which it stands.¹⁹

These actions give a clearer understanding of which countries may provoke the United States to action. However, it is extremely unlikely that the war on terrorism would lead us to armed intervention in every state that shares many, if not all, of the above attributes.

If we are to make efficient decisions about where to intervene, we must be able to assess the costs and benefits of such actions. Which countries pose the greatest threats and are likely to require intervention? Those countries that have access to valuable natural resources are the most probable candidates since they are likely to have the ability to finance their operations and make an impact beyond their borders. Countries with significant natural resources may also threaten modern economies (especially within a region) by withholding access to those raw materials. We also should assess potential threats on economic as well as moral and foreign-policy grounds. Nevertheless, totalitarian regimes whose countries lack natural resources are not likely to produce smoothly functioning economic systems that generate substantial wealth; therefore, most of these rogue states will not have the means to pose a substantial threat to the United States.²⁰ We may choose to engage these countries on moral grounds (e.g., to prevent genocide) or to help friends in the region, but a direct security threat to the United States is less likely in these cases. On the other hand, countries that do have access to valuable natural re-

sources such as oil can use them to sponsor mayhem around the globe.

Costs versus Investments

As we implement this new security strategy, we must take the long view of the consequences of our actions. For example, one argument for terminating the Gulf War of 1991 prematurely was that we did not want to destabilize Iraq and be forced into bearing the cost (in terms of both money and personnel) of a lengthy nation-building effort. This concern, however, turned out to be a false economy. Instead of conducting a nation-building campaign that could lead to a self-sufficient country, we had to maintain large numbers of troops in the region to contain Iraqi actions. The United States needs to clarify its analysis of the debate over containment versus nation building. Containment actions result in costs, whereas nation-building expenditures are more akin to investments that pay dividends in the future. But we need not go on a massive nation-building campaign throughout the world. We should simply clarify our analysis of the costs of nation building versus sanctions, especially regarding containment operations. This dilemma demonstrates the differences between costs and investments. Costs tend to maintain the status quo, but investments provide increased returns and economies of scale in the future.²¹

Marginal versus Containment Costs

The crux of this argument is that the marginal costs of forcing a regime change once an armed conflict occurs are almost always less than those of a shorter campaign followed by a containment strategy. This assumes that the costs of undertaking the first part of the conflict are "sunken" once the decision for armed intervention is made. The following conflict scenarios illustrate this point:

Scenario one: regime change is forced during the course of the initial conflict. Additional marginal

losses occur in both the military and civilian populations. Postconflict losses are minimal but still happen due to incidents that arise during nation-building efforts. The costs of nation building are significant, but the total expense is likely to be less than that of the other scenarios.

Scenario two: minimal objectives are met for the conflict and a long-term containment strategy is adopted afterward. Initially, marginal losses are nil for both the military and indigenous civilian populations. However, containment costs are extensive in terms of both fiscal resources and human lives. Fiscal costs are easy to visualize, especially if the containment period is lengthy. The cost in human lives is not as easy to predict since it includes not only losses to the civilian population from direct actions of the totalitarian regime, but also indirect losses from the hardships produced by sanctions. Military losses include both increased training losses and those due to terrorist actions that become feasible when forces are placed in high-risk environments for long periods. Examples include the losses associated with the bombing of the barracks in Dhahran, Saudi Arabia, and of the USS *Cole*.²²

Scenario three: minimal objectives are met for the conflict and a containment strategy is adopted afterward; however, at some later date, a regime change occurs due to the actions of internal forces. The marginal costs of this strategy can be minimal, but the type of regime that replaces the original government may be just as problematic for American interests as the original antagonist.

Scenario four: minimal objectives are met for the conflict and a containment strategy is adopted afterward; however, at some point in the future, the actions of the totalitarian regime become so provocative that regime change becomes necessary. Obviously, this is the most costly of all the scenarios.

These scenarios are not necessarily comprehensive, but they provide a fairly good view of the possibilities in many potential conflicts. In algebraic terms, $MC + NBC < CC$ reflects the idea that the marginal costs (MC) of regime change plus the nation-building costs (NBC) are frequently less than the containment costs (CC) for many scenarios. This assertion is especially true for scenario four, in which the containment-costs term consists of the expense of a new campaign for regime change plus that for nation building as well.

The formula is not meant to describe some sort of “natural law.” The four scenarios are all predicated on the fact that the decision to engage in armed conflict has already been made. The formula represents some of the assessments that must be conducted to determine the appropriate course of action; it is certainly within the realm of possibility that the marginal costs of regime change could be greater than the potential containment costs. The primary point is that we should make a full accounting of the elements in the equation in order to arrive at the appropriate decision.

The United States has used containment strategies successfully in the past, especially during the Cold War with the Soviet Union. In this situation, the marginal costs of regime change likely would have been complete nuclear war. Clearly, these costs would exceed the containment costs—even though the containment period lasted for almost 50 years.

Implications for the Future

The new security strategy relies upon continued development of effects-based warfare doctrine—especially since difficult regime-change operations may become more likely in the future. The question then becomes, How do we continue to develop our doctrine and capabilities as we reach the limits of improvements in precision targeting?

Previous research makes a powerful argument that much of our success in the Gulf War of 1991 stemmed from our ability to project an image of omniscience, omnipresence, and omnipotence to the Iraqi forces.²³ Of course we were none of these, but many of the Iraqi soldiers on the ground (remember, there were none in the air) felt otherwise. Our responses to Iraqi battlefield movements were so quick and overpowering that most soldiers realized that resistance was futile. In fact, we were unprepared for the large numbers of surrendering Iraqi soldiers.

If we move our effects-based doctrine forward with the idea of dominating the battle space, how does that affect our cost-benefit analysis for the future? Two possibilities come

to mind. The first is an investment in improved information-processing capabilities, and the second is an investment in education for our most important resource—our people. I use the term *investment* very deliberately here. Both of these strategies should provide dividends and increased economies of scale for the future force.

If we are to dominate future adversaries, our information-processing capabilities must continue to improve. This is especially true as we try to engage decentralized, nonstate actors such as terrorist organizations. Our rapid improvement in precision-targeting technologies has provided great benefits, but we are reaching a point of diminishing returns. In what types of technologies should we invest? Three stand out: visual recognition, speech recognition, and artificial intelligence. In order to maintain the “full-spectrum dominance” called for by *Joint Vision 2020* with smaller, more agile forces in the future, these technologies will be essential.²⁴ Speech recognition and artificial intelligence are especially critical. Our data-collection technologies have advanced to the extent that we cannot hope to analyze all of the collected information with traditional human analysis. Language-screening programs that do the initial analysis would better enable us to target our resources worldwide. Of course, these programs must work in a variety of languages and dialects—a task not currently feasible. Nevertheless, successful investments in these areas could pay huge dividends.

Improved data processing and artificial intelligence will go only so far, however. We must improve our understanding of other languages and cultures in order to make effective use of these technologies. Precision targeting requires precision knowledge of the local environment—especially the language and culture. We currently develop our leaders (both officer and enlisted) with a superb system of professional military education (PME). Recently, Gen John P. Jumper, chief of staff of the Air Force, implemented a broadened concept for PME called developmental education. This is a necessary leap as we seek to groom leaders for the more complex environments of the future;

however, we can expand recent movements toward developmental education even more.²⁵

For one of the more successful efforts at achieving enhanced military education, one need only look to the School of Advanced Air and Space Studies (SAASS) at Maxwell AFB, Alabama. Lt Gen Donald A. Lamontagne, commander of Air University, recently observed that "SAASS graduates have always been in high demand for key staff and command positions, but the day after Sept. 11, my phone was ringing off the hook. People responsible for planning for this new kind of war wanted to know where the SAASS grads were."²⁶ SAASS is a great example of successful investing in our people. When commanders must consider serious actions, they want graduates with high-level expertise in doctrine and planning.

Unfortunately, finding people with expertise in the local language and culture is more difficult. In 1996 the Air Force set a goal that 10 percent of officers should have proficiency in a foreign language by 2005.²⁷ Recent figures show that we are only halfway there, and it seems unlikely that we will achieve this target by the specified deadline.²⁸ Programs such as those for foreign-area officers and Olmsted scholars help achieve this goal, but they fall outside the normal military developmental-education process. We should add foreign-language instruction to our traditional PME programs, thereby merging language and culture studies with doctrine studies. Currently, exposing our people to both types of knowledge environments is difficult. Moreover, we should consider creating a similar program for selected enlisted personnel. "Study abroad" programs, offered by most undergraduate institutions, represent a wonderful opportunity for some of our enlisted personnel who are seeking an undergraduate degree.

These expensive education programs may seem extravagant, but we should view them as investments. One can acquire such precise cultural knowledge only through experience—we must invest as much in this type of knowledge as we do in technical knowledge. A more integrated approach to our developmental-education efforts would mean that such in-

vestments in education would be more likely to pay dividends when commanders find themselves involved in planning complex operations. In addition to the foreign-language instruction at in-residence PME, we could add a more advanced course to the curriculum, thus complementing SAASS. One could call the new program the School for Advanced Language and Culture Studies (SALCS), offering intensive language instruction followed by study abroad at a university. Commanders can readily locate SAASS graduates, but we need to increase the number of officers with extensive doctrine knowledge, coupled with an understanding of local language and culture.

If we are to move forward with effects-based concepts, we must develop precision knowledge of the environment to complement the other advances. The actions mentioned here should help with all steps of the effects-based planning model developed by Col Edward Mann, USAF, retired; Lt Col Gary Endersby, USAF; and Tom Searle. Those steps include researching the strategic environment, determining policy goals, parsing and integrating the mission, and assessing effects.²⁹

Limitations of the Economic View

As with any economic approach, the conclusions depend heavily upon the assumptions made to develop the arguments. Ironically, one of the most problematic assumptions of this idea is that one can calculate the costs of warfare and national strategy with any precision. Certainly, we can't put some sort of economic value on human lives; furthermore, moral decisions must override economic decisions.

Thus, the economic approach presented here does not imply that we can calculate all of the costs and benefits of our actions with perfect certainty—especially in the fog of war. However, the difficulty of calculating costs and benefits does not mean that we gain nothing from this approach. Even chaotic systems tend to behave within some boundaries.³⁰ Understanding the cost-benefit structure that shapes these boundaries should prove a useful exercise for decision makers now and in the future.

Another underlying assumption of an economic approach also merits some discussion in this context. Typically, economic models are based on an assumption of rational behavior by the relevant actors in the situation. Certainly, many tyrants do not adhere to our notions of rational behavior. However, we can still derive advantages from this model if the behavior of the antagonist is reasonably rational. The model can in fact provide some insight without an assumption of rational behavior. Indeed, irrational behavior by the enemy can make a much more compelling case for action in some situations. Even by assuming rationality on only one side of the situation (ours), we can nevertheless undertake an assessment of costs and benefits that will have significant value for decision making.

Conclusion

This article does not imply that the United States has used cost-benefit analysis unsuccessfully in the past. The primary point is that we must reassess how we calculate those costs and benefits in the future due to the imperatives imposed on us by the new national security strategy, and we must use that analysis to make our doctrine more effective. Moreover, we must increase our investments in resources that allow us to make more effective assessments of those costs and benefits.

Technology has radically changed the face of warfare in the modern age—with significant consequences for decision makers. New technology allows the United States to use force with more precision and less cost in terms of fiscal resources and lives. However, improved technology also enables terrorists to wreak havoc with very few resources. These changes have led to a new national security strategy that reflects these problems. An economic view of these new realities can clear a sometimes muddy picture, leading to two conclusions: (1) we must continue to develop our notions of effects-based warfare, and (2) technological improvements in the future are likely to come from sources other than precision weapons. Further development of the eco-

omic view can help us use our resources effectively to meet the challenges of the modern world.

Postconflict containment by means of sanctions is mostly a failed policy, and its costs are enormous. We should consider such containment a preconflict—not postconflict—strategy. As in all things strategic, this is not a hard-and-fast rule. Sometimes the costs associated with regime change will prove too great, but we must be more realistic in calculating those costs.

Finally, in order to further develop our concepts of effects-based warfare, we must improve our information-processing capabilities, which include strategies for both collection and analysis. Traditional evaluations of potential targets must provide a richer picture of the total environment in order to see further gains in our application of effects-based doctrine. Improvements in our PME system are necessary to provide this enhanced picture.

Clearly, some of the ideas articulated in this article fall into the realm of national-strategy decisions that are not traditionally the purview of military officers. We implement the strategy decided upon by our civilian leadership. However, as key players in the development of security strategies, we frequently provide an opinion and a likely outcome from a given course of action. It is in this role as “trusted advisors” and participants in developing strategy that these ideas can enhance our national security.

Postscript

Currently, the cost-benefit question of Operation Iraqi Freedom, which occurred after this article was written, is receiving great attention in the press. The costs of the conflict proved generally less than anticipated, but the benefits also seem to be less than expected—at least at this early stage. Specifically, US forces have not yet found conclusive evidence of weapons of mass destruction (WMD) in Iraq—a problematic situation since the Bush administration used the near-certainty of finding them as a central argument for going to war. Despite its treatment in the press, this

lack of evidence does not necessarily mean that we erred in using WMDs as the basis for the decision to remove the Iraqi regime.

Once again, an economic framework proves useful here. Economists frequently use a tool called "expected value" to assess situations of uncertainty. The idea is relatively simple. If an investment has a 90 percent probability of paying \$100, then the expected value of the investment is \$90. For simplicity's sake, let's assume that the other 10 percent probability is that the value of the investment will be \$0. It makes economic sense to choose the investment for all costs less than \$90 (this also assumes that we will play the investment "game" repeatedly). However, choosing the investment at a cost less than \$90 doesn't necessarily mean we will make money. Chance may dictate that our actual return on the investment is \$0. (Variations exist on how one chooses to approach a situation such as this one, based on risk tolerance, but I have chosen one of the simplest strategies to keep things straightforward.) If our actual return is \$0, did we make a bad decision? No. It is easy to fall into the "bad outcome equals bad decision" fallacy here, but in this example we made a sound decision, based on the available information.³¹

One can apply the expected-value analysis to the question of WMDs as well. Available intelligence pointed to an extremely high prob-

ability of finding such weapons in Iraq. Even if we never find them, an expected-value analysis suggests that we made the correct decision. The costs of the conflict were less than the expected value of finding WMDs. Further, given the size of Iraq, it is still very possible, even likely, that we will find the evidence we seek.

What lessons can we learn from this expected-value viewpoint? The most obvious is that the reliability of our probability function is critical. Achieving an accurate assessment of the probabilities of various outcomes further strengthens the "precision knowledge" arguments made previously in this article. Effective use of these cost-benefit tools, even in uncertain environments, requires the best possible intelligence. Second, although intelligence information will never be perfect, we can still base our decisions on sound reasoning. An unexpected outcome does not necessarily mean that we have made a bad decision. After the conflict, we can assess our actions carefully to see where we might improve in the future. We tend to conduct this process well, in both our successes and failures. Currently, low-level conflict continues in Iraq, and it is probably a little early to make conclusive judgments about Iraqi Freedom; nevertheless, in terms of the economic viewpoint outlined in this article, it would be difficult to declare it anything other than a success. □

Notes

1. George W. Bush, *The National Security Strategy of the United States of America* (Washington, D.C.: The White House, September 2002), on-line, Internet, 4 December 2002, available from <http://www.whitehouse.gov/nsc/nss.pdf>.

2. See, for example, D. Milbank, "Cheney Says Iraqi Strike Is Justified," *Washington Post*, 27 August 2002, A1; and J. A. Mayer, "A Doctrine Passes," *New Yorker*, 7 October 2002, on-line, Internet, 11 October 2002, available from <http://www.newyorker.com>.

3. Michael Kelly, "A Doctrine of Armed Evangelism," *Washington Post*, 9 October 2002, A31.

4. Ibid.

5. See Maj Gen David A. Deptula, "Air Force Transformation: Past, Present, and Future," *Aerospace Power Journal* 15, no. 3 (fall 2001): 85-91, on-line, Internet, 4 December 2002, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj01/fal01/phifal01.html>.

6. John A. Warden III, *The Air Campaign: Planning for Combat* (San Jose, Calif.: toExcel, 1998).

7. See Brig Gen David A. Deptula, *Effects-Based Operations: Change in the Nature of Warfare* (Arlington, Va.: Aerospace Educa-

tion Foundation, 2001), on-line, Internet, 4 December 2002, available from <http://www.aef.org/pub/psbook.pdf>.

8. See Col Edward Mann, Lt Col Gary Endersby, and Tom Searle, "Dominant Effects: Effects-Based Joint Operations," *Aerospace Power Journal* 15, no. 3 (fall 2001): 92-100, on-line, Internet, 4 December 2002, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj01/fal01/vorfal01.html>.

9. See Maj T. W. Beagle Jr., *Effects-Based Targeting: Another Empty Promise?* (Maxwell AFB, Ala.: Air University Press, December 2001), on-line, Internet, 8 December 2002, available from <https://research.maxwell.af.mil/papers/ay2001/saastheses/beagle.pdf>.

10. Gordon Moore, one of the cofounders of Intel, formulated Moore's Law, which states that the number of transistors on a chip (and, consequently, the processing power) will double every 18-24 months.

11. See David Coursey, "Does Intel Still Matter? Yes, but . . ." *ZDNet AnchorDesk Online*, 24 February 2003, on-line, Internet, 24 February 2003, available from <http://www.zdnet.com/anchordesk/stories/story/0,10738,2911357,00.html>.

12. See Prof. George J. Stein, "Information Warfare," *Airpower Journal* 9, no. 1 (spring 1995): 31-39, on-line, Internet, 8 December 2002, available from <http://www.airpower.maxwell.af.mil/airchronicles/apj/stein.html>.

13. Warden, 46.

14. H. Norman Schwarzkopf with Peter Petre, *General H. Norman Schwarzkopf: The Autobiography: It Doesn't Take a Hero* (New York: Bantam Books, 1992), 319.

15. The North Korean situation illustrates the difficulty of maintaining comprehensive sanctions. In the early 1990s, as the sources of support (especially the Soviet Union) for the Korean regime evaporated, we provided some aid to North Korea in return for concessions concerning its nuclear-weapons program. New evidence reported in the press seems to show that this deal had little or no effect on reducing that program.

16. Wesley K. Clark, *Waging Modern War: Bosnia, Kosovo, and the Future of Combat* (New York: Public Affairs, Ltd., 2001), 11-12.

17. A. Karatnycky, "Ukraine's Rogue President," *Wall Street Journal Online*, 9 October 2002, on-line, Internet, 9 October 2002, available from <http://online.wsj.com>.

18. George F. Will, "A Retrospective on Disarmament," *Washington Post*, 15 December 2002, B7.

19. Bush, 14.

20. Although oil is the most likely resource to provide rogue states significant income in the immediate future, other resources, such as diamonds or drugs, could do so in the future. One should also note that, as technology improves the threshold of resources required to sponsor terror, the threat is likely to become lower. North Korea seems to be the notable exception to this rule. That country, despite a crippled economy, has managed to assemble a credible threat largely due to cash generated from weapons sales and the support of other nations to help meet its goals.

21. This does not imply that investments carry no risks. Uncertainty exists, no matter the course chosen. Nevertheless, investments have a positive "expected return."

22. One could argue that the United States would have had these forces in the region, regardless of a regime change in Iraq. However, the number of forces could have been less had the region become more stable by means of a regime change.

23. Edward C. Mann III, "Inbound and Ready: Controlling an Adversary and Shaping the Battlespace for Decisive Operations" (unpublished paper, Maxwell AFB, Ala.: Airpower Research Institute, 2001).

24. *Joint Vision 2020* (Washington, D.C.: Joint Chiefs of Staff, 2000), on-line, Internet, 4 December 2002, available from <http://www.dtic.mil/jv2020>.

25. See "Chief's Sight Picture: Total Force Development," 6 November 2002, on-line, Internet, 25 February 2003, available from <http://afas.afpc.randolph.af.mil/pme/docs/Total%20Force%20Development.doc>.

26. "Strategy School Changes Name, Expands," Air Education and Training Command News Service, February 2003, on-line, Internet, 24 February 2003, available from <http://www.af.mil/stories/story.asp?storyID=22003482>.

27. "Air Force Provides Opportunities for Foreign Service," Air Force News Service, 31 August 1998, on-line, Internet, 24 February 2003, available from http://www.af.mil/news/Aug1998/n19980831_981311.html.

28. Amy Parr, "Opportunities Available for Officers to Expand Global Skills," Air Force News Service, 22 June 2001, on-line, Internet, 24 February 2003, available from http://www.af.mil/news/Jun2001/n20010622_0836.shtml.

29. See Mann, Endersby, and Searle.

30. See Maj Michael R. Weeks, "Chaos, Complexity and Conflict," *Air and Space Power Chronicles*, 16 July 2001, on-line, Internet, 24 February 2002, available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/Weeks.html>.

31. See Robert H. Frank, *Passions within Reason: The Strategic Role of the Emotions* (New York: W. W. Norton & Company, 1989).

Celebrating 50 Years of Air and Space Power Publishing

Currently Seeking Manuscripts on Air and Space Doctrine,
Strategy, History, and Biographies
of Pioneer Airmen

AIR UNIVERSITY PRESS
131 West Shumacher Avenue
Maxwell AFB AL 36112-6615

For catalog or information, call
334-953-2773/6136 DSN 493-2773/6136
Fax 334-953-6862 Fax DSN 493-6862

<http://aupress.maxwell.af.mil>

AUPRESS
50
YEARS

Strategic Airlift The C-5 Galaxy

ASPJ STAFF



The C-5 is a formidable aircraft. The giant "T-tail" entered the active inventory on 17 December 1969 and has been a source of national strength, pride, and worry ever since. Its dramatic successes, such as Operation Nickel Grass (airlift to Israel during the 1973 war), have been bounded by design limita-



tions and high operating costs that have earned the aircraft severe criticism from outsiders and insiders alike. The original program combined new technologies, "first-ever" capabilities, and concurrent development with an excess of unlikely requirements. Because of early problems, the original "buy" was curtailed at 81 aircraft, and in an unprecedented move, the badly flawed wing on every C-5A was removed and replaced with one from a new design. Despite its faults, the C-5 still showed huge potential; in fact, a decade after the Galaxy production line closed, it was reopened, and 50 new C-5Bs were added to the inventory. Regardless of subsequent improvements, many aimed at raising the C-5A to the "B" standard, the C-5's operating cost continued to be among the highest for all Air Force aircraft. However, the successes kept coming as well. Most recently, in Operation Enduring Freedom, the C-5 flew approximately 30 percent of the missions and delivered approximately 48 percent of the cargo. In Operation Iraqi Freedom, it flew approximately 23 percent of the missions and again delivered approximately 48 percent of the cargo. By way of comparison, the C-5 moved more cargo and more passengers, on average, per mission than did either the C-17 or the C-141.

The C-5 has a maximum takeoff weight of approximately three-quarters of a million pounds with a cargo maximum of just over a quarter of a million pounds. The unique opening "visor" in front and cargo ramp/doors in back allow rapid drive-through loading and unloading, facilitated by the aircraft's ability to "kneel" at the load/unload point. This feature lowers the access point

by approximately 10 feet and enables easier cargo transit to/from truck beds and a lesser ramp angle for drive-on loading. The C-5 can carry any of the Army's current equipment, including the 74-ton mobile scissors bridge, the 70-ton M1-A2 Abrams tank, and helicopters up to the H-53 class. The C-5 also has an aft upper deck that seats up to 77 passengers. In an emergency, the main deck can be configured for passengers as well. The 12 internal fuel tanks hold over 50,000 gallons of fuel, giving the airlifter vast range in all mission profiles—and in-flight refueling gives it unlimited range.

The future of the C-5 fleet appears to have two distinct alternatives. First, the Air Force Fleet Viability Board at Wright-Patterson AFB, Ohio, is currently analyzing the C-5A's operating costs, remaining structural life, and capabilities as part of its charter to assess aging aircraft. This detailed comparison of costs and values will provide decision makers the data they need to determine the practicality of retaining the C-5A in the Air Force inventory. Second, two significant upgrades—the Avionics Modernization Program (AMP) and the Reliability and Reengining Program (RERP)—have been funded through the test phase for both the A and B models. These modifications will directly address the C-5's most serious limitations: avionics, parts, and engines. Success with these new technologies may finally allow the "C-5M" to achieve the full potential envisioned for it these past decades. If so, it will be around for years to come, say until 2040.

To Learn More . . .

Aviation Week and Space Technology: 1999 Aerospace Source Book 150, no. 2 (11 January 1999).-

"C-5 Galaxy." *Global Security.org*, 8 November 2001. On-line. Internet, 2 July 2003. Available from <http://www.globalsecurity.org/military/systems/aircraft/c-5.htm>.

Norton, Bill. *Lockheed C-5 Galaxy*. Warbird Tech Series, vol. 36. North Branch, Minn.: Specialty Press Publishers and Wholesalers, 2003.

"Photos and Fact Sheets." *USTRANSCOM*, 30 November 2001. On-line. Internet, 2 July 2003. Available from <http://www.transcom.mil/images/photos/c-5-front.cfm>.

"Strategic Airlift: Improvements in C-5 Mission Capability Can Help Meet Airlift Requirements." *GAO: United States General Accounting Office*, 20 November 1995. On-line. Internet, 2 July 2003. Available from <http://www.fas.org/man/gao/gao9643.htm>.

USAF Fact Sheet: C-5 Galaxy, November 2000. On-line. Internet, 2 July 2003. Available from http://www.af.mil/news/factsheets/C_5_Galaxy.html.

Latin American Countries with Space Programs Colleagues or Competitors?

LT COL ROBERT D. NEWBERRY, USAF

Editorial Abstract: Colonel Newberry's three-tiered analysis of Latin American space programs identifies (1) owner/operator states with mature space programs, (2) material participants with well-developed research and intellectual capabilities, and (3) countries that willingly participate in space programs with other nations by means of intellectual or capital contributions.



SPACE TECHNOLOGY, NOW taken for granted, is an accepted part of modern life. Space-derived products and services for communications, imagery, navigation, and weather forecasting are available to everyone around the world, even in less-developed and underdeveloped regions. Every

country in Latin America has access to a wide variety of space-based services. Telecommunications are available through International Telecommunications Satellites (INTELSAT), International Maritime Satellites (INMARSAT), and Iridium telephones, in addition to many satellite television and radio broadcasts

throughout the hemisphere. News reporters routinely use satellite-communications video-phones for live reporting in remote areas of Latin America. Space-derived imagery products are available from indigenous regional satellites, several commercial-imagery satellites, and the Internet. The Global Positioning System provides free navigation services, and that system's receivers are prevalent throughout Latin America. Regionally specific weather information is available from space-based systems. These space services have become pervasive due to their relatively low cost and the ability to access most of them by means of handheld units, small-dish antennae, or the Internet. As a region, Latin America has shown significant interest in developing indigenous space capabilities to assist with managing resources and exercising sovereignty. Brazil, Mexico, Argentina, Chile, Uruguay, Paraguay, and Peru in particular have participated in space programs beyond the level of merely subscribing to a satellite service.

The United States should routinely review Latin American space programs to ascertain their impact on its national-security interests. The primary such interest at stake with foreign space developments is the dual-use nature of space-launch technology. Space-launch missiles are inherently capable of being used for attacks against the United States. To date, the US ballistic missile defense program has focused on launches coming over the North Pole; those originating from south of the border could significantly complicate missile defense operations or render current plans ineffective. A secondary US national-security concern involves understanding the technical sophistication of foreign space systems to ensure that countermeasures can be developed to mitigate any military advantage they offer. Based on these two interests, the United States has pursued a policy of thwarting Latin American countries' missile developments while generally ignoring their space programs, considering them technically unsophisticated. Such a policy may not serve US long-term interests and should be reconsidered, based upon a better understanding of

Latin American space needs and purposes. With an eye toward formulating a new space policy for the region, this article reviews the most significant space programs in Latin American countries and categorizes those nations as either colleagues or competitors of the United States.

This article also rates the space capabilities of Latin American countries on a decreasing scale from three to one. Level three includes those countries with a mature space program and an indigenous capability to own or operate space systems. They do not have the capability to independently produce large-scale spacecraft and launch them, but they do have the infrastructure and technical capability to develop spacecraft hardware. Level two describes those countries that have the research capabilities and intellectual capital needed to engage in a space program as material participants. They can contribute design ideas and some hardware to a space program, and they have the resources to process and analyze space-derived products. Level one refers to countries that are willing participants in other space programs and that can contribute either intellectual or financial resources to a collaborative venture with another space-faring country. These nations are collaborators to others' space programs.

Level Three: Owners/Operators

Brazil and Mexico are the largest owners and operators of space systems in the region and are the most space-capable countries. However, the similarity ends there, as the two have developed highly individualized, unique space programs. Brazil, the dominant space power in the region, is the major player in terms of funding and technical scope. Its Instituto Nacional De Pesquisas Espaciais has undertaken an aggressive and long-term space program dating back to 1979 with the inauguration of the Missao Espacial Completa Brasileira (MECB).¹ The three objectives of the MECB are to (1) design and build its own satellites, (2) possess an indigenous manufactured rocket, and (3) develop a launch center

on its own territory.² The MECB identifies remote sensing as the major Brazilian interest in space. The Brazilian government intends to use space capabilities to perform the following functions:

1. Investigate and monitor natural resources.
2. Map the Amazon and track the rate of deforestation.
3. Monitor agricultural production.
4. Provide communications to remote Amazon and Andean regions.³

Brazil developed a three-phase program to purchase needed space technologies while developing an indigenous capability to eventually replace the need for outside support. The first phase, which ran from 1973 to 1984, included the purchase of US Earth-resources data from the land satellite (LANDSAT) program and a program to develop information technologies to receive, record, process, analyze, and disseminate the information. The second phase, from 1985 to 1994, expanded the sources of imagery products, including the French Satellite Pour l'Observation de la Terre satellites and the European Earth Resources Satellites. This phase invested additional money in indigenous capabilities to build laboratories for space-imagery research, simulation, mapping products, and the development of geoprocessing techniques. The third phase, which started in 1995, will expand the technology base to other imagery products, such as microwave sensors, and the operation of their indigenously produced imagery and communications satellites.⁴ Unable to produce a large-scale imagery satellite on its own, Brazil eventually entered into a joint-development project with the Chinese Academy of Space Technology for the China-Brazil Earth Resources Satellite (CBERS).⁵ Brazil also codeveloped the companion Scientific Científico (SACI) satellites in collaboration with both the United States and China as a technology test-bed activity.⁶ The tremendously successful MECB has provided Brazil with a robust and very capable space program.

Implementation of the MECB initially put Brazil at odds with the United States due to its objective of developing a rocket. The United States invoked the Missile Technology Control Regime (MTCR) in 1995 with the discovery that Russia was selling advanced missile technology to Brazil. Russia agreed to stop sales to Brazil, which cast the United States in a role of trying to stall that country's space program.⁷ The fact that Brazil also explored the purchase of Cyclone missiles from the Ukraine and missile technology from China further irritated the United States. Brazil eventually decided not to oppose the United States and signed on to the MTCR in 1995. But agreeing to the MTCR did not open the doors to missile technology, and the United States insisted that Brazil agree to a Technology Safeguard Agreement (TSA) to allay concerns about technology transfers to third parties, particularly China.⁸ Although the executive branches of both countries were able to reach agreement on the TSA, the Brazilian Congress has not ratified it because of significant concerns about the effect on Brazil's sovereignty. Brazil halted plans for developing an indigenous launch capability at Alcantara to appease US concerns and is now developing a commercial space-launch facility to compete with French Guiana for business.⁹ The US Air Force planned to use Alcantara to launch a satellite on a Pegasus rocket but moved to Kwajalein Atoll since the TSA had not been ratified at the time of the January 2003 launch.¹⁰

The second area of US concern about Brazil's space program is its codevelopment of space technology with China. The initial CBERS development did not particularly trouble the United States since it considered the satellites relatively unsophisticated. At the time, China relied on the Fanhui Shi Weixing imagery satellites, which used film capsules with one-meter-quality images and had to be de-orbited from space.¹¹ For CBERS, China funded 70 percent of the project and launched the satellite from its own territory using the Long March rocket; Brazil contributed the rest of the funding, mostly tied to development of the 20-meter imaging pay-

load.¹² The main concern of the United States was that China was gaining a near-real-time reconnaissance capability instead of taking an average of three days to recover and process film capsules. Since the United States, France, European Union, and others already offered commercial imagery of better quality, the United States did not consider CBERS a significant threat to its interests. This attitude changed somewhat in November 2002, when China and Brazil announced their follow-on agreement to produce CBERS-3 and -4 to fund the program on 50-50 shares and improve the imaging payload to five meters.¹³ The new agreement will also explore the feasibility of jointly developing a geostationary weather satellite based on the CBERS model.¹⁴

Partly as a consequence of the difficulty of working with the United States, Brazil has independently pursued its space program; however, its relationship with the United States has not been completely characterized by conflict, and Brazil has continued to participate in US-led space programs. For example, Brazil was the third country to participate in the US LANDSAT program and is the third largest user of US-provided satellite imagery.¹⁵ It is supplying \$120 million worth of hardware over five years to the International Space Station,¹⁶ has an astronaut in the National Aeronautics and Space Administration's (NASA) space-shuttle cadre, and continues to participate in the hitchhiker program to place experimental payloads on the space shuttle. In addition to collaborating with the United States on microsatellite technology, Brazil has also teamed with other US allies such as the United Kingdom.¹⁷ Although one might justifiably categorize Brazil as both a US colleague and competitor, it is principally a competitor.

Mexico, on the other hand, has a much less ambitious space program than Brazil's and a very different focus. Its major space interests involve integrating the country with telecommunications services for governmental command and control of resources and pursuing commercial activities such as banking and entertainment. Therefore, instead of emphasizing imagery, Mexico has concen-

trated on communications services. Like most countries, it was an early participant in the INTELSAT and INMARSAT programs and subscribed to US systems for telecommunications services for domestic audiences. In 1997 the Mexican government created the Satellites Mexicanos, S.A. de C.V. (Satmex) to oversee its satellite operations. Satmex teamed with Loral to operate the Morelos, Solidaridad, and Satmex telecommunications satellites Mexico purchased from the United States.¹⁸ In 1996 the National Autonomous University (UNAM) launched the UNAMSAT-B microsatellite it had developed with the Radio Amateur Satellite (AMSAT) organization.¹⁹ In general, Mexico's main space involvement has entailed financing space communications programs and contracting with US companies for their operation. Because Mexico has taken a decidedly cooperative stance with the United States in the development of space capabilities, it is one of America's space colleagues.

Level Two: Material Participants

Argentina and Chile are both capable of developing small satellites but have to team with other countries to undertake larger-scale space programs. Both nations are more fiscally constrained in their space spending than the level-three countries and do not have compelling national-security or economic interests that would drive a dedicated or more robust space program. Since their participation in space programs is not downward-directed, based on government priorities, they have been free to participate in a wide variety of programs without having to commit to the long-term operation of any particular system. Both Argentina and Chile, therefore, have pursued a strategy of breadth over depth, emphasizing the development of their intellectual capital over specific hardware.

Argentina's Comision Nacional de Actividades Espaciales (CONAE) had ambitious space-development plans prior to the devaluation of the Argentine peso in January 2002. In the 1980s and early 1990s, Argentina was developing an indigenous rocket program

called the Condor, which had space-technology applications. The Condor raised significant concerns in the United States due to its violation of the MTCR and the potential for technology transfer to Iraq.²⁰ As did Brazil, Argentina eventually concluded that its interests would be better served by cooperating with the United States on the MTCR. Thus, in 1995 Argentina joined the pact, cancelled the Condor program, and began pursuing a space program with the goal of integrating with the Brazilian program.²¹ Over time, Argentina developed contacts with other countries and joined an AMSAT program, entering into a codevelopment program with Chile, Spain, and Brazil for the Cesar satellite, which has agricultural, water-management, and environmental-monitoring applications.²² Argentina has also signed an intergovernmental agreement with China for bilateral space cooperation.²³

This competitive stance changed somewhat in 1998 after President Bill Clinton named Argentina the only "major non-NATO ally" in Latin America.²⁴ CONAE had already participated with NASA in the development of the Satellite de Aplicaciones Científico (SAC) microsattellites as a space-research project.²⁵ As Argentina continues to seek closer military ties with the United States, mainly through peace-keeping operations, its space program now appears more cooperative with that of the United States. Its plans to develop the Satellites for Observation and Communications (SAOCOM)-1A radar satellite include Italy—another NATO ally of the United States.²⁶ Also, the United States views the launch of Latinsat-A and -B by Aprize Satellite in 2002 as a commercial endeavor with no national-security implications.²⁷ One reason the Argentine space program is now perceived as more pro-United States is that most funding for programs with US competitors has largely stopped as a result of the government's fiscal crisis and lingering economic problems. Considering its continuing links to competing, non-US space programs, one can consider Argentina both a US colleague and competitor.

Chile has taken an approach similar to Argentina's but on a smaller and more sustainable scale. First, Chile has proceeded at a slower pace and did not pursue domestic missile programs, a course that would have challenged the MTCR. Second, the Chileans have been flexible in their teaming arrangements without committing themselves to funding large space developments over long periods of time. Third, Chile has become more aligned with the United States in high-technology programs by purchasing F-16 aircraft. So, although Chile has explored coparticipating with Brazil and China on space programs, it has done nothing to cause the United States significant concern.

Unsurprisingly, then, bilateral military cooperation with Chile may expand into the area of space. Its main interest in space programs concerns scientific collaboration on Earth resources. Chile has recently formed a space agency and has opened dialogue with NASA. In addition to the Cesar satellites, mentioned above, the Fuerza Aerea de Chile (FACH) entered into a collaborative program with the University of Surrey in the United Kingdom to build the FASAT-1 scientific Earth-resources microsattellite, launched in 1998.²⁸ In 2002 Chile opened discussions with the United States for a follow-on collaborative program in this scientific area. Initial discussions have occurred between the FACH and US Air Force although future collaborative arrangements would include NASA and the new Chilean space agency.²⁹

Chile's lightweight satellite (Lightsat) initiative has been discussed as a bilateral development by the United States and Chile. In June 2002, United States Strategic Command offered to sponsor a joint microsattellite experiment with Chile. United States Southern Command endorsed a proposal, and members of Strategic Command and the FACH exchanged visits in the summer of 2002. This proposal has completed staff-to-staff coordination and is awaiting endorsement by the US Air Force's Senior Steering Group for International Space Cooperation.³⁰ The program is consistent with Chile's past involvement in

space initiatives insofar as it will continue to gain technical expertise with space operations but not commit itself to funding large budgets or operating space systems over a long period of time. Chile's space program appears to be changing from a competitive to more cooperative relationship with the United States.

Level One: Collaborators

Uruguay, Paraguay, and Peru participate in the space programs of other countries without developing stand-alone space capabilities of their own. (One could argue that nearly every other Latin American country also fits into this category.) These countries have not allocated many resources to a space program and have no compelling national interests that would cause them to embark on one. They are participants of convenience with others' space programs and merit only passing mention as interested parties. French Guiana is omitted from this list since it is a "department" of the French government and not a sovereign country.

Uruguay, Paraguay, and Peru have discussed options for participating in space programs with their Mercado Comun del Sur

(MERCOSUR) and Andean Pact neighbors. Brazil has generally served as the lead country in proposing multilateral space programs with these countries, but, to date, their participation has involved little more than technical-interchange meetings.³¹ Their major interest in such programs is more academic and scientific than political, economic, or military. Also, hard fiscal realities and other pressing national priorities will likely mute their involvement as significant players in space programs for many years to come.

Latin American countries with space programs have a largely collegial relationship with the United States (table 1) even though the latter has generally thwarted their missile developments and ignored their satellite technology. Continuation of the current policy does not serve long-term US national-security interests since it could become a self-fulfilling prophecy by causing Latin American countries once again to pursue space programs that work more directly against those interests. One readily identifiable consequence of past US policy is the depth and breadth of contact that has developed between countries in the region and China. Positioning China as the dominant Latin American space partner does

Table 1

Summary of Findings

| <i>Level</i> | <i>Country</i> | <i>Priorities</i> | <i>Status</i> |
|-----------------------------|-------------------------|----------------------------|-------------------------------------|
| Three: Owners and Operators | Brazil | Imagery and Communications | Mostly Competitor |
| | Mexico | Communications | Mostly Colleague |
| Two: Material | Argentina | Microsatellite Technology | Moving from Competitor to Colleague |
| | Chile | Microsatellite Technology | Moving from Competitor to Colleague |
| One: Collaborators | Uruguay, Paraguay, Peru | Academic | Not Assessed |

not serve US national-security interests. The United States should act now to forge more bilateral and multilateral ties with its Latin American neighbors, encourage Latin American space development, and integrate regional space aspirations with its own. Even without a specific policy review by the Na-

tional Security Council, it appears that the needed change may be taking place as a natural evolution of US policy. If the Chile Light-sat initiative is successful, then it should become the model for cooperation and integration between US and Latin American space programs. □

Notes

1. English translation: Brazilian Complete Space Mission (BCSM).

2. Frank Braun, "South American Space: The Brazilian Space Program in Review," *Ad Astra*, November–December 2002, 16.

3. *Ibid.*; Marcio Nogueira Barbosa and Decio Castilho Ceballos, "The Brazilian Observation Satellites," *Acta Astronautica* 37 (1995): 505–7; and Decio Castilho Ceballos, "The Brazilian Space Program: A Selective Strategy for Space Development and Business," *Space Policy*, August 1995, 203.

4. Brazil has an impressive record of producing its own small-scale satellites, such as the Date Collection Satellites (SCD)-1, -2, and -3, as well as the Brasilsats (B1, B2, B3, and B4). Brazil also plans to field remote-sensing satellites (SRR-1 and -2) and ECO-8 communication satellites in low earth orbit.

5. Barbosa and Ceballos, 505–7.

6. J. A. Neri et al., "The Brazilian Scientific Microsatellite SACI-1," *Acta Astronautica* 39, nos. 9–12 (1996): 707–9. The United States provided a \$4.6 million grant for SACI-1, launched in 1999 by the Chinese along with the CBERS-1 satellite.

7. R. Jeffery Smith, "U.S. Waives Objection to Russian Missile Technology Sale to Brazil," *Washington Post*, 8 June 1995, A23, A27.

8. Braun, 17.

9. Ambassador Sergio de Queiroz Duarte, statement to the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE Three), 20 June 1999, on-line, Internet, 12 June 2003, available from <http://www.un.org/events/unispace3/speeches/20bra.htm>.

10. Frank Dirceu Braun, "Romancing the Skies," *Brazzil*, October 2002, on-line, Internet, 23 June 2003, available from <http://www.brazzil.com/cvroct02.htm>.

11. A description of Fanhui Shi Weixing satellites is available on-line at <http://www.fas.org/spp/guide/china/military/imint/index.html>.

12. Wei Long, "China, Brazil Continue Remote Sensing Co operation," *Space Daily*, 28 September 2000.

13. The 50-50 cost share and improved imaging performance had been announced previously. Xinhua News Agency publicly released the formal start of the follow-on CBERS-3/4 on 28 November 2002.

14. Long.

15. Michael A. Taverna, "Pacts with China, Italy Spotlight Latin American Space Ambitions," *Aviation Week and Space Technology*, 9 October 2000, 125.

16. Braun, "South American Space," 16.

17. This refers to the development of the Abracos rainfall-monitoring satellite being developed with the United Kingdom. For a description of it, see the Instituto Nacional De Pesquisas Espaciais's Web site at <http://www.inpe.br>.

18. See the Satmex Web site at <http://www.satmex.com.mx> for a description of the Mexican satellites. For a description of Mexico's domestic space market, visit <http://www.tradeport.org/ts/countries/mexico/isa/isar0055.html>.

19. For a description of UNAMSAT-B, see UNAM's Web site at <http://serpiente.dgsc.unam.mx/unamsat/unameng.htm>.

20. "Missile Proliferation Developments in Brazil and Argentina," MIIS Seminar Series on Nonproliferation, 12 December 1991.

21. "Space Offers Fast Track to Technology Mainstream," *Aviation Week and Space Technology*, 4 March 1996, 49.

22. Taverna, 126. For more information, see the Cesar Web site at <http://quidelinele.ufro.cl/cesar1>.

23. Virtual Information Center, 22 May 2002, on-line, Internet, 12 June 2003, available from <http://www.vic-info.org>.

24. See Presidential Determination no. 98-9, 6 January 1998, on-line, Internet, 12 June 2003, available from http://www.access.gpo.gov/su_docs/fedreg/a980126c.html.

25. SAC-B (1996), SAC-A (1998), and SAC-C (2000) were all launched successfully. For a description of SAC-A, see the NASA Web site at <http://sspp.gsfc.nasa.gov/hh/saca/mission.html>.

26. For a description of SAOCOM-1A and other CONAE programs, see CONAE's Web site at <http://www.conae.gov.ar>.

27. For a description of Latinsat, visit <http://www.latintrade-satellite.com>. For a description of Aprize satellite, visit <http://www.aprizesat.com>.

28. For a description of FASAT, visit <http://www.fasat.cl>.

29. Brig Gen Simon "Pete" Worden, SMC/TR, Los Angeles, Calif., to author, E-mail, subject: Latin American Space Programs, 30 April 2003.

30. Lt Col Juan Berrios, US Embassy DATT staff, Santiago, Chile, to author, E-mail, subject: Latin American Space Programs, 19 March 2003; and Maj Jim Szczur, US Strategic Command, Colorado Springs, Colo., to author, E-mail, subject: Latin American Space Programs, 23 April 2003.

31. Taverna, 126.

Robbie Risner

CHARLES TUSTIN KAMPS



When the term *American hero* comes to mind, so does the name *Robbie Risner*. Born into modest circumstances in 1925 in Arkansas, James Robinson Risner enlisted in the US Army Air Forces in 1943. After getting his wings, he was assigned to duty in the Panama Canal Zone and

thus missed the “action” of World War II, eventually passing into the Oklahoma Air Guard in 1946. His subsequent career, however, more than made up for this inauspicious start.

Captain Risner arrived in Korea in May of 1952. Flying F-86s with the 4th Fighter Interceptor Wing, he became an ace by downing five MiGs in less than four months. All told, he shot down eight communist jets before the end of the war. Becoming an ace fighter pilot is a great accomplishment, but Robbie Risner displayed courage and skill that went beyond tactical competence.

On 22 October 1952, he and Joe Logan, his wingman, were screening a group of fighter-bombers close to the Yalu River and ended up penetrating Chinese airspace all the way to Antung. Returning toward the Yalu after a low-level kill, the pair caught flak, and Logan’s jet was shot up badly. Losing fuel and hydraulic fluid, it would not be able to fly the 60 miles to the nearest air-sea rescue point. Sizing up the situation, Risner had Logan shut down his engine while Risner nosed his own F-86 up to the tailpipe and literally pushed the crippled plane through the air at 190 knots! In spite of this heroic effort, Risner’s friend drowned after bailing out of the stricken F-86 and becoming entangled in the parachute lines.

Lieutenant Colonel Risner’s tour in Vietnam took a decidedly different—and longer—turn. Flying F-105s with the 67th Tactical Fighter Squadron at Korat, Thailand, he was leading a strike against North Vietnam’s infamous Thanh Hoa Bridge on 3 April 1965, when fire from anti-



aircraft artillery severely damaged his plane. Risner nursed the stricken “Thud” to a safe landing at Da Nang, but the Thanh Hoa defenses got him during a return visit on 16 September. On that day, Robbie Risner became one of 104 American pilots shot down trying to drop the bridge over the course of the war, a fraternity that includes such company as Jeremiah Denton and James Stockdale.

Risner was a prisoner of war (POW) until 1973, spending four and a half years of that time in solitary confinement. As a POW, he uplifted his brother officers and served as an inspiration and example of leadership. After repatriation he received a promotion to brigadier general. In his own words, “During my imprisonment the things that sustained me to the greatest extent were my faith in God, the American people, my commander in chief, my fellow POWs, and my wonderful wife. I never lost hope, and never did I despair of coming back alive. . . . We came back stronger, better men.”

To Learn More . . .

Frisbee, John L. “When Push Came to Shove.” *Air Force Magazine* 66, no. 12 (December 1983). On-line. Internet, 24 June 2003. Available from http://www.afa.org/magazine/valor/1283valor_print.html.

Hammel, Eric M., ed. *The American Aces Speak*. Vol. 5, *Aces in Combat*. Pacifica, Calif.: Pacifica Press, 1998.

Risner, Robinson. *The Passing of the Night: My Seven Years as a Prisoner of the North Vietnamese*. Duncanville, Tex.: World Wide Printing, 1999.

Air Expeditionary Access

The African Connection

COL BRIAN K. HALL, USAF

Editorial Abstract: Nearly a decade of increasing globalization has reached Africa in fits and starts, leaving a legacy of social tensions, poverty, disease, and conflict. US national-security strategy hinges on dealing with such conditions in an appropriate manner. For air and space power, a comprehensive access plan becomes a critical component for success.



We cannot predict where the next Desert Shield will occur. It could easily be in a place where we have no troops and no infrastructure—no bases or support systems in place. We will have to take with us everything that we need, including shelter, maintenance facilities, hospitals, and food and water.

—Lt Gen Michael A. Nelson, USAF
“Aerospace Forces and Power Projection”

IS THE STRATEGIC access the United States attained in Africa during the 1980s possible today after more than a decade of foreign-policy neglect? Access remains somewhat constant or is increasing on four of the world’s five major continents. The one region at highest risk from reduced US engagement is sub-Saharan Africa.¹ The United States has chosen to concentrate in

other areas at Africa’s expense. Not only was Operation Desert Shield successful and monumental at leveraging access in the Middle East, but also it validated US airpower doctrine and emerging joint-warfare concepts. Moreover, transformational concepts were reflected in the Air Force’s new concept-of-operations initiative. The greatest lesson learned from Desert Shield is that no future crisis will be handled

successfully without the continued access of the Air Force's expeditionary forces. The wide access enjoyed during that operation made possible the decisiveness of Operation Desert Storm. The Air Force has mastered most of the intricate facets of major expeditionary warfare; nevertheless, rapid-deployment operations in response to small-scale contingencies, humanitarian-assistance operations, and peace-support operations remain relatively ad hoc because they are more reactionary than deliberate. Much remains to be done to refine our nation's rapid-deployment capability in support of foreign-policy objectives.

According to *The National Security Strategy (NSS)* of 2002, "the presence of American forces overseas is one of the most profound symbols of the U.S. commitment to allies and friends."² The *NSS* also emphasizes how US forces must prepare for more such deployments by developing assets and capabilities reflective of expeditionary forces. At the high end of conflict, regional combatant commanders will require forces to bring unique capabilities to the fight and will expect those forces to be combat ready upon arrival in-theater. Operation Enduring Freedom (OEF) stands as an example of a nonstandard mix of air and ground assets joining the fight against terrorism without an abundance of doctrinal guidance—thus providing a lucid example of transformation. Henceforth, we will need this type of creativity and innovation to contend with strategic uncertainty and asymmetric engagement worldwide.

Africa may well serve as the proving ground for transformational concepts, methods, and capabilities. That continent provides a great challenge to the ability of the United States to project forces to a region often overlooked because of the magnitude of ongoing crises in the Balkans, Middle East, and Korean Peninsula. The American public has been subjected to unrelenting media attention towards those areas. But Africa has been overlooked as scarce national resources and advocacy were directed to areas of greater vital interest to the United States. Not until cataclysmic tragedy strikes, as occurred in Rwanda during the summer of

1994, does the US public turn its attention to Africa. Just one year earlier, the American media graphically filled television sets with the Somalia disaster, which undoubtedly reduced both subsequent coverage and US direct-assistance programs.

Over the last 10 years, experience has proven that air expeditionary deployment to Africa remains an immature science—one that follows a neglected foreign policy. Oftentimes, innovative airmen applied artful solutions to contend with the unique challenges posed by what can still be considered the "Dark Continent." Oddly enough, due to the limited presence of US government agencies in Africa, airmen became our nation's ambassadors of goodwill in areas cut off from normal diplomatic channels and limited activities of non-governmental organizations (NGO). The necessity of perfecting air expeditions to contend with low-end conflicts will not diminish anytime soon. In fact, it is more likely that out-of-area-based forces will see more frequent expeditionary deployments as our nation contends with the pervasive global war on terrorism, a fight that may well take this nation and its allies deep into Africa. The sub-Saharan region has become a proverbial breeding ground of human suffering caused by pandemic HIV/AIDS; ethnic, religious, and political unrest; natural disasters; and failed states—all of which create an environment ripe for terrorist proliferation. Afghanistan and Somalia have shown that where anarchy and radicalism run rampant, so does terrorism. In order to counter the spread of these maladies, the United States must establish access with select, promising African nations.

This article concentrates on access as the enabler of the military, economic, and diplomatic elements of US power projection. It discusses the strategic importance of access as a means of demonstrating soft-power projection;³ addresses how regional, operational strategies for cooperation create greater access, albeit not without significant challenges; and identifies emerging concepts of assuring access to show how the United States can best prepare for future air expeditions into Africa.

The Strategic Importance of Global Access

In Africa, promise and opportunity sit side by side with disease, war, and desperate poverty. This threatens both a core value of the United States—preserving human dignity—and our strategic priority—combating global terror.

—National Security Strategy, 2002

The *NSS* notes that, “together with our European allies, we must help strengthen Africa’s fragile states, help build indigenous capability to secure porous borders, and help build up the law enforcement and intelligence infrastructure to deny havens for terrorists.”⁴ We cannot realize these goals without significant power projection and sustainment to a continent of immense size and diversity. The US/African regional-security strategy must respect multilateral alliances while preparing bilateral engagements that build confidence and strengthen assured access.

The administration of President George W. Bush clearly recognizes that it must focus its attention on South Africa, Nigeria, Kenya, and Ethiopia as anchor states for regional-security cooperation. Yet, other regional players also deserve recognition for maintaining good governance and implementing responsible, democratic political systems—namely Ghana, Gabon, Mali, and Senegal. The administration’s policy towards regional-security cooperation recognizes these states, as it does the entire Sahel. Indeed, the Pan-Sahel Initiative is the most recent cooperative effort spun off from the global war on terrorism.⁵ Budding democracies have granted US requests for access to counter emerging crises. We will need assured access to shore up rapid response once conflict flares, as it has recently in Liberia and numerous times in Africa over the last decade.

Striving to balance global power as it develops new national-security strategies, the United States finds itself in a unique hegemonic position. From a classic political perspective, this is not necessarily bad because if one nation dominates the international arena

with overwhelming power, peace and stability reign since there is little point in declaring war against such a state. Political scientist Robert Gilpin has argued that “Pax Britannica and Pax Americana, like Pax Romana, ensured an international system of relative peace and security.”⁶ Unlike the Britain of the past, which controlled a global empire, America possesses a large, self-sustaining home economy and has the ability to project great soft power (the art of diplomacy, transparent military cooperation, and economic reform) to all corners of the globe. Thus, the United States is more apt to send food and medical supplies than a man-of-war to Africa.

Power projection and access go hand in hand. In this article, air expedition becomes the means of power projection, and access is its enabler. But one has to peel back the discussion of national power another layer or two to adequately portray the type of power best suited to project towards Africa. Of course, the United States must always be prepared to exercise both military and economic hard power to induce other parties to change their positions. Major force deployments and economic sanctions are two examples of the compelling projection of hard power, which is relatively easy to use when access is predictable and overseas presence extensive. A large, permanent US presence and investment (military and economic) in Europe, the Pacific, and the Middle East demonstrate America’s willingness to use hard power. But one can exercise power indirectly: that is, a country can obtain desired outcomes in world politics because other countries admire its values, emulate its example, aspire to its level of prosperity and openness, and therefore want to follow it.⁷

Soft power is more than persuasion or the ability to move people by argument.⁸ The United States would be in dire straits if it lost the ability to shape the international landscape by credibly projecting hard and soft power. America’s hegemony comes into play less often when its soft power is strong and associated with the tenets of benevolence and human dignity.

Africa is ripe for soft-power engagement. Great hard-power resources, such as those invested in the Middle East, Europe, and the Pacific, are not needed in Africa. Soft-power projection will go a long way towards securing vital American interests. Credible projectors of soft power include Canada, the Netherlands, Norway, and Sweden, each of which has political clout that vastly exceeds its military and economic weight. All four nations incorporate attractive soft implements such as economic aid and peacekeeping assets into their definition of national interests, thereby negating the necessity for costly hard power. Limited objectives allow for exclusive soft-power foreign policies.

Interestingly, governments are not the only wielders of soft power. US industries and NGOs develop their own soft power, which might either complement or compete with official foreign policy. But there is no room for friction between players when scarce resources are better applied by collaborative efforts that assure widespread access—a classic, symbiotic soft-power relationship. In Africa, competing unilateral efforts tend not to survive. From the onset, complementary private and public cooperation has a greater impact and longer-lasting effects. For that reason, the US military plays a substantial role in transporting, distributing, and supporting the wares of many NGOs and official government programs.

There are ways to assure that all US interests in Africa are safely supportable and, if necessary, introduced in-theater via expeditionary, global-mobility, and rapid-response task forces. Little difference exists in the planning, executing, and sustaining of air expeditionary task forces for other-than-major conflicts. Although their scope and character are vastly different, the strength of air expeditionary task forces lies in the transformational capabilities of each.

In Africa, the potential for rapid global mobility and agile combat support (ACS), reinforced with distributed command and control capabilities, is perfect for future area operations. Air expeditionary forces (most likely part of a joint task force) will rapidly move,

and sustain these forces. Rapid global mobility demonstrates an improved ability to support operations with a smaller force and footprint while transiting distances in minimum time. ACS, which begins well before deployment, provides many capabilities crucial to successful beddown and sustainment, including readying the force; assessing, planning, and posturing for employment; tailoring and preparing for movement, deployment, and reception; employing effectively; and sustaining appropriate levels of support for theater operations.⁹

Although these concepts and capabilities sound promising, nonstate entities preparing for conflict with the United States will seek to capitalize on the great distances US forces must travel to engage them. Those evasive enemies realize all too well the near-absolute reliance of the United States on unimpeded access to and use of airfields and bases in the potential theater of conflict.¹⁰ In today's environment of crisis action, quickly getting in-theater is as important as what one does after forces arrive. The Bush administration's greatest concern for the projection of military power to Africa is establishing select sites that form the greatest foothold once the boots hit the ground.¹¹

The Difficulties of African Access

For the Armed Forces, troubled states and transnational threats will probably occupy an increasing amount of their time in the future, further complicating existing OPTEMPO problems. The ethnic, tribal, and religious extremism revived by the end of the Cold War gives no indication of abating.

—Hans Binnendijk
“A Strategic Assessment
of the 21st Century”

Globalization is the child of US foreign policy. In the most rudimentary terms, globalization is a worldwide network of interdependence.¹² So intertwined is globalization with world economies, societies, environments, and defense that some members of the world

community have become dependent upon the more endowed nations for vital sustenance. Africa is the norm rather than the exception insofar as it receives substantial percentages of official development assistance from developed nations: France (43 percent), Germany (28 percent), Italy (69 percent), United Kingdom (35 percent), and United States (15.4 percent).¹³ As a percentage of total, worldwide foreign assistance, the US contribution is deceptive; actually, it represents more than \$2.1 billion of committed funds in 2003.

The hub-and-spoke metaphor fits military globalism more closely than economic, environmental, or social globalism because American dominance is so much greater in that domain.¹⁴ So globally entrenched is American military dominance that less capable nations lean on bilateral security agreements to fill their own defense gaps. In order to ensure viability, the United States negotiates assured access via these mutual agreements, a process that leads to every possible forward-basing option—from “fortress Europe” installations to remote stations in forgotten corners of the globe. Although significant US forces remain in Europe, the Middle East, and the Western Pacific, force drawdowns over the last 15 years have left significant gaps in overseas presence.

This unequal distribution of military hard and soft power in preindustrial and industrial parts of the world has taken its toll in very short order. What had been a modest US military-cooperation program in strategic locations such as Ethiopia, Kenya, Liberia, Somalia, Sudan, and Zaire was all but ended by the late 1980s. Over the last decade, US military presence was reduced to nothing more than limited airlift operations supporting diplomatic missions, minor exercises and exercise-related construction, port calls, and sparse special-forces training and familiarization (focused on the Horn of Africa).

As limited Navy and Marine assets become tied down with current and projected hot spots in the eastern Mediterranean, Persian Gulf, and Indian and Pacific littoral, the west, central, and southern parts of Africa become

vulnerable due to a gap in rapid US military assistance traditionally performed by Marine expeditionary units afloat in the South Atlantic and Indian Oceans. Although strategic- and tactical-airlift assets of the US Air Force have flown extensively in Africa, these missions must contend with the danger of nonstandard operations, limited access, and degraded capabilities.

Today, Enduring Freedom sets the stage for future deployments of air expeditionary forces. Lessons learned from the expeditionary methods and processes used to bed down air assets at Bagram and Kandahar, Afghanistan, and in Manas, Kyrgyzstan, provided the practical environment to test and standardize the laydown of air expeditionary forces.¹⁵ The deliberate planning, task organization, and ACS necessary to ensure safe, supportable beddown should be captured as the standard for future air expeditions. Combining OEF lessons learned with years of flying air operations in Africa provides a baseline that should set the standard for the beddown and basing of air expeditionary forces in any corner of the globe.

Any contingency operation will entail an inherent amount of uncertainty. However, the fact that the future remains uncertain is no excuse for failing to make adequate preparations.¹⁶ Any major operation begins with thorough strategic-campaign planning, which recognizes that success depends upon bedding down all the implements of warfare in optimal locations. Force beddown is the responsibility of the regional combatant commander, whose staff must account for the specific beddown requirements of its air component once the total number and type of aircraft are known. According to joint doctrine, each service component is responsible for its own deployment and sustainment. The combatant command must approve initial and subsequent beddown, if applicable, to ensure not only supportability and force protection, but also—and most importantly—the maximum attainable power projection in the least amount of time.

Of equal importance, access is a fundamental facet of combat-support planning because it is inextricably tied to logistics and force protection. If logistics is the lifeblood of airpower, then access to air bases is the skeleton and internal organs through which the blood flows.¹⁷ The need for air bases to employ land-based airpower effectively has been essential since the beginning of forward air operations. Recently, expeditionary air operations have experienced growing pains, the first notable problems inevitably resulting from nonoptimal operations.

Aside from distance, preindustrial Africa is rife with other unique access challenges to the projection of air expeditionary forces. For example, among the 286 larger African airports or airfields currently included in Air Mobility Command's Airfield Suitability and Restrictions Report (ASRR) of May 2000, only 84 percent of major military-surveyed airports can support C-130 aircraft operations (the smallest US Air Force tactical transport).¹⁸ The C-17, designed for better worldwide deployment with greater payload/range and requiring at least 4,000-foot improved runways, can land in less than 65 percent of ASRR-listed major African airfields.¹⁹ The bulk of missions flown into Africa over the last 20 years used C-130 and C-141 airframes—not the strategically valuable C-17, 87 of which were delivered to the US Air Force for global movement of personnel and equipment.²⁰ In addition to the shortage of suitable runways, limitations concerning such factors as flight safety, available support and fuel on the ground, and airfield security compound to defeat the advantage of the C-17's capability to provide worldwide response when that asset is already stretched to the limit supporting round-the-clock operations in the Middle East and Central Asia.

Ten significant expeditionary airlift operations have occurred in Africa over the last 10 years, including peacekeeping and enforcement operations, noncombatant evacuation operations, and humanitarian-assistance operations. All of them generated lessons learned that reflected the difficulties of planning for

African operations, deployment and employment degradation, and ill-defined exit strategies. National political as well as joint military and service planning all warn of the inherent dangers associated with operating in proximity to or through adversary states and nonstate actors. These groups will use increasingly available weapons and subversion to affect our will and ability to conduct vital African military operations, leaving twenty-first-century Africa with conditions antithetical to US interests. Political unrest, ethnic and religious fighting, pandemic health disasters, and corruption make strategic cooperation tenuous at best. In a continent oozing with porous borders ideal for undetected, transnational terrorist movement, antiaccess operations are not only plausible, but also probable in today's emerging security lexicon.

Add to this volatility unpredictable support, erratic air-traffic control and communications (both ground and airborne), and questionable security, and it is no wonder that US commercial air carriers deliberately stay away from Africa. Nothing disturbs an aviator more than operating in an environment that lacks the staples taken for granted in the rest of the world. Air expeditionary planning, operations, logistics, support, and medical assumptions standard on the other four major continents have been hit or miss over the past decade or more in Africa.

Operation Guardian Assistance—the humanitarian-assistance operation conducted in 1996, two years after the atrocities in Rwanda—provides a representative example of problems that plagued US forces attempting to establish airhead operations. Because lack of fuel storage and mobile refuelers limited overall fuel throughput, strategic aircraft sucked so much fuel that the rate of consumption seriously affected other sequential locations along the fuel lines and often cascaded into adjacent countries. Airfield facilities, as well as navigational aids and procedures, did not meet US standards designed to assure flight safety. The lack of current and complete airfield surveys forced last-minute surveys that risked capturing incomplete, critical data that put aircrews,

passengers, and cargo in peril. At times aircrews were restricted to daytime visual-flight conditions to conduct operations. Onboard inertial navigation and global positioning systems, as well as aviation-chart visual confirmation, became the directed methods to navigate the vast, blacked-out African distances.

Before undertaking the next inevitable air expedition to Africa, the United States must ensure that properly qualified personnel control the operations. When an attendant air and space operations center (AOC) is task-organized, depending upon the joint task force mission (in Africa most air expeditions are airlift oriented), it must have people with airlift expertise. AOC resident personnel in the air mobility division maintain the qualifications needed for most African missions, but dedicated load planners must be added to the joint manning document. Stripping load planners from overworked tanker airlift-control elements is not the solution.

The US Air Force faces a critical physical challenge—specifically, availability and operability—in basing expeditionary forces. Availability, as applied to access, refers to using the best possible airfields for operating bases in the employment of airpower. Nations will grant the best physical access to US forces when it is in their best interests to do so, with economic return the predominant consideration and availability a secondary concern. If the price is right, availability becomes a moot point.

To the airman, operability refers to using an airfield at peak efficiency in support of assigned aircraft. The airfields necessary to sustain modern aircraft employment require tremendous infrastructure to support today's technologically sophisticated weapon systems. The dilemma of modern airpower is that it tends to come with a very large footprint on the ground. Oftentimes, the forward airfield requires significant infrastructure improvements in order to accommodate long-term deployments. Then again, a Desert Storm combat beddown in Africa is unlikely. We are more apt to see force layoffs similar to the OEF model. Certainly cost will be a factor in establishing assured access according to US standards.

Availability and operability access became significant challenges at Ganci Air Base (AB) at the Manas Airport, Kyrgyzstan.²¹ Here, need superseded cost as access to air bases in Central Asia became preeminent during the first weeks of OEF, and the physical challenge of availability and operability outweighed other limited options. Manas Airport required significant infrastructure improvements and additional major construction to handle a moderate strategic-airlift throughput (it had enough ramp space to park only four C-17 or C-5 transports).²² The price of access is high at Manas: the US military is expected to pump more than \$40 million annually into the weak local economy.²³

We must not overlook opportunities for potential force beddowns and adequate basing in Africa. Understandably, this investment may come in many forms, often costing more than monetary reimbursement to a host nation. The political cost of opening contingency-base access can mark the beginning of a long-term relationship built on the foundation of negotiations. For example, in Turkey, the United States collocated operating-base employment at Incirlik AB, beginning in 1954. It started as a forward refueling and supply base in a remote location, very similar to places from which the United States has operated in Africa. That's 49 years of growing US presence from a single expeditionary base.

This is not to suggest that engagement with Africa should mature to a sub-Saharan Incirlik. But the time for action has arrived. Security cooperation in Africa comes at substantial savings compared to the situations in Europe and Central Asia. The scope of African initiatives is a fraction of those associated with OEF. Waiting until the beginning of hostilities or crisis response to initiate beddown actions will delay the full effectiveness of expeditionary airpower. Preemptive engagement can lead to assured access when we need rapid global-mobility beddown.

This discussion has concentrated on air expeditionary beddown; sustainment of those forces is crucial to prolonged operations. A network of efficient and effective in-theater

distribution points must quickly link forward forces to the lifeline attached to the continental United States.²⁴ Generation and maintenance repair must be secured because they are key to sustained operations.

In a crisis situation, the time spent deploying forces and ACS is the mitigating factor in decision making with regard to basing. Deployment to a robust base significantly improves security options and missions spanning the spectrum of conflict. Beddown to an austere location hinders responsiveness because of conflicting resource requirements between making air base improvements and sustaining operations; such a scenario detracts from the expeditionary nature of the emerging global-mobility concept of operations.

Recommendations

Prepare for the location to which you are going, take the right people and equipment, get there early to oversee the establishment of base support, build rapport with host nation commanders, work within the theater command structure for personnel issues and sustainment of forces.

—Maj Gen Roger A. Brady, USAF
“Building and Commanding Expeditionary Units”

Given a joint force commander’s strategic appreciation of the political, economic, military, and social forces affecting access, and assuming that the strategic and operational objectives needed to accomplish the mission are understood by the components, one of the first considerations for concrete planning becomes beddown and basing.²⁵ Preparing force beddown involves conveying to the supported combatant commander the best estimate of the air-component planning requirements and future operational assessment. Accurately assessing support capabilities and infrastructure is critical to the US Air Force’s agility because it allows planners to determine support requirements and properly tailor force packages.²⁶ Also, the strategy division of the air component’s AOC must incorporate force

beddown and basing information in its concept of operations. Having current data and preapproved expeditionary sites is the basis of US Air Forces in Europe’s (USAFE) preapproved expeditionary deployment sites (PEDS) concept.²⁷

The United States can ill afford to waste valuable deployment planning on extensive unilateral negotiations as in Central Asia and the Middle East. The need for preplanned, preapproved airfields for US aircraft was identified in the Government Audit Office’s report on Kosovo air operations. Canceling of the colocated operating-base concept in the mid-1990s left a strategic gap in assured US access to potential hot spots in USAFE’s area of responsibility (which includes 41 of the 54 African nations). USAFE had to come up with a concept to rectify the reduction from 25 to eight permanently accessible airfields in-theater—none of which are on the African continent.

The PEDS concept is based upon requirements. Thus, US European Command must use the recent NSS and follow-on foreign-policy guidance to define the soft-power projection requirements of selective sub-Saharan access. Ghana, Gabon, Mali, and Senegal are all credible PEDS candidates because they show relative political stability and an overt willingness to support the United States in the global war on terrorism. The strategic locations of these four nations amply fit the hub-and-spoke requirement for joint US air expeditionary operations.

Upon concept approval by US European Command and the Department of Defense, PEDS preliminary-agreement negotiations would set the ball in motion. Specifically, they would initiate host-nation concept approval for US beddown and operations of a specific airfield for specific types of aircraft and expeditionary support. After host-nation approval, negotiated agreements must include the following:

1. Status-of-forces-agreement permission for deployed US military and US contractors.
2. US contracting practices.
3. Tax relief.

4. Base facilities available for use by expeditionary forces.
5. Host-nation support.
6. US payment for facility use, repairs and upgrades, and services received.²⁸

As we learned through OEF negotiations, standing arrangements—such as the memorandum of understanding (MOU) for potential airfield utilization—accelerate force bed-down and, more importantly, can activate a host nation's force-protection plan well in advance of reception. This simple consideration hastens the employment of expeditionary forces.

Minimal resource allocation to improve a host nation's facility assures our access partner of US commitment that previously was just a signature on an MOU regarding the joint use of designated air bases. Seeing the implementation of MOU technical arrangements in such areas as personnel and equipment beddown in forward locations, initiation of local contract services, and facility improvement/new construction bolsters good relations that pay big dividends when forces arrive in the host country.

Enough cannot be said about paying attention to details in a noncrisis mode. Timely supply routes and methods can be activated and tested in advance of the deployment of expeditionary forces. In essence, this provides an opportunity for ACS to rehearse critical tasks. Most importantly, force protection can be assessed and deficiencies identified and corrected without risking loss of life or equipment.

Conclusion

This article has emphasized the transformation of the US Air Force from deploying cumbersome, large-footprint air packages (poorly synchronized with other services' power projection) to rapidly deployable expeditionary airpower tailored to meet overseas rapid response. The Air Force can learn much from the Marine Corps, which has long had a true appreciation for expeditionary-force employment and, indeed, embodies the word *expeditionary*. Marine combat doctrine

directly addresses the concept of combined-arms integration to maximize the effects of an air and ground task force—the forebear of today's joint task force. Marine survival depends upon full integration of capabilities, as will the joint forces that join in tomorrow's security challenges.

Another point worth pondering involves taking advantage of time. Why deploy into austere locations if time is available and if robust major operating bases are accessible? Again, preemptive air expeditionary concepts, such as PEDS, provide significant capability to sustain protracted military operations. The decision to commit resources is difficult to recall once initiated. US planners and combatant commanders must realize that power projection is not easily reversible. We must implement the best options because the speed of decisive airpower employment will outrun the ability to reposition a poorly conceived concept of basing.

As Sebastian Mallaby remarked in the *Washington Post*, “The paradox of American power at the end of this millennium is that it is too great to be challenged by any other state, yet not great enough to solve problems such as global terrorism and nuclear proliferation.”²⁹ Although he made this statement prior to 11 September 2001, it still rings true. Unfortunately, the war against nonstate players will gravitate to a point where the advantage goes to the terrorist. Africa promises to be such a haven, for it overflows with widespread poverty and unemployment that create idle masses attracted to anything that promises financial gain and greater self-esteem. The unfamiliar landscape of sub-Saharan Africa can be bounded only by greater American presence—and that can occur only with assured access to well-planned and capable airfields that enable hub-and-spoke operations to remote areas ripe for subversion. The plan of access presented here is a step in the right direction. America's door to Africa will remain open as long as US interests remain focused and funded. Soft-power projection is the goal—air expeditionary access is the key. □

Notes

1. Henceforth, this article will refer to *sub-Saharan Africa* as *Africa*. North Africa, composed of the littoral Mediterranean nations, does not pose as great a challenge to air expeditionary operations because the United States has fostered long-lasting relations and access to collocated operating bases during contingencies; these bases receive periodic attention during binational and multinational exercises.

2. *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, September 2002), 29, on-line, Internet, 9 June 2003, available from <http://www.whitehouse.gov/nsc/nss.pdf>.

3. Joseph S. Nye Jr., *The Paradox of American Power: Why the World's Only Superpower Can't Go It Alone* (New York: Oxford University Press, 2002), 8.

4. *National Security Strategy*, 10.

5. Briefing, Steve Metz, subject: Africa and Future US Policies and Strategies, USAF Air War College, 20 February 2003.

6. Quoted in Nye, 15.

7. *Ibid.*, 8.

8. *Ibid.*, 9.

9. Draft briefing, Headquarters USAF/XOXS, subject: Air and Space Expeditionary CONOPS, September 2002.

10. US Department of Defense, Office of the Under Secretary of Defense for Acquisition and Technology, *Final Report of the Defense Science Board Task Force on Globalization and Security* (Washington, D.C.: Office of the Under Secretary of Defense for Acquisition and Technology, December 1999), on-line, Internet, 9 June 2003, available from <http://www.acq.osd.mil/dsb/globalization.pdf>.

11. Briefing, Dr. Cindy Courville, deputy assistant national security advisor for African affairs, National Security Council, subject: The NSC and Foreign Policy, USAF Air War College, 23 January 2003.

12. Nye, 8.

13. Library of Congress, Congressional Research Service, *Africa: U.S. Foreign Assistance Issues* (Washington, D.C.: Government Printing Office, 3 December 2002), 9.

14. *Ibid.*

15. "Summary—Ganci AB at Manas, Kyrgyzstan," JULL no. 02403-56195 (unclassified), *Air Force Center for Knowledge Sharing, Lessons Learned*, 4 December 2001, on-line, Internet, 9 June 2003, available from <https://afknowledge.langley.af.mil/afcks/Search/JULLsrch.asp>.

16. Lt Col Karen U. Kwiatkowski, *Expeditionary Air Operations in Africa: Challenges and Solutions* (Maxwell AFB, Ala.: Air University Press, December 2001), 13.

17. Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict* (London: Brassey's Ltd., 1991), 3–5.

18. Kwiatkowski, 13.

19. *Ibid.*

20. Boeing Corporation, *C-17 Globemaster III*, 19 March 2003, on-line, Internet, 9 June 2003, available from <http://www.boeing.com/defense-space/military/c17/flash.html>.

21. "Summary—Ganci AB."

22. John Hendren, "Beddown in Bishkek," *Air Force Magazine*, July 2002, 58.

23. *Ibid.*

24. Air Force Doctrine Document (AFDD) 2-4, *Combat Support*, 22 November 1999, 15.


25. Air Force Instruction (AFI) 13-1AOC, *Operational Procedures—Aerospace Operations Center*, 1 July 2002, 18.

26. *Ibid.*, 11.

27. US Air Forces in Europe, *Pre-Approved Expeditionary Deployment Sites (PEDS) Concept*, 13 January 2003.

28. *Ibid.*

29. Sebastian Mallaby, "A Mockery in the Eyes of the World," *Washington Post*, 31 January 1999, B5.



**AIR & SPACE
POWER CHRONICLES**

DOD's First Professional Journal On-Line
<http://www.airpower.maxwell.af.mil>

Visit our other Web sites

- *Air & Space Power Journal – Español*
<http://www.airpower.maxwell.af.mil/apjinternational/apjiesp.html>
- *Air & Space Power Journal – Em Português*
<http://www.airpower.maxwell.af.mil/apjinternational/apjipor.html>

Africa Contingency Operations Training Assistance

Developing Training Partnerships for the Future of Africa

COL RUSSELL J. HANDY, USAF

Editorial Abstract: Shifting the emphasis from direct US involvement in African peacekeeping toward support for the Africa Contingency Operations Training Assistance program promises to create an "African solution for Africa." The program builds upon the African Crisis Response Initiative by reinforcing training packages, including peace-enforcement training.



AFRICA IS A continent of immense social diversity, rich in human and natural resources. Regrettably, its history has been marred by images of governmental corruption, failed states, and shattered economies. The collapse of apparent "bright spots" such as Côte d'Ivoire suggests the presence of only a very dim light at

the end of the tunnel. As fledgling governments struggle to hold on to order and stability, various groups undoubtedly will continue to challenge their rule. Thus, the requirement for competent and capable peacekeeping and peace-enforcement forces remains strong.

How extensively should the United States involve itself in African peacekeeping? Since

it has at least peripheral interest in ensuring that the continent doesn't disintegrate, should America directly participate in these operations or find ways to help Africans help themselves? The administration of President George W. Bush clearly favors the latter option. Funding for direct US involvement in African peacekeeping is on the decline—from \$31 million in fiscal year 2003 to a projected \$9 million in 2004.¹ Conversely, forecasts for the Africa Contingency Operations Training Assistance (ACOTA) program call for funding to increase from \$10 to \$15 million over the same period.

Is the United States getting the most for its money from ACOTA? Evidence indicates that ACOTA has instituted some beneficial changes to its predecessor—the African Crisis Response Initiative (ACRI). This article argues that the United States should continue to support ACOTA, redouble its follow-up efforts to measure effectiveness, and initiate the formation of training partnerships with key African nations, beginning with South Africa. It briefly reviews ACRI's history, describes the Bush administration's design for ACOTA to improve upon ACRI's success, outlines the potential for US-African partnerships, and offers recommendations for implementation.

Background

The United States experienced few successes with its involvement in African peacekeeping operations during the early 1990s. Public perceptions of Rwanda and Somalia put the administration of President Bill Clinton between a rock and a hard place with regard to the scope of US involvement on the continent. Prior to Somalia, the United States had taken a more active role in African peacekeeping, but American attitudes toward operations in Africa took a drastic turn for the worse on 3 October 1993—a fateful day for US forces. President Clinton's subsequent Presidential Decision Directive 25 made it very clear that the United States was not interested in an expanded role in African peacekeeping.² America's renewed timidity toward involve-

ment in Africa undoubtedly contributed to the Clinton administration's reluctance to enter Rwanda in 1994. The absence of timely US support in the early stages of the genocide that occurred there lingers in the memories of many African leaders.

The looming crisis in Burundi in 1996 acted as a catalyst for the United States to engage more actively in African operations. In the aftermath of Rwanda, influential leaders on the continent and the international community sought ways for African nations to tackle their problems effectively without constantly requiring help from the United States or other Western nations.³ Initially, America offered assistance by suggesting the creation of an African Crisis Response Force (ACRF)—an indigenous African military force, trained and equipped with the help of the US military, available for deployment to trouble spots on the continent. This concept seemed to offer a perfect way for the United States to help prevent a repeat of a Rwanda- or Somalia-type catastrophe while minimizing the number of US boots on the ground. Given the frequency of such contingencies and Africa's interest in more effectively handling its own problems, ACRF seemed a logical approach to avoiding the severity of future Rwanda-style scenarios.

Unfortunately, ACRF was not well received by most African nations. When Warren Christopher, then the US secretary of state, went to Africa in October 1996 to present the idea, many of the implementation details remained incomplete.⁴ Additionally, African leaders were troubled that the United States had not consulted them, and the unsolicited offer of a US-trained standing military force may have created anxiety about the prospect of American "imperialism" reminiscent of recent European colonial history. Finally, many African leaders felt that ACRF did not appropriately recognize the burgeoning influence of regional agencies such as the Organization of African Unity.

Committed to salvaging the ACRF concept and resolving the objections to it, the United States formed an interagency working group in early 1997. Led by Marshall McCallie, for-

mer US ambassador, the group recommended softening the objectives of the initiative, focusing on the long-term capability of African peacekeeping forces, and crafting a relationship with the United Nations (UN).⁵ Consequently, ACRF evolved into ACRI, a plan that aimed to enhance the peacekeeping capability of military forces from a number of African nations, which would retain operational control of their units.⁶ The facelift proved successful: by mid-1997, seven African countries had signed up for eight battalions to be trained under ACRI.⁷

After ACRI's inception, US military and contractor personnel trained nearly 9,000 troops from eight African nations under the program.⁸ Their training entailed all aspects of tactical- and operational-level peacekeeping tasks, including interaction with a variety of nongovernmental organizations. Units with ACRI-trained soldiers participated in at least nine peacekeeping operations during the initiative's five-year history.⁹ After conducting the initial training, US teams returned every six months to help develop indigenous sustainment capability within the host-nation units.¹⁰ From the outset, America intended the program to serve a dual purpose—make a “present impact” on existing conflicts and build long-term capacity to engage in future crises.¹¹

ACOTA: ACRI for the Twenty-First Century

The Bush administration's plan for building peacekeeping capacity in Africa closely resembles President Clinton's ACRI program. ACOTA, the new program, retains most of the components of ACRI. On the surface, the changes appear cosmetic, merely “de-Clintonizing” the program for the new administration by changing its name. A closer examination, however, reveals a few key distinctions between the two. The US Department of State fine-tuned ACOTA's objectives in several areas to capitalize upon lessons learned from its five-year experience with ACRI. Most notable were modifications insti-

tuted to resolve three key ACRI shortfalls: (1) lack of appropriately tailored packages, (2) perishable nature of the training, and (3) absence of peace-enforcement training.

ACOTA architects intend to add substantial specificity to their recipient nations' programs. Peacekeeping requirements vary greatly among African nations, so any training or equipment provided must be carefully planned to meet the recipient's needs. Initial ACRI training provided by US special forces was conducted using the same basic syllabus for each country. According to Theresa Whelan, director of the Office of African Affairs for the US Office of the Secretary of Defense, the existence of a “fixed curriculum” was a glaring ACRI deficiency.¹² Scott Fisher of the US Department of State Interagency Group on ACOTA acknowledged that the same basic program of instruction was used for all recipient nations, albeit “tweaked” by the on-scene battalion commander to meet individual requirements of each military.¹³

Greg Engle, director of the Office of Regional and Security Affairs at the US Department of State, contends that “tailoring of individualized programs is a key difference” between ACOTA and ACRI.¹⁴ ACOTA's training packages are formalized and vetted during detailed planning conferences conducted prior to the first training event. Training is matched to the individual operational requirements of the recipient, and equipment delivered as part of the package is specifically adapted to a country's blueprint.¹⁵ For example, ACOTA personnel spent two weeks in Ethiopia in February 2003 during the second meeting with that nation to lay the groundwork for a tailored program. Two planning conferences were completed with Kenya in February and May 2003 to lay similar groundwork for that country's program, which began in June 2003. Clearly, ACOTA puts much more emphasis on training packages designed expressly for the customer.

The second area targeted for improvement under ACOTA involved the challenge of creating an enduring peacekeeping capacity in the recipient nations. Despite attempts to stress

continuity, ACRI-trained troops remain a perishable asset. Although accurate statistics are elusive, a number of these troops were lost to HIV/AIDS and other infectious diseases. Additionally, according to US Embassy officials interviewed in Dakar, Senegal, unit effectiveness is diffused by a lack of unit cohesion—that is, soldiers trained under ACRI are often dispersed across a nation's military as a matter of numerical necessity, without regard to the impact on unit effectiveness.¹⁶ When the time comes to deploy peacekeepers on short notice, the task becomes a pickup game that fails to inspire confidence in the quality of the soldiers who arrive for the operation.

ACOTA seeks to ensure the continuity of trained peacekeepers by strongly emphasizing the “train-the-trainer” concept. According to Engle, ACOTA takes an entirely different approach than ACRI, focusing on enhancing the country's ability to train its own troops.¹⁷ Ghana's first ACOTA event concentrated almost exclusively on the development of Ghanaian training doctrine and strategy.¹⁸ In their follow-on event, conducted from 13 January to 11 April 2003, US personnel trained Ghanaian instructors and then monitored the soldiers who taught peacekeeping skills to indigenous troops. The United States is also developing a methodology for certifying host instructors. Additionally, future training funding will be tied to the host nation's commitment to utilize the certified trainers. ACOTA planners are optimistic that this more aggressive train-the-trainer approach will effectively hold African nations' feet to the fire, propagating peacekeeper training and creating a more capable force.

The third major ACRI area addressed by ACOTA entailed a failure to provide training to cope with the full range of potential action likely to be encountered by the recipient nation's soldiers. ACRI training packages effectively addressed operations categorized under chapter 6 of the UN Charter as peacekeeping tasks but did not prepare troops for peace-enforcement operations—oftentimes the precise skill set needed on short notice to quell conflict on the continent. Introduction of ill-

equipped and/or untrained units into this environment can be deadly and, ultimately, counterproductive. ACOTA training now includes a provision for peace-enforcement tasks such as light-infantry operations and small-unit tactics.¹⁹ Additionally, each ACOTA package contains between just under \$1 million to \$2 million worth of equipment, including combat paraphernalia, that the recipient retains after the completion of training. Finally, although agreements for training involvement are made bilaterally, ACOTA puts increased emphasis on the participation and consultation of subregional organizations, such as the Economic Community of West African States and the Southern African Development Community.²⁰ These organizations play a critical role in initiating and/or legitimizing peace-enforcement operations on the continent insofar as their “buy-in” to ACOTA enables the multinational integration essential to the success of those operations.

Although ACOTA clearly addresses ACRI's three key deficiencies, it remains on a pure donor-to-recipient basis. Additionally, ACOTA contracts largely excluded states envisioned by the United States as key to its involvement on the continent. These states could prove especially influential and could facilitate—perhaps even improve upon—peacekeeping training in their regions. Thus, the possibility of establishing partnership arrangements with principal African states, beginning with South Africa, becomes especially important.

South Africa: First “Anchor” Peacekeeper-Training Partner?

Despite the best intentions of ACOTA to help Africans help themselves, the program has enjoyed only minimal involvement from America's so-called anchor states—namely South Africa, Nigeria, Ethiopia, and Kenya. According to Dr. Jendayi Frazer, the US National Security Council's director of African Affairs, US policy on the continent under the Bush administration is built around developing the capabilities and understanding the role of these four regional “pillars.”²¹ Despite



Many African countries, such as Angola, Burundi, Central African Republic, Chad, Mozambique, Rwanda, South Africa, and Zambia, still use 50-year-old aircraft like this DC-3.

this intent, Kenya is the only anchor state to participate in ACRI to date, and ACOTA planners are currently completing their first meeting to solidify Ethiopia's involvement. Additionally, all of the ACOTA proposals dealing with anchor states—including the proposed conference with South Africa—stress US training to the recipient nation, an approach that ignores involving anchor states in training other African nations' forces.

Perhaps the most intriguing potential ACOTA participant is South Africa, whose interest in effective regional peacekeeping is straightforward. An "island" of first world

prosperity on a third world continent, South Africa is gravely affected by any instability in its region. The 1999 war in Angola had spillover effects on Namibia, showing how conflict in one state can influence its neighbors.²² Indeed, southern Africa is fraught with weak and unstable regimes. Any conflict on South Africa's borders could have a devastating effect at a critical juncture in the development and transformation of such governments. Similarly, migration can have potentially catastrophic social and economic effects. For example, approximately eight million illegal immigrants reportedly crossed

South Africa's borders in 1990 alone,²³ and the five million illegal entries to that country in 1994 cost it an estimated \$2 billion. Clearly, instability on South Africa's borders is not in its best interest.

Since South Africa alone cannot successfully accomplish the daunting peacekeeping tasks required in southern Africa, it should help ensure that other African nations can successfully employ their military forces in a peacekeeping role. Regrettably, according to Gen Siphwe Nyanda, chief of the South African National Defense Force (SANDF), other African states expect more force projection on the continent from the SANDF,²⁴ which has deployed nearly 1,000 soldiers to four locations in Africa. General Nyanda contends that greater regional involvement from South Africa would become problematic, especially regarding sea lift, airlift, and air defense. Virtually all military officials interviewed in March 2003 during a visit to Africa by students from the US Air War College agreed that getting the troops to the fight and sustaining them—by means of tactical lift—were among the most significant limiting factors in the SANDF's peacekeeping ability.²⁵

Given these limiting factors and South Africa's vested interest in better regional-peacekeeping capabilities, would that country benefit from involvement with the United States in ACOTA training? Opinions on the utility of this type of assistance within the country appear mixed. Henri Boshoff—a retired South African officer, veteran of several African peacekeeping operations, and senior analyst for the Institute for Security Studies in Pretoria—has participated in initial discussions regarding South African involvement in ACOTA. He argues that little need exists for direct US training of soldiers and staff in the country due to the SANDF's extensive, practical peacekeeping experience.²⁶ At the tactical level, Boshoff maintains that South African troops are perhaps better qualified than US personnel who would conduct the ACOTA training. The current manning of US ACOTA training teams may underscore this assertion: due to current operations-tempo realities, as

of February 2003, no uniformed US military personnel are involved in ACOTA. The total instructor cadre consists of contractors.²⁷

SANDF's official military position toward ACOTA is more positive, however. Mosioua Lekota, South Africa's defense minister, recently acknowledged his military's need for better trained troops and staff members.²⁸ He contends that other African countries routinely expect South Africa to play a leading role—diplomatically and militarily—when peacekeeping needs arise on the continent. Lekota asserts that this burden of regional leadership demands the ability to provide technical expertise to others, and he welcomes US assistance in this regard. Maj Gen Jan Lusse, chief of Joint Operations at Headquarters South African Joint Forces, agrees that current demand far exceeds capacity. He feels that ACOTA training would prove useful in South Africa's quest to build a more robust peacekeeping force.²⁹

Persuading South Africa to step up to the table as a full ACOTA participant with the United States will not be easy. Formidable obstacles stand in the way of effective interaction. Because of US support to the former apartheid regime, relations with South Africa since 1994 have been strained. In September 2000 William Cohen, then the US secretary of defense, acknowledged that the process of building "a level of trust and mutual respect" would be a long-term endeavor.³⁰ Relations since then have remained cool and are currently extremely tense. During the Air War College visit mentioned above, members of the South African Parliament commented on a very clear rift that exists between US and South African positions on many issues, most notably the ongoing tensions with Iraq.³¹ Senior South African officials strongly disagree with US policies on global engagement, preferring that individual nations—or, at most, regions—sort out their own difficulties.

Cooperating with South Africa to enhance peacekeeping training on the continent may well provide a "best of both worlds" answer to this issue. The United States wants to see an expanded, sustainable peacekeeping capacity

on the African continent. South Africa has similar interests but clings to a deep-seated philosophy of internal, grassroots solutions to one's own problems, devoid of external influence. The compromise may lie in a US training partnership with anchor states, using South Africa as the template for developing combined peacekeeping-training teams that work together to train other nations' forces. In fact, the door may already be open for this initiative. South Africa is the first nation on the continent invited to participate in Operation Phoenix, a newly proposed US program designed to establish a direct liaison between the SANDF and a US reserve-component organization.³² This is a tremendous engagement opportunity for the United States and South Africa, having the potential to better develop a mutual comprehension of each other's interests and spearhead a better long-term relationship.

Recommendations and Conclusion

The United States has an ardent interest in stability on the African continent. The focus on counterterrorism following the events of 11 September 2001 underscores just one long-term consequence of weak and failed states in the region. President Bush's recently announced budget demonstrates his commitment to helping African nations tackle long-term issues such as HIV/AIDS. Projected spending for peacekeeping, however, implies that the administration is serious about Africans being prepared to conduct these operations themselves. Peacekeeping and peace enforcement may be analogous to "putting out fires," but they are bona fide requirements that will continue to emerge in Africa on extremely short notice. Neglecting this responsibility can have catastrophic human consequences.

US fiscal policies are sending a clear message to African governments to focus on building indigenous peacekeeping and peace-enforcement capability so they can help *themselves* when scenarios arise involving

them or their neighbors—even though the United States stands ready to help. Like its predecessor, ACOTA is an effective bilateral tool to assist smaller African nations in developing this capability, but substantive participation from African anchor states has not been forthcoming. Several recommendations, however, could enhance the effectiveness of ACOTA.

First, the United States should continue to craft customized training packages for individual nations and strengthen the follow-up mechanism to ensure that these programs are appropriate and that the train-the-trainer concept is working. To accomplish this effectively, we must be willing to remain engaged with these states after training is completed. A train-and-forget mentality will perpetuate diffusion of qualified personnel throughout the recipient nation. To the maximum extent practical, the United States must include its uniformed military forces in these ACOTA training activities to uphold the program's legitimacy and avoid a perception of waning US interests.

Second, America must intensify its efforts to involve major regional powers (anchor states) in the program. The next planning conference with South Africa should initiate efforts to transform the present donor-recipient association to a full partnership. Creating a training partnership—beginning with bilateral skills development and later expanding to a US/South African training *team* that delivers training to other African nations—has tremendous potential. The United States must also ensure that the unit chosen to participate in Operation Phoenix is qualified to be a peacekeeping partner. If the United States and South Africa can traverse the diplomatic hurdles to make this happen, the continent will have better indigenous peacekeeping forces and enhanced regional commonality in doctrine and tactics; perhaps most importantly, relations between the United States and South Africa will improve.

Like its predecessor, ACOTA faces significant obstacles before it can become Africa's saving grace in terms of peacekeeping. Practi-

cally speaking, the primary hurdle may have less to do with training than with the physical capacity to execute. African states lack the tactical mobility and logistics infrastructure to independently conduct peace-enforcement and peacekeeping operations. Some blame may be cast upon the more developed nations, such as South Africa, which arguably is undergoing a period of strategic confusion regarding its optimal force structure. Despite a desperate need for more tactical airlift and

logistical infrastructure for peacekeeping and peace enforcement, the SANDF instead is buying guided-missile frigates, submarines, and third-generation tactical fighters. Hopefully, a partnership with the United States may serve to highlight some of this apparent force-structure mismatch. Regardless, the United States must face the continued reality that, for the foreseeable future, Africans will continue to need US assistance when crises emerge on their troubled continent. □

Notes

1. Col Mike Bittrick, USA, retired, US Department of State, lecture to the West Africa Regional Studies Seminar, Air War College, Maxwell AFB, Ala., 13 February 2003.

2. Jeffrey Herbst, "Western and African Peacekeepers: Motives and Opportunities," in *Africa in World Politics: The African State System in Flux*, ed. John W. Harbeson and Donald S. Rothchild, 3d ed. (Boulder, Colo.: Westview Press, 2000), 308-23.

3. Lt Comdr Andrea Pollard, "An Analysis of the Measures of Effectiveness for the African Crisis Response Initiative" (master's thesis, US Army Command and General Staff College, 2000), 10-12.

4. Werner Biermann, ed., *African Crisis Response Initiative: The New U.S. Africa Policy* (Piscataway, N.J.: Transaction Publishers, 1999), 130-31.

5. *Ibid.*, 132-33.

6. Maj Timothy E. Lolatte, "How Should the United States Shape Training for Those Countries That Are in Support of the African Crisis Response Initiative?" research report (Maxwell AFB, Ala.: Air Command and Staff College, 1999), 8.

7. Biermann, 93.

8. Association of Concerned African Scholars, *US Military Programs in Sub-Saharan Africa, 2001-2003*, 11 February 2003, 5, on-line, Internet, 16 February 2003, available from <http://www.prairinet.org/acas/military/miloverview.html>.

9. Scott Fisher, US Department of State Interagency Group on ACOTA, interviewed by author via telecon, 4 February 2003.

10. Lolatte, 9.

11. Biermann, 3.

12. "South African Forces to Get US Training?" *Africa Online*, 26 July 2002, n.p., on-line, Internet, 16 February 2003, available from <http://www.africaonline.com/site/Articles/1,3,48752.jsp>.

13. Fisher interview.

14. Alex Belida, "US Ready to Launch Military Training Program for Sub-Saharan Africa," *VOA News.com*, 25 July 2002, n.p., on-line, Internet, 31 January 2003, available from <http://www.voanews.com/article.cfm?objectID=692BCA14-086D-4159.htm>.

15. Bittrick lecture.

16. Remarks delivered under conditions of nonattribution, US Embassy, Dakar, Senegal, March 2003.

17. Belida.

18. Fisher interview.

19. Bittrick lecture.

20. Gilbert M. Khadiagala and Terrence Lyons, "Conclusion: African Foreign Policy Making at the Millennium," in *African Foreign Policies, Power and Process*, ed. Gilbert M. Khadiagala and Terrence Lyons (Boulder, Colo.: Lynne Rienner Publishers, 2001), 212-13.

21. Greg Mills, "A 'Less Is More' Policy for Africa," *Daily Mail and Guardian*, 23 April 2001, n.p., on-line, Internet, 25 March 2003, available from <http://www.aegis.com/news/dmg/2001/MG01406.html>.

22. Senzo Ngubane and Hussein Solomon, "Southern Africa's New Security Agenda," *Africa Insight* 32, no. 1 (March 2002): 60.

23. *Ibid.*, 62.

24. Helmoed Römer-Heitmean, "Interview: Gen Siphwe Nyanda, Chief of the South African National Defence Force," *Jane's Defence Weekly* 37, no. 26 (26 June 2002): 32.

25. Notes compiled from presentations during visit to Senegal and South Africa, 3-13 March 2003.

26. Henri Boshoff, military analyst, South African Institute of Security Studies, lecture to the Air War College's West Africa Regional Studies Seminar, Pretoria, South Africa, 7 March 2003.

27. Fisher interview.

28. "South African Forces to Get US Training?"

29. Maj Gen Jan Lusse, chief of Joint Operations, South African National Defense Force, lecture to the Air War College's West Africa Regional Studies Seminar, Johannesburg, South Africa, 10 March 2003.

30. Jason Sherman, "Arm's Length: The Pentagon Hopes to Foster Good Changes in Difficult Places by Teaming Up with Two Nations It Once Ignored," *Armed Forces Journal International* 138, no. 2 (September 2000): 33.

31. Remarks delivered under conditions of nonattribution, South African Parliament, Cape Town, South Africa, March 2003.

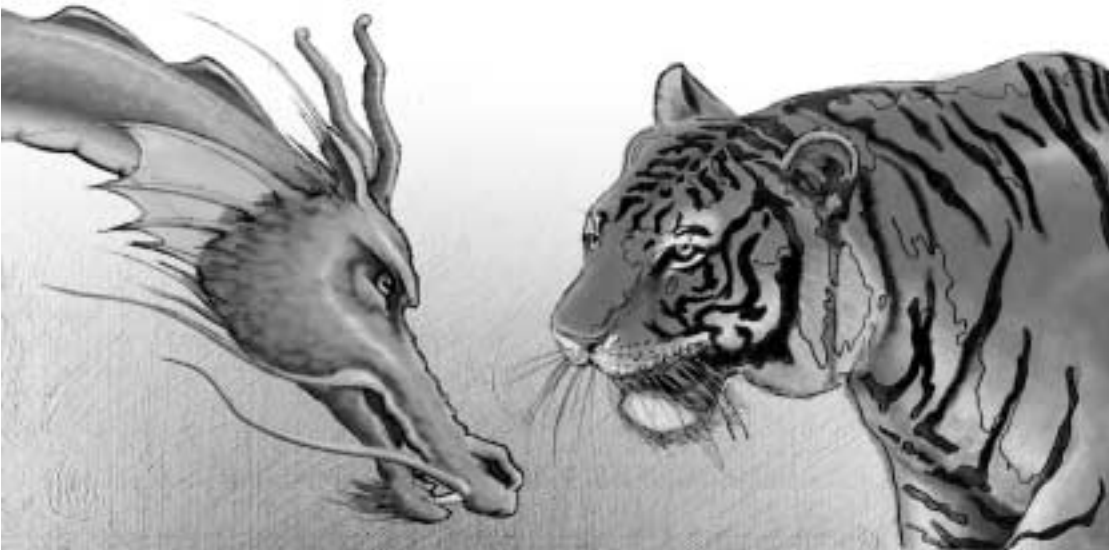
32. Col C. D. Smith, US defense attaché to South Africa, interviewed by author, 10 March 2003.

China and India

Friends or Foes?

LT COL MONA LISA D. TUCKER, USAF

Editorial Abstract: Even though China and India have a 20-year track record of cooperation, both countries have ample justification for proceeding with caution. On the one hand, US hegemony and greater US involvement in Asia may push the two neighbors toward even more cooperation. On the other hand, the degree to which one nation perceives the other as a threat could encourage closer ties with the United States.



SINCE ITS INCEPTION as an independent nation in 1947, India has followed its own drumbeat in developing foreign policy. Such an independent worldview and the desire to become a regional hegemon in South Asia has often put India at odds with the United States. Even though the two nations share democratic values, their values and interests have rarely converged in the world of international politics. India and China, who claim to be the world's two oldest and largest civilizations, also have had a seesaw-like relationship.¹ This article examines India's and China's history of foreign policy and discusses their current relation-

ship as well as possibilities for the future, both through the prism of US interests. Although both countries have developed a more cooperative relationship in the last 20 years, because India still sees China as a threat, it continues to pursue both additional nuclear capability and a stronger relationship with the United States. Some observers might argue that India and China are on a path of cooperation so as to effectively counterbalance US hegemony in Asia. This article, however, argues that, although India is cautiously proceeding with cooperative efforts with the Chinese, it sees China as a major threat, and that the United States welcomes this view as a means

of counterbalancing China as its only near-term strategic competitor.

India's Major Foreign-Policy Themes

Upon achieving its independence, India set about becoming a world power with global influence, even though it fixed most of its attention on Pakistan. India also extended its hand to the African National Congress of South Africa—which had adopted the passive resistance advocated by Mohandas Gandhi—by providing training and assistance as Africans struggled to rid themselves of colonial oppressors. Unwilling to become a pawn of the United States and USSR, the world's two superpowers, during the Cold War, India cofounded the Non-Aligned Movement, remaining neutral until it became more expedient to side with the USSR.² Additionally, India promoted total nuclear disarmament of all nuclear powers, all the while seeking nuclear-power status itself. It continued to condemn nuclear powers but saw nuclear weapons as its ticket to becoming a global force.³

Cold War and Post-Cold War Relationships

India and Pakistan have been fixated on each other's demise since the partition of India by the British. The legitimacy of each government seems to hinge on the illegitimacy of the other. On the one hand, the very existence of the Muslim state of Pakistan threatens India's idea of itself as a pluralistic society with a secular government that also represents the world's second-largest Muslim population. On the other hand, Pakistan was founded on the belief that the world needed a Muslim state that would provide Muslims equal status and rule them under Muslim law. Consequently, India's foreign policy remains focused on the Pakistani threat—seemingly, everything else is secondary even though India developed a two-front scenario in its national-security strategy after China's successful military ac-

tion against it in 1962.⁴ India has always felt itself superior to Pakistan, an attitude reinforced by its sound defeat of that country in 1971. But following India's testing of a nuclear weapon in 1974, Pakistan began its own covert journey to achieve nuclear-power status. Indeed, when India conducted its next nuclear demonstration in 1998, Pakistan responded in kind with its own test. It was now apparent to the world that both India and Pakistan intended to direct their nuclear capabilities at each other. Other disputes between Pakistan and India stem from the seemingly irresolvable dispute over Kashmir. Further, degradation in their relationship occurred with the so-called state-sponsored terrorist tactics used by the Pakistanis, especially in the Kashmir region. Despite the US reliance on Pakistan as an ally in the global war on terrorism, India continues to insist that its neighbor is an enemy and a source of much of the world's terrorism.⁵

US-India Relations

India's position of nonalignment put it at odds with the United States. The United States initially saw India, the world's largest democracy, as a prize to be kept away from the Communists. When India failed to side with the United States during the Korean War, Secretary of State John Foster Dulles called the Indians "immoral." Over time, the United States came to accept India's nonalignment policy as a nuisance but not a threat. As a result, India enjoyed handouts from both the United States and USSR, thus benefiting from the Cold War for a while. However, as the United States tired of the zero-sum relationship between India and Pakistan, as well as their inability to resolve their differences, it sought to extricate itself from the countries' ongoing battles. When the India-Pakistan war of 1971 resulted in Pakistan's sound defeat, India emerged as the regional power of South Asia,⁶ but the United States lost patience with both countries because of their practice of using US weapons and aid to fight each other. With the detonation of India's nuclear warhead in 1974, the United States again opposed India on the grounds of nonproliferation, seeking an end

to that country's nuclear testing and arming.⁷ Meanwhile, Pakistan also gained nuclear capability, presumably with China's help, and conducted a nuclear test of its own. Once again, India believed that the United States was trying to thwart its regional hegemonic status by levying more sanctions and beating the nonproliferation drum in the international arena. Becoming more embroiled in Vietnam, the United States pulled its aid from both India and Pakistan. India began to see a pattern of US support followed by sanctions when India displeased America. Or the United States totally ignored India, opting to court Pakistan, China, and—later—even the USSR. Unsurprisingly, India became increasingly distrustful of the United States and, though initially bent on nonalignment, grew closer to the USSR.⁸

USSR-India Relations

India didn't see the Soviet Union as a threat at all. Although the two countries were ideologically far apart, India's Jawaharlal Nehru, its first prime minister, admired the Soviets' ability to become a world power by building their economy, military, and political might on their own terms. In fact, the Soviet Union became India's economic model for building an infrastructure of roads, dams, and power plants and its main benefactor in terms of arms sales.⁹ Obviously, this relationship with Russia further strained the one with the United States.¹⁰ But the USSR did not help India with nuclear issues, and its invasion of Afghanistan in December 1979 caught India off guard, putting their relationship to the test. Further, the collapse of the USSR severely degraded India's military readiness because, without Soviet help, it could no longer logistically support its equipment.¹¹ Dismayed at how the Israelis had used US and Western technology to easily defeat the Arabs and their Soviet-supplied weapons, India once again sought out the West.¹²

China-India Relations

Sino-Indian relationships also experienced many ups and downs during and after the

Cold War. Nehru envisioned a close relationship between his country and China, seeing them both becoming strong regional allies with important seats at the world table. But this was not to be. Since the two countries had great potential and no additional territorial ambitions, Nehru believed that they shared a common path. Both were on the sidelines, watching the Cold War between the United States and USSR. Both had large populations and needed to build their respective economies. Both aspired to become great powers and had the requisite potential to do so.¹³ Therefore, India—the second country formally to recognize the People's Republic of China as the single voice of China—was understandably surprised in 1962, when the border disputes between the two countries escalated and China invaded parts of India, taking some of its territory. As a result of China's aggression, India continues to dispute the border between the two countries to this day.

Furthering the ill will between China and India, Pakistan ceded about 5,800 square kilometers of Indian Kashmir to China in 1963. Additionally, in 1965 during the India-Pakistan conflict, China provided Pakistan with military weaponry and accused India of "criminal aggression."¹⁴ Because India was adamant about remaining militarily superior to Pakistan, however, it adopted a policy of accommodation with China—a move undoubtedly motivated by India's realization that it could never win any further conflict with China. But as China became more of a benefactor of Pakistan, India strengthened its ties with the USSR. The Soviet Union's invasion of Afghanistan in 1979 caused the United States and China to become more active in the region, both of them once again providing aid and military hardware to Pakistan.¹⁵

Current and Future China-India Relations

Still concerned about the above-mentioned border dispute, India remains cautious in its dealings with China, which is in no hurry to resolve the problem even though India continues to press the issue during each exchange visit.¹⁶ India also views China warily because

of the latter's history with Pakistan. Specifically, China provided Pakistan with much of its weaponry and technology, most likely including its nuclear capability. China still refuses to recognize Sikkim as a legitimate part of India, having called it an "illegal annexation" in 1975, and persists in thwarting India's quest for a permanent seat on the United Nations (UN) Security Council.¹⁷

Another roadblock in China-India relations is India's position on Tibetan autonomy and human rights. India provided refuge for several exiled Tibetan spiritual leaders, and China scathingly referred to the meeting between Indian prime minister Shri Atal Bihari Vajpayee and the Dalai Lama in 1998 as an interference in its internal affairs. India further irritates China by allowing these and other exiled Tibetans to express their views and influence world opinion concerning the treatment of their people.¹⁸ In spite of these hindrances, Indian political leaders claim to want good relations with China. They deny seeing China as a threat, yet the Indian military clearly seems to think otherwise. Moreover, the Ministry of External Affairs talks about cooperation with China and opportunities for trade, yet high-ranking officials have verbally identified China and Pakistan as India's two principal threats. Further corroboration occurred in early March 2003, when Indian newspapers described newly purchased Su-30 MKI aircraft as the means of delivering nuclear weapons to any part of China. These overt references to China as a threat seem to fly in the face of the rhetoric of cooperation heard in some circles.¹⁹

Cooperative Efforts between China and India

The annual report for 2001-2 published by the Indian Ministry of External Affairs states that India "seeks friendly, cooperative, good neighbourly and mutually beneficial relations with China on the basis of the Five Principles of Peaceful Coexistence, jointly enunciated by India and China. India seeks a long term, stable relationship based on equality in which both sides are responsive to each other's con-

cerns."²⁰ It appears to India, however, that China hasn't been responsive enough in solving long-time border disputes and that it doesn't consider India an equal.

In the last few decades, India has pursued resolution of the border issue. Since resuming ambassadorial relations in 1976 after a 25-year hiatus, India and China have taken steps to strengthen cooperative measures. In 1988 Rajiv Gandhi, the Indian prime minister, visited China, and as the two countries resumed high-level diplomatic dialogue, they decided to set up a joint working group to discuss their borders. As a result of Prime Minister Narasimha Rao's visit in 1993, China and India signed an agreement on Border Peace and Tranquility and set up the India-China Expert Group of Diplomatic and Military Officers to assist the work of the joint working group. On the Chinese side, Premier Li Peng visited India in 1991, and President Jiang Zemin did so in 1996. During the latter's visit, the two sides established the Agreement on Confidence Building Measures in the Military Field along the Line of Actual Control in the India-China Border Areas. Both countries agreed to work towards a constructive and cooperative relationship for the twenty-first century. Nevertheless, even though the joint working group has met 13 times since its inception, the border problem remains unresolved.²¹ Other cooperative efforts include six memorandums of understanding and agreements signed in New Delhi on 14 January 2002 that address cooperation in the areas of science and technology, outer space, tourism, phytosanitary measures, and China's providing India with hydrological data regarding the Brahmaputra River during flood season.²²

After India's nuclear test in 1998 and its disclosure that the threat of China made the test necessary, both countries agreed on the need for bilateral security dialogue. After resuming relations about a year later, India and China stated that they did not consider the other a threat. The first meeting of the security dialogue occurred in Beijing in March 2000 and the second in New Delhi in February 2001. After the terrorist strikes of 11 September

2001, India and China agreed that they should maintain close cooperation and establish a bilateral dialogue against terrorism. Chinese leaders have also remarked that, since both countries feel threatened by the United States, they should cooperate to counterbalance America.²³ According to Zhou Gang, China's ambassador to New Delhi, "the threat is not from China to India and not from India to China. It comes from other places. . . . There is only one force dominating the world and asserting its domination to create a unipolar world. It is quite realistic for [India and China] to improve [their] relations to a cooperative partnership."²⁴

When Li Changchun, member of the politburo of the Chinese Communist party and party secretary of Guangdong Province, visited India in May 2001, he stated that India and China were the world's largest developing countries and that they had a responsibility to promote economic development, the well being of the two peoples, and the strengthening of bilateral ties. He also noted that the two countries shared more commonalities than differences and that both sides agreed on the existence of concrete opportunities for the development of bilateral trade.²⁵

Such trade has grown rapidly over the last decade. In 1991 the trade volume between the two countries was \$265 million (US dollars), and in 2001 it reached \$3.6 billion. The increase from the year 2000 to 2001 was about 23.4 percent. India imports more than it exports to China, imports having increased by 21.5 percent from 2000 to 2001. Its main exports include ore, slag, ash, cotton yarn/fabric, plastics, organic chemicals, mineral fuel, oil, silk yarn/fabric, and machinery. For both countries, however, their bilateral trade is significantly smaller than the rest of their foreign trade. India and China continue to exchange trade delegations and product exhibitions; additionally, each has established joint-venture and wholly owned companies in the other's country. Indian companies in China include Cadilla and Wockhardt pharmaceutical companies, Orissa Industries Ltd., Infosys, Tata

Exports, Torrent Group, Lupin Laboratories, and Kanoria Chemicals and Industries.²⁶

Despite these moves, much remains to be done. Significant bilateral cooperation will require changes in both China's and India's threat perceptions, avoidance of open rivalry over regional issues, better management of each country's relationship with Pakistan, and eventual resolution of their border dispute.²⁷

The Future of Relations between China and India

The rhetoric of government officials from either India or China suggests that the two consider each other friends and seek cooperation and harmony. Although India and China have agreed to better and more cooperation on border resolution, security, the fight against terrorism, and trade, India still seems suspicious of China. As recently as March 2003, discussions and briefings by senior military and government officials demonstrated that India sees China as one of its two main threats.²⁸ India now bases its security strategy on a two-front scenario, using the China threat as a rationale for procuring new weapons systems. Indeed, China can reach all parts of India with its nuclear arsenal, and India's recent purchase of the Russian-made Su-30 MKI aircraft, mentioned above, is a response to that threat and part of its effort to close the military gap between the two. It seems India believes that China will deal with it as an equal only if it can reciprocate China's nuclear threat. Additionally, Indians are frustrated with the "glacial" pace of the border-resolution efforts. China has been slow to move on the issue since the two countries began their dialogue in 1988. In short, India thinks that China does not consider it a legitimate Asian or regional power. To overcome this perception, many Indians feel a need to build a stronger, better military arsenal; others argue that India can never win an arms race with China.²⁹

Additionally, China and India are rivals in the marketplace, competing for business in Asia, Europe, and the United States. Although they seek cooperation on some level and have

certainly improved bilateral trade, the two produce many of the same goods, both have billion-person populations to employ, and their large populations' impoverishment gives them little buying power. Once again, China has an edge on India in terms of goods, services, and access to other markets. For instance, the United States has shown much more interest in trade with China than with India.³⁰

Other stumbling blocks to closer bilateral cooperation include China's stance on Sikkim and India's stance on Tibet. Also, China's refusal to back India's efforts to gain a permanent seat on the UN Security Council inhibits full-scale cooperation between the two.³¹

Even though India and China have agreed to cooperate on the war against terrorism, India remains wary of China's relationship with Pakistan. In the past, China has provided Pakistan with many of its weapons and, historically, their relationship has sought to counterbalance India-Soviet power. With the disintegration of the Soviet Union, it will be interesting to see how these relationships evolve. Today Pakistan is an active partner with the United States and the West in the global war on terrorism, but India has always contended that Pakistan is the main perpetrator of much terrorist activity, as mentioned earlier.³² This issue must be addressed if further cooperation is to occur.

Sino-Indian Cooperation or Competition: What Is Best for US Interests?

If India and China were to cooperate on security and economics, what would that mean for the United States? Could they effectively push the United States out of regional issues and counterbalance US power both regionally and globally? The United States sees China as its only potential near-peer in the next couple of decades. On the other hand, although the United States and India have been at odds for most of their history, the current administration seeks to solidify a cooperative relationship. Regardless of whether one is

an idealist looking at the great potential for shared values and market globalization or a realist seeing an opportunity to counterbalance China with a billion-person weight, the United States would benefit if the level of cooperation between India and China remained low. Both countries provide huge markets for US commerce although each needs a larger middle class if the United States is to benefit substantially. Militarily, the United States remains wary of China and could use Indian military power and intelligence to help keep China in check. Clearly, China's military outclasses India's at this time, but a more robust India with nuclear capability can at least provide another concern for Chinese security. As Secretary of State Colin Powell observed in his confirmation hearing, "We must deal more wisely with the world's largest democracy. . . . India has the potential to keep the peace in the vast Indian Ocean area and its periphery." This statement may well indicate that the United States no longer perceives China as just a major market but a strategic competitor that needs to be contained in Asia.³³

Conclusion

Many ups and downs have marked the history of Sino-Indian relations. Today a number of observers believe that China and India can become cooperative partners to counterbalance US hegemony, but in reality India still sees China as one of its two principal threats. Thus, the United States would do well to strengthen its ties with a more robust and nuclear-capable India so as to offset China's growing strategic importance and influence.

India continues to pursue regional hegemony and global influence, so stronger ties with the United States would contribute to its stature as a world player. On the other hand, India deals cautiously with China and will deal similarly with the United States because of the latter's history of imposing sanctions on India and isolating it. The United States may yet develop a partnership with the world's largest democracy that will benefit both parties—a goal implicit in the previous and current US

administrations' reaching out to India in an effort to make amends. As outlined in current US national security strategy, "the United States has undertaken a transformation in its bilateral relationship with India based on a conviction that U.S. interests require a strong

relationship with India."³⁴ If our country remains true to course, India and the United States can take advantage of greater trade opportunities as well as strategic security against China. □

Notes

1. Shri George Fernandes, "Concluding Address at the Fifth Asian Security Conference Organised by the Institute for Defence Studies and Analyses," *Strategic Digest*, February 2003, 95.
2. Stephen P. Cohen, *India: Emerging Power* (Washington, D.C.: Brookings Institution, 2001), 72.
3. *Ibid.*, 168.
4. *Ibid.*, 203.
5. Briefing, Indian Integrated Defense Staff (IDS) to US Air War College students and faculty, subject: Organizational Overview and Security Issues, March 2003.
6. Cohen, 137.
7. Amit Gupta, *CRS Report to Congress: US-India Security Relations* (Washington, D.C.: Congressional Research Service, November 2002), CRS-3.
8. Cohen, 270-71.
9. *Ibid.*, 38.
10. *Ibid.*, 142.
11. *Ibid.*, 249-50.
12. *Ibid.*, 139.
13. *Ibid.*, 25.
14. "India's Foreign Relations: China," *Ministry of External Affairs, Government of India*, March 2003, on-line, Internet, 16 June 2003, available from <http://www.meadev.nic.in/foreign/china.htm>.
15. Gupta, CRS-3.
16. Mark W. Frazier, "China-India Relations since Pokhran II: Assessing Sources of Conflict and Cooperation," *Access Asia Review* 3, no. 2 (2000): n.p., on-line, Internet, 16 June 2003, available from <http://www.nbr.org/publications/review/vol3no2/essay.html>.
17. "India's Foreign Relations: China."
18. Frazier.
19. IDS briefing.

20. Ministry of External Affairs, Government of India, *Annual Report, 2001-2002*, 25, on-line, Internet, 15 July 2003, available from <http://meadev.nic.in/ARReport2002.pdf>.
21. "India's Foreign Relations: China."
22. *Ibid.*
23. *Ibid.*
24. Frazier.
25. "India's Foreign Relations: China."
26. *Ibid.*
27. Waheguru Pal Singh Sidhu and Jing-Dong Yuan, "Resolving the Sino-Indian Border Dispute: Building Confidence through Cooperative Monitoring," *Asian Survey* 41, no. 2 (March-April 2001): 351-76, reprinted in *South Asia Regional Studies Reader* (Maxwell AFB, Ala.: USAF Air War College, 2003), 156.
28. IDS briefing.
29. Cohen, 163-64.
30. Gupta, CRS-21.
31. "India's Foreign Relations: China."
32. Briefings, Indian Ministry of External Affairs and the Integrated Defense Staff to US Air War College students and faculty, subject: India's Strategic Outlook—Pakistan, China, Threats, and Cooperative Efforts, March 2003.
33. Gupta, CRS-4; and "Prepared Statement of Colin L. Powell, Confirmation Hearing before the Senate Foreign Relations Committee, January 17, 2001," *Bush Team Confirmation Hearings*, on-line, Internet, 16 June 2003, available from <http://www.acronym.org.uk/53bush.htm>.
34. George W. Bush, *The National Security Strategy of the United States of America* (Washington, D.C.: The White House, September 2002), 27, on-line, Internet, 16 June 2003, available from <http://www.whitehouse.gov/nsc/nss.pdf>.

Science has been awaiting the great physicist, who, like Galileo or Newton, should bring order out of chaos in aerodynamics, and reduce its many anomalies to the rule of harmonious law. It is not impossible that when that law is formulated all the discrepancies and apparent anomalies which now appear, will be found easily explained and accounted for by one simple general cause, which has been hitherto overlooked.

—Octave Chanute
Progress in Flying Machines

Operation Linebacker II

CHARLES TUSTIN KAMPS



By October of 1972, peace talks between the United States and North Vietnam had come to a standstill as America tried to extricate itself from the nightmare war in Southeast Asia. President Richard M. Nixon, frustrated by communist intransigence, decided that it was time for the “Buffs” (B-52s) to go “downtown”

and take out any targets of military value in the formerly restricted Hanoi and Haiphong metropolitan areas. In just 11 flying days between 18 and 29 December, the Air Force and Navy achieved an objective that had eluded US politicians since 1964—forcing the North Vietnamese to the peace table on America’s terms.

Linebacker II saw the greatest operational concentration of B-52s in history, with some 206 employed from Andersen AFB, Guam, and U-Tapao Royal Thai Air Base. In addition to 729 effective B-52 sorties, the campaign included over 700 sorties by Air Force tactical aircraft and 500 by Navy planes. Initial flaws in tactical planning were overcome but not before 15 of the giant bombers were lost to North Vietnamese SA-2 missiles. In effect, just under 2 percent of the committed heavy-bomber force had been lost. By the end of the operation, however, the

B-52s were traversing North Vietnam at will, the enemy having expended the last of his surface-to-air missiles.

Causing little appreciable collateral damage, Linebacker II devastated the intended targets and inflicted severe psychological damage on the North Vietnamese leadership and population. American prisoners of war (POW) noticed a marked change in the demeanor of their captors, who were visibly shaken by the aerial onslaught. North Vietnam returned to the peace talks on 8 January 1973, and an accord was in hand by the 27th of that month. The battle lines were temporarily frozen, remaining US forces departed Vietnam, and 591 American POWs were released to come home.

Some historians have tried to belittle the effectiveness of Linebacker II by asserting that the North Vietnamese simply wanted to bide their time and let the Americans leave before they “finished off” the South. In fact, however, the Northerners lived in fear of a repeat performance of Linebacker II up until President Nixon’s resignation of the presidency. In any event, the South Vietnamese were able to defend their sovereignty for an additional two years—until US congressional appropriations for munitions and spare parts virtually dried up. The overwhelming majority of general officers who actually fought the war assert that Linebacker II was the model of what the air campaign should have been—right from the start in 1965.

To Learn More . . .

Eschmann, Karl J. *Linebacker: The Untold Story of the Air Raids over North Vietnam*. New York: Ivy Books, 1989.

McCarthy, James R., and George B. Allison. *Linebacker II: A View from the Rock*. USAF Southeast Asia Monograph Series, vol. 6, no. 8. Maxwell AFB, Ala.: Airpower Research Institute, Air War College, 1979.

Thompson, Wayne. *To Hanoi and Back: The U.S. Air Force and North Vietnam, 1966–1973*. Washington, D.C.: Smithsonian Institution Press, 2000.

The Chinese Air Force and Air and Space Power

LT COL THOMAS R. McCABE, USAFR

Editorial Abstract: Analysts who predict that China will become the next peer competitor of the United States often cite as evidence China's large population and latent industrial potential. If they are correct, a critical component of US-Chinese relations will involve understanding the strategic perspective, composition, and doctrine of China's People's Liberation Army Air Force, because the unique characteristics of Chinese society and culture discourage using historical war-fighting models as foundations for strategy.



IN AN INFORMAL interview with James Reston of the *New York Times* in 1971, Zhou Enlai, premier of the People's Republic of China (PRC), laid out in broad terms the PRC's foreign-policy objectives: (1) unification of the mainland and Taiwan, (2) removal of US military power from Asia, (3) withdrawal of the massive Soviet military force deployed along the Sino-Soviet border, and (4) prevention of the rise of Japan as a military power.¹ Meeting these objectives would have established the PRC as the dominant military power in Asia. Even more important, meeting them today would produce the same effect. Equally notable is their ideological neutrality: any Chinese nationalist, Communist

or otherwise, can support such policy aims. If the Chinese Communist Party continues its gradual drift from Marxism to Chinese nationalism as its justification for ruling, these objectives are not likely to change. Although diplomacy can finesse and conveniently obscure the issue, to a degree, and although the events of 11 September 2001 may have changed its tone, the overall circumstances of US-PRC relations make very possible a future of fundamental hostility.

Even though China's primary focus today remains on its internal development and even though it is probably satisfied with its land borders, such is not the case with its maritime borders—especially with Taiwan and, second-

arily, the South China Sea.² The status of Taiwan, in particular, could lead to war sometime in the future. Even more important, China is a profoundly dissatisfied power in psychological terms. It craves respect, but the United States is not likely to give it such respect as long as the PRC remains a dictatorship. To the degree that the PRC ultimately aspires to the leadership of Asia, it is likely to clash with the United States, Japan, and probably with Russia. A policy of containing China as a strategic competitor will be regarded by its government as hostile, while a policy of "engagement" has been and will likely continue to be regarded in the same light—as one of smiling containment and subversion. Some sources have indicated that the PRC government already regards the United States as a rival and has done so for several years; indeed, anti-Americanism is evidently widespread among the population.³ The overall circumstances of US-PRC relations provide at least considerable potential for a fundamentally hostile Sino-US relationship.

For these reasons, it is prudent to study China in general and its military in particular. If the Chinese are not an enemy, it is worthwhile to understand them so as to minimize the chances of inadvertently identifying them as such.⁴ If they are, we need to understand why and to judge accurately whether they represent a threat, since a powerless enemy is more a nuisance than a danger.⁵ If they are indeed a present or emerging threat, we must understand them in order to deter or, if necessary, defeat them.

In studying the Chinese military as a potential enemy, one must pay attention to more than just the capabilities of the People's Liberation Army (PLA) and its component services. Specifically, one would do well to begin with the PRC's military doctrine, since it shapes objectives, strategy, force structure, procurement, and training. This article addresses the air and space power doctrine of the PRC's People's Liberation Army Air Force (PLAAF) and analyzes its ability to carry out that doctrine.

Doctrine

Drew and Snow define three levels of doctrine: (1) fundamental, which deals with basic characteristics such as the nature of war, purpose of military power, and relationship of military force to other instruments of power; (2) environmental, "a compilation of beliefs about the employment of military forces within a particular operating medium" (functionally speaking, this is air and space power doctrine—a statement of how today's air and space power capabilities should be used to have a decisive effect on military operations and wars); and (3) organizational, which includes basic beliefs about the operation of a particular military organization and its roles, missions, and current objectives.⁶ In the US Air Force, Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, covers environmental doctrine, defining it as "most fundamental and enduring beliefs that describe and guide the proper use of air and space forces in military action"; AFDD 2, *Organization and Employment of Aerospace Power*, covers organizational doctrine.⁷

The PLA and its component services do not use the term *military doctrine*. The closest analog they have to Western doctrine is what they call *military science*, which links theory and practice.⁸ Chinese military science consists of (1) basic military science, the fundamental concepts that govern PLA military operations at the various levels of war (basic military science would include whatever environmental doctrine—air and space power doctrine—the PRC might have);⁹ and (2) applied military theory, the specifics of how to apply military force at each level of warfare (similar to US organizational doctrine).¹⁰

PLA military concepts, including those of the PLAAF, are not couched in terms of roles and missions, as is the case with the US military. Instead, they use the alternative concept of *campaigns*, defined as a series of battles fought under a unified command to achieve a local or overall objective.¹¹ Campaigns primarily take place at what the US military would call the operational level of war, using a wartime operational structure called a *War*

Zone. Depending on the size of the operation, a War Zone can encompass either a portion of or more than one Military Region.¹²

A critical point of the PLA's campaign planning lies in its expectations of the military environment in the type of war it expects to face. These expectations will obviously have a dramatic effect on strategy, force structure, and procurement. At present, the PLA views the primary threat as a local (i.e., regional) war under high-technology conditions.¹³ It expects such a war to have the following general characteristics:

- It will be a limited war, fought in a restricted geographic area for limited objectives with limited means and a conscious effort to curtail destruction. It will not be a comprehensive or total war, fought to destroy the Chinese state and to invade and occupy the homeland. It will not threaten the survival of the states involved. In many ways, such a conflict is the modern equivalent of a border war.¹⁴ Overall, the threat of world war is minimal for the indefinite future, due to the revolutionary changes in external circumstances faced by the PRC over the last 15 years (i.e., the collapse of the Soviet Union and the end of the Cold War).¹⁵
- Such a war will be fought with comparatively small, highly trained joint forces using mostly long-range, precision-strike weapons made available by the ongoing revolution in military technology.
- The objective in such warfare is to defeat the enemy rapidly by inflicting strategic and operational paralysis through attacks on his weaknesses. In fact, it may be possible to defeat the enemy with one strike. This kind of war will not require annihilation of the enemy or physical occupation of his territory.
- This multidimensional war will unfold in all dimensions (air, sea, ground, space, and the electromagnetic spectrum) simultaneously. Warfare in one dimension

will integrate with that in the other dimensions. Forces will fight throughout the depth of the theater (a "full-depth strike"), and the battlefield will be extremely fluid and dynamic. Airpower and precision strike are now the primary means of conducting warfare, with ground operations secondary.¹⁶

This type of war, of course, represents a revolutionary change from the traditional PLA concept of People's War, which assumed a total war fought primarily by ground forces and a comprehensively mobilized population against an invading enemy seeking to destroy and occupy the PRC. At first glance, it would appear that this new war is tailor-made for air and space power, which can have a major impact by waging an independent air campaign against vital targets and supporting other arms of the military.¹⁷ Thus, one would reasonably expect the PLAAF to have a concept of air and space power that calls for such an air force and to restructure itself along the lines of the US Air Force (i.e., emphasizing all-weather offensive aircraft; precision-guided munitions; and sophisticated command and control, intelligence, surveillance, and reconnaissance capability). However, little evidence suggests that PLAAF military science thinks in these terms or that the PLAAF is building this kind of an organization. If anything, a massive disconnect seems to exist between what we might expect the PLAAF to do and what it is actually doing. Several likely explanations account for this situation.

For one, by assuming that the PLAAF would choose a course parallel to our own, we are mirror-imaging—that is, projecting our assumptions and thinking onto the PLAAF's. This practice proved dismally common and nearly disastrous during both the Cold War and, in fact, at times during our past dealings with the PRC.¹⁸ It is essential to remember that we are not dealing with Americans or, for that matter, Westerners. The PLAAF's aims are not necessarily the ones we would choose under similar circumstances (even if the PLAAF's aims were identical to ours, it might choose drastically different ways of pursuing

them); its assumptions are not necessarily our assumptions; and its tactics and strategies are not necessarily the ones we might choose. We must remember that the PLAAF's history is not ours and, above all, that the circumstances it faces are profoundly different than those we face.

Beyond this explanation for the apparent disconnect, I suggest two others. The first is that local war under high-tech conditions is what some authors call *aspirational doctrine*.¹⁹ The second is that, at present, PLA military science, strategy, and procurement do not seek to *wage* a high-tech local war but to *defeat* an enemy who wages high-tech local war against them. These two explanations are not mutually exclusive.

Aspirational Doctrine

In aspirational doctrine, military theory is much more advanced than actual military technology and capability, and the concepts of a local war under high-technology conditions detail the kind of offensive war the PRC wants to be able to wage. Such doctrine does not necessarily suggest that the PRC can in fact fight such a war today. In this respect, China's military science bears a marked resemblance to Soviet doctrinal writings such as Marshal Sokolovskiy's classic *Soviet Military Strategy*, which originally laid out an extremely ambitious strategy for fighting a nuclear war at a time when the USSR was only starting to deploy the capabilities necessary to fight such a war.²⁰ One should note that the highest levels of the Chinese leadership have evidently recognized that at present the PRC cannot fight a high-tech local war.²¹

Preventing it from doing so are the PRC's geopolitical and historical circumstances, economic limitations, and technological limitations, as well as the legacy of its past military policies. Obviously, these factors have had—and continue to have—a profound impact on shaping the PLAAF and its military science. They constitute an enormously unfavorable legacy for the PLA and PLAAF and their mili-

tary theory—one that will be difficult to overcome.

Geopolitical and Historical Circumstances

Historically for the Chinese, war has been a home game, fought on and over their territory; until recently, their military science has reflected this fact.²² In recent centuries, China has endured humiliation and partial dismemberment from invasion, and in recent decades it has largely been surrounded by states perceived as hostile or powerful or both. The PRC's strategic concepts and military strategy have reflected this situation by focusing on a People's War, mentioned above—a strategic, defensive war to defend the mainland from attack and invasion. China expected to wage a war of attrition designed to wear down and ultimately expel invading enemies. In this strategy, the PRC's ground army would be the preeminent service, supplemented by a comprehensively mobilized population. Power projection beyond China's borders was only a secondary concern, and any power projection would be by ground forces into adjacent territory. The air force played an even lesser role. In the conflict envisioned by People's War, the PLAAF's function was primarily defensive, with very limited offensive capability. *China did not expect to use air and space power but did expect an enemy to do so.* Indeed, the very name of the Chinese air force—the People's Liberation Army Air Force—speaks volumes in this regard. Clearly, China considered its air arm an extension of the army. *Under such conditions, the PRC had no need for air and space power doctrine.* Only recently has China, facing the challenge of local wars under high-technology conditions, reportedly granted the PLAAF an enhanced role. However, having a new role on paper does not equate to the ability to carry out that role. In many ways, the PLAAF now faces the worst of all worlds: it has a huge legacy force of obsolescent or obsolete equipment that was inadequate for the old strategy and that is utterly unsuited for the new one.

Economic Limitations

China's lack of wealth has severely restricted the resources available for military-related matters.²³ Until fairly recently, the country spent much of its available military funds on infrastructure such as tunnel systems and the construction and dispersal of military industry to remote areas. Although economic reforms of the last 20 years have led to impressive (although often overstated) economic growth, the PRC still has neither a wealthy nor modern economy. Even partial replacement of the PLA's and PLAAF's antiquated equipment with modern assets suitable for major power projection would be enormously costly at best and ruinous at worst—undoubtedly one of the major reasons that the PLAAF's acquisition program for new equipment is proceeding so slowly.

Technological Limitations

Because of its poor and developing economy/society, China has had only a very limited technology base to draw upon to support its military. Although the PRC has established an increasingly significant industrial base, its ability to support a technologically sophisticated military, let alone build one by itself, remains very much open to question. The country's aviation-related military industry is limited, technologically backward, and inefficient.²⁴ Most of the PLAAF's equipment, especially its aircraft and surface-to-air missiles (SAM), is based on Soviet designs of the 1950s and 1960s, such as F-6 and F-7 fighter aircraft,

based on the MiG-19 and MiG-21, respectively, and the B-5 and B-6 bombers, based on the Il-28 light bomber and Tu-16 medium bomber, respectively. At best, these aircraft have only limited ability to operate at night, in bad weather, and in an electronic-countermeasures environment. Few are capable of using precision-guided munitions. China's attempts to design and build more sophisticated aircraft, such as the F-8, have met with limited success, as have its attempts to import, integrate, and maintain foreign technology.²⁵ The PLAAF and PLA evidently have major programs aimed at developing high-technology weapons, but generally they are still in the technology-development phase—years (or decades) away from actual deployment.²⁶

Campaign Theory of the PLA and PLAAF

Clearly, the PLA and PLAAF have only an extremely limited ability to wage a high-tech local war at present, even against an enemy such as Taiwan, and any gains in capability are proceeding slowly.²⁷ This situation suggests the second, probably more important, reason for Chinese military science's adoption of this concept of war: *It is the kind of war the PRC expects to have imposed upon it in any future conflict, especially one with the United States or a US-led alliance.*²⁸ Within the limits of the circumstances discussed earlier, China is preparing to try to survive and defeat this kind of war. Thus, it might be more accurate to say that



"The F-6 (Jianji-6 Fighter aircraft 6) is the Chinese version of the MiG-19, which as of the mid-1990s was still in production in China. The J-6, which began flight tests in 1958, was China's first supersonic jet fighter." (From "MiG-19 Farmer, J-6/F-6," Federation of American Scientists, 26 June 2000, on-line, Internet, 2 June 2003, available from <http://www.fas.org/nuke/guide/russia/airdef/mig-19.htm>.)



"In 1995 it was projected that J-7 production would continue for at least another decade, resulting in a total inventory of nearly 1000 aircraft by 2005, but in fact the PLAAF inventory has remained static since then at about 500 aircraft, suggesting that production has either been suspended or terminated." (From "MiG-21 Fishbed, J-7 [Jianji-7]/F-7, YF-110," Federation of American Scientists, 26 June 2000, on-line, Internet, 2 June 2003, available from <http://www.fas.org/man/dod-101/sys/ac/row/mig-21.htm>.)

the PLAAF does not have an *air and space power* doctrine so much as it has an *anti-air and space power* doctrine.

At present, the national military strategy of the PRC calls for "active defense," which involves a nominal strategic defensive that uses offensive tactics, including preemptive war. In such a war, the PRC aims not necessarily to conquer enemy territory but to win decisively and coerce the enemy to change the particular policy that prompted the PRC to go to war in the first place.²⁹ More than likely, the PRC will base its campaign strategy on three principles:

1. Using elite forces and sharp arms. The cutting edge will consist of "fist forces"—comparatively small, well-equipped, and highly trained elite joint forces.
2. Gaining the initiative by striking first. Evidently, the PRC is prepared to launch a war if diplomacy fails in a crisis. PLA preparations for such an attack emphasize a campaign of deception and disinformation to maximize the chances of surprising the enemy. Furthermore, the PLA seems prepared to launch a preemptive strike, preferably before enemy deployments are complete.
3. Fighting a quick, offensive battle to force a rapid, successful end to the war. A long war would likely prove both economically and militarily costly. Even more important, because any PLA superiority would probably be temporary, a long war would enable an enemy to recover,

mobilize, reduce the PLA to a position of inferiority, and eventually defeat it.³⁰

War-Zone Campaign

The PRC will likely structure the War-Zone or overall campaign as a joint effort aimed to integrate ground, naval, air, and special operations forces, as well as surface-to-surface missile forces of the II Artillery Corps, with service-based subsidiary campaigns functioning with relative autonomy within the campaign plan. Any PLAAF campaign would probably be subsidiary, but some writers theorize that it might serve as the primary campaign.³¹

PLAAF Air Campaign

The Military Region Air Force (MRAF) commander will direct aviation units assigned to the air campaign and have responsibility for coordinating with any other service units (e.g., II Artillery Corps, special operations forces, etc.) operating in support of the air campaign. The commander's purview will include the air defense campaign, the offensive air campaign, any air transport, and, presumably, any air support provided to other services, such as the ground forces and navy.³²

Air Defense Campaign. Historically, the PLAAF's primary campaign entailed strategic air defense of the PRC mainland, especially the Beijing and Shanghai areas, with the air force's major arms (aviation, SAMs, and anti-aircraft artillery) operating in parallel, not as parts of an integrated air defense system. It



"In January 1959 China received two TU-16 BADGER medium jet bombers from the USSR. China began producing the BADGER at the Hsian Airframe Plant in 1968 and had 32 BADGERS in the operational inventory by 1972." (From "H-6 [Tu-16 Badger]," Federation of American Scientists, 18 August 1999, on-line, Internet, 2 June 2003, available from <http://www.fas.org/nuke/guide/china/aircraft/h-6.htm>.)

would provide defense in depth, with light screening forces located in a forward area and most forces concentrated close to key potential targets ("light front, heavy rear"). Strategic air defense remains the PLAAF's principal campaign; indeed, some authors suggest that, under some circumstances, it may be the war's only campaign.³³ In fact, its importance is increasing, for three reasons:

1. In a local war under high-tech conditions, air and space power represents the major threat faced by the PRC. Air and space power has been central to all such wars fought since 1990.
2. The threat from air and space power is growing, a fact acknowledged by the PLAAF in its "three offenses and three defenses" training program.³⁴
3. The PLAAF's legacy interceptor aircraft are suited only for short-range air defense missions, and most of its newer aircraft (F-7s and F-8s) face similar limitations. This situation is likely to change only very slowly as new aircraft enter the inventory.

The PRC's air defense campaign seeks to establish and maintain strategic air superiority over the War Zone by (1) achieving complete deterrence through denial (psychologically, the enemy becomes reluctant to attack because he expects any such attack to fail); (2) resisting attack by targeting hostile intelligence and surveillance platforms, as well as airborne

warning and control system (AWACS) and jamming aircraft, with either long-range fighters or, preferably, long-range SAMs (resisting attack remains PLAAF's priority and will become an increasingly multidimensional activity with the integration of advanced surveillance systems); and (3) launching timely counterattacks against enemy air bases (PLAAF writers stress that a purely defensive air effort surrenders the initiative to the enemy and would likely guarantee defeat).³⁵

Currently, the PLAAF is working to upgrade its extremely limited strategic air defense capabilities by deploying better equipment and developing an integrated (though probably rudimentary) air defense system, something it has lacked until very recently.³⁶ However, modernization is proceeding slowly due to the relatively small number of Su-27s acquired thus far, either purchased from Russia or manufactured under license in China, and problems with other systems.³⁷ The PLAAF is in the early stages of building an AWACS component through indigenous development and the leasing of aircraft from Russia after the United States vetoed a sale from Israel.³⁸ Furthermore, it has just a few advanced SAMs (SA-10s purchased from Russia) although this situation may change if and when it initiates major deployments of FT-2000s.³⁹ Overall, the PLAAF's limited means of projecting airpower, whether for timely counterattacks or any other reason, renders its ability to conduct an air defense campaign largely aspirational.



"The [FT-2000] is a program to develop a new long-range surface-to-air missile (SAM). The [FT-2000] development effort may be based on a Chinese-designed missile motor, search and guidance hardware based on the Russian S-300PMU, and guidance technology from the American Patriot." (From "HQ-9/FT-2000," Federation of American Scientists, 23 June 2000, on-line, Internet, 2 June 2003, available from <http://www.fas.org/man/dod-101/sys/missile/row/hq-9.htm>.)

Offensive Air Campaign. This campaign seeks to maximize enemy weaknesses by "moving the battlefield as far as possible toward the enemy's side" and forcing the enemy to fight on the defensive at China's initiative.⁴⁰ It intends to exploit air and space power's advantages of initiative, versatility, and suddenness. The campaign can either stand alone as an independent air force effort or, far more likely, become part of an integrated joint campaign of surface-to-surface missiles, special operations forces, electronic and information strikes, and attacks by aircraft. The PRC could aim such a campaign at either strategic-level or campaign-level enemy target systems. The former includes political and economic systems, transportation and lines of communication, and supply and mobilization targets that will have strategic-level effects. The latter encompasses air defenses, air bases, and aircraft carriers (damage to or destruction of such targets can influence events in the War Zone).⁴¹

Historically, the PLAAF has not considered offensive attack a major mission since it has no capability for conducting strategic intercontinental air attack and extremely limited

means for either a strategic- or campaign-level offensive in a local war—a situation subject to gradual change at best.⁴² Most of the PLAAF's current aircraft might prove useful only as a sacrificial first wave to soak up the defensive armaments of targets attacked in an offensive campaign; as mentioned earlier, its aircraft have little or no capability to operate at night, in bad weather, and in an electronic-countermeasures environment—and the greater part of the B-5/B-6 bomber force is obsolete.⁴³ Furthermore, few, if any, of its aircraft can use precision-guided munitions against land targets; it has only a modest force of fighter aircraft (Su-27s) with the capability (not to mention the range) to conduct air-to-air offensive counterair; and, aside from the Su-30s coming from Russia, the PLAAF lacks the aircraft and specialized munitions necessary for airfield attack and suppression/destruction of enemy air defenses.⁴⁴ Thus, the Chinese air force will likely find itself relegated to nothing more than a supporting role in any offensive campaign, with the major burden carried by missiles of II Artillery Corps and by information warfare, for which

the Chinese have vast enthusiasm.⁴⁵ If the conflict should expand to intercontinental ranges, the PLAAF would probably have no role at all.

Direct Support of Ground Units. The PLAAF has a record of scant participation in close air support, battlefield air interdiction, and interdiction, and shows no signs of improvement in the foreseeable future. Interestingly, it evidently does not consider this mission a separate campaign. Although the PLAAF has a substantial force of attack aircraft, they are not equipped—nor are their crews trained—for direct support of ground units; nor is the PLAAF organized and equipped to function in support of a highly dynamic surface war of maneuver.⁴⁶ Evidently, the air force has never successfully carried out direct support, preferring to provide indirect support by attacking targets in the enemy's rear area, such as air defenses, campaign reserve forces, logistics support, communications, and helicopters.⁴⁷ The PLAAF shows no sign of initiating major efforts to improve its capabilities in this area.

Conclusions and Implications

PLA military science's concept of high-technology local wars gives the army an accurate assessment of the military environment it faces in the early twenty-first century in the form of challenges from either a local enemy or a "powerful country" such as the United States. The PLA's strategy of relying on surface-to-surface missiles, fist forces, and asymmetric warfare, while gradually modernizing its massive and obsolete military, is reasonably sound so long as it deals with an isolated Taiwan; over time the strategy may provide plausible capability to coerce or overwhelm Taiwan, so long as the United States does not intervene. But it does not provide plausible capability to defeat or even deter the United States at any time in the foreseeable future.

The situation is even worse for the PLAAF, which wishes (1) to move from the primarily defensive strategy and force structure of the past to one that combines offensive and de-

fensive elements and (2) to initiate a qualitative transformation that reflects the ongoing revolution in military technology. In theory these wishes make reasonable sense. At present, however, they remain an aspirational concept that exists largely on paper. The PLAAF has moved very slowly to build the force it requires: out of a force of approximately 2,500 combat aircraft, fewer than 150 can be considered modern, and that number is increasing by fewer than 50 a year—with no sign of accelerating the acquisition process. The air force has not taken the obvious interim step of upgrading the capabilities of existing aircraft (e.g., by adding modern missiles, especially standoff weapons, and improved electronics). Nor has it taken more than preliminary steps toward making the qualitative improvements in organization, training, and tactics that have proved so central to the success of American air and space power. Finally, the PLAAF has not undertaken a major effort to build the intelligence, surveillance, and reconnaissance capabilities it will need if only to partially duplicate American capabilities.

The PLAAF's military science, force structure, and acquisition make considerable sense if it is not expecting a conflict with the United States within the next 20 years. But the unsettled status of Taiwan makes that assumption uncertain at best. Against a major American effort, the PLAAF fundamentally would remain in the same position it found itself after Operation Desert Storm: incapable of either effective offense or defense—and its current efforts will not change that status in the foreseeable future. In fact, in all likelihood the United States is widening its lead and will do so even more rapidly as it deploys new capabilities, such as the F/A-22.

Chinese military science and strategy for a war with the United States over Taiwan call for defeating the island rapidly and presenting America with a *fait accompli* before it can intervene. China's published writings are extremely vague as to what it intends to do if its first effort does not succeed and a million tons of US diplomacy come roaring across the Pacific at flank speed and/or the speed of

sound before Chinese forces have won. It seems that China hopes the United States will not be willing to endure the casualties and costs of a major war, but in that hope may lie an immense potential for danger. Such a mind-set has ominous parallels to the wishful thinking of the leadership of the Hirohito Shogunate before Pearl Harbor. The Japanese

felt that they could rapidly overrun the western Pacific and that the soft, materialistic United States would not have the stomach for a long and bloody war. Three and a half years later, their country in ruins, they surrendered unconditionally. However, it is difficult to conceive of a nuclear-armed China surrendering on the aft deck of the USS *Ronald Reagan*. □

Notes

1. Tillman Durdin, James Reston, and Seymour Topping, *The New York Times Report from Red China* (New York: Quadrangle Books, 1971). See p. 107 for the summary and pp. 81–106 for the actual interview.

2. China is probably satisfied with its land borders, but one cannot necessarily say the same of its neighbors—especially India. Over time, that satisfaction may change with circum stances, as the demographic balance of the Russian Far East changes with the loss of ethnic Europeans to western Russia and the illegal entry of Chinese. If, at some point, a significant majority of the population there becomes ethnic Chinese, they may start to demand annexation by the PRC.

3. Richard Bernstein and Ross Munro, *The Coming Conflict with China* (New York: A. A. Knopf, 1997), 22. For a more optimistic view, see John Pomfret, "China Sees Interests Tied to U.S.," *Washington Post*, 2 February 2002, 1.

4. Although I am extremely skeptical of the claim that wars are caused by misunderstandings, they may very well be caused by miscalculations that grow from misunderstandings. A particularly relevant example is the misunderstanding of the United States that led to Japan's miscalculation in going to war with America in 1941.

5. Fidel Castro is an obvious example. With the collapse of the Soviet empire and the bankruptcy of Communism, he has shrunk to irritant status.

6. Col Dennis M. Drew and Dr. Donald M. Snow, *Making Strategy: An Introduction to National Security Processes and Problems* (Maxwell AFB, Ala.: Air University Press, 1988), 167–70.

7. AFDD 1, *Air Force Basic Doctrine*, 1 September 1997, 2; and AFDD 2, *Organization and Employment of Aerospace Power*, 17 February 2000.

8. Dr. David Finkelstein, "Thinking about the PLA's Revolution in Doctrinal Affairs," draft paper, November 2002. Cited with permission of the author.

9. Adm Shi Yunsheng, "PLA Navy Military Science," in *Chinese Navy Encyclopedia*, vol. 1 (Beijing: Haichao Publishing House, 1998), 16–31. Many thanks to Dr. David Finkelstein of the Center for Naval Analysis for bringing to my attention the PLA's naval encyclopedia (and the book *The Science of Campaigns*).

10. Shi Yunsheng, 16–31.

11. Wang Houqing and Zhang Xingye, eds., *The Science of Campaigns* (Beijing: National Defense University Press, 2000), especially chap. 1.

12. A Military Region is a peacetime administrative entity, whereas a War Zone is a wartime operational entity for the command and control of campaign-level operations. Military Regions provide forces and assets to a War Zone. Dr. David Finkelstein, Center for Naval Analysis, correspondence with author.

13. An excellent basic source is *Chinese Views of Future Warfare*, ed. Michael Pillsbury (Washington, D.C.: National Defense University Press, 1997). For a more recent and representative Chinese view, see Gen Fu Quanyou, "Deepen the Study of the Char-

acteristics and Laws of High-Technology Local Wars and Raise the Standard of Guidance for Winning the High-Technology Local War of the Future," *Beijing Zhongguo Junshi Kexue*, 20 February 1999, on-line, Internet, 25 May 2002, *Foreign Broadcast Information Service (FBIS) Online* [hereafter *FBIS Online*], serial FTS19990701001913, available from <http://199.221.15.211>.

14. One should note that, for the United States and the PRC, the Korean War was the equivalent of a border war. Nevertheless, it was a major war.

15. One should note that some events, especially the bombing of the PRC embassy in Yugoslavia, reportedly prompted some Chinese leaders to warn that US hegemony was increasing regional wars, which could lead to a world war. See Yueh Shan, "Beijing Sets Forth New World War Theory," *Hong Kong Cheng Ming*, 1 May 1999, on-line, Internet, 25 May 2002, *FBIS Online*, serial FTS19990516000908, available from <http://199.221.15.211>. See also Li Tzu-Ching, "The Chinese Military Clamor for War: Vowing to Have a Fight with the United States," *Hong Kong Cheng Ming*, 1 June 1999, on-line, Internet, 25 May 2002, *FBIS Online*, serial FTS19990626000913, available from <http://199.221.15.211>.

16. In December 1995, the Central Military Commission—the Communist Party organization that oversees the military—concluded that the ground battle was now secondary to the air battle. See Mark Stokes, "China's Missile, Space, and Conventional Theater Missile Development: Implications for Security in the Taiwan Strait," in *People's Liberation Army after Next*, ed. Susan M. Puska (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 2000), 109.

17. Wang Houqing and Zhang Xingye, chap. 3, p. 9.

18. Dr. Jeffrey Record, "Thinking about China and War," *Aerospace Power Journal* 15, no. 4 (winter 2001): 69–80.

19. The concept is from Paul Godwin, quoted in Kenneth W. Allen, "Focus on China's Air Force Modernization," unpublished paper, n.d., 3.

20. Marshal V. D. Sokolovskiy, *Soviet Military Strategy*, 3d ed., trans. and ed. Harriet Fast Scott (New York: Crane, Russak, and Company, 1975). The original Soviet edition was printed in 1962.

21. In 1999 Jiang Zemin recognized that the PRC could not fight and win this kind of war. See "Review of Jiang Zemin's Views on High-Tech Warfare," *Beijing Jiefangjun Bao*, 13 February 2001, on-line, Internet, 25 May 2002, *FBIS Online*, serial CPP20010213000086, 4, available from <http://199.221.15.211>.

22. This, of course, differs most profoundly from the situation of the United States, which, surrounded by friendly countries and far away from the main battlegrounds of the world, has implicitly or explicitly assumed for nearly the last century that any wars it fought would be expeditionary and conducted somewhere else. China has not enjoyed that luxury.

23. Mao Zedong's ideologically driven policies of the 1950s and 1960s, particularly the Great Leap Forward in the 1950s and the Great Proletarian Cultural Revolution in the mid-to-late

1960s, were disastrous, even by the standards of Communist economics; they led directly to repeated economic and political upheavals that set PRC economic growth back decades.

24. For information on the technological limits of Chinese military industry, see Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," in *The Chinese Armed Forces in the 21st Century*, ed. Larry M. Wortzel (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1999), 159-215. See also John Wilson and Xue Litai, "China's Search for a Modern Air Force," *International Security* 24, no. 1 (summer 1999): 64-94.

25. For information on China's past difficulties with integrating foreign technology into its aircraft, see Wilson and Xue Litai. In "China Hikes Defense Budget Again," *Washington Post*, 5 March 2002, 5, John Pomfret reported that 60 percent of China's Su-27s were grounded. The Chinese consider the Su-27s inadequate. See Chi Mo, "J-10' Fighters Set to Become Air Force's Main Arms—50 'J-10' Fighters Set to Be Built; General Secretary Jiang Zemin Watches Test Flight," *Hong Kong Sing Tao Jih Pao*, 29 May 2002, on-line, Internet, 25 May 2002, *FBIS Online*, serial CPP20020529000059, available from <http://199.221.15.211>.

26. Mark A. Stokes, *China's Strategic Modernization: Implications for the United States* (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1999).

27. Michael O'Hanlon, "Why China Cannot Conquer Taiwan," *International Security* 25, no. 2 (fall 2000): 51-86.

28. PRC writings often assume a US-Japanese alliance, and some of them imply that the PRC expects to confront NATO. See Gen Liao Xilong, "PRC General Discusses Civilian Air Defense," *Beijing Zhongguo Junshi Kexue*, 1 April 2001, on-line, Internet, 25 May 2002, *FBIS Online*, serial CPP20010416000146, available from <http://199.221.15.211>.

29. Mark Burles and Abram N. Shulsky, *Patterns in China's Use of Force: Evidence from History and Doctrinal Writings* (Santa Monica, Calif.: RAND, 2000), vii.

30. This description draws extensively from Nan Li, "The PLA's Evolving Campaign Doctrine and Strategy," in *The People's Liberation Army in the Information Age*, ed. James C. Mulvenon and Richard H. Yang (Santa Monica, Calif.: RAND, 1999), 146-74. See also Huang Jialun, "Attach Importance to Operation at Outer Strategic Line," *Beijing Jiefangjun Bao*, 30 November 1999, on-line, Internet, 25 May 2002, *FBIS Online*, serial FTS19991231001520, available from <http://199.221.15.211>; and Nan Li, 154.

31. Maj Gen Zheng Shenxia and Senior Col Zhang Chazhi, "The Military Revolution in Air Power," in Pillsbury, 301.

32. The main transport capability of the PLAAF consists of 25 Y-8s (Chinese-built AN-12s) and 25 Il-76s. See "World Defense Almanac," *Military Technology* 26, no. 1 (January 2002): 301. The demands on PLAAF's transport force are likely to be extreme. In addition to providing force-projection capability, they will have to redeploy troops from other parts of the PRC to reinforce the War Zone. The PLAAF's very small force of transports is likely to be totally inadequate for either mission, let alone both. Although Chinese civilian transports can deliver troops, they cannot move much equipment. In addition to these wartime campaigns, PLAAF writings discuss an air-blockade campaign, intended to isolate a target country. See Wang Houqing and Zhang Xingye, chap. 13.

33. Zong Fangsheng, "PLA Merges Artillery and Air Defense Forces," *S&T Daily*, 25 July 2000. He is evidently thinking in terms of NATO's war against Yugoslavia in 1999.

34. Kenneth W. Allen, "China and the Use of Force: The Role of the PLA Air Force," unpublished paper, 2000, 26. The three new offenses include those against stealth aircraft, cruise missiles, and armed helicopters. The three new defenses include those against precision bombing, electronic interference, and reconnaissance and surveillance. See Guo Jia, "Building Stronger Armed Forces through Science and Technology: Train Crack Troops for Winning Future Wars," *Beijing Renmin Rebao*, 17 December 2001.

35. Strategic air superiority results from establishing air superiority for the entire war over the entire War Zone, or for specific periods of time over a specific location or locations. The Chinese aim to establish such superiority not only over the PRC mainland, but also over the area into which they are trying to project power. See Kenneth W. Allen, "PLAAF Strategic Thought," unpublished paper, n.d., 1-3; and idem, "PLA Air Force Operations and Modernization," in Puska, 224.

36. In 1999 a US Department of Defense report estimated that it would take up to 20 years for China to fully establish a national integrated air defense system. Cited in Allen, "Focus on China's Air Force Modernization," 13.

37. China has purchased 76 Su-27s from Russia, and licensed production of an additional 200 is under way. See "World Defense Almanac," 301. However, this is hardly a crash program: the production agreement between Russia and China set the maximum production rate at 10-15 per year. See Allen, "Focus on China's Air Force Modernization," 7-8 n. 16. In addition, the F-10 fighters entering production will replace the comparatively new F-8IIIs, not the elderly F-6s—a situation that presumably indicates serious problems with the F-8IIIs. See Chi Mo.

38. Four Russian-built A-50M/U airborne early warning and control (AEW&C) aircraft are reportedly on order. See "World Defense Almanac," 302. China seems to need 15-20 such aircraft. See Allen, "Focus on China's Air Force Modernization," 10-11. The indigenous aircraft is the Y8AEW. See Department of Defense, *Report to Congress Pursuant to the FY 2000 National Defense Authorization Act, Annual Report on the Military Power of the People's Republic of China* (Washington, D.C.: Secretary of Defense, 2000), 17, on-line, Internet, 15 April 2003, available from <http://www.defenselink.mil/news/Jun2000/china06222000.htm>.

39. Jim O'Halloran, "New Missile for Chinese FT-2000 SAM System," *Jane's Defence Weekly*, 15 August 2001, 15.

40. Zhou Shijun, "Try as far as Possible to Move the Battlefields toward the Enemy Side," *Beijing Jiefangjun Bao*, 14 September 1999.

41. Allen, "China and the Use of Force," 12.

42. In 1999 PLAAF commander Liu Shun Yao said that the PLAAF would change as fast as possible from territorial air defense to gain both defensive and offensive capabilities, indicating that offensive capability was an aspiration, not a present capability. See Sun Maoqing, "Air Force Commander Liu Shun Yao Says That He Is Endeavoring to Build a Powerful Modern People's Air Force with Both Offensive and Defensive Capabilities," *Beijing Xinhua Domestic Service*, 8 November 1999, on-line, Internet, 25 May 2002, *FBIS Online*, serial FTS19991130000440, available from <http://199.221.15.211>. See also Huang Jialun.

43. Allen, "China and the Use of Force," 40. Although the specific reference is to F-6s and F-7s, this could just as readily apply to the B-5s and B-6s of the PLAAF bomber force. The PLAAF evidently has about 150 B-5s (being retired) and 120 B-6s. See "World Defense Almanac," 301.

44. The PLAAF has taken delivery of 38 Su-30s, signed a second contract for a second batch of 38 more in 2001, and is reportedly expected to buy at least a third batch. See "China Expected to Buy Third Batch of Su-30MKKs," *Jane's Defence Weekly*, 21 August 2002, 14. The PLAAF, which is reportedly procuring them as replacements for older B-5s, may be considering producing them under license. See Allen, "PLA Air Force Operations and Modernization," 215.

45. The Chinese are enthusiastic about the potential of information warfare, which they seem to regard as something of a magic bullet. However, their actual capabilities may be quite limited. See James Mulvenon, "The PLA and Information Warfare," in Mulvenon and Yang, 175-86.

46. The PLAAF has about 500 Q-5 attack aircraft, which are redesignated F-6s. See "World Defense Almanac," 301.

47. See Allen, "PLA Air Force Operations and Modernization," 201; and idem, "China and the Use of Force," 6.

Iraq, Preemption, and the Views of Poland, the Czech Republic, and Hungary

COL GORDON R. HAMMOCK, USAF



Editorial Abstract: Colonel Hammock examines the generally favorable actions and views of Poland, the Czech Republic, and Hungary in response to the announced US strategy of preemption and the recent implementation of that policy in Iraq.

We'll be deliberate, yet time is not on our side. I will not wait on events, while dangers gather. I will not stand by, as peril draws closer and closer. The United States of America will not permit the world's most dangerous regimes to threaten us with the world's most destructive weapons.

—President George W. Bush

POLAND, THE CZECH REPUBLIC, and Hungary see merit in many of the arguments supporting the announced US strategy of preemption and, particularly, the recent implementation of that strategy in Iraq. They would, nevertheless, have preferred to avoid “choosing sides” between the important countries and bodies involved in that discussion (i.e., the United States, individual European nations, the European Union [EU], the North Atlantic Treaty Organization [NATO], and the United Nations [UN] and its Security Council). However, when compelled to do so, Polish leaders emerge as the most supportive of US actions with the Czech and Hungarian leaders not far behind.

Hungary, though, seems to be losing steam in the longer term. This article reviews the US policy of preemption, and the sequence of international political events relating to the application of that policy in Iraq; it then examines the views and actions of Poland, the Czech Republic, and Hungary.

The US National Security Strategy and Preemption

The words of President Bush, quoted in the opening epigraph and spoken during his State of the Union Address on 29 January 2002,¹ were eventually integrated into the new *Na-*

tional Security Strategy, which he signed on 17 September 2002. That strategy asserted that “we must be prepared to stop rogue states and their terrorist clients *before they are able to threaten or use* weapons of mass destruction against the United States and our allies and friends” (emphasis added).² It also outlined three criteria—the inability to deter, the immediacy of the threat, and the magnitude of the potential harm—that when combined cause a situation to warrant “preemptive” action.³

Importantly, the new US policy can be triggered by either a capability or simply an effort to obtain a capability, when it is combined with a presumed hostile intent. This new standard is a significant relaxation of the long-standing, apparent requirement for such a use of force.⁴ More to the point, it injects a fair amount of subjective judgment into an equation that had historically been more objective in nature.

Throwing Down the Gauntlet to the UN

On 12 September 2002, President Bush addressed the UN General Assembly and detailed Iraq’s history of noncompliance and deception regarding previous Security Council resolutions; more importantly, he challenged the UN to become the full-bodied institution its founders intended and pledged the United States to work with the UN to that end. That said, President Bush made clear his resolve, that should the Security Council fail to measure up to the task, the United States would fill the resultant breach.⁵

Congressional Approval of Use of Force against Iraq

On 16 October 2002, President Bush signed into law House Joint Resolution 114, which allowed force against Iraq.⁶ Although debate on the measure was fairly abbreviated, the resulting measure was comprehensive in both its scope and design.⁷ The resolution articulated a rationale for the United States to take

preemptive action in self-defense, supported presidential efforts to work with and through the Security Council, and authorized the use of force in self-defense or to enforce Security Council resolutions.⁸ Finally, the resolution entrusted solely to the president any future decision to use force—requiring at that future time the president to determine that

- reliance on diplomatic or other peaceful means will not protect US national security or will not lead to the enforcement of relevant Security Council resolutions, and that
- such action is consistent with the overarching actions of the United States and other countries in pursuing international terrorist organizations, including those nations, organizations, or persons involved in perpetrating the events of 11 September 2001.⁹

In short, Congress provided the president sufficient flexibility to act in the nation’s defense *with the caveat that* force was the option of last resort, should be consistent with the larger strategic war on terrorism, and *would be best accomplished by and through the Security Council.*

UN Security Council Resolution 1441—Implementation and Aftermath

The Security Council unanimously adopted Resolution (UNSCR) 1441 on 8 November 2002, which, *inter alia*, held Iraq in “material breach” of its obligations under previous resolutions, afforded Iraq a “final opportunity to comply with its disarmament obligations,” required Iraq to declare all aspects of its weapons of mass destruction (WMD) programs and accompanying delivery systems, and provided for an enhanced inspection regimen.¹⁰ The Security Council warned Iraq of “serious consequences” in the event of continued violations and decided to remain “seized” of the matter.¹¹

During January–February 2003, public and often visceral posturing by Germany (one of the six nonpermanent members of the Security Council and whose representative served as its president during the month of February 2003) and the five permanent members of the Security Council caused deep divisions: first in the Security Council, then in the EU, and finally in NATO. Germany set the divisive process in motion on 22 September 2002 when Chancellor Gerhard Schröder “snatched victory from the jaws of defeat” for his Green Party through a rash, last-minute promise to not support or participate in any later action against Iraq. Chancellor Schröder compounded the divide further by convincing President Jacques Chirac of France to back out of his gentleman’s agreement with the United States—an agreement to not force a second UN resolution—in exchange for a power-play move that would permit France and Germany to dominate the European Council.¹² The issue that had initially separated the United States from three of the Council’s permanent members (France, Russia, and China) was their desire to allow the UN inspectors additional time. Britain also supported giving the inspectors “the time they need,” but with Prime Minister Tony Blair’s caveat that he could foresee military action without a second resolution if such a resolution were vetoed “unreasonably” (i.e., in the face of a clear report from inspectors that Iraq was not cooperating).¹³

An EU rift erupted on 30 January 2003 as the leaders of eight of its member countries (Spain, Britain, Italy, Denmark, Portugal, Poland, Hungary, and the Czech Republic) publicly endorsed the US position on Iraq in a written declaration published in newspapers in both Europe and the United States. Their action caught leaders of the EU, France, and Germany by surprise. In addition, the synergy of that action and Secretary of State Colin Powell’s address to the UN Security Council on 5 February 2003 helped prompt the “Vilnius 10” (the NATO-candidate and near-candidate countries of Albania, Bulgaria, Croatia, Estonia, Latvia, Lithuania, Macedonia, Romania, Slovakia, and Slovenia) to publicly endorse the US position on that same day. Their action

provoked an intemperate rebuke from President Chirac.¹⁴

NATO became divided on 11 February 2003 over Turkey’s request for defensive assistance in anticipation of retaliatory acts by Iraq for Turkey’s (expected) support of the coalition. France, Germany, and Belgium vetoed the measure, calling it “premature.” Although this issue was later resolved, these countries did not relish the prospect of being pulled into conflict by their collective self-defense responsibilities (contained in Article 5 of the NATO treaty) to indirectly support US-initiated offensive operations that some felt were not sanctioned by the Security Council.¹⁵

In the midst of this posturing and in various public statements, President George Bush, Secretary of State Colin Powell, and Secretary of Defense Donald Rumsfeld made clear the United States’s intention to press forward in the face of continued Iraqi intransigence—with or without specific authority from the UN.¹⁶ At about the same time, UN secretary-general Kofi Anan stated his view that a second UN resolution was a prerequisite for the legitimate use of force.¹⁷ Following the onset of hostilities, the United States publicly disagreed with this view.¹⁸ Within the context of this international backdrop, we turn our examination to the views and actions of Poland, the Czech Republic, and Hungary.

Commonalty and Differences amongst the Three Countries

Although there is much to make each of the three countries and their actions unique, there are also three historic events that they have in common. The significance of those events warrants their specific mention: the conflict in Kosovo, the Prague Summit, and the 30 January 2003 “Statement of Eight.”

Hungary, Poland, and the Czech Republic entered NATO together on 12 March 1999, and within days, all three cast their first vote in the alliance to back the use of armed force in Kosovo. In Hungary and especially the Czech Republic, this vote came against a difficult domestic backdrop—given the long-standing ties

with the neighboring region and the genuine risk of spreading the conflict. Nevertheless, their support was unequivocal, as NATO was viewed as the essential guarantor of each country's future security.¹⁹ This was not only the first vote these countries cast, it was also the first "out of scope" action authorized by NATO—an interesting introduction to NATO.

Following the Security Council's unanimous approval of UNSCR 1441, these three countries joined with the other 16 NATO countries at the Prague Summit on 21 November 2002 and unanimously endorsed that UN resolution. Their joint statement concluded with the following words: "NATO Allies stand united in their commitment to take effective action to assist and support the efforts of the UN to ensure full and immediate compliance by Iraq, without conditions or restrictions, with UNSCR 1441. We recall that the Security Council in this resolution has warned Iraq that it will face serious consequences as a result of its continued violation of its obligations."²⁰

Finally, these three countries joined the Statement of Eight in supporting the US posture on Iraq. Of importance, however, is their collective view that the UN Security Council occupy the central and formative role in maintaining peace and security, as reflected in the statement's concluding paragraph:

The U.N. Charter charges the Security Council with the task of preserving international peace and security. To do so, the Security Council must maintain its credibility by ensuring full compliance with its resolutions. We cannot allow a dictator to systematically violate those resolutions. If they are not complied with, the Security Council will lose its credibility and world peace will suffer as a result. We are confident that the Security Council will face up to its responsibilities.²¹

In short, the eight countries clearly share the US view on the apparent need for the use of force in Iraq, though they may not wholly share the US view on the legality of the use of such force absent *specific* UN authorization.

Poland

Poland is a nation committed to NATO, the UN, and a multilateralist approach, while at

the same time it supports philosophically and substantively the US response to the changed world condition after the events of 11 September 2001.²² Additionally, Poland's leaders offer constructive insight and "ways ahead" for progress. Mr. Włodzimierz Cimoszewicz, Poland's minister for foreign affairs, has been at the forefront of urging a structural reexamination of the concept of *preventive action* in response to *emerging*, and not just *imminent*, threats—the latter having long served as justification for preemptive action. On 6 March 2003, in an address in New Zealand, he intimated that change was necessary and that the Iraq crisis could serve as the catalyst for producing that change. In that forum, he invited UN members to create a new basis for a global security system and to squarely address one of the most important security issues of the day:

Since September 11, 2001 several important public statements have emphasized the fact that the use of force as an instrument of addressing international problems has been put in a new light. Some argued that the scope of the right to self-defense was a legitimate topic for re-examination. Others sought to prove the legitimacy of preventive military intervention should international law be seriously violated. *The case of Iraq raises the question of the culture of prevention. Would it be appropriate now to include this notion into the code of political norms espoused by the United Nations?* How can the reaction of the international community be speeded-up in the face of crisis situations? There are no ready answers on hand in the matter. The case of Saddam Hussein may offer an instructive lesson to the international community if it seriously looks for relevant solutions to global security threats. The international environment changes and the way it is perceived changes likewise. This concerns among others international security. The old international setting fades away and the structures originating from it are not always able to live up to the new situation. They urgently need reform. . . . Today's discussions on global governance are definitely eclipsed by the Iraqi crisis. We still do not know all implications that it may have for the international system. It has already caused visible rifts. However, we must look beyond the short-term agenda. Polish initiative of the New Political Act for the United Nations is intended to help us in this process (emphasis added).²³

On 19 March 2003—the eve of hostilities as Mr. Bush’s ultimatum to Iraq was running out—the Polish Council of Ministers issued a statement endorsing the president of Poland’s request to commit military support to the coalition forming against Iraq. That statement emphasized several important points: force as an option of last resort in international relations, and the failure to take action to disarm Iraq in this situation would be a serious political and military mistake. The Council approved the president’s request, while capping participation at 200 soldiers, noting that

the anticipated participation of Poland in the international coalition is limited, and the size of the contingent will not exceed 200 soldiers. The Polish contingent will receive limited specialist tasks. They will be mostly of a logistic nature, supporting the activities of the coalition forces—such as neutralizing the consequences of the possible use of weapons of mass destruction by Iraq, decontaminating the area, etc. They are well suited to the capacity of our armed forces.²⁴

Poland had already made a significant contribution to the larger international war against terrorism. That included the deployment of combat engineers and logistics forces to Bagram, Afghanistan, where they cleared over 4,000 square meters of land, and the deployment of a special operations unit, as well as a logistics support ship to US Central Command (CENTCOM) for its use in maritime and leadership interdiction operations.²⁵ It was one of only 11 countries whose contribution to the coalition was singled out by President Bush in a 27 March 2003 speech to the CENTCOM troops at MacDill Air Force Base, Florida:

All the nations in our coalition are contributing to our steady progress. British ground forces have seized strategic towns and ports . . . *Polish* military forces have secured an Iraqi oil platform in the Persian Gulf. . . . Czech, Slovak, *Polish*, and Romanian forces, soon to be joined by Ukrainian and Bulgarian forces, are forward deployed in the region, prepared to respond in the event of an attack of weapons of mass destruction anywhere in the region (emphasis added).²⁶

During my in-country conversations with Polish officials as well as Christopher R. Hill, the US ambassador to Poland, several of the above points were expanded. In short, the Polish position not only supported the United States, but also intellectually supported its rationale.

Ambassador Hill noted that the Statement of Eight was a genuine reaction of those nations—not a US brainchild—to what they viewed as the French and Germans speaking out of turn on Iraq during the celebration of the Elysee Treaty’s 40th anniversary. As Ambassador Hill noted, this prompted Chancellor Schröder to place a nasty call to Prime Minister Leszek Miller of Poland to complain bitterly about not being consulted. President Miller aptly noted in response that Poland had not been consulted prior to the French and German statement.²⁷

Mr. Janusz Onyszkiewicz, the former minister of national defense for Poland, made clear his view that preventive war was a necessary option for the United States to retain. In support for his position, he noted that in 1934, Poland had urged France to pursue preventive military action against Germany. His concern was that it was important that the United States flesh out the criteria for its use—what would be the exception, and what would be the norm. He noted that countries developing WMDs served as a good tripwire. Mr. Onyszkiewicz also expressed concern that the United States had not thoroughly thought through its preemption policy and as a consequence, could not accurately anticipate the potential and probable consequences emanating from it.²⁸

The Czech Republic

The Czech Republic, although understanding the necessity of preventive action in certain situations—particularly involving WMDs—is a nation committed to seeing that when force is used in international relations, it is done so under the rubric of the UN. If Poland’s cardinal rule is “First do no harm to NATO,” then the Czech Republic’s corollary is “Please don’t make us choose between being pro-Atlantic

and pro-Europe.”²⁹ The republic’s “straddle” position was exacerbated by the gap between the end of the term of President Vaclav Havel—a staunchly pro-US figure—and the 7 March 2003 inauguration of Vaclav Klaus—a brilliant, if less enthusiastic, ally.³⁰

In official statements, the Czech Republic consistently advocated that the UN adopt the US view on Iraq. On 5 February 2003, the Ministry of Foreign Affairs (MFA) stated that

from the viewpoint of the Czech Republic . . . the UN Security Council must seek a consensus on how to ensure the implementation of its respective resolutions. The Czech Republic therefore welcomes the continued multilateral approach favored by the US. . . . Provided the UN Security Council proves in any form the violation of the Iraqi obligations, the Czech Republic will be prepared to assume its share of responsibility for the maintenance of global peace and security.³¹

Officially listed as a member of the “Coalition of the Willing,” the Czech MFA’s statement on the eve of war was a tepid endorsement of the coalition’s effort. It also delimited its military contributions to a nuclear, biological, and chemical protection battalion in the event of WMD use or reasonable suspicion of its use against civilians or coalition forces. At the same time, the MFA signaled its willingness to provide humanitarian assistance during the war and to aid in the postwar reconstruction effort.³² The Czech Republic made significant contributions to both the effort in Afghanistan as well as to the then looming conflict in Iraq.³³ That support included stationing country representatives at CENTCOM, providing basing and overflight permission, deploying 251 personnel to Kuwait for combating the effects of possible WMD employment, donating military uniforms to the Afghan national army, deploying a 150-man hospital unit to Bagram, and providing air transport support to NATO for early warning missions—support that earned President Bush’s public recognition.³⁴ Finally, the Czech Republic promptly expelled the Iraqi *chargés d’affaires* just days after the United States asked all countries to take such action.³⁵

During the in-country conversations with Czech officials, our team did not develop any real insights into how the Czech Republic views the US policy of preemption. However, in an extended informal exchange with the top lawyer in the republic’s Ministry of Defense, he commented that he had been asked to issue an opinion on the legality of the Coalition of the Willing in light of the provisions in the UN charter. His elicited opinion was that no such authority existed; that opinion was returned with the request that he study the issue further.³⁶ In sum, the Czech Republic sees the UN as the only vehicle for collective action, but it also seeks to fully support US actions, as long as that does not compromise its basic worldview. Successfully maintaining a political posture such as this requires careful parsing, which was much in evidence in the words and actions of the Czech Republic.

Hungary

The US deputy chief of mission at the US Embassy in Budapest noted that the Hungarian government signed the Statement of Eight, then immediately backtracked.³⁷ Perhaps, this is due to Hungary’s own discordant public opinion and the conflict inherent in her foreign-policy goal to improve relationships with the United States, Russia, and her neighbors. It’s noteworthy that the issues surrounding the Iraqi crisis received scant attention on the Web site of the Hungarian Ministry of Foreign Affairs or that of the Embassy of the United States in Budapest.³⁸

Hungary’s apparently quixotic support is prompted by the realization that its support for the coalition might produce an undesired security risk. More to the point, Hungary agreed to allow the United States to use Taszar Air Base to train some 3,000 Iraqi exiles for possible postwar administrative roles.³⁹ Hungarians—who were opposed to a war with Iraq and were opposed to the training at Taszar by figures of 80 and 60 percent, respectively—fear that these actions risk sparking terrorist action against Hungary.⁴⁰ In some sense, Hungary’s after-the-fact hand-wringing mirrors problems encountered in integrating

its military with NATO. A dominant theme that emerged during our meetings with Hungarian counterparts was that Hungary was asked to commit resources to NATO without first fully understanding what that commitment actually entailed.⁴¹

Hungary does understand—even with its reservations—that 11 September 2001 changed the world's political equation. If the Czech Republic's concern is "Please don't make us choose between being pro-Atlantic and pro-Europe," then the Hungarian offshoot is more fatalistic—it is that "No matter what we do, we will be seen as disloyal to France and Germany, or to the US."⁴² Hungary is supportive of US preventive action in striking against terrorism—particularly against *nonstate actors*, which are not easily influenced by UN Security Council action. Notwithstanding, Hungary believes that there must be *international consensus* on the desired end state of a military campaign and the political goals to be realized.⁴³ Given the lack of such consensus, Hungary has stepped forward and taken on the role of fence-mender between the members of NATO. This is partially explained by Hungary's historical orientation towards Germany and France, and its friendship with Britain and the United States. In this regard, Prime Minister Peter Medgyessy of Hungary was the first European leader to be received in France's Elysee Palace following President Chirac's intemperate remarks; this is consistent with his fence-mender's role in smoothing over differences of opinion in the transatlantic alliance.⁴⁴ Remaining consistent with this policy, Hungary permitted the United States and Britain to use Hungarian airspace and designated airports for its war in Iraq, while it threw "a

diplomatic bone" to France by refusing to expel the Iraqi *chargés d'affaires* as requested by the United States.⁴⁵ In short, Hungary appears to be actively engaged in working both sides of the street, with the hope of reducing the differences between NATO members, and the expectation of having friendly relations and being welcomed by both sides.

Conclusion

Poland, the Czech Republic, Hungary, and the United States share common values and the common understanding that the use of force is a necessary—if undesirable—tool in preserving peace and security, as well as earning and maintaining one's freedom. When they were reluctantly compelled to take sides in the case of Iraq, each sided with the United States—each with varying amounts of reservation as to the road ahead, but with the hope that the normal order of international relations will once again turn to multilateralism through the auspices of the UN, NATO, and, in the future, the EU. These countries share multiple borders and view robust collective security organizations as the guarantor of a more certain future for themselves individually and for Europe at large. In many ways their stance mirrors that of our Congress—they support the military action but state a preference for action under the mantle of UN authority. All of these three countries emerged from the Iraq matter with—to some degree—a foot in each camp and can now serve as effective "bridge builders" in smoothing over bitter feelings between some members of the UN and NATO and help both institutions achieve greater importance and attain a more robust character. □

Notes

1. President George W. Bush, "State of the Union Address," United States Capitol, Washington, D.C., 28 January 2002, on-line, Internet, 19 June 2003, available from <http://www.whitehouse.gov/news/releases/2003/01/20030128-19.html>.

2. The White House, *The National Security Strategy of the United States* (Washington, D.C., 17 September 2002), 14, on-line, Internet, 16 June 2003, available from <http://www.whitehouse.gov/nsc/nss.pdf>. Pay special attention to the word *threaten*—the policy now targets nascent capabilities.

3. *Ibid.*, 15.

4. On 7 October 2002, Sen. Arlen Specter restated, in the well of the Senate, the long-standing *international* norm with respect to preemptive action. He noted: "In evaluating the time when preemptive action may be used, Secretary of State Daniel Webster, in dealing with the so-called Caroline incident, in 1837, when British troops attacked and sank an American ship . . . made a point that an intrusion into the territory of another State can be justified as an act of self defense only in those: [*Cases in*

which the necessity of that self-defense is instant, overwhelming and leaves no choice of means and no moment of deliberation" (emphasis added). Senate, *Delegation of Congressional Authority*, 107th Cong., 2d sess., 7 October 2002, S10004, on-line, Internet, 17 June 2003, available from <http://frwebgate4.access.gpo.gov/cgi-bin/waisgate.cgi?WAIS docID=85668724316+1+0+0&WAISSAction=retrieve>.

5. President George W. Bush, "Remarks by the President in an Address to the United Nations General Assembly," United Nations Headquarters, New York, N.Y., 12 September 2002, on-line, Internet, 17 June 2003, available from <http://www.whitehouse.gov/news/releases/2002/09/20020912-1.html>.

6. President George W. Bush, remarks made when signing House Joint Resolution (H.J.R.) 114, White House, Washington, D.C., 16 October 2002, on-line, Internet, 17 June 2003, available from <http://www.whitehouse.gov/news/releases/2002/10/20021016-1.html>.

7. *Authorization for Use of Military Force against Iraq Resolution of 2002*, H.J.R. 114, 107th Cong., 2d sess., 16 October 2002, was enacted as Public Law 107-243, 116 Stat 1498-1502, on-line, Internet, 17 June 2003, available from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_public_laws&docid=f:publ243.107.pdf.

8. *Ibid.* The resolution noted, inter alia, that in his address to the UN, President Bush committed the United States to "work with the United Nations Security Council to meet our common challenge" posed by Iraq.

9. *Ibid.*

10. UN Security Council Resolution 1441, "The Situation between Iraq and Kuwait," 8 November 2002, especially paragraphs 1-3 and 5-7. Note that 1441 referenced 11 of the 25 prior resolutions regarding Iraq. On-line, Internet, 18 June 2003, available from <http://www.iaea.or.at/worldatom/Press/Focus/Iaealraq/iraqres.pdf>.

11. *Ibid.* See paragraphs 13 and 14. "Seized" is a diplomatic term denoting intense interest in and continued oversight and direction of a particular issue or problem. Conversation with Mr. Earle St. A. Scarlett, Department of State advisor to Air War College (AWC).

12. William Safire, "Bad Herr Dye," *New York Times*, Thursday, 23 January 2003, on-line, Internet, 19 June 2003, available from <http://www.nytimes.com/2003/01/23/opinion/23SAFI.html>.

13. Glenn Kessler, "Verdict Unclear; UN Divide Is Not: Diplomats Find Justifications for and against Iraq Invasion," *Washington Post*, Tuesday, 28 January 2003, A13, on-line, Internet, 19 June 2003, available from <http://www.washingtonpost.com/wp-dyn/articles/A52076-2003Jan27.html>.

14. Editorial, "United We Stand," *Wall Street Journal*, Thursday, 30 January 2003, on-line, Internet, 19 June 2003, available from <http://www.opinionjournal.com/extra/?id=110002994>; Glenn Frankel and Keith B. Richburg, "8 Leaders in Europe Back Bush on Iraq," *Washington Post*, Friday, 31 January 2003, A16, on-line, Internet, 19 June 2003, available from <http://www.washingtonpost.com/wp-dyn/articles/A3685-2003Jan30.html>; the text of the Vilnius Group Statement is on-line, Internet, 19 June 2003, available from <http://www.bulgaria-embassy.org/1/02052003-01.htm>; and David R. Sands, "Continental Divide," *Washington Times*, Sunday, 9 February 2003.

15. Steven R. Weisman, "US Demands Iraq Show Cooperation by This Weekend," *New York Times*, Monday, 10 February 2003, on-line, Internet, 19 June 2003, available from <http://www.nytimes.com/2003/02/10/international/middleeast/10DIPL.html>; and Richard Bernstein with Steven R. Weisman, "NATO Settles Rift over Aid to Turks in Case of a War," *New York Times*, Monday, 17 February 2003, on-line, Internet, 19 June 2003, available from <http://www.nytimes.com/2003/02/17/international/europe/17IRAQ.html>.

16. President Bush, *State of the Union*, Secretary of Defense Donald H. Rumsfeld, briefing at the Foreign Press Center, Penta-

gon, Washington, D.C., 22 January 2003, on-line, Internet, 19 June 2003, available from www.state.gov/secretary/rm/2003/17300.htm; and Secretary of State Colin L. Powell, remarks to the United Nations Security Council, United Nations Headquarters, New York City, 5 February 2003, on-line, Internet, 19 June 2003, available from http://dod.mil/news/Jan2003/t01232003_t0122sdfpc.html.

17. Secretary-General Kofi Annan, comments delivered by Lakhdar Brahimi to the Thirteenth Summit of the Non-Aligned Movement, Kuala Lumpur, Malaysia, 24 February 2003, on-line, Internet, 19 June 2003, available from <http://www.un.org/News/Press/docs/2003/sgsm8616.doc.htm>.

18. The State Department's top lawyer, William Howard Taft IV, stated that clear UN authority for the use of force was derived from UN Security Council Resolutions 678, 687, and 1441. Also, Mr. Taft noted that the United States could proceed under the theory of self-defense. Peter Slevin, "U.S. Says War Has Legal Basis—Reliance on Gulf War Resolutions Is Questioned by Others," *Washington Post*, Friday, 21 March 2003, on-line, Internet, 19 June 2003, available from <http://www.washingtonpost.com/wp-dyn/articles/A1332-2003Mar20.html>.

19. Fred Coleman, "NATO Newcomers Plunged into Conflict," *USA TODAY*, Wednesday, 23 April 1999, on-line, Internet, 19 June 2003, available from <http://www.usatoday.com/news/index/kosovo/koso396.htm>.

20. *Prague Summit Statement on Iraq*, Prague, Czech Republic, 21 November 2002, on-line, Internet, 19 June 2003, available from <http://www.czechembassy.org/www/mzv/default.asp?id=15683&ido=10094&idj=36>.

21. Editorial, "United We Stand," *Wall Street Journal*, Thursday, 30 January 2003, on-line, Internet, 19 June 2003, available from <http://www.opinionjournal.com/extra/?id=110002994>.

22. Mr. Janusz Onyszkiewicz, Poland's minister of national defense, said that their adaptation of the "Hippocratic Oath" is "first do no harm to NATO" in comments to US AWC contingent at the Polish Armed Defense Forces Headquarters, Warsaw, Poland, 3 March 2003.

23. Mr. Włodzimierz Cimoszewicz, Poland's former prime minister and current minister for foreign affairs, "Poland in the Changing International Environment at the Dawn of the 21st Century," lecture, New Zealand Institute of International Affairs, Wellington, New Zealand, 6 March 2003, on-line, Internet, 19 June 2003, available from <http://www.ms.gov.pl/start.php>.

24. Ministry of Foreign Affairs of the Republic of Poland, "Statement of the Council of Ministers," Warsaw, Poland, 19 March 2003, on-line, Internet, 19 June 2003, available from <http://www.ms.gov.pl/start.php>.

25. US State Department Fact Sheet, "International Contributions to the War against Terrorism," 14 June 2002, on-line, Internet, 20 June 2003, available from <http://usinfo.state.gov/topical/pol/terror/020815contribute.htm>.

26. President George W. Bush, remarks made at Headquarters CENTCOM, MacDill AFB, Fla., 27 March 2003, on-line, Internet, 24 June 2003, available from http://www.usinfo.pl/docs/cc_transcript.htm.

27. US Ambassador Christopher R. Hill, remarks to AWC contingent, US Embassy, Warsaw, Poland, 3 March 2003.

28. Onyszkiewicz.

29. Mr. Ivan Pocuch, deputy director of security policy for the Czech Republic Ministry of Foreign Affairs (MFA), remarks to AWC contingent at the MFA, Prague, Czech Republic, 6 March 2003.

30. US Country Team, remarks to AWC contingent, US Embassy, Prague, Czech Republic, 6 March 2003.

31. Czech Republic MFA, Statement on the UN Security Council Meeting of 5 February 2003, MFA, Prague, Czech Republic, on-line, Internet, 24 June 2003, available from <http://www.czechembassy.org/www/mzv/default.asp?id=16585&ido=6569&idj=2>.

32. Czech Republic MFA, Statement on the Situation Concerning Iraq, MFA, Prague, Czech Republic, 19 March 2003, on-line, Internet, 24 June 2003, available from <http://www.czechembassy.org/www/mzv/default.asp?id=17669&ido=6569&idj=2&amb=1>.

33. US State Department Fact Sheet, "International Contributions to the War against Terrorism," Department of Defense, Washington, D.C., 14 June 2002, on-line, Internet, 24 June 2003, available from <http://usinfo.state.gov/topical/pol/terror/020815contribute.htm>.

34. President Bush, Headquarters CENTCOM.

35. Czech Republic MFA, Statement of the Expulsion of the Iraqi Chargé d'affaires," MFA, Prague, Czech Republic, 24 March 2003, on-line, Internet, 24 June 2003, available from <http://www.czechembassy.org/www/mzv/default.asp?id=17724&ido=6569&idj=2&amb=1>.

36. Czech Republic Ministry of Defence attorney, conversation with AWC contingent, informal social gathering, Prague, Czech Republic, 6 March 2003.

37. Ms. Janet E. Garvey, remarks to AWC contingent, US Embassy, Budapest, Hungary, 11 March 2003.

38. There was only one mention of Iraq on each Web page. The first reads as follows: "Prime Minister of Hungary and leaders of Britain, Spain, Portugal, Italy, the Czech Republic, Poland and Denmark call for Europe and [the] United States to stand united." Hungarian MFA Web site, on-line, Internet, 19 June 2003, available from <http://www.mfa.gov.hu/kum/Templates/CikkSablonAlt.aspx?NRMODE=Published&NRORIGINALURL=%2fKulugyminiszterium%2fEN%2fissues%2firaq%2ehtm&NRNODEGUID=%7b95D0625D-E625-45BF-B57E-6D061716F536%7d&NRCACHEHINT=NoModifyGuest>; the other statement—informative, vice positional—was issued following Secretary Powell's address to the UN on 5 February 2003. László Kovács, Hungarian minister for foreign affairs, statement on Iraq, Budapest, Hungary, 5 February 2003, on-line, Internet, 24 June 2003, available from <http://www.kum.hu/Szovivoi/2003/02/spok0205.htm>.

39. Adam LeBor, "Government Decision on Taszar Sends a Message to the World," *Budapest Sun*, 23 January 2003, on-line, Internet, 24 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={CC2D4052AF142018C8895CC0E768440}&From=News%20-%20Editorial.

40. Eszter Balazs, "Taszar Fears Run High," *Budapest Sun*, 23 January 2003, on-line, Internet, 24 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={378EA18D58D74050B166DF9A47482AC9}&From=News; and Tamas Kiss, "First Iraqi Volunteers Touch Down in Taszar," *Budapest Sun*, 6 February 2003, on-line, Internet, 24 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={996D24ABE94D45BD8708E598AB6D2A96}&From=News.

41. Hungary's complaint was that once it had committed to providing certain types of forces to the alliance, NATO then explained what the *requirements* for such forces were.

42. Eszter Balazs, "PM Dismisses Chirac Outburst as 'Mistake,'" *Budapest Sun*, 27 February 2003, on-line, Internet, 24 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={AE10B03F701D46BD8BDC09700CA26E3E}&From=News.

43. Gyorgy Rabai, administrative assistant, Hungarian minister of defence, to AWC contingent at the Ministry of Defence in Budapest, 11 March 2003.

44. Eszter Balazs, "Chirac Assures PM of Continued EU Support," *Budapest Sun*, 13 March 2003, on-line, Internet, 19 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={7A773B3DC78B45348BF262B7B0CB655A}&From=News.

45. Eszter Balazs, "Iraq Airspace Decision," *Budapest Sun*, 20 March 2003, on-line, Internet, 19 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={8D0E14F3FF1B43CD9E096B40FCB315BB}&From=News; and idem, "Hungary Rejects US Iraq Embassy Request," *Budapest Sun*, 27 March 2003, on-line, Internet, 19 June 2003, available from http://www.budapestsun.com/full_story.asp?ArticleId={87DF900F0DEF4C1BAAF9658F8D8CDED4}&From=News.

As an institution, the American people trust the military more than any profession in the United States. They are confident in our ability to defend our nation at home. They trust our competence in conflict. They are keenly aware of the professionalism and skill of airmen and their contributions to our nation's victories in the first Gulf War, in the Balkans, and most recently, in Afghanistan and Iraq. And they deeply appreciate the airmen who secure the skies over this wonderful country.

—James G. Roche
Secretary of the Air Force

The Benelux Deployable Air Task Force

A Model for EU/NATO Defense Force Integration

LT COL DAVE L. ORR, USAF

Editorial Abstract: Colonel Orr observes the success of Belgium, Netherlands, and Luxembourg in combining aspects of their individual military strengths to create the Benelux Deployable Air Task Force, a rapid-response expeditionary capability. The success of this initiative offers one model for improving EU/NATO rapid-response efforts while simultaneously allowing member states to optimize their own limited defense resources.



BELGIUM AND LUXEMBOURG formed the Benelux Deployable Air Task Force (DATF) in September 1996 in an effort to optimize the effect of their limited defense resources. Components of the Belgium and Netherlands air forces were combined with a tailored Luxembourg security force to form the Benelux DATF—viable, highly specialized packages to support the gamut of military operations. Current security themes in the European Union (EU) and the North Atlantic Treaty Organization (NATO) focus on the formation of corps-sized task forces that emphasize “long-range application of force, deployability, sustainability, and effective engagement” in peacekeeping and peacemaking missions throughout and beyond the US European Command (EUCOM) area of responsibility (AOR).¹ In achieving this vision, European

member nations seek to organize their individual capabilities through bilateral and multilateral arrangements to form specialized task forces. The Benelux DATF has been a model that illustrates the positive effects that achieving interoperability within multilateral coalition resources has on increased capability for military roles and missions. This article describes the DATF’s organization and its possible future role in NATO and an EU Rapid Reaction Force (EU RRF). It also compares the NATO goal of formally integrating member-nation assets with those of the DATF example, which merely pools capabilities for greater effect. Despite the 2002 Prague Summit’s repeated commitment to leverage military technologies and field an EU RRF in 2003, NATO and EU-member defense budgets have continued to decline. That decline pressures these nations to pool their combat and support assets within

multinational task forces to be able to field a military capability that can successfully serve in future contingencies.

Benelux DATF Origins— Developing an EU Military Identity

Since the inception of NATO, and most notably with the growth of a military structure within the EU, European nations have sought multinational cooperation in building defense forces. NATO's struggle with interoperability and burden sharing has continued in recent years due to the divergence in defense budgets and the resulting differences in military capabilities between the United States and the other members of NATO. The United States has been called on, during most post-Cold War missions, to provide all strategic airlift, intelligence gathering, and the preponderance of logistics and airpower; the other NATO members carried out "manpower-intensive tasks such as long-term peacekeeping."² In the 1990s, the EU expanded its focus from economic interoperability to aggressively explore the development of European military capabilities. Initially, initiatives such as Combined Joint Task Forces (CJTF) and the European Security and Defence Identity (ESDI) were collaborative ventures with NATO. The CJTF organization enabled the EU to use NATO resources for peacekeeping operations without US involvement. During the approval of this concept in June 1996, President Jacques Chirac of France termed this multinational pooling of European assets as "separable but not separate forces."³ The Eurocorps was a formal example of this effort to integrate NATO assets into a multinational force. The Eurocorps includes forces from Germany, Belgium, Spain, France, and Luxembourg and maintains a permanent headquarters to execute NATO- or EU-directed missions.⁴ The Eurocorps participated in NATO operations in Bosnia and Kosovo, and its headquarters commanded the Kosovo Force from March to October 2000.⁵

EU's drive to develop military capabilities continued with its Common Foreign and Security Policy (CFSP). With a vision to build a

distinct military organization—separate from NATO—the CFSP sought a greater commitment from EU member nations and expected them to relegate some sovereignty over their military resources.⁶ The Benelux DATF and other bilateral and multilateral arrangements were forged during the effort in the mid-1990s to build multinational cooperation between NATO and EU members.

Benelux DATF: Organization and Execution

Cooperation between the Netherlands and Belgium air forces was already strong before formally joining the DATF. They had developed comparable military capabilities, and their common NATO history and culture had allowed them to effectively participate together in military exercises. The precedent of their long-standing naval-command relationship, which placed the Netherland naval command over both navies during crisis situations, was not followed by the DATF. The air forces simply agreed to pool all types of military equipment and weapons systems for DATF use.⁷ A planning cell was activated in February 1996 as a precursor to the actual DATF enactment the following September. The cell developed the deployable force concept, which led to the inclusion of the Luxembourg army to provide deployed security. At this time, the DATF was unique because it extended military cooperation beyond the NATO model of matching systems. While NATO was the springboard for international cooperation, it focused on *system interoperability* and commonality to best integrate its multinational assets. The DATF took advantage of the Belgian and Dutch cultural similarities and extended its capabilities to include command and control, logistics, transportation, and operational planning.⁸ The DATF's success in Operations Joint Forge and Allied Force showcased its capabilities in actual combat operations.

The DATF assumed both combat operations and combat support responsibilities in Operation Joint Forge. The Dutch and Belgians staffed intelligence and operational plan-

ning cells, security patrols, maintenance shops, and all flight-line specialties. Although Dutch and Belgian pilots flew their own air force's F-16s, close cooperation existed between the operations and maintenance units. Both air forces had accomplished aircraft and weapons upgrades on identical schedules, so the aircraft were completely interoperable. This allowed DATF pilots to plan their missions together and enabled maintenance specialists to pool their expertise for solving system anomalies. This enhanced flight-line operations and generated higher mission-capable rates for both forces. Based on its success in Joint Forge, the DATF was tasked for a greater role in Operation Allied Force. The DATF deployed a total of 32 F-16 aircraft and 520 personnel to Amendola AB, Italy, in support of the NATO operation against Slobodan Milosevic.⁹ The Luxembourg army, as planned, provided over 100 security personnel to protect the DATE. During the 78-day air campaign from 24 March to 10 June 1999, the DATF flew 11.6 percent of all allied fighter missions and maintained a 95 percent mission-capable rate for the duration of the war.¹⁰ The DATF flew every type of mission called for by Supreme Allied Commander, Europe (SACEUR [NATO]), including defensive counterair, night attack, and reconnaissance. Because the DATF F-16s were equipped with targeting pods, they were the only aircraft other than those of the United States and Great Britain to expend laser-guided munitions during the conflict. Their low-altitude navigation and targeting infrared for night (LANTIRN) system provided NATO planners additional night-attack precision-weapon capabilities.¹¹ Since Allied Force, the DATF has continued to rotate forces in Bosnia and has conducted seven multinational exercises with NATO and EU partners to enhance their interoperability in future integrated rapid-response forces. Denmark is negotiating to join the DATE, and its fleets of F-16s and C-130s are already compatible with the DATF platforms. Their cultural similarities would permit an easy and logical integration of shared resources to further increase

the capability of the DATF for peacekeeping or peacemaking operations.

In addition to the original DATE, the Netherlands and Belgian armed forces are involved in other bilateral and multinational agreements to pool scarce defense assets. The Belgian-Portuguese DATF was formed in 2000 and combines the elements of each country's C-130 fleet for intratheater lift and airdrop missions. The force has served NATO in Macedonia and conducts routine exercises to increase interoperability.¹² Belgium also served as the lead NATO trainer for C-130H crews in the mid-1990s and trains a significant number of allied airmen in the F-16. Finally, the Belgian military has taken the lead to incorporate air transportation and air-to-air refueling in these multinational cooperation ventures. The Netherlands and Belgium programmed 50 million euros to strengthen Germany's strategic-lift and air-to-air refueling capability.¹³ In return, the DATF will have access to Germany's air-transport fleet during crisis and peacekeeping operations.

Building an EU RRF

This DATF discussion leads to the strategic level of the EU's long-range force-structure planning. Will the EU have access to its members' task forces and be able to integrate them into the proposed EU RRF? In 1999, leaders of the EU committed their nations to the Helsinki Headline Goal, which called for a 60,000-person force to be deployed within 60 days and be sustainable for at least one year.¹⁴ Under this goal and within the overarching European security and defense policy, the EU RRF would be equipped to accomplish all the command and control, airlift, logistics, intelligence-gathering, and combat support functions necessary to sustain a long-term deployment.¹⁵ Such an EU RRF will use smaller rapid-response elements, such as the DATE, to accomplish the tasks agreed upon in the Petersburg Tasks, which include duties associated with peacekeeping contingencies and the ability to generate combat missions for crisis management and peacemaking.¹⁶



A Royal Netherlands air force KDC-10 refuels a Dutch F-16.

Benelux DATF, the Belgian-Portuguese DATF, the Spanish-Italian Amphibious Force, the Franco-British Air Group, and other such organizations, as well as the many multilateral memorandums of understanding between member nations, are critical to the creation of a credible EU peacemaking force. Defense budgets for a majority of EU member nations are currently at less than 2 percent, and “present-day military capabilities do not match the common foreign policy ambitions of the European Union.”¹⁷ Therefore, integrating these mission-specific, pooled resources becomes the only viable means for the EU to produce an effective and capable, stand-alone combat force. Beyond building, integrating, and training the 60,000-person force, the more difficult challenge will be developing the consensus on when to use such a force. The political and economic climates of

the day will impact how much a nation supports a particular EU operation. NATO was able to successfully integrate member nations’ personnel and equipment using a common motivation based on a common threat—the expansion of Communism into Western Europe and throughout the world. Operation Iraqi Freedom vividly illustrates the difficulty that European leaders had in developing a common consensus on the use of force; that recent difficulty portends a future in which developing that necessary European consensus may continue to be difficult or even unattainable.

National defense postures change, and defense budgets get slashed when political concerns shift at the same time European economies are struggling; then internal social programs are prioritized ahead of a common EU military defense force. Shrinking budgets make it even more difficult for individual na-

tions to bridge the technological gaps in their systems to improve—or even maintain—their military capabilities. Adding to this challenge is an increasing number of deployments for their downsized air forces. Formal agreements regarding future common-defense programs are also suspect, as evidenced by the large cut in Germany's Airbus 400 strategic airlift program, demonstrating that German domestic interests supersede EU-defense initiatives.

Pooling Capabilities for Coalition Warfare

The EU RRF could initially function at the tactical level by using established task-force agreements, such as the DATF, to separate categories of responsibility. This would encourage smaller countries to pool their limited assets and allow them to participate in a joint international force. The ability to combine the various weapons platforms and system operators creates the synergistic effect whereby the sum is greater than the constituent parts.¹⁸ In war-fighter terms, an operational commander would then be able to build sufficient combat mass from this pool of limited assets. For now this approach to pooling resources eliminates the problem of national control over national assets and alleviates the differences in doctrine and culture inherent in a formally integrated tactical force under an EU-designated commander.¹⁹ In any pooling arrangement, a problem will occur if one member nation refrains from participating in a coalition operation. Within the EU RRF-DATF framework, however, that effect is minimized; the impact will simply be a reduction in numbers versus the loss of an entire capability, which could be a critical element in an integrated force package. National pride also becomes a source of stability in such an organization as the smaller NATO or EU countries with modest capabilities make positive contributions to a specific military operation. A small member nation may have the technological lead in a given weapon system or be structured to best support a special mission capability such as combat search and rescue or integrated air de-

fense. Providing an anchor system or mission capability to an international force not only serves as a source of national pride, but it also protects the military budget from internal cuts. The budgets of the Netherlands and Belgian air forces are less likely to come under domestic political scrutiny as long as the DATF is designated as the lead composite force for an EU peacekeeping operation in that budget year.

The Benelux DATF: Roles Today and in Future EU Task Forces

The employment of the EU RRF, to support a peacemaking operation, would likely cause the Benelux DATF to be deployed and tasked to conduct night attack missions and execute precision attacks on lucrative command and control targets. Likewise, the Spanish-Italian amphibious force would be tasked as the first-in infiltrating unit to conduct special operations missions, and the combined Dutch-German airlift operation would provide logistical support and personnel movement. The British, French, and German forces will form the composite task units essential to the success of a given EU RRF deployment and crisis-action response. Finally, forces representing the smaller EU member states would be integrated into specific combat, support, and sustainment functions.

The Benelux DATF is a model military organization in present-day Europe. It's a force that optimized its nations' limited national defense dollars, combined a diversity of systems, and built a composite force, which has now been proven in combat. The air forces of the Netherlands and Belgium and the security forces of Luxembourg can operate as single entities and retain sovereignty for action based on national interests. However, through years of cooperation in training, procurement of like systems, combined deployments, and the sharing of tactics, techniques, and procedures, the DATF in execution is a fully integrated combat force. The development and pooling

of multinational task-force structures is the best starting point to meet the Helsinki Headline Goal of a deployable 60,000 EU RRF this year. Eventually, a formal integration of member resources will be required to sustain such a force for recurring peacekeeping or crisis-action contingencies. The future political,

economic, and military environment in Europe will dictate if—and if so, when—the EU RRF will become a military organization on par with NATO. Nevertheless, the Benelux DATF is capable of serving either organization and will remain a mainstay in European fighter capabilities. □

Notes

1. Lord [George Islay MacNeill] Robertson, secretary-general of NATO and chairman of the North Atlantic Council, "Investing in Security," *NATO Review*, no. 3 (2002), on-line, Internet, 25 June 2003, available from <http://www.nato.int/docu/review/2002/issue3/english/art3.html>.

2. James Appathurai, "Closing the Capabilities Gap," *NATO Review*, no. 3 (2002), on-line, Internet, 25 June 2003, available from <http://www.nato.int/docu/review/2002/issue3/english/art1.html>.

3. Erik Derycke, "Belgium's Contribution to Security in the Euro-Atlantic Area," *NATO Review*, no. 6 (1996): 4, on-line, Internet, 25 June 2003, available from <http://www.nato.int/docu/review/1996/9606-1.htm>.

4. Eurocorps Web site, "Eurocorps: A Force for Europe and the Atlantic Alliance," 1, on-line, Internet, 25 June 2003, available from http://www.eurocorps.org/downloads/infobrochure/info_brochure_en.pdf.

5. *Ibid.*, 12.

6. Guy Verhofstadt, Belgium prime minister, "Europe Has to Become a Force in NATO," *Financial Times*, 20 February 2003, on-line, Internet, 25 June 2003, available from <http://victory.village.com/GM/archives/00000087.htm>.

7. S. T. Planken, "Royal Netherlands Air Force Deployable Air Task Force," *Canada Connection*, 28 August [2001], on-line, Internet, 27 June 2003, available from <http://home.wanadoo.nl/tcc/rnlaf/datf.html>.

8. *Ibid.*

9. S. T. Planken, "Operation Allied Force: Air Strikes against Yugoslavia," *Canada Connection* [Web site], on-line, Internet, 27

June 2003, available from http://home.wanadoo.nl/tcc/balkan/allfor_forces.html.

10. *Ibid.*

11. F. H. G. DeGrave, "Opening Statement to the Air Power Colloquium in Rijswijk," 5 July 2001, on-line, Internet, 27 June 2003, available from http://www.minddef.nl/nieuws/toespraken/content/070501_airpower.html.

12. Belgian Ministry of Defense, "Belgian-Portuguese Deployable Air Task Force to Be Formed," 7 July 1999, on-line, Internet, 27 June 2003, available from <http://www.defense-aerospace.com/data/communiques/archives/1999Jul/data/1999Jul496/>.

13. DeGrave.

14. Gen Rainer Schuwirth, "Hitting the Helsinki Headline Goal," *NATO Review*, no. 3 (2002), on-line, Internet, 27 June 2003, available from <http://www.nato.int/docu/review/2002/issue3/english/art4.html>.

15. Colin Robinson, "The European Union's Nascent Military Capability: The Right Move for European Security?" 23 May 2002, on-line, Internet, 25 June 2003, available from <http://www.cdi.org/mrp/eu-security.cfm>.

16. *Ibid.*

17. DeGrave.

18. Lt Gen B. A. C. Droste, commander in chief, Royal Netherlands air force, "Combined Joint Task Force Development and Allied Air Power: Pooling Assets for Cooperative Missions" (paper presented at the Global Air Chiefs Conference, Las Vegas, Nev., April 1997), on-line, Internet, 25 June 2003, available from <http://www.af.mil/lib/gacc/pt2.html>.

19. *Ibid.*

We can view, and we can access any battle space. When air and space combine in the right ways, we can target, we can be redundant, and we can persist. We can find, fix, track, target, engage, and assess anything of significance on the face of the Earth. We can bring this to the joint fight in ways that no one else can. It is our job, and it is our duty. It is what air and space warriors are all about.

—Gen John P. Jumper
Chief of Staff of the Air Force

Words and Weapons

The Power of Discourse

LT COL EDITH A. DISLER, USAF



Editorial Abstract: Air Force culture favors technological and quantifiable solutions to most problems. However, the methods by which information gets disseminated are as important as the technology used, and the accurate flow of information and data is critical to air and space power. As the service moves further toward an expeditionary philosophy, accurately packaging and delivering information will remain a vital leadership capability that can help preserve unit and service effectiveness.

Thus new thinking, or the complexity paradigm, can create a model and an understanding of major regional conflicts that could not be developed by our traditional scientific paradigm and its simple, linear, universal models. Driven by the aesthetics of complexity and specificity, new thinking develops models that strengthen our understanding with increased numbers of variables; that build depth and sophistication with interdependent variables; that describe open systems subject to global conditions; and that capture political and economic phenomena as products of the era in which they occur. Operating in the white spaces, new thinking challenges us to defend our 300-year-old thinking patterns: Are simplicity, linearity, and universality the only way to think about the world?

—Dr. Gerry Gingrich
National Defense University

IN THE SPIRIT of the “traditional scientific paradigm and its simple, linear” models Gingrich cites above, we in the Air Force approach modern warfare with a penchant for extolling the virtues of technology in attack aircraft, reconnaissance platforms, and even computer-facilitated staff

work. We value real-time data with which to make decisions and plan responses and bemoan the bureaucracy we must navigate to buy the equipment that gets us the data in real time. Air Force members interact daily in person, via E-mail, and on the phone. Yet we neglect the study of the one thing that driving

intelligence satellites, flying attack aircraft, performing computer-aided staff work, and even working in the bureaucracy all have in common—discourse. Whether interpreting a satellite photo, assimilating the information on a head-up display, or communicating as a Pentagon action officer, military members are but human beings, taking action within a specific social setting through the use of discourse. Analysis of the discourse involved in our day-to-day interactions is, this article proposes, operating in the “‘white spaces’—areas of thought and discovery not covered by old thinking and the traditional academic disciplines.”¹ This article will explore the complex web of discourses which come together to result in human action, with particular attention to both the theoretical underpinnings of such analysis and the framework for analysis proposed by *mediated discourse analysis*.

Communications versus Communication

Military strategists and theorists have devoted volumes to the role of information technology in today's defense structure, but many fewer volumes to the impact of those technologies upon the individuals using them. As INSS Senior Fellow Martin Libicki has pointed out,

Information has always been part of conflict, but in times past it has been almost entirely at the human level: who is my enemy, what are his intentions, what can I see and hear of him, and how can I best confound him. Today, human-level analog information is being supplemented by a wealth (perhaps a flood) of machine generated information that can be further processed and distributed through electronic means.²

But, until the technological platforms can wage war amongst themselves without a human in the loop, we must face the fact that war is still waged by “human-level analog” minds, helped along by increasingly advanced cultural tools. For that reason, we should stop and consider the ways in which various discourses, including written words, spoken

words, images, and other cues, come together and cause us to take action.

In the 1996 RAND study *The Virtual Combat Air Staff: The Promise of Information Technologies*, the authors foresee an era in which dispersed members of a combat air staff can come together as a virtual combat air staff, using networked communications and information technologies.³ Among other advantages, the authors note, is the ability to keep people further from harm's way and slim the size of the staff needed. They continue, “The military unit must understand its environment, have some knowledge of the enemy's position and intentions, be able to assess its own strengths and weaknesses, and know what other friendly forces are doing. In this regard, communication is key.”⁴ But, what is communication?

To the military mind, “communication” may imply the proper network of secure and non-secure satellite links, fiber-optic cables, or radio frequencies; to the linguist, sociologist, or cognitive psychologist, communication is a much more human concern. Some military theorists manage to keep sight of this human dimension. Institute for National Strategic Studies (INSS) author David Alberts says, “The appropriate command concepts for an information-rich battlefield have, as yet, not been determined even at the most basic level. Concerns have been raised regarding the potential adverse effects of increased visibility into operations at all levels, including potential for information overload, second-guessing, micro-management, stifling of initiatives, and distraction.”⁵ The latter complications emphasize the fact that communications may be working fine, but communication may not. Of interest here is finding a framework whereby we can examine the confluence of technology and discourses to determine exactly what causes “information overload, second-guessing, micro-management, stifling of initiatives, and distraction.” The solution may be partly technological, and, obviously, it is also a matter of human perception.

One problem with a focus on technology is its underlying assumption of the “conduit” metaphor. That is the notion that communica-

tion travels from sender to receiver, as though through a pipe, with language (or digital ones and zeros) as the conduit of transmission. Philosophers and theorists have long explored the intricacies of communication and interaction far beyond the sender-receiver model of communication. Communication is not just as simple as sender-receiver; therefore, our sender-receiver technology is not entirely the panacea we desire for the contemporary and future military engagement. Users and inventors of information technology primarily want to know how to get more information through the pipe. In contrast, students of linguistics and sociology are interested in how humans make meaning of the information when it is generated, heard, or read; how the discourse may be impacted at various points along the way; and how that discourse results in specific human actions.

Consider the work of philosopher Mikhail Bakhtin, who explores in great depth the reality that all interactions are dialogic. That is, every utterance is influenced by previous utterances and a variety of cultural and personal assumptions. He says, "The living utterance having taken meaning and shape at a particular historical moment in a socially specific environment, cannot fail to brush up against thousands of living dialogic threads, woven by socio-ideological consciousness around the given object of an utterance."⁶ In other words, an utterance is not static. Words communicated by operators in one location to a virtual air staff in another location may have very different relevance in different times and locations to operators with different training, different experiences, different missions, and different tasking orders.

As those transmitted words (or images) are interpreted, acted upon, and relayed to other operators, the meaning can't help changing along the way. In dialogue, says Bakhtin, words live a "double life." That is because, in a combined context, one cannot adopt or interpret the words of another, "without losing [their] sense and tone."⁷ While a written or verbal command can be issued, the one who carries out the command cannot possibly have the

complete "sense and tone" of what is in the commander's mind, that having been dialogically created from the commander's knowledge and background. This difference may or may not affect the specific actions taken in response to the command. A command is normally considered objective in nature, but Bakhtin would argue that the dialogic inherent in its issuance makes it relative, "subjective, psychological and (frequently) random" in character.⁸ This subjectivity will never be completely eliminated, just as technology will never be perfect.

One source of the subjectivity of interpretation is the human mind and each individual's particular psychological processes. L. S. Vygotsky, a contemporary of Bakhtin, placed particular emphasis on the social dimension of consciousness.⁹ One of Vygotsky's themes is "his claim that human social and psychological processes are fundamentally shaped by the 'mediational means,' especially language, they employ."¹⁰ In the realm of military technology, then, the computers of virtual air staffs or "sensor to shooter" platforms, the satellite communications (SATCOM) system, and the fiber-optic cables are but mediational means, cultural tools, or sign systems that help shape human mental processes. Examination of such mediational means is key to interpretation of human action. As Vygotsky claimed, "By being included in the process of behavior, the psychological tool [sign] alters the entire flow and structure of mental functions. It does this by determining the structure of a new instrumental act, just as a technical tool alters the process of a natural adaptation by determining the form of labor operations."¹¹ In other words, the setting and technology of an interaction affect the process of interpretation and, hence, action.

The notion of *intertextuality*—a term coined by J. Kristeva in response to Western audiences' interpretations of Bakhtin, refers to the shaping of texts and utterances by prior texts and utterances.¹² This notion is critical to military theorists and strategists. As Norman Fairclough notes, "The concept of intertextuality points to the productivity of texts, to how

texts can transform prior texts and restructure existing conventions to generate new ones."¹³ Far from esoteric, intertextuality is a key condition of all military training and operations. Military members are trained, for example, through classroom discourse, hands-on instruction, and by written texts such as technical orders, operating instructions, and checklists. Strategies and tactics, when committed to warning orders and tasking orders, are but retextualizations, for a specific time and place, of written doctrine and political policy. When operators in the field engage in the actions assigned to them, it is as a result of years of dialogic and intertextual formation of their own understanding of their duties, obligations, and interactions.

We can use the insights of Bakhtin, Vygotsky, Kristeva, Fairclough, and others as we examine the layers of discourse which impact the actions we take. This analysis is necessary as the Air Force moves forward with key information technologies. As David Alberts points out,

Since we cannot stop, slow down, or control the information explosion or totally prevent unintended consequences, we must design a strategy for introducing information technologies that a) identifies and anticipates negative repercussions and enables us to avoid those repercussions or minimize their impacts, b) recognizes and takes advantage of unexpected opportunities, and c) balances the risks associated with the failure to achieve these two objectives.¹⁴

A close analysis of the discourse networks used in information technologies will help avoid problems and may very well lead to unexpected opportunities.

Mediated Discourse Analysis— One Framework for Study

Consider the following assertion: "It is now widely accepted within the U.S. Department of Defense that its military capabilities will be decisive to the extent that the United States can enjoy information dominance over its foes extant and potential. Behind this simple formulation, however, is a set of complex inter-

relationships between knowledge and action."¹⁵ It is exactly those complex interrelationships that the field of *mediated discourse analysis* examines, which, says linguist Ron Scollon, "takes the position that social action and discourse are inextricably linked on the one hand¹⁶ but that on the other hand these links are sometimes not at all direct or obvious, and therefore in need of more careful theorization."¹⁷ Generally speaking, mediated discourse analysis examines the interrelationship between individuals, social practices or actions, and various forms of text—that is, discourse.

We see just such an analysis by Hutchins and Klausen in their "Distributed Cognition in an Airline Cockpit."¹⁸ In this study of air-crew interaction in a NASA Boeing 727 flight simulator, the authors explore the ways in which training and interaction (verbal and nonverbal) work together in "the construction of a shared understanding of the situation in which the interactants find themselves."¹⁹ Specifically, given the sometime random order of tasks in cockpit operations and the various methods of communication between crew members, a mere glance at the captain by the first officer cued the captain to respond to an air-traffic-control (ATC) transmission when the first officer thought the response time was excessive. However, the first officer could also tell, simply by the look on the captain's face, that the captain wasn't sure of the altitude that ATC had cleared them to maintain. So, responding based upon the social practice intertextually and interdiscursively created by training and operations, the first officer simply says, "Three two zero," thus providing the information that the captain is to echo back to ATC. This shared understanding between interactants is called *intersubjectivity*. Such shared understanding should sound familiar to Air Force members, as it is the basis of the crew concept.

Hutchins and Klausen's analysis is, of course, much deeper and much more detailed than presented here. The point is that, in their study of the interaction of a 727 crew, they showed the importance of interactional cues

that couldn't possibly be replicated by machinery. They also discuss, however, ways in which the machinery cues the interactants in what they call *distributed cognition*. For instance, mechanically linked control yokes allow members of the crew to visually monitor inputs in ways side-stick controllers do not. Or, dual sets of identical instrumentation ensure that the captain and the first officer are working with the same information and the same relative display of that information while performing their tasks. Newer aircrew workstations have independent flight-management computer systems for each crew member and do not necessarily display the same information, thereby interrupting distributed cognition. As the authors point out, "The issue is whether or not the system could interact with the pilots in the way that they interact with each other. With human interactants, we have seen that intersubjectively shared representations permit a silent look in a particular context to have the meaning of a request for specific information. This sort of phenomenon is a reminder of the complexity and subtlety of human interaction. It is difficult to imagine what sort of machine could engage in this kind of interaction."²⁰

We largely take for granted an understanding of such subtleties. But, it is just such subtleties that are easily overlooked when we seek a purely technological solution to the transfer of information. In designing a virtual air staff, for example, one must closely study the kinds of interactive cues operators use to communicate so that when dislocated in time and space, compensation can be made for the lack of interactive cues.

Mediated Discourse Analysis Applied: One View of Staff Work

This article has only broadly addressed mediated discourse analysis as a method of analyzing humans in social interaction. Now it is time to examine the framework for analysis more closely. Key to this framework is remembering that in mediated discourse analysis, the unit of analysis is the mediated

action—the glance by the first officer in the simulator scenario above, for example, which resulted in a response from the captain. In fact, the most difficult aspect of applying this framework may very well be narrowing a series of actions down to a specific action taken. The action of launching a missile, for example, is much too nebulous and complex. The process must be broken down into the smaller actions that comprise it; each of those actions can be further analyzed according to the mediated-discourse-analysis framework. The remainder of this article will delineate some key considerations within the framework of mediated discourse analysis and apply that framework to the specific action of opening an E-mail and tracing the web of discourse and social practices which resulted in that action.

Scollon delineated the key concepts of mediated discourse analysis:

1. *Mediated action* is the basic unit of analysis. It is the moment when an individual, as a social being, engages in an action in a "dialectic between [the] action and the material means" which mediate it.
2. The mediated action occurs in a *site of engagement*. This is the point at which the action becomes "the focal point of attention of the relevant participants" at a "unique moment in history."
3. The *mediational means* are the material objects used to carry out the mediated action and include the material factors associated with the social actors involved. Intertextuality and interdiscursivity/dialogicality are inherent in the mediational means.
4. In mediated discourse analysis a mediated action must be seen as "a necessary interaction of *social practices* and mediational means which in themselves reproduce social groups, histories, and identities."
5. One action involves the intersection of several discursive and nondiscursive practices. This intersection is called the *nexus of practice*.²¹

This framework is best explored through an example of a specific action.

In late August of 2002, an Air force officer logged on to her E-mail server. Listed among incoming E-mail messages was one from a chief master sergeant at the Air Force Institute of Technology (AFIT) at Wright-Patterson AFB, Ohio. His E-mail was addressed to all civilian-institution liaison officers (LO) and had a one-page document signed by the chief of staff of the Air Force as an attachment. The document came as one in a series of documents called the *CSAF Sight Picture*. The subtitle of the document the officer saved to her hard drive and brought up on her screen by striking the required keys was "An Expeditionary Language." What series of practices had to come together to allow that officer to strike a key on the computer and read that document? According to Pentagon staff officers interviewed, the following is an abbreviated list of the linked social practices that resulted in this mediated action:

- An officer assigned to the Office of the Deputy Under Secretary of the Air Force for International Affairs (SAF/IA), in an effort to give increased exposure to the need for language-trained officers, drafts a version of the "An Expeditionary Language" document to be disseminated as a CSAF NOTAM. That is the acronym title of the periodic Air Force chief of staff's notice to airmen, which later becomes known as the *Chief's Sight Picture*.
- This effort is terminated while being staffed—CSAF staff members cite other NOTAM messages that have higher relative priority.
- Roughly one year later, after the 11 September 2001 terrorist attacks, an increased senior-staff interest in the officer corps's language capabilities resurrects the "An Expeditionary Language" document and the notion of disseminating it as a topic in the *Chief's Sight Picture* series.
- A staff package containing a staff summary sheet, point paper, summary of

feedback and changes from the deputy for air and space operations (XO) and the deputy for personnel (DP), and a draft of "An Expeditionary Language" is delivered to the CSAF Staff Group.

- The package, along with a new edit of the draft document, is forwarded to the CSAF through his administrative assistant and executive officer.
- The CSAF provides input, more edits are made, and the corrected document is returned to the CSAF for signature.
- Once signed, public affairs and information personnel distribute the document, using the established electronic network, to major commands (MAJCOM) and various other recipients.
- Air Education and Training Command (AETC), as a MAJCOM, receives the chief's E-mail and then uses its normal distribution network that includes AFIT as an addressee.
- Since the Air Force officer at the beginning of this example is attached to AFIT, the E-mail addressed to all civilian-institution LOs now reaches her, and the mediated action takes place.

Despite this long series of actions, recall that the finite mediated action being analyzed is the last tap on the laptop computer that had the effect of opening the document "An Expeditionary Language." Anyone familiar with the series of practices which results in creating an E-mail, attaching a document to it, and sending it, knows that a long series of actions is required of a social actor. One could, of course, regress the series of actions all the way back to the physical construction or electronic workings of the computer that originated the E-mail. The very fact that the E-mail reached the officer shows that she was participating in a number of discourses which facilitated that action, computer discourse and Air Force institutional discourse among them. Note that the officer could have elected to delete the message without open-

ing and reading either the E-mail message or the attachment.

The real-time, irreversible action that resulted in the officer's reading "An Expeditionary Language" included placing the computer-screen cursor on a box with the words "open" and tapping the mouse pad on the laptop computer at a specific *site of engagement*. As Scollon points out, this is but a moment whose "interpretation is located within the social practices which are linked in that unique moment."²² In other words, this discrete action is not the end result, but a result of the long series of events, which led to the document's creation and publication. The social practices that were linked in the moment the document "An Expeditionary Language" was opened included (1) the practice of connecting military members through E-mail contact lists structured according to the chain of command, (2) the practice of drafting and staffing a document through the hierarchy at Headquarters Air Force, and (3) the practice of operating a computer in a way so as to be able to read an E-mail and its electronic attachments.

The material objects or *mediational means* involved in the act of opening an E-mail may seem relatively discrete—the social actor, sitting in a chair in front of a computer, tapped some keys on the keyboard which produced an image with words in a language the reader could interpret. But, the *dialectical interaction* of the structures which resulted in an interpretable computer message involved an indeterminate parade of mediational means. The material objects involved in the process included multiple personal computers, staff summary sheets and point papers, a procedurally correct document folder, a pen for the chief to sign the final version of "An Expeditionary Language," a scanner to digitize the document, cables through which the digital image was passed to the computer that began the dissemination, and many other computers used to distribute the electronic message, and, finally, sufficiently equipped computers for recipients to read the E-mail and the chief's attachment. One could certainly look closer

and discern many additional mediational means that were used in this process.

It is obvious that for the officer to open the chief's message there was, as Scollon states, "a necessary intersection of social practices and mediational means which in themselves reproduce social groups, histories, and identities."²³ While it may be less obvious to those immersed in the process, the fact that the E-mail was opened by the AFIT-assigned officer is a testament to the extent to which the military's system of hierarchy is internalized in Air Force members. The repeated use of the Air Force hierarchy within the process above—in the document's creation, initial rejection, resurrection, submission, revision, and dissemination—was certainly an interdiscursive and intertextual reinforcement of the Air Force as a social group with a history and an identity. Both the words in the document and the system of processes with which it was created and disseminated reflect the ideology and structure of the institution.

The institution's culture is similarly apparent in the nexus of practices which influence the action of the officer opening the chief's E-mail attachment. Those acceptable and relevant social practices include the use of a computer; staff summary sheets and point papers; a disciplined chain-of-command information flow, coordination, and approval process; chain-of-command electronic dissemination; and so on.

Concluding Discussion

The process of creating "An Expeditionary Language" and the more finite action of striking the computer keys which caused the document to be seen were impacted at many points in the process. While Air Force-wide dissemination of the Chief's Sight Picture is assumed by virtue of the gravity of a document signed by the chief of staff of the Air Force, one will never know if it will be read by every airman. Although some recipients may hit the delete key without reading it, most recipients will feel obliged to read any E-mail signed out by the chief—having internalized the expecta-

tions of Air Force membership and the chain of command. Commanders, officers, enlisted members, and other social actors may each read the document and subscribe to it various levels of import and validity based upon their own knowledge, habits, and the social practices of their own unit. Readers bring their own interpretations to the document—a reality, according to interviews, intended by the document's originators, but perhaps not intended by the chief's staff. In the end, we can appreciate the breadth of the effect that "An Expeditionary Language" and its production will have on its various readers: transfer of knowledge, change of attitudes, and actions that could be taken. This, remember, is not a wartime document, produced in less than ideal conditions and with time sensitivity, a quickly wired net-

work of computer systems, and a potentially unreliable electrical generator.

Also remember that even the simplest computer-mediated actions in which a human engages—opening an E-mail—are complex and highly involved, even in a controlled and reliable environment. In the much more complex environment of the expeditionary battlefield, the communicator must take into consideration a much larger system of mediated actions, sites of engagement, mediational means, social practice and structure, and nexus of practice. By giving advance consideration to the minutest details, the "second-guessing, micro-management, stifling of initiatives, and distraction" that Alberts acknowledged as potential problems in the "information-rich battlefield" may be addressed and their effects minimized.²⁴ □

Notes

1. Gerry Gingrich, "Simplified Complexity: Thinking in the White Spaces," *Strategic Forum*, no. 139 (May 1998), on-line, Internet, 17 April 2003, available from <http://www.ndu.edu/inss/strforum/forum139.html>.

2. Martin C. Libicki, "Information Dominance," *Strategic Forum*, no. 132 (November 1997), on-line, Internet, 17 April 2003, available from <http://www.ndu.edu/inss/strforum/forum132.html>.

3. Arthur Huber et al., *The Virtual Combat Air Staff: The Promise of Information Technologies*, RAND Report MR-759-AF (Santa Monica, Calif.: RAND, 1996), on-line, Internet, 17 April 2003, available from <http://www.rand.org/publications/MR/MR759/>.

4. Ibid.

5. David S. Alberts, *The Unintended Consequences of Information Age Technologies* (Washington, D.C.: NDU Press, 1996), on-line, Internet, 17 April 2003, available from <http://www.ndu.edu/inss/books/books/uchome.html>.

6. M. M. Bakhtin, *The Dialogic Imagination*, ed. Michael Holquist and Vadim Liapunov, trans. Kenneth Brostrom (Austin: University of Texas Press, 1981), 276.

7. Ibid., 284.

8. Ibid., 282.

9. James V. Wertsch, "Mediated Action and the Study of Communication: The Lessons of L. S. Vygotsky and M. M. Bakhtin," *Communication Review* 1, no. 2 (1995): 134.

10. Ibid., 136.

11. Ibid., Vygotsky as cited by Wertsch, 136.

12. Norman Fairclough, *Discourse and Social Change* (Cambridge, England: Polity Press, 1992), 101.

13. Ibid., 103.

14. Alberts.

15. Libicki.

16. Lilie Chouliaraki and Norman Fairclough, *Discourse in Late Modernity: Rethinking Critical Discourse Analysis* (Edinburgh: Edinburgh University Press, 2000).

17. Ron Scollon, *Mediated Discourse: The Nexus of Practice* (New York: Routledge, 2001), 1.

18. Edwin Hutchins and Tove Klausen, "Distributed Cognition in an Airline Cockpit," in *Cognition and Communication at Work*, ed. Yrjö Engeström and David Middleton (Cambridge: Cambridge University Press, 1996), 23; see also on-line, Internet, 17 April 2003, available from http://www.cc.gatech.edu/classes/AY2003/cs6795_spring/cockpit-cog.pdf.

19. Ibid.

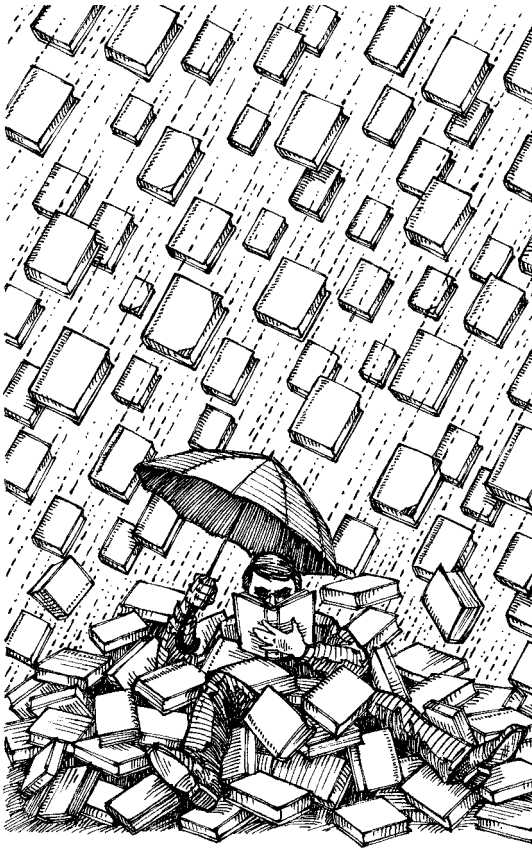
20. Ibid., 24–25.

21. Ronald Scollon, *Mediated Discourse as Social Interaction: A Study of News Discourse* (New York: Longman Group, 1998), 10; and idem, *Mediated Discourse: The Nexus of Practice*.

22. Scollon, *Mediated Discourse: The Nexus of Practice*, 4.

23. Ibid.

24. Alberts.



American Airpower Comes of Age: General Henry

H. “Hap” Arnold’s World War II Diaries, 2 vols., edited by Maj Gen John W. Huston, USAF, retired. Air University Press (<http://www.maxwell.af.mil/au/aul/aupress>), 131 West Shumacher Avenue, Maxwell AFB, Alabama 36112-6615, 2002, 592 pages (vol. 1), 458 pages (vol. 2), \$47.00 (vol. 1, softcover), \$39.00 (vol. 2, softcover).

The two volumes that cover Gen Henry H. “Hap” Arnold’s World War II experiences contain more than 1,000 pages! But don’t be afraid. Reading them is worth the effort. The editor, Maj Gen

John Huston, USAF, retired, served as a B-17 navigator with the 379th Bombardment Group in England during World War II. During his academic career, General Huston, who earned his PhD from the University of Pittsburgh, held such posts as chair of the Naval Academy’s History Department, chief of the Office of Air Force History, and distinguished visiting professor at the Air Force Academy. Clearly, General Huston is a true soldier-scholar.

His long-awaited edition of Arnold’s World War II diaries is monumental in scope and detailed in content. In fact, the work is really three different projects tied together. The diaries make up just under 300 pages of the entire project, certainly a smaller number than one might expect. Huston provides a biographical text that, by itself, could stand as a completely separate book. Finally, he has created a masterful set of chapter notes—just over 200 pages in a much smaller font than the one used for the text. These notes are so extensive that they are almost worth reading independently of the text. Overall, this collection is clearly a labor of love—a magnum opus for any writer/editor.

This reviewer stands in awe of the final product, which absolutely must be read by military—especially airpower—historians and anyone interested in the functions of the Army’s high command (and it was indeed the Army) during wartime. Any publication of important sections of the personal papers of this five-star general is valuable because, until now, none of Arnold’s papers have seen publication in any form. These diaries provide insight into the general’s day-to-day activities and the nature of his major concerns during these crucial trips abroad. As described by the editor, “In all cases, the aim has been to let Arnold’s notes speak for themselves as he recorded them in his diaries” (vol. 1, p. xi). That said—and as most reviewers are wont to do—I will now relate what the editor (perhaps more directly, the publisher) *should* have done with these diaries.

This collection could have been much easier to digest had one separate book included the biographical and operational-history segments. The diaries and Huston’s postscript to each would have made another excellent single volume, and assembling them in that fashion might have made more sense. Quite frankly, without the editor’s commen-

tary, the diaries are not very helpful—actually mundane for the most part. Because these three sections were woven together, however, I found myself reading them like a Latin translator—one finger in the notes and another on my spot in the text or in the diaries, jumping back and forth between lengthy pieces of text. After several hundred pages, this exercise became a tiresome and distracting annoyance. Thus, I think that Air University Press and the editor might have found a better solution. The first volume *should* have been limited to the edited diaries, smoothly linked together by Huston's analysis of their content. The lengthy biographical text *should* have constituted a second volume by itself—and it would have been a tremendous one. No doubt, the structural complexity of this set contributed to the lengthy publishing process.

I would be remiss if I failed to mention a tragic typographical error in one of the notes of the second volume (p. 58, note 93). Col Frederick W. Castle, the son of one of General Arnold's West Point classmates, was killed in combat on Christmas eve of 1944 and posthumously awarded the Medal of Honor, not the Medal of *Humor*—an inexcusable copyediting mistake.

Huston's text includes several high points. Of these, his examination of Arnold's career-long relationship with Ira Eaker and of the controversy over Eaker's removal as commander of Eighth Air Force during the war is enlightening. Throughout the volumes, Huston's account of Arnold's participation at the strategic level of command and the impact he had on the operational level of planning and execution of the war effort is, perhaps, his greatest achievement in the work. As for the few gems hidden in the text of the diaries, Huston admirably extracts their significance and describes it in his postscript. During his visit to England in September 1943, Arnold's realization that Eighth Air Force desperately needed long-range fighter escorts is one of the best examples of Huston's ability to separate the cream from the milk. Huston's insight, particularly into Arnold's command years (1938–45) fills a serious historical gap in previous works on the Army Air Forces commander.

The set includes two photo galleries, one in each volume. Unfortunately, the quality is uneven, and the photos are printed on regular paper rather than glossy stock (a choice probably driven by cost). The set might have been better balanced had the publisher consolidated all images into the second volume as one large photo essay.

Despite the shortcomings of the physical presentation, the content of these volumes remains priceless—well worth the finger stretching needed to meld the significance of the diaries, text, and notes into a comprehensible experience. So what are you waiting for? Crack your knuckles and dive in. You'll be better for the effort.

Dik Alan Daso
Washington, D.C.

On War and Leadership: The Words of Combat Commanders from Frederick the Great to Norman Schwarzkopf by Owen Connelly. Princeton University Press (<http://www.pupress.princeton.edu>), 41 William Street, Princeton, New Jersey 08540-5237, 2002, 368 pages, \$29.95 (hardcover).

Given the numerous published works on leadership in general and leadership in combat in particular, I initially thought that Dr. Connelly's book would provide little additional advice on combat leadership. Reading the book confirmed some of my initial thoughts; that is, it does not really provide any great new revelations about leadership in combat. However, the book still has significant value because it confirms the most important aspects of leadership in combat from 20 of the world's most accomplished commanders—men who actually led troops at the operational and tactical levels of combat.

Dr. Connelly is well qualified to produce this book. He is the McKissick Dial Professor of History at the University of South Carolina, an ex-US Army Ranger captain, and the author of numerous books on the French Revolution and Napoléon. Clearly, he brings a great deal of authority and experience to his task.

The author draws most of the book's content from the actual writings of past commanders or from interviews with the ones who are still alive. Most importantly, these men were not "armchair" commanders, observing their soldiers in combat "from afar," but were there themselves in the heat of battle. As a result, their comments on combat leadership are more meaningful and authoritative—these commanders literally speak from their experiences.

Despite the diversity of background (European, American, and Asian), time span (1760s to 1990s), and specific wars in which these commanders

fought (those of the 1700s, American Civil War, World Wars I and II, Vietnam War, Gulf War, and Falklands War), these individuals developed relatively similar thoughts on combat leadership. They all emphasize the following as characteristics of good combat leadership: unity of command (one leader in charge), leadership by example, taking care of the troops (providing proper and adequate food and medical care, as well as visiting troops in the field), using initiative and improvisation, having personal knowledge of prospective battlefields, and making bold decisions.

The maxims about combat leadership presented in *On War and Leadership* are as current today as when they were first made. They apply not only to combat leaders, but also to corporate leaders. Dr. Connelly's book is a welcome addition to the existing literature on leadership.

Lt Col Robert B. Kane, USAF
Maxwell AFB, Alabama

P-40 Warhawk Aces of the MTO, Osprey Aircraft of the Aces Series no. 43, by Carl Molesworth. Osprey Publishing (<http://www.ospreypublishing.com/index.shtml>), Elms Court, Chapel Way, Botley, Oxford OX2 9LP, United Kingdom, 2002, 96 pages, \$18.95.

Osprey Publishing has done it again. Adding to perhaps the best series of military aviation books to hit the streets in recent years, Osprey has produced yet another excellent study that details aces and aircraft from a specific area. Carl Molesworth, an expert on the P-40 and its pilots, has written several books on this subject and is currently at work on his third book for Osprey—it will cover P-40 pilots in the Pacific; his first Osprey book dealt with P-40 aces of the China-Burma-India theater. *P-40 Warhawk Aces* is an excellent volume although a more appropriate title may have been *American P-40 Warhawk Aces*. Several Desert Air Force (DAF) fighter squadrons (South African, Australian, Canadian, and British) had success using the P-40 in the Mediterranean theater of operations (MTO) before the Americans arrived, but this book focuses on the American pilots of the 33d, 57th, 79th, 324th, and 325th Fighter Groups, the earliest of which did not arrive in-theater until late 1942.

The successes of the P-47s and P-51s that came into service later in the war tend to overshadow the story of the P-40. Most people do not realize that

when the first operational American units arrived in North Africa in September 1942, the pilots of Ninth Air Force and Twelfth Air Force entered combat against German and Italian units with the only aircraft available at the time—the venerable P-40. In their battles with Axis forces, American P-40 pilots claimed 592 aerial victories, including the “Palm Sunday Massacre,” in which no fewer than 76 Luftwaffe aircraft were shot down in a 20-minute period over the Gulf of Tunis. American pilots, new to combat, held their own against enemy forces. I found it especially interesting to read accounts of American pilots shooting down Stukas, an honor usually reserved for pilots of the DAF or the Royal Air Force during the Battle of Britain.

Like the other books in this series, *P-40 Warhawk Aces* is laden with superb pictures and color aircraft profiles. Jim Laurier's 40 color plates of P-40s used in the MTO add a detailed dimension to the book, as do the excellent scale drawings by Mark Styling. However, maps of the area and landing grounds emphasized by Molesworth would have been helpful. More important than the visual aesthetics, I found Molesworth's writing to be clear, informative, and easy to read.

Given the quality of the research, pictures, color plates, scale drawings, and pilot accounts, readers cannot go wrong by including *P-40 Warhawk Aces of the MTO* in their collection. I look forward to the author's next volume and hope he is planning to write about P-40 aces of the DAF from 1941 to 1942.

Lt Col Robert Tate, USAFR
Maxwell AFB, Alabama

Billy Mitchell by James J. Cooke. Lynne Rienner Publishers, Inc. (<http://www.rienner.com>), 1800 30th Street, Suite 314, Boulder, Colorado 80301, 2002, 305 pages, \$49.95.

Billy Mitchell has always been a controversial figure in American military history. On the one hand, soldiers and sailors usually see him as an arrogant, disloyal, and self-promoting blowhard who played loose with the facts in order to push his own agenda. Airmen, on the other hand, generally tend to see him as a courageous, farsighted, and dedicated patriot persistently thwarted by conservative soldiers and sailors who protected their turf. These conflicting images, common in the 1920s, remain popular today. James J. Cooke, a professor

emeritus at the University of Mississippi who has written extensively on US participation in World War I, both from a ground and air point of view, attempts to present a more balanced portrait of Mitchell. He is only partially successful.

We have a number of Mitchell biographies, but Cooke found material that the others had missed—specifically, family papers and diaries located in Milwaukee, Mitchell's birthplace. These documents illuminate a dark side of the airman usually not seen. Mitchell's father, a powerful Democratic senator, had gone through a particularly messy divorce in his mid 30s. He subsequently remarried but had almost nothing to do with his son from that first marriage. The senator also had little time for the children of his second marriage, including Billy, who, says Cooke, was permanently scarred because of his father's neglect. Ominously, Mitchell went through a similar midlife crisis, divorced his wife, and essentially abandoned his three children from that marriage—they didn't even bother to show up for his funeral in 1936.

Cooke reveals that Mitchell had a drinking problem upon returning from France in 1919. For the next two years, when his marriage was falling apart, his behavior became increasingly erratic, and his military performance suffered noticeably. In 1921 the Army apparently ordered Mitchell to Walter Reed Hospital for a psychological examination. (However, Cooke's endnote states that this order was written in January 1928, long after Mitchell had retired; obviously, something is wrong with this account.) Instead, the Air Service shuffled him off to Europe on an inspection trip, giving him an opportunity to rest and get his life back in order.

Apparently, Mitchell frequently found himself in debt and periodically wrote his mother, asking for money to buy uniforms, guns, and horses. Fortunately for him, his second wife was extremely wealthy; she bought their large country home outside Washington, D.C., and her father paid Billy's considerable legal bills during his court-martial.

Cooke looks closely at the court-martial, portraying Mitchell's performance as dismal. He deliberately provoked the trial, apparently seeing it as a forum from which to lambaste his old foes in the Army and Navy hierarchy. According to Cooke, he was lackadaisical throughout the trial, either assuming he would not be convicted or unconcerned if he were. The prosecutor uncovered Mitchell's surprising lack of detailed knowledge regarding naval operations—and even the Air Service. As a consequence, Mitchell not only was found

guilty, but also—and far worse—the news media found him boring. A “show trial” gains one little support or sympathy if journalists don't bother to cover it.

Cooke's account, however, fails to achieve the balance he promises. Although acknowledging that Mitchell did good work in World War I (although even that effort was stained by his petulance and bravado), the author suggests that he did little else of value during the rest of his career. This interpretation is too stark. Mitchell thought long and deeply about the employment of aircraft in war, but one finds no discussion of those ideas in the book. Instead, Cooke lumps Mitchell's views into two groups—the obsolescence of battleships and the need for a separate air force. Mitchell's views were more nuanced than that, but Cooke either ignores or gives short shrift to the vast majority of his writings. For example, one finds no reference to Mitchell's important and lengthy “Notes on the Multi-Motored Bombardment Group,” written in 1922.

Nonetheless, Cooke admits that much of what Mitchell advocated and predicted was accurate and valid: the obsolescence of the battleship, the vulnerability of the Hawaiian Islands to air attack, the growing importance of strategic bombing, and the need for a separate air force. However, the author argues that Mitchell's methods hindered the achievement of his goals, which were unobtainable in the mid-1920s, when Mitchell pushed them. Few people would argue with the former portion of that statement—as even his supporter Hugh Trenchard put it, “Mitchell tried to convert his opponents by killing them first.” The second point, however, raises the question of what could have been attained had the air arm enjoyed proper funding. From 1921 to 1926, when Mitchell attacked his superiors for ignoring airpower, the Air Service received barely 5 percent of the Army's budget—small wonder the Air Service had so little capability at the time of Mitchell's court-martial (precisely his point).

Overall, *Billy Mitchell* is a very well written book with some sobering insights into this controversial man's personality and character. Readers who want an insightful view of his ideas on airpower employment, however, should turn to Alfred Hurley's *Billy Mitchell: Crusader for Air Power*, the standard work on that subject.

Col Phillip S. Meilinger, USAF, Retired
McLean, Virginia

American Military Aviation: The Indispensable Arm by Charles J. Gross. Texas A&M University Press (<http://www.tamu.edu/upress>), John H. Lindsey Building, Lewis Street, 4354 TAMU, College Station, Texas 77843-4354, 2002, 382 pages, \$35.00 (hardcover).

Dr. Charles Gross, a retired Air Force officer with active, Reserve, and Guard experience, has surveyed a century of the history of American military airpower. His chronological narrative advances five broad theses. First, he makes the un controversial assertion that airpower "has become an indispensable element" of American power. His next two theses present the contrasting ideas that leaders have consistently overestimated airpower's effectiveness yet have disparaged airlift and air refueling as "the neglected stepchildren of airpower" (p. 8). His final two simply contend that "air power has transformed warfare by extending the range and destructiveness of combat operations" and that airpower "has had a significant impact on American culture and economy" (pp. 8-9). Consistent with his wide-ranging theses, the author takes a broad perspective of airpower. He discusses aviation's growing importance in each US military service and addresses nearly all airpower roles. Embedding airpower's economic and cultural aspects deeply into his narrative, he even addresses space power briefly. Gross does not explicitly emphasize a joint-airpower perspective but does highlight contributions of the Reserve and Guard components—especially since the Vietnam War. Since Dr. Gross currently serves as chief of the Air National Guard's history program, his generous attention to airpower's total-force aspects is understandable.

No airpower zealot, the author presents generally evenhanded historical interpretations, critiquing Air Force icons such as Billy Mitchell and remaining skeptical of the Combined Bomber Offensive: "Tactical air power . . . not strategic bombers, made the most significant contribution to Allied victory" (p. 119). For the most part, he praises recent, dramatic advances in military aviation technology and in leaders' attention to airlift and air refueling, yet offers cautious appraisals of airpower's performance during Operation Desert Storm and the recent Balkans campaigns.

Neither a new historical interpretation nor a reference work, *American Military Aviation* resists categorization. Because it relies almost entirely on secondary sources, readers will find few original insights—but the author adds value by assembling information into a fast-paced narrative based on

his five theses. Gross does a good job of summarizing key airpower trends yet assumes that readers are already acquainted with the history he describes. The book has an encyclopedic tone because it covers diverse airpower topics and contains extensive endnotes and bibliographic references. However, the lack of an index hinders its utility as a reference source. Overall, *American Military Aviation* will prove most useful to readers who, though already familiar with the history of American military airpower, seek a balanced, sweeping overview of the topic.

Lt Col Paul D. Berg, PhD, USAF
Maxwell AFB, Alabama

A Dance with Death: Soviet Airwomen in World War II by Anne Noggle. Texas A&M University Press (<http://www.tamu.edu/upress>), John H. Lindsey Building, Lewis Street, 4354 TAMU, College Station, Texas 77843, 2002, 336 pages, \$24.95 (softcover).

This oral history, complemented by a series of photographic portraits the author made of her interviewees, was extremely well received when it first appeared in 1994. The fact that Texas A&M University Press has reissued the book in paperback suggests how valuable it remains. Anne Noggle, a former member of the Women Airforce Service Pilots and adjunct professor of art, journeyed in the early 1990s to Russia to interview over 70 women who served in the Soviet air force. The accounts she gathered and edited constitute excellent primary sources and, with more recent scholarship (such as that of Reina Pennington), not only shed light on gender relations in Soviet society, but also dispel many myths propagated in earlier publications about female pilots in World War II.

Although each woman's account is unique, all of them raise similar themes, from duty to challenge, loneliness, courage, and pride. Most stress the role of Marina Raskova, the woman who formed the first female regiment and inspired them to join the service. Raskova played an essential role in convincing Soviet military authorities to allow women into combat. Nevertheless, the accounts do not make clear whether the fading resistance of men resulted from war conditions or an acceptance of Soviet ideologies of equality. In any case, the women who joined faced conditions worse than male trainees did in any of the combat forces of World War II. Living conditions in the women's

units—often formed in under three months instead of the standard two years—were extremely difficult (flight clothing was often male-sized, and hygiene and building heat were nonexistent). The women also had to contend with substandard flying equipment and were sent out several times a night without escort on missions (in the case of one regiment, without parachutes until 1944). The somewhat repetitive comments of the interviewees make clear that they did not resent these conditions but in fact discovered a new identity as patriotic defenders against the Nazi threat (they also hated the German-given nickname of “night witches”). As ordinary women thrown into the fire, they developed a strong sorority amongst themselves, and those who survived learned to devise and share tactics as they gained experience, some graduating from navigator to pilot. Several of them note that they were never so respected and admired as they were during the conflict.

These testimonies, however, do not provide an analysis of their narrators’ experience. Although supported by an excellent introduction by Christine White, who clearly frames the role of the women’s squadrons (organized into three regiments) in the Soviet war effort, the collection leaves the reader wishing for more information to better understand this unique female experience in combat. The book occasionally mentions fraternization with male soldiers, but whether women sought or accepted these friendships as a matter of fact remains unclear. Similarly, 30 of the women interviewed received their nation’s highest award, that of Hero(ine) of the Soviet Union. They were all highly deserving, but Noggle does not specify the criteria for the award. Furthermore, one finds a few mistakes in the transcriptions of some nouns (e.g., *Focke Wolf* instead of *Focke Wulf* and *Oerlekon* instead of *Oerlikon*). However, these are minor quibbles. *A Dance with Death* is sure to remain an excellent starting point for historians, an entertaining volume for general readers, and (especially in paperback) a good source for instructors who wish to assign reading on World War II, Soviet Russia, or women in combat.

Guillaume de Syon
Reading, Pennsylvania

Air Power History: Turning Points from Kitty Hawk to Kosovo edited by Sebastian Cox and Peter Gray. Frank Cass Publishers (<http://www.frankcass.com>), 5824 NE Hassalo Street, Port-

land, Oregon 97213-3644, 2002, 362 pages, \$64.50 (hardcover), \$26.50 (softcover).

By all reports, the conference sponsored by the Royal Air Force (RAF) Air Historical Branch/RAF director of defense studies in July 2001 was a smashing success. Some of the most prominent scholars in airpower history gathered at the RAF’s marvelous museum at Hendon, a most appropriate setting, to deliver some stimulating essays on their discipline. Afterwards, they participated in a Battle of Britain staff ride, an event reported to have been splendid in every regard. It is fitting, then, that the proceedings of the conference should appear in such fine shape and so soon. The work reflects the judgment and efficiency of the editors, Sebastian Cox and Peter Gray—the former the head of the Air Historical Branch and the latter the director of defense studies. Both editors are widely published in airpower topics, chiefly European, and are clearly authorities on the subject.

The editing is clean—hardly an error occurs anywhere in the text, a considerable achievement in such an anthology. Some of the chapters are well written and informative, although a few are unsurprising and fewer still engage in some airmen’s chest thumping. As always, the parts of the work vary in quality, and the overall theme is difficult to maintain. Most of the essays focus on airpower in Europe, but some address air wars in other arenas. Ian MacFarling, of the Australian air force, has a chapter on World War II in the Pacific, and the USAF historian deals with that topic in passing in his essay of a more general character. The collection also includes two very fine chapters on airpower and maritime wars, one dealing with World War I by Christina Goulter of the Royal Naval Air Service and the other with World War II by John Buckley. American experts on naval aviation are conspicuous by their absence. John Ferris’s wonderful chapter on the development of the air defense of Great Britain makes clear that the victory was due to much more than the fortunate invention of radar in 1935 and the ascendancy of Air Marshal Hugh Dowding. To be sure, those events were important, but the whole system had been building ever since World War I, and other parts of it were vital too. Ferris concludes that “the Battle of Britain was a walkover, one of the most one-sided victories in military history” (p. 46). At the conference, the USAF historian spoke of the same battle thusly: “The Battle of Britain was, like Waterloo, a ‘close-run thing’; indeed, it was perhaps even

closer than might first be apparent" (p. 97). Take your pick.

Part of the problem for the generalist reader of *Air and Space Power Journal* is that the essays are in interpretations which sometimes contradict each other. That is fine and even stimulating for the specialist in airpower history, but it can impede progress for the generalist. Too, the essays focus very much on the lethal dimensions of airpower. Furthermore, the book includes only one chapter on the logistics of the RAF in the early years, and that is disappointing; very little material addresses research and development, although some contributors touch upon technology here and there; command and control issues receive only indirect attention; despite its importance to airpower, intelligence gets just a peripheral look; and readers enjoy a splendid chapter by John Olson on the Gulf War but nothing on the Korean War. The point is that, as fine as *Air Power History* is, it mainly interests the specialist, who already has a firm grasp of the details of the discipline. The generalist USAF officer would be better served by broader works such as Lee Kennett's *The First Air War, 1914–1918*; R. J. Overy's *The Air War, 1939–1945*; and Benjamin S. Lambeth's *The Transformation of American Air Power*. Together, these three would yield a good summary of the history of air war. *Air Power History* is valuable to teachers of the subject, but perhaps a better title would have been *Reflections on the History of Air Power*.

Dr. David R. Mets
Maxwell AFB, Alabama

The Warriors: Reflections of a Fighter Pilot, Test Pilot, and Veteran of the Air Wars over Vietnam
by Robert E. Ross. Yucca Tree Press (<http://yuccatree.com>), Barbed Wire Publishing, 270 Avenida de Mesilla, Las Cruces, New Mexico 88005, 2002, 304 pages, \$25.00 (hardcover).

As new generations of airmen filter into the ranks, the American experience in Southeast Asia slowly dwindles from the consciousness of the active duty force. Veterans who saw combat duty during the conflict in Vietnam are fewer in number, and as they retire, their ability to pass on lessons learned to younger troops diminishes correspondingly. The fear is that the passion and emotion that come from stories of their firsthand experiences will lose something when translated into memoirs

and history books. Enter retired colonel Bob Ross. In a book he waited his whole career to write, Ross masterfully describes the emotional highs and lows, likes and dislikes, and triumphs and defeats of his Air Force career.

In this account of life as a test pilot, fighter pilot, and combat commander, Ross tells his Air Force story with wit, candor, and refreshing irreverence. He brings a no-nonsense perspective to a culture he describes as beset with needless paperwork, career bureaucrats, and hangers-on at all levels of the chain of command. Both the bomber community, champions of "stan-evals," and a class of pilots he describes with the phonetic spellings of the letters *W* and *D* draw Ross's ire.

The author begins by describing his inadvertent entry into the flying community after studying engineering at the University of California at Berkeley. After joining the Air Force with the expectation of using his education and experience as a civil engineer, Ross was startled by his assignment to a position in communications and electronics. Hoping to correct the oversight, he was swiftly informed by a well-schooled personnel officer that "the Air Force doesn't make mistakes." If he did not like it, he could sign up for pilot training. So began the distinguished flying career of Robert Ross.

Ross proceeds to detail his early flying days, selection and tenure as a test pilot, and first tour in Vietnam, seamlessly weaving personal stories with descriptions of missions flown and experiences with leadership styles, both good and bad. Recalling his first tour, he reveals the interplay of fear of the unknown with a fighter-pilot-sized dose of hubris. Interspersing the recollections of tense missions flown are amusing vignettes of the downtime diversions of his fellow pilots. Ross also describes returning from Vietnam to study at an American college campus (the University of Illinois in Champagne-Urbana) during the uproar of the antiwar movement. Memories of this experience are insightful and characteristically frank ("Did I waste a year dropping napalm on the wrong folks?").

Ross concludes by describing his second tour in Vietnam in a self-deprecating manner that vastly understates his heroism and valor. (Indeed, he is the kind of man whom readers would want to meet one day to hear these same stories in person.) After 438 combat missions and a total of two more takeoffs in his F-4 than he amassed landings, he came home. I enthusiastically recommend *The Warriors* to students of Vietnam, enthusiasts of Air Force history and culture, and any active duty

member looking for a good book about actual airmen in combat.

Capt Jay Hemphill, USAF
Edwards AFB, California

Knights of the Air: Canadian Fighter Pilots in the First World War by David L. Bashow. McArthur & Company Publishing, Limited (<http://www.mcarthur-co.com/books.html>), 322 King Street West, Suite 402, Toronto, Ontario M5J 1J2, 2001, 210 pages, \$50.00 (hardcover).

Dave Bashow, assistant professor of military history at the Royal Military College of Canada, fills a void with his book *Knights of the Air* by telling a story that few American pilots are aware of: the significant contribution of Canadian fighter pilots to the history of airpower. He documents the fact that at least 171 of the 863 known British Empire aces of World War I were Canadian, and of the 26 with 30 or more kills, 10 were Canadian—including Billy Bishop, Canada's leading ace, with 72 kills and Raymond Collishaw, who tied with Edward Mannock at 61.

Of interest to the American military historian, most of these kills were made long before the United States deployed any military aircraft to Europe. British Commonwealth aviators, along with the French, fought the Germans in the skies over France for two full years before American heroes like Eddie Rickenbacker took to the air in combat. The author carefully records how young Canadians paid for their own training (the substantial sum of \$400), mostly in the United States, so they could enter British flying squadrons.

Early on, Canadian fighter pilots logged a number of (mostly) firsts in air combat. Redford Mulock was the first to intercept a German airship over England; the first to spot for artillery at night, using flares; and the second to bomb a submarine. Mulock, flying with the Royal Naval Air Service, was the first Canadian ace of World War I. Capt Andrew McKeever scored all of his 31 confirmed kills flying the two-seat F2a, when pilots made most of their kills in single-seat aircraft. British Empire fighter pilots moved from single aircraft to formation tactics; specifically, they invented the "finger four" formation, known to US airmen down through the next 60 years or so as "fluid four." On 30 April 1916, Capt William Milne led the first finger-four

flight, and a second Canadian, Lt C. E. Rogers, was a wingman in the flight.

No book on Canadian fighter pilots would be complete without a detailed history of Billy Bishop, a Canadian and British Empire hero of World War I. Bashow masterfully relates Bishop's colorful history, which includes some of his not-so-well-known behavior. He also documents the last moments of Baron Manfred von Richthofen, whose last engagement involved an attack on a Canadian (Lt Wilfred May) while von Richthofen, in turn, was under attack by Lt Roy Brown, May's former schoolmate and current squadron mate. Evidently, von Richthofen was shot down by Sgt C. B. Popkin of the Australian army; however, Bashow puts a fighter pilot's perspective on his death by saying that the German ace violated his own rules by chasing Lieutenant May.

Knights of the Air is about more than the exploits of individual Canadian airmen. Bashow uniquely covers the Somme offensive from the perspective of the aviator and relates air fighting to the important ground battles. His research is thorough and complete, even to the point of documenting the incomplete record keeping of German flying squadrons. He also discusses how this deficiency created some permanent holes in the history of air warfare in World War I.

Canadian fighter pilots made a substantial contribution during the war. Bashow's record of the exploits of these daring, adventurous young men complements *All the Fine Young Eagles* (Toronto: Stoddart Publishing, 1996), his book on the history of Canadian fighter pilots in World War II. Both books are good reads for any airman. Clearly, the legacy of Canada's first fighter pilots is still alive in the writings of Dave Bashow.

Lt Col Martin A. Noel Jr., USAF, Retired
Las Vegas, Nevada

Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945 by Tami Davis Biddle. Princeton University Press (<http://www.pupress.princeton.edu>), 41 William Street, Princeton, New Jersey 08540-5237, 2002, 408 pages, \$45.00 (hardcover).

Tami Biddle has written an important and innovative intellectual history of American and British strategic bombing in the age of total war

that should appeal to both academic historians and military professionals. The author discusses how strategies of airpower originate, develop, and are later executed, as well as why gaps occur between the genesis of an idea/strategy and the actual reality of implementing it. She also wrestles with the problem of why militaries fail to adapt to new and differing realities.

The book's central idea entails comparing the development of ideas in the United States and Great Britain regarding long-range bombing, raising such key questions as why the British and Americans were interested in strategic bombing in the first place. Biddle also considers why American and British expectations were at odds with reality and how perceptions and interpretations shaped plans, policies, and campaigns. In many ways, her book is about the assumptions of airpower. In illuminating these various questions, she casts a wide intellectual net, using unique and original approaches such as cognitive psychology and the role of popular culture.

Early on, Biddle emphasizes the importance of World War I and its long-lasting influence upon both the interwar period (1919–39) and World War II. In many ways, her discussion of the Great War highlights the role of personalities—Sir Hugh “Boom” Trenchard, for example, was one figure who dominated the scene. She takes a more critical view of Trenchard than have previous authors, thus providing an important corrective to early biographical works on him. Trenchard was investigated by the Army for his overtaxing pilot training and very high casualty rate. In fact, one could argue that Trenchard fought a war of attrition in the air. According to Biddle, he commanded more by instinct than by systematic analysis and ignored recommendations regarding targeting. By analyzing British bomb damage assessment (BDA) at the end of the war, she demonstrates that Trenchard heavily influenced BDA to justify his conduct of the war. This report and Trenchard himself, both of which provoked discussion about the moral effects of heavy bombing, shaped the development and force structure of the Royal Air Force (RAF), which organized itself around strategic bombing during the interwar years. Furthermore, Trenchard's overemphasis on the moral effects of strategic bombing leads Biddle to blame him for Britain's appeasement of Nazi Germany in the late 1930s.

In an interesting discussion of professional military education (PME) in the RAF, Biddle argues that the service developed dogmatic doctrine in the interwar years partially because the RAF staff

college's curriculum and teaching were lackluster and highly conventional. Faculty and staff seemed to consider it more important that students feel good about themselves and be air-offensive-minded rather than think out of the box or perform well in class. Thus, the school emphasized riding and sports to the detriment of analytical study. Consequently, the RAF rearmed itself in the 1930s without understanding the strategic vision of the Luftwaffe; it also ignored the lessons of the wars that took place during this period in China and Spain. Indeed, the RAF's disinclination to alter its policies in light of a changing international environment could prove to be a cautionary tale for current American PME.

In the third chapter, Biddle demonstrates that the dependent status of the Army Air Forces (AAF) did not hamper its intellectual development. However, she fails to discuss either the popular cultural context of the development of US airpower or the relationship between the development of theory and technology. Biddle does illustrate here that the American debate over strategic bombing was not a high-profile political issue and shows that some American analysis done at the end of the Great War was either lost or forgotten during the interwar years. She also addresses some problems, such as an overemphasis on strategic bombing and horseback riding, that existed at the Air Corps Tactical School (ACTS) at Maxwell Field, Alabama, in the 1930s. Nevertheless, she portrays ACTS as a much more intellectually vibrant staff college than its British counterpart. Like the British, however, the Americans failed to draw any lessons from interwar conflicts, and, like the previous chapter, this one tries to explain why the Americans and British continued to believe for so long that bombers did not need escorts.

Biddle's discussion of World War II reveals the timidity of RAF Bomber Command and its lack of technological ability to engage in strategic bombing—a situation quite contrary to Trenchard's earlier vision of airpower. Emerging here is another key personality—Arthur “Bomber” Harris, a product of Trenchard's RAF who believed that Bomber Command could win the war entirely on its own. Not very “joint” and narrower in his approach than Arthur Tedder (another RAF leader), Harris had a difficult time working with the Americans and his own navy. According to Biddle, Harris said Bomber Command's job was to destroy cities and kill workers and that it should not hide behind the excuse of collateral damage, a statement that made Winston Churchill very nervous about bad publicity. Al-

though the British public supported the destruction of German cities, Harris stands as a villain in Biddle's work.

Dr. Biddle has some interesting and controversial things to say about the AAF in World War II. For example, she shows that in the winter of 1943–44, the Combined Bomber Offensive almost failed. The use of long-range fighter escorts saved not only the AAF, but also the RAF. Before the outbreak of the war, ACTS had developed high-altitude daylight precision bombing (HADPB), which Harris rejected in favor of area bombing. The United States continued to follow this strategy despite the absence of a viable precision technology because it believed in this theory of air war. Biddle argues that concerns about a just war or morality did not motivate HADPB. In fact, one of her most controversial arguments is that the United States was interested in area bombing long before the air campaign over Japan commenced in the winter of 1945 and that the firebombing of that country was premeditated, having its origins in 1943. Further, Biddle declares that the adoption of area bombing in Europe and, later, Japan upended ACTS theory. Domestic US popular culture emotionally prepared the American public for the firebombing of Japan, after which the postwar US Strategic Bombing Survey continued to argue for precision over area bombing.

Only a few quibbles come to mind regarding this otherwise excellent, thought-provoking book. For instance, Biddle is uneven in her discussion of technology, and key visual aids such as maps would have been helpful. Also, the discussion of the historiography of strategic bombing should have occurred in the introduction rather than at the end of the work, where the author briefly examines the conflicts in Korea and Vietnam—both of which sections are relatively weak and underdeveloped.

Rhetoric and Reality in Air Warfare—which will stimulate thinking about airpower and would be appropriate for inclusion in courses in PME—is a cautionary tale for the Air Force because it demonstrates that ideas and history really do matter. Biddle shows that understanding the history of strategic bombing is an intellectual process. Many of the key problems studied by theorists and practitioners of strategic bombing in the age of total war, such as the relationship between bombing and enemy capitulation, still haunt airpower theorists in the twenty-first century. In fact, in her sweeping and controversial conclusion, Biddle argues that ideas about strategic bombing have changed little since the age of technology despite dramatic technolog-

ical improvements. Whether or not one agrees with the author, her book clearly and coherently illustrates that the study of the *history* of strategic bombing remains crucial to the development of airpower in this age of the transformation of military power.

Dr. William Dean

*Air Command and Staff College
Maxwell AFB, Alabama*

Arms Control: Cooperative Security in a Changing Environment edited by Jeffrey A. Larsen. Lynne Rienner Publishers, Inc. (<http://www.rienner.com>), 1800 30th Street, Suite 314, Boulder, Colorado 80301, 2002, 413 pages, \$65.00 (hardcover), \$24.50 (softcover).

In the years since the dissolution of the former Soviet Union, a diverse literature has emerged to explore the manifold implications of this momentous event. This collection of essays compiled by Jeffrey Larsen addresses the arms-control dimension of the post-Cold War era, specifically the search for cooperative security in a global environment that bears marked differences from the period before the Soviet hammer and sickle was lowered for the last time. This anthology, an update of an earlier book—*Arms Control toward the Twenty-First Century* (1996)—draws upon the insights of several authors who contributed to the original volume, in addition to those of other scholars who bring considerable expertise to bear on this topic. The new book is divided topically into four sections: arms-control concepts and history, weapons-related issues, regional perspectives, and new items on the arms-control agenda.

The contextual setting of arms control is the theme of the book's first section. Michael Wheeler's historical review of arms control is a useful survey for readers new to the literature, as well as a reminder that post-Cold War arms control will continue to be a pervasive part of international relations, although it may take different forms from its antecedents. Schuyler Foerster's essay points out that these new forms will be a function, at least in part, of trends such as the global spread of technology, emergence of new states, and proliferation of state and nonstate actors. Departing from this structural view, Jennifer Sims provides insights into the influence of domestic-level variables on arms control. Using the United States as a case study, she illus-

trates how strategic culture; political and legal institutions; economic and technological factors; and elites, interest groups, and public opinion will continue to shape US arms-control policy, but in new ways. Clearly, a more complex, dynamic international setting may render traditional verification of treaty-limited activities and items more difficult. Accordingly, Joseph Pilat suggests a greater use of openness, transparency, and confidence-building measures to make arms control more cooperative and less competitive.

Preventing the spread of arms is the focus of the second section of the book. Forrest Waller argues persuasively that a transformation of strategic nuclear arms control will enable this enterprise to play a continuing role in US-Russian relations and elsewhere to prevent the spread of nuclear weapons. Guy Roberts makes a strong case to sustain the Cooperative Threat Reduction (CTR) program with Russia to dispose of excess fissile materials and provide alternative employment for nuclear scientists and engineers. Despite its slow pace and shortfalls, CTR serves US interests by keeping nuclear materials away from terrorists and rogue states. The broader proliferation problem is addressed in three essays by Leonard Spector, Marie Isabelle Chevrier, and Jo Husbands. Spector's examination of diplomatic initiatives to curb nuclear proliferation reveals that these measures have generally been successful and, when balanced with military preparedness, could improve opportunities to deter or defeat nuclear threats. Although the objectives of nuclear arms control overlap in some ways with those of chemical and biological arms control, in other ways they are different due to the nature of the weapons. These differences make chemical and biological arms control more difficult and, in the case of biological weapons, more urgent. Yet, as Chevrier points out, there have been problems implementing the Chemical Weapons Convention and strengthening the Biological and Toxin Weapons Convention—problems that may have less to do with technical and legal issues than with political differences among decision makers who perceive divergent paths to national security. Despite the numerous obstacles that hamper the achievement of nuclear, chemical, and biological arms control, Husbands's discussion of attempts to constrain the global proliferation of conventional arms illuminates an oft neglected yet equally important challenge.

The third section of the book addresses regional perspectives on past, present, and future arms control. Aside from Jeffrey McCausland's essay on progress in European arms control, the

other authors present a mixed picture of achievements against a background of regional factors that could militate against future prospects. Glen Segell's discussion of the Middle East's historical record suggests meager gains unless a constructive dialogue and general agreement occur on norms and forms of behavior conducive to stability. Although the disarmament of Iraq might resolve some barriers to progress, Iran's nuclear program, coupled with long-standing regional political and religious disputes, may lead to less—not more—cooperation. Christopher Carr's essay on Africa reveals that traditional and nontraditional approaches have had some success controlling the spread of small arms, but until African societies tire of internecine conflict, efforts to curb these weapons will continue to resemble more a patchwork of measures than formal arms control. Similarly, Peter Lavoy observes that until India and Pakistan embrace restraint and reciprocity, South Asia will remain a crisis-prone region where nuclear war remains a possibility. Brad Roberts notes that East Asia has reached a fork in the road. Although arms-control agreements have played an important role in that region, future events could unravel past success.

Future challenges for arms control are the focus of the fourth section of the book. Kerry Kartchner concludes from his examination of the offense-defense relationship that, although the United States will not abandon deterrence, it will jettison its Cold War definition of deterrence in order to answer questions about *who* should be deterred, *what* the United States seeks to deter, and *how* US forces and diplomacy should be developed for new forms of deterrence. Patricia McFate's essay explores the tension between reconciling the unilateral pursuit of US goals in space and adhering to the international pacts the United States has signed. Current space arms-control accords are the product of a different era, yet the United States has interests that may conflict with these agreements. The United States has reached a juncture where its choices could affect the international community for many years. Not only has a new age presented new arms-control challenges in traditional environments, such as outer space, this new age poses challenges in new realms, such as cyberspace. Gregory Rattray assesses growing US dependence on computer networks, particularly for military operations, and the rise in cyber attacks. Undertaking "cyber arms control" will confront the United States with legal, political, technical, and economic factors never before encountered in traditional arms control. Changes in the structure of the international

system will also influence future forms of arms control. John Nagl offers that the emergence of a two-tiered world, a concept drawn from Donald Snow, composed of democratic, liberal economies and nondemocratic, nonmarket economies, as well as a diverse range of nonstate and substate actors, will take arms control into uncharted areas. Clearly, as James Wirtz observes in the concluding essay, we stand at a crossroads in the history of arms control and cooperation, poised to enter a new century whose problems will be no less challenging and whose opportunities no less intriguing than they were at the beginning of the last century.

If this anthology has gaps or omissions, none were evident to this reviewer. Without exception, the essays are timely, informative, and well written. The book also includes a chronology of arms control from 1945 through mid-2002 and an appendix with synopses of 42 arms-control treaties, agreements, and organizations. *Arms Control* is recommended reading for scholars, arms-control neophytes, seasoned practitioners, and anyone whose profession could be touched by the subject.

Lt Col Charles E. Costanzo, USAF
Maxwell AFB, Alabama

We Have Capture: Tom Stafford and the Space Race by Thomas P. Stafford with Michael Cassutt. Smithsonian Institution Press (<http://www.sipress.si.edu>), 750 Ninth Street NW, Suite 4300, Washington, D.C. 20560-0950, 2002, 224 pages, \$29.95 (hardcover).

From schoolboy in Oklahoma to plebe at Annapolis, from Air Force test pilot to NASA astronaut, Lt Gen Tom Stafford, USAF, retired, has recounted one man's success in an easily read book. But it is also much more. *We Have Capture* is an examination of an intriguing period of history from the point of view of one of the few insiders.

Using the maturation of the US Manned Space Program as a backdrop, General Stafford gives the reader a lively tour of his personal recollections of NASA, the Cold War, détente with the Soviets, and the maturation of human interaction in space. Although his scope ranges from his childhood and the World War II era, the meat of the book covers the space race to the end of the century, particularly from the Gemini program to the international space station. Famous names and familiar visuals of space missions leap off each page. Also,

Stafford nicely peppers the book with comical asides and unique stories that even trivia-savvy space hobbyists will find remarkable.

His juxtaposition of American and Soviet space stories is pointed and insightful—and makes the book unique. Several of the longer stories work on many levels: technical, historical, political, and personal. For example, on 29 June 1971, *Soyuz 11*'s crew left *Salyut*, the world's first manned space station. Supposed to land just before dawn in Central Asia, the crew members completed their reentry maneuver and then fired the retro-rockets. The descent module parachuted to a landing in Kazakhstan. But when members of the recovery team arrived, they found all three cosmonauts mysteriously dead.

General Stafford then concisely explains how the men died and what the ramifications on the ground entailed, both politically and for him personally. I like the way he segues from expositor of technical detail to storyteller here. *Soyuz 11*'s misfortune becomes another story—one about Stafford's introduction to dealing with the Soviets and meeting a lifelong friend who reappears throughout the book.

On a family vacation to Europe at the time of the *Soyuz 11* accident, Stafford was unexpectedly called to duty as a diplomat—appointed stand-in for President Richard Nixon at the cosmonauts' state funeral. As a fellow space explorer, Stafford was invited to serve as a pallbearer. The funeral was a solemn event, made even less bearable by tedious Communist political speeches. Stafford noted the Soviet guards "fainting and falling to the pavement." The morning after the service, Stafford's host, a Russian cosmonaut general named Beregovoi, held Stafford's commercial plane on the flight line. As Stafford was about to board to return to his family, his host announced, "We need some vodka." When Stafford protested, the general replied that "the plane doesn't leave until I say it does" and then asked, "Do you like caviar? . . . Come here! You need a snack." As they drank, the passengers waited. The scene provides a quick, comical example of Soviet power and attitude.

Another layer to this story involves Stafford's meeting in Moscow during the memorial ceremonies with Aleksie Leonov, the cosmonaut who was supposed to have led the fatal *Soyuz 11* mission. Stafford maintained a relationship with Leonov, and they were partners on the Apollo-Soyuz project. They remain friends to this day. Thus, Stafford and his collaborator Michael Cassutt make the book more than a typical memoir by recounting

key Soviet space events and the career progression of certain cosmonauts in parallel with Stafford's own rapid pace through the ranks of the Air Force and NASA.

I found the chapter "Handshake in Space," devoted to the Apollo-Soyuz mission of June 1975, particularly interesting. When I was a young astronaut wanna-be back then, this mission became a significant milestone in my decision to be an Air Force officer. I had the good fortune to be escorted behind the scenes in Houston by a family member who worked in mission control. I remember the real-time video of astronauts and cosmonauts in space. The experience was a genuine thrill, now enhanced by reading about the hidden, inside story.

Stafford's parallel recounting of Soviet and US space achievements from the 1960s seems to lead to the Apollo-Soyuz mission, which included three years of political wrangling, long sessions of training, and getting to know and trust one another. I appreciate Stafford's detailed description of the training and behind-the-scenes intrigue that attempted to pry open the Iron Curtain—if only just a little. The challenges and successes of the mission also add great color. The story of the Apollo capsule's rough return to Earth contains enough technical stick-and-rudder details to satisfy my tastes, with plenty of realism that allowed me to picture what was happening.

General Stafford's humor also adds a nice touch to the book. After the rendezvous between the Soyuz and Apollo craft and the historic docking, Stafford knocked on the hatch leading to the Soyuz module. Leonov, his friend and Soviet cosmonaut commander, responded, "Kto Budet tam?" [Who's there?]. Nice. I also found the Soviets' hide-and-seek antics, pretending that their space program was civilian rather than military, comical but insightful. In one instance, US cooperation with the Soviets was almost scrubbed until Stafford used his personal connections to convince them to come clean on Soyuz incidents and failures before Congress found out.

All in all, *We Have Capture* is a great book for space and history buffs. It is especially appropriate reading during our celebration of the centennial of flight this year. However, I also think it is just a good book for airmen. General Stafford was famous not only for being a legendary Gemini and Apollo astronaut, but also for being instrumental in the development of the B-2 and the international space station, and for bettering Russo-American relations. His book goes beyond NASA and delves

into Air Force stealth testing; the complexities of serving as a staff officer; and some of Stafford's entrepreneurial, corporate, and philanthropic projects—including health imaging, student scholarships, and the Stafford Commission. His personal achievements and lessons in dealing with internal NASA politics and the Soviets (and then the Russians on the international space station), as well as his personal asides, lead me to strongly recommend *We Have Capture*.

Lt Col Merrick E. Krause, USAF
Washington, D.C.

Vietnam Air Losses: United States Air Force, Navy and Marine Corps Fixed-Wing Aircraft Losses in Southeast Asia, 1961–1973 by Chris Hobson. Midland Publishing, available from Specialty Press (<http://www.specialtypress.com>), 39966 Grand Avenue, North Branch, Minnesota 55056, 2001, 192 pages, \$29.95 (softcover).

The headline of a front-page story in the *New York Times* on 21 March 1961 read, "U.S. Ready to Face All Risks to Bar Red Rule of Laos/Decision Made as Kennedy Meets with Top Military Advisors/Growing Crisis Seen." Two days later, Pathet Lao ground fire downed a C-47B out of Vientiane, thus marking the loss of the first US fixed-wing aircraft operating in the fledgling conflict in Southeast Asia. Seven crew members died. Maj Lawrence Robert Bailey, "who always wore a parachute when he flew," survived to spend nearly 17 months as a prisoner of war (p. 5).

In *Vietnam Air Losses*, Chris Hobson offers a running calendar that chronicles the air war and provides capsule accounts of aircraft lost and the fate of their crews, addressing the when, where, how, and why of these incidents. The book's stories of aviators connected by a common thread describe accounts of bravery, misfortune, and occasional misadventure. On another level, they provide a clinical record, both historical and statistical, of air warfare in Southeast Asia.

The author, a British librarian with over 20 years' service with the Ministry of Defence, ties together 3,322 aircraft losses with insightful background information about participating units, aircraft types, and the operational history of the war. Such continuity makes his work much more than a mere directory or listing of random events.

In addition to a judicious use of photographs with captions on aircraft types, the book contains a bibliography and glossary of operation and project code names. Appendices and indexes include Air Force, Navy, and Marine Corps orders of battle (wings, groups, and other units, including squadron makeup; and—where applicable—activation, inactivation, redesignation, reassignment, and deployment dates), as well as a statistical summary of air losses by service, year, and aircraft type, with separate listings by date for losses to surface-to-air missiles and MiGs. Finally, a 10-page index of 4,400 personnel provides a reference point for each incident that mentions an aviator's or crew member's name. Mr. Hobson has dedicated his book to these people and has told their story well. For researchers looking for a description or confirmation of details about aircraft losses, *Vietnam Air Losses* is a practical place to start.

Ron Fuller

Maxwell AFB, Alabama

Swedish Signal Intelligence, 1900–1945 by C. G. McKay and Bengt Beckman. Frank Cass Publishers (<http://www.frankcass.com>), 5824 NE Hassalo Street, Portland, Oregon 97213-3644, 2002, 310 pages, \$49.50 (hardcover).

Signals intelligence (SIGINT) is seldom covered in historical texts, which makes McKay and Beckman's first authoritative account of Sweden's SIGINT both valuable and unique. It is published in English and charts the path of a neutral Sweden as it sought to keep a fine balance between the Russians and Germans in World War I and the Allies and Germans in World War II. The authors are to be commended for their detailed, up-front explanation of SIGINT: how radio and telegraph coding was used between various countries and their diplomatic missions, what kinds of transmissions third parties could intercept, and the numerous tasks involved in decoding that data.

As an integral part of the book, the authors documented Sweden's ties to Finnish independence groups in 1917 and its associations with the independent Baltic states of Estonia, Latvia, and Lithuania prior to their conquest by the Soviet Union in 1939. Those conquests and the 1939 Winter War in Finland brought home to the Swedes the threat they faced from an expanding Soviet Union. The Swedes reorganized their military repeatedly

during the interwar years in response to potential adversaries and developed a SIGINT organization that would serve it well during World War II.

The outbreak of World War II and the German occupation of Denmark and Norway made the Swedish position of neutrality more precarious. Soviet codes were difficult at first but were eventually mastered; the German Enigma keys were even harder to break. German landline communications ran through Swedish territory and could be monitored and exploited. That opportunity allowed the Swedes to eventually break the encryption codes used by the German Geheimschreiber teleprinter. That successful work on its simultaneous machine encryption required both an understanding of codes and electro-mechanics. With a staff of fewer than 400 people, the Swedes achieved impressive results: Soviet, German, and American codes were broken, and Swedish code security was monitored and corrected when necessary. Interestingly, while the Germans realized that the integrity of their communications crossing Sweden had been compromised, their own bureaucratic bungling prevented any improvement in their signal security.

After demonstrating its value, SIGINT was removed from the Swedish general staff's signal section in 1942 and established as an independent authority. It not only broke codes but also monitored illegal radio transmissions inside Sweden, leading to the apprehension of spies. This became an early vision of a unified SIGINT establishment.

In 1944 when the Finns were required to remove German forces to comply with Soviet armistice demands, the Swedes proposed that a network of agents stay behind to keep Sweden informed of Soviet operations inside Finland. While this network was never emplaced, Finnish SIGINT equipment, codes, and intelligence documents were brought to Sweden that year. That material was exploited and retained until it was destroyed in the 1980s to maintain the secrecy of those activities.

The neutral capital of Stockholm offered numerous SIGINT interception opportunities as exemplified by the Oslo-Berlin communications. Those interceptions provided the Swedes with insight into German operations and diplomatic traffic. Other interesting tidbits in the book cover the possible compromise of Operation Overlord, British counterintelligence operations inside the Swedish Embassy in London, and the role played by the Hagelin Crypto Machine Company. Among the smaller neutral nations of World War II, Sweden was the most ready to tackle SIGINT challenges at the beginning of the Cold War, and may

have come closest to matching the British successes of Bletchley Park.

While a more complete book could have included the Cold War history of Swedish SIGINT (which would be interesting and possibly answer many Baltic mysteries), SIGINT books are rare, and this one is a must-read for intelligence professionals. The detailed explanation of cryptology, coding, and the way SIGINT is produced puts this book ahead of other, more technical, texts. Historians interested in World War II may even have to reconsider some events of that war after reading this book.

Capt Gilles Van Nederveen, USAF, Retired
Alexandria, Virginia

Beyond Terror: Strategy in a Changing World by Ralph Peters. Stackpole Books (<http://www.stackpolebooks.com/cgi-bin/StackpoleBooks.storefront>), 5067 Ritter Road, Mechanicsburg, Pennsylvania 17055-6921, 2002, 368 pages, \$22.95 (hardcover).

Ralph Peters had an interesting military career that included service in the Executive Office of the President. He retired as a lieutenant colonel in order to speak freely about what he considered problems in the US military and political policies. Although one can disagree with his points of view, they do force readers to think about the future of our armed forces. *Beyond Terror* includes 16 essays that Peters published in such journals as the US Naval Institute's *Proceedings* and the Army War College's *Parameters*, as well as a few chapters written specifically for it. The book deals with problems as varied as the root causes of intelligence failures, the need for linguists, and the problem of retired flag officers assuming positions in private defense-contracting firms.

Peters—who seems to embrace Samuel Huntington's theory of the clash of civilizations, which many academics reject—begins by discussing America's place in history, arguing that the United States should not be ashamed of its military and industrial might. He feels that we often support dictatorships and corrupt regimes in the name of political expediency when we should be throwing our instruments of national power behind people who want self-determination. About the world of Islam he writes, “[Muslims] must decide whether to wallow in a comforting that warms the heart with ha-

tried of others” (p. 6), a statement that is too simplistic and minimizes efforts to really identify what is currently wrong with Islam. For example, one glaring problem is the inability of Sunni Islam to reinvent itself through an Islamic concept called *Jjithaad* (analytical reasoning), which senior religious officials foolishly banned in the ninth century.

“When Devils Walk the Earth,” the chapter on terrorism, offers an excellent analysis of two different types of terrorists: the practical and the apocalyptic. The former have a political agenda and want to ascend to power, so utterly destroying the infrastructure they intend to govern makes no sense. The latter are the more dangerous type because they believe they are the hand of God. Unlike practical terrorists, the apocalyptic terrorists do not listen to reason—after all, they have God on their side. Peters candidly states that the apocalyptic faction must simply be destroyed. Clearly, *Beyond Terror* is a controversial book but an important one for readers interested in forecasting strategy and policy.

Lt Comdr Youssef H. Aboul-Enein, USN
Washington, D.C.

War of the Aeronauts: The History of Ballooning in the Civil War by Charles M. Evans. Stackpole Books (<http://www.stackpolebooks.com/cgi-bin/StackpoleBooks.storefront>), 5067 Ritter Road, Mechanicsburg, Pennsylvania 17055-6921, 2002, 368 pages, \$27.95 (hardcover).

First-time author Charles M. Evans has written an excellent history of the birth of American airpower in *War of the Aeronauts*, which he began researching in graduate school. Evans provides an admirable overview of early ballooning and of the first US and Confederate air forces. Woven around the universal themes of personalities and resistance to change, the book devotes most of its text to balloonist Thaddeus Lowe and his exploits with the Union army of the Potomac.

Lowe was a ballooning pioneer, an innovator, and an excellent organizer, as well as a supreme egotist and self-promoter. On 17 June 1861, he brought a balloon to Pennsylvania Avenue, directly across from the White House, where he made an ascent and sent a telegram to President Lincoln from the balloon. Lincoln was impressed enough to invite Lowe to spend the night at the White House and personally took him to see Winfield Scott, general in chief of the Union army. Lincoln

told a skeptical Scott, "This is my friend Professor Lowe, who is organizing an Aeronautics Corps for the Army, and is to be its Chief. I wish you would facilitate his work in every way" (pp. 86–87).

Lowe became a civilian "contractor" attached to the Bureau of Topographical Engineers (mapmakers). Insisting on being paid a colonel's salary, he proved very adept at organizing teams to inflate, transport, and operate his balloons. He also devised portable hydrogen-gas generators that combined sulfuric acid and iron shavings to produce combustible gas. Among other innovations, Lowe built an "aircraft carrier" from a 122-foot barge, a telegraph train to transmit messages from balloons to army field headquarters, and colored flares for signaling troop movements. His development and employment of an "oxyhydrogen" arc lamp made him the first person to use artificial light in combat operations, and he hired other "aeronauts" to expand his reconnaissance capability. Finally, Lowe understood the need to build sturdy balloons and equipment that could withstand the rigors of the field. His strengths and expertise won him the support of Maj Gen George B. McClellan, commander of the army of the Potomac. Unfortunately, Lowe's personality eventually became his undoing. Extremely jealous of other balloonists who offered their services to the Union army, he refused to cooperate with any of them. Although McClellan continued to support him, most other senior officers grew weary of Lowe's ego.

Lowe and his balloonists provided effective aerial reconnaissance during several major campaigns in 1862 and 1863. In March 1862, Lowe became the first to discover that the Confederates had abandoned their long-held position near Centerville, Virginia, and in April he moved his balloons to Fortress Monroe, Virginia, in support of the Peninsula campaign. In May 1862, he discovered the Confederate evacuation of Yorktown and observed the Battle of Williamsburg. He also reported on Confederate troop movements during the Battles of Seven Pines/Fair Oaks, Mechanicsville, and Gaines Mill, where he was nearly overrun by Confederates. When McClellan retreated, Lowe had to ground his balloons due to the loss of iron shavings, essential to the production of hydrogen.

After Lincoln dismissed General McClellan in the fall of 1862, Lowe never again enjoyed the full confidence of the army commanders. Both Gen Ambrose Burnside and Gen Joseph Hooker employed Lowe's balloons during the Battles of Fredericksburg and Chancellorsville, respectively, but Hooker allowed the Topographical Corps to cut

Lowe's pay and reduce his prestige. After the Battle of Chancellorsville in May 1863, a demoralized Lowe resigned, and the army never employed the balloon corps again. The high command had lost interest in aerial reconnaissance.

Most probably Lowe failed because of his egotistical personality. Officers became disgusted with his self-centered attempts to build a reputation at the expense of his rivals. Many of them also distrusted the balloonists and felt that Lowe exaggerated his observations for self-serving purposes. Still others saw the balloonists as a carnival act and refused to take them seriously. Even more importantly, Evans concludes that the horrible slaughter of the Civil War shocked the nation into feeling that it had "no more time to waste on novel ideas concerning the war effort. The time for experimenting with fanciful contraptions of war was over. Proven concepts of technology . . . would remain, because their effectiveness was categorically tested on the field of battle" (p. 293).

Evans's book is excellent—well written, researched, documented, and illustrated. Aside from the fact that the author seems to accept Lowe's writings and accounts too uncritically, the book offers a well-balanced account of its subject. It will be of great interest to the Civil War community because little else exists on the subject. *War of the Aeronauts* is also relevant to modern military officers and airpower historians since it provides excellent case studies on the impact of personalities in a military bureaucracy, radical technological change, and the innate conservatism of military professionals. Billy Mitchell, anyone?

Col Allan W. Howey, USAF, Retired
Centerville, Ohio

The Clinton Wars: The Constitution, Congress, and War Powers by Ryan C. Hendrickson. Vanderbilt University Press (<http://www.vanderbilt.edu/vupress/index.html>), VU Station B 351813, Nashville, Tennessee 37235-1813, 2002, 240 pages, \$49.95 (hardcover), \$24.95 (softcover).

Ryan Hendrickson's *The Clinton Wars* provides outstanding information about presidential versus congressional war powers. Every president from Truman on has claimed constitutional authority as commander in chief to unilaterally deploy (and employ) America's armed forces. To stem the growing threat of an imperial president, the House

and Senate passed the War Powers Act of 1973: Joint Resolution Concerning the War Powers of Congress and the President—also known as the War Powers Resolution (WPR).

By means of the WPR, Congress intended to reclaim the constitutionally provided war-making authority. The resolution spelled out specific requirements the president needed to meet in order to deploy American armed forces. Included were limitations on the length of deployment (subject to congressional approval) and mandatory consultation with Congress prior to deployment. Despite the passage of the WPR, presidents have continued to unilaterally deploy American armed forces, frequently with minimal (or no) consultation with Congress.

By examining six case studies, Hendrickson addresses the president's unilateral exercise of war powers during the two terms of the Clinton presidency. The studies range from American involvement in Somalia to Operation Noble Anvil over Kosovo. They cover not only President Clinton's perspective as commander in chief, but also the views of Congress and the framers of the Constitution. Hendrickson skillfully incorporates relevant readings that bear on whether or not WPR requirements were met.

The author's research reveals several threads common to presidential administrations. First, public opinion about the impending conflict plays a major role—Congress just can't seem to say no to a president who wants to deploy forces for a looming conflict that the public supports. Second, a president's willingness to consult with Congress seems to depend upon the circumstances at hand. As was true of presidents during the 50 years preceding his administration, Clinton frequently paid little more than lip service to Congress regarding consultation. Only when the political chips were down did he earnestly build his case with congressional leaders well prior to a strike. Hendrickson effectively illustrates their willingness to cooperate with Clinton when he included them in advance discussions versus their attitude when either the president or his representatives "consulted" them mere hours before or after a strike.

The author proposes some measures to help put teeth back into the WPR but readily concedes that a Congress unwilling to put constitutional law before politics will defer to a president in the question of the execution of war powers. That said, *The Clinton Wars* is a great read for people who desire a better understanding of the political process behind presidential commitment of forces in low in-

tensity conflict. It is a must-read for those who wish to closely examine the execution of war powers during the Clinton years.

Maj Paul Niesen, USAF
Maxwell AFB, Alabama

Airwar: Essays on Its Theory and Practice by Phillip S. Meilinger. Frank Cass Publishers (<http://www.frankcass.com>), 5824 NE Hassalo Street, Portland, Oregon 97213-3644, 2003, 288 pages, \$67.50 (hardcover), \$26.00 (softcover).

Phillip Meilinger, a prolific and well-respected historian of military aviation, has published a collection of 14 essays taken from his master's thesis, articles, papers, and lectures. Varying in length from three to 29 pages, they were either published or presented between 1991 and 2001. Meilinger's wide breadth of coverage, in terms of both chronology and subject, gives readers a sweeping survey of aviation history. From the outset, he emphasizes that his book is not history of airpower (the title is somewhat misleading) but "a collection of my thoughts on various important aspects of air power history and theory, strategy and tactics, and operations and organization, from both an American and an international perspective" (p. 3). Three chapters on Giulio Douhet, Hugh Trenchard, and John Slessor cover the theory of military aviation. He also includes pieces on joint operations in World War II, the B-29 campaign against Japan, the first Gulf War, and Kosovo. A pair of essays deals with aviation technology (the development of US fighter aircraft between the world wars and of precision-guided munitions). Other chapters deal with seldom-discussed topics, such as the British navy's fleet air arm and the issue of interservice rivalry, and the futile international attempt in the early 1930s to disarm the world's militaries.

Meilinger reveals his enthusiasm for and advocacy of airpower early on (literally on page one): "I believe that air power has brought about a revolution in war, because it has altered virtually all aspects of how it is fought, by whom, against whom, and with what weapons. . . . War has been fundamentally transformed by the advent of the airplane." He acknowledges airpower's technological limits but envisions an improvement in its capabilities over time, further noting that concerns about "casualty aversion" have made airpower America's weapon of choice. In a number of the essays, Meilinger ad-

dresses targeting—especially the issue of bombing cities and civilians. Readers will find some of the author's observations easy to accept (e.g., the importance of intelligence in the application of airpower) but will need more persuading for others (e.g., the idea that, in this era of terrorism, Clausewitz needs revising).

Meilinger deserves high praise, both for his boldness in tackling these critical subjects and for his considerable skill in dealing with them. He writes clearly, cuts to the essence, and makes good sense. In addition, he provides notes and especially valuable bibliographic commentary. In short, the book stands as a substantial addition to the literature on

airpower, both for its historical coverage and its assessment of airpower's current status. One hopes that the author one day will deal with other aspects of airpower not covered here, such as naval aviation, individuals and organizations (e.g., Billy Mitchell and the Air Corps Tactical School), airlift, and pilotless aircraft. In the meantime, this important collection certainly deserves more than a glance by readers interested in the history and the practice of airpower. Even if they read but a few of *Airwar's* essays, they will be amply rewarded.

Kenneth P. Werrell
Christiansburg, Virginia



Touch and Go

In this section of "Net Assessment," you will find additional reviews of aviation-related books and CD-ROMs but in a considerably briefer format than our usual offerings. We certainly don't mean to imply that these items are less worthy of your attention. On the contrary, our intention is to give you as many reviews of notable books and electronic publications as possible in a limited amount of space.

Flying Fury: Five Years in the Royal Flying Corps by James McCudden. V.C. Greenhill Books/Stackpole Books (<http://www.stackpolebooks.com>), 5067 Ritter Road, Mechanicsburg, Pennsylvania 17055-6921, 2000, 288 pages, \$19.95 (softcover).

This paperback reprint of the classic Royal Flying Corps memoir by James McCudden, recipient of the Victoria Cross, is still a great read. First published in 1918 under the title *Five Years in the Royal Flying Corps*, the book brings to life McCudden's perspective of the first air war. Famous not only for his 57 aerial victories, but also for the fact that he started as an enlisted engine mechanic and fighter pilot, McCudden records fascinating tales about the challenges of flying and fighting, as well as the many personalities he encountered—both friends and foes. Full of period English wit, the memoir presents charming comic relief to the dangers and tragedies of World War I. The reader is only too aware of this, knowing that McCudden was killed in 1918, a few days after his final entry in the memoir. This paperback version, which includes

photographs and a list of victories compiled by Norman Franks, now makes McCudden's story easily and affordably available.

Col Eric A. Ash, USAF
Maxwell AFB, Alabama

Storm from the Sea by Peter Young. Greenhill Books/Stackpole Books (<http://www.stackpolebooks.com>), 5067 Ritter Road, Mechanicsburg, Pennsylvania 17055-6921, 2002, 240 pages, \$18.95 (softcover).

Storm from the Sea, a reprint of British brigadier Peter Young's World War II memoir, will interest readers who like the "ant's-eye view" of warfare. Young, a highly decorated soldier, literally fought a global war. Seeing conflict on the horizon, he entered the British army early in 1939, deployed to France as part of the British Expeditionary Force, and escaped disaster at Dunkirk. Transferring to the commandos, Young quickly made a name for himself in such far-flung and varied terrain and as-

sociated climates as Norway; Sicily; Italy; Dieppe and Normandy, France; and finally Burma, where he finished the war as a brigadier commanding the 1st Commando Brigade at the ripe old age of 30.

Although these accounts are interesting, this reader hungered for more details. Young's description of the fighting in France in 1940 is summed up in only one paragraph. The early operations of the commandos are almost comical in their naïveté, yet he makes no mention of lessons learned or training for operations. Assigned to Lord Lovet's brigade on D day, Young does not mention the training and rehearsals for the invasion although his unit spent months in England prior to 6 June 1944. Despite these shortcomings, readers interested strictly in a combat narrative will find that *Storm from the Sea* makes a welcome addition to their libraries.

Maj James Gates, USAF
Washington, D.C.

B-25 Mitchell Units of the MTO, Combat Aircraft Series 32 by Steve Pace. Osprey Publishing (<http://www.ospreypublishing.com>), Elms Court, Chapel Way, Botley, Oxford OX2 9LP, United Kingdom, 2002, 96 pages, \$19.95 (softcover).

In *B-25 Mitchell Units of the MTO*, Steve Pace presents the B-25 as the backbone of the US Army Air Forces' medium-bomber force. In addition to tracing the aircraft's operations across North Africa after Operation Torch, the book gives an accounting of the B-25's employment by Ninth and Twelfth Air Forces from Torch to the invasion of Italy. In doing so, the author covers the operations of the five bomb groups (12th, 310th, 319th, 321st, and 340th) as well as the 57th Bomb Wing, which was equipped with Mitchells. The firsthand accounts make for a pleasant and informative read. This exceptionally well illustrated volume includes over 30 great color plates and over 100 black-and-white photographs, as well as both color and black-and-white nose art—absolutely crucial to any volume on the B-25. *B-25 Mitchell Units of the MTO* is a must-read for people interested in this aircraft and its role in the Mediterranean theater of operations.

Col Frank L. Goldstein, PhD, USAF, Retired
Fort Walton Beach, Florida

MiG Alley: Sabres vs. MiGs over Korea by Warren E. Thompson and David R. McLaren. Specialty Press (<http://www.specialtypress.com>), 39966 Grand Avenue, North Branch, Minnesota 55056, 2002, 192 pages, \$39.95 (hardcover).

This is a fine book on a great airplane. *MiG Alley* is built around vignettes provided by over 60 American veterans of the Korean War, woven together with a brief commentary by the authors. It is a personal view of the subject—primarily reflections by F-86 pilots 50 years after the conflict. The book relates not only the excitement of dogfights, but also incidents of bailouts and accidents during the flying and fighting that took place over Korea. Produced on sleek paper in an unusual format (10¼ by 10¼ inches), it features numerous color pictures and two full-page paintings of the F-86s and the men who flew them. Few, if any, of these photos have appeared before in print. The volume also includes three appendices that will gladden the hearts of students of the war. One appendix identifies each F-86 that served in the war by serial number, indicating its unit and, if the aircraft were lost, the official explanation of the circumstances. A second, which shows F-86 losses by date, including the serial number, pilot's name, unit, cause of loss, and fate of the pilot, is very important because it marks the first time such information has been published. A third appendix lists confirmed American kills by date, noting both pilot and unit. A brief bibliography lists 20 books and eight articles.

MiG Alley embodies popular history at its best by providing a useful narrative that ties together interesting anecdotes, along with numerous first-rate pictures. The authors demonstrate their research into Air Force records and validate their good reputation as aviation writers. Exceptionally noteworthy is a chapter written by a retired technical representative of North American Aircraft Corporation, which gives an excellent account of Operation GunVal—the Air Force's test-mounting of 20 mm cannons on F-86s.

MiG Alley, which vividly presents the fight for air superiority in Korea in both prose and pictures, is an excellent read (and look) for any aviation enthusiast; indeed, it is probably the best of this genre. In short, the book is a sheer delight to behold and should be added to the short list of books on this aspect of the air war in Korea.

Kenneth P. Werrell
Christiansburg, Virginia



Air and Space Power Journal is always looking for good articles written by our readers. If you have something to say, send it to us.

The *Journal* focuses on the operational and strategic levels of war. We are interested in articles that will stimulate thought on how warfare is conducted and the impact of leadership, training, and support functions on operations.

We encourage you to supply graphics and photos to support your article, but don't let the lack of those keep you from writing! We are looking for articles from 2,500 to 5,000 words in length—about 15 to 25 pages. Please submit your manuscript via electronic file in either MS Word or Word Perfect format. Otherwise, we need two typed, double-spaced draft copies.

As the professional journal of the Air Force, *ASPJ* strives to expand the horizons and professional knowledge of Air Force personnel. To do this, we seek and encourage thought-provoking articles. Please submit yours to the Editor, *Air and Space Power Journal*, 401 Chennault Circle, Maxwell AFB AL 36112-6428, or electronically to aspj@maxwell.af.mil.

... But How Do I Subscribe?
EASY ...

- Just write New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh PA 15250-7954; call (202) 512-1800 (voice) or (202) 512-2250 (fax); or visit <http://bookstore.gpo.gov/subscriptions/alphabet.html> on the Internet.

- Say that you want to subscribe to AFRP 10-1, *Air and Space Power Journal*, stock number 708-007-00000-5.

- Enclose a check for \$32.00 (\$44.80 for international mail).

- Spend a year enjoying four quarterly issues mailed to your home or office.

Basis of Issue

AFRP 10-1, *Air and Space Power Journal*, is the professional journal of the Air Force. Requirements for distribution will be based on the following:

One copy for each general officer on active duty with the US Air Force and Air Reserve Forces.

One copy for every five (or fraction thereof) active duty US Air Force officers in the ranks second lieutenant through colonel.

One copy for each US Air Force or Air Reserve Forces office of public affairs.

Three copies for each Air Reserve Forces unit down to squadron level.

Three copies for each air attaché or advisory group function.

One copy for each non-US Air Force, US government organization.

One copy for each US Air Force or US government library.

If your organization is not presently receiving its authorized copies of the *Air and Space Power Journal*, please contact our staff to verify your address. To obtain the latest information or to contact us, visit our Web site at <http://www.airpower.maxwell.af.mil>.

The Editor

OUR CONTRIBUTORS



Gen Richard B. Myers (BS[ME], Kansas State University; MBA, Auburn University) is the 15th chairman of the Joint Chiefs of Staff (JCS) and the principal military advisor to the president, secretary of defense, and National Security Council. As vice chairman of the JCS during the 19 months prior to becoming chairman, he served as chairman of the Joint Requirements Oversight Council, vice chairman of the Defense Acquisition Board, and member of the National Security Council Deputies Committee and the Nuclear Weapons Council. General Myers has commanded North American Aerospace Defense Command, US Space Command, Air Force Space Command, and Pacific Air Forces. At the tactical level, he commanded the 335th Tactical Fighter Squadron, 1st Tactical Fighter Wing, and 325th Tactical Training Wing in addition to serving as commandant of the USAF Fighter Weapons School. A command pilot, he has more than 4,000 flying hours in the T-33, C-21, F-4, F-16, and F-15, including 600 combat hours in the F-4. General Myers is a graduate of Air Command and Staff College and Army War College.



Col Chris J. Krisinger (USAF; MA, Webster University; MA, Naval War College) is chief of the Doctrine and Policy Division, Directorate

of Plans and Programs, Headquarters Air Mobility Command, Scott AFB, Illinois. A command pilot with more than 3,300 hours of flight time, primarily in the C-130 Hercules aircraft, he has served flying tours at Pope AFB, North Carolina, and Little Rock AFB, Arkansas, as well as an exchange tour flying C-130s with the Canadian Forces at CFB Edmonton, Alberta, Canada. His staff assignments have included tours as an action officer at Headquarters Military Airlift Command, Scott AFB; chief of plans, Joint Contact Team Program, US European Command, Stuttgart, Germany; deputy chief of the Strategy, Concepts, and Doctrine Division, Air Staff, Pentagon, Washington, D.C.; and military advisor to the European Bureau, Department of State, Washington, D.C. A resident graduate of Squadron Officer School and Armed Forces Staff College and a distinguished graduate of the Naval Command and Staff Course at the US Naval War College, he also studied as a National Defense Fellow at the Olin Institute for Strategic Studies, Harvard University. Colonel Krisinger is the author of numerous articles on air-mobility topics.



Lt Col Mona Lisa D. Tucker (BS, Georgia Institute of Technology; MS, Saint Mary's University; MSS, USAF Air War College) is deputy commander of the 89th Communications Group, Andrews AFB, Maryland. She has served as commander of the 50th Communications Squadron, Schriever AFB, Colorado; staff officer at United States Space Command, Peterson AFB, Colorado; and commander of the 71st Communications Squadron, Vance AFB, Oklahoma. Colonel Tucker is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.



Lt Col Michael R. Weeks (BEE, MBA, Auburn University; MSc, Oxford University) is currently assigned to an Air Force Institute of Technology-sponsored doctoral program in management studies at Oxford University, United Kingdom. He has completed tours as a C-141 flight examiner, T-38 instructor, staff officer with Twenty-First Air Force, and instructor of management at the US Air Force Academy. Colonel Weeks is a senior pilot with over 3,700 hours in the C-141, T-38, and T-3 aircraft.



Lt Col Robert D. Newberry (USAF; MSEE, University of Southern California) is deputy commander of Detachment 12, Space and Missile Systems Center, Kirtland AFB, New Mexico. His assignments have included the Air Force Research Laboratory, Defense Nuclear Agency, Milstar Joint Program Office, Titan System Program Office, Headquarters Air Force Space Command, Headquarters USAF Plans and Programs, Joint Staff, Headquarters USAF Air and Space Operations, and United States Space Command. Colonel Newberry is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.



Col Brian K. Hall (BS, Rutgers University; MS, Marine Corps Command and Staff College; DC, New York Chiropractic College) is deputy director of Joint Requirements and Integration (J-8), US Joint Forces Command, Norfolk, Virginia. He has served as executive officer to the vice commander, Air Combat Command, Langley AFB, Virginia; chief of Joint Force Requirements, US Atlantic Command, Norfolk, Virginia; director of staff for the 317th Airlift Group, Dyess AFB, Texas; and chief of the Air Force Directorate, Office of Defense Cooperation, Ankara, Turkey. A command pilot with over 2,400 flying hours in three major weapon systems, Colonel Hall is a graduate of Squadron Officer School, Armed Forces Staff College, and Air War College.



Col Gordon R. Hammock (BA, Virginia Military Institute; JD, Washington and Lee University, School of Law; MSS, Air War College) is the staff judge advocate at the 18th Wing, Kadena AB, Japan. He has previously served in that capacity at the 39th Wing, Incirlik AB, Turkey; 437th Airlift Wing, Charleston AFB, South Carolina; and Electronic Systems Center, Hanscom AFB, Massachusetts. He has also served in numerous other legal positions, including that of deputy staff judge advocate; chief, military justice; area defense counsel; chief, adverse actions and civil law; and legal intern. Colonel Hammock is a graduate of Squadron Officer School and Air Command and Staff College. He is also an Air War College graduate *with academic distinction*.



Col Russell J. Handy (BS, Embry-Riddle Aeronautical University; MS, Central Michigan University) is commander of the 3d Operations Group, Elmendorf AFB, Alaska. He previously served as commander of the 58th Fighter Squadron, chief of 33d Fighter Wing Safety, and operations officer of the 60th Fighter Squadron, all at Eglin AFB, Florida, and as chief of Advanced Programs and of Missile Defense Operations at Headquarters NORAD, Peterson AFB, Colorado. He also was an instructor at the USAF Weapons School, Nellis AFB, Nevada; chief of Weapons and Tactics for the 71st Tactical Fighter Squadron, Langley AFB, Virginia; and F-15 instructor pilot and assistant chief of Weapons and Tactics for the 44th Tactical Fighter Squadron, both at Kadena AB, Japan. Colonel Handy is a graduate of Squadron Officer School, USAF Fighter Weapons School, Army Command and General Staff College, Armed Forces Staff College, and Air War College.

Lt Col Edith A. Disler (BA, University of Michigan; MA, University of Arkansas at Little Rock; MA, Naval War College) is completing her doctoral studies in linguistics at Georgetown University. She will then return to the US Air Force Academy to serve as an associate professor of English. Colonel Disler has served as a Titan II missile combat crew member at Little Rock AFB, as assistant professor of English at the US Air Force Academy, as executive assistant to the secretary and deputy secretary of defense, as a speechwriter to the secretary of the Air Force, speechwriter to the chief of staff of the Air Force, and as a conventional arms control inspector with the Defense Threat Reduction Agency, Rhein-Main AFB, Germany. She has regularly presented papers at professional conferences and has had numerous book reviews published. She recently contributed "The Military" chapter to *Unpeaceful Metaphors*, edited by Abdul Karim Bangura. Colonel Disler is a distinguished graduate of Air Force Reserve Officers Training Corps and a graduate of Squadron Officer School, Air Command and Staff College, the College of Naval Command and Staff, and Air War College.



Lt Col Thomas R. McCabe, USAFR (BA, West Chester State College; MA, Georgetown University; MS, Defense Intelligence College), is an Air Force reservist mobilized since 11 September 2001 and assigned to the Military Infrastructure Office, Directorate of Analysis, Defense Intelligence Agency, Bolling AFB, Washington, D.C. His active duty assignments include serving as a targeting intelligence officer with the 366th Tactical Fighter Wing at Mountain Home AFB, Idaho; as an operational intelligence officer with the 51st Tactical Fighter Wing, Osan AB, Republic of Korea; and as a briefing officer on the Air Force Intelligence Service Soviet Awareness Briefing Team. In civilian life, he is a career intelligence analyst. A previous contributor to *Air and Space Power Journal*, he won the Ira C. Eaker Award for his article "The Limits of Deep Attack," which appeared in the fall 1993 issue. Colonel McCabe is a graduate of Squadron Officer School and Air Command and Staff College.



Lt Col David L. Orr (BS, University of Miami [Florida]; MPA, Valdosta State University; MSS, Air War College) is a war-fighting capabilities analyst in the Force Structure, Resources, and Assessment Directorate (J-8) of the Joint Staff. He has served in numerous operational and staff positions, including the commander's special action group, Air Combat Command; executive officer for the vice commander, Air Combat Command; director of staff, 56th Fighter Wing; operations officer, 35th Fighter Squadron; and commander, 56th Operations Support Squadron. He is a command pilot with 4,500 flying hours, including 2,300 hours in the F-16. Colonel Orr is a distinguished graduate of Squadron Officer School and a graduate of the Army's Command and General Staff College, and Air War College.

EDITORIAL BOARD

Lt Gen Bradley C. Hosmer, USAF, Retired
Maj Gen I. B. Holley Jr., USAFR, Retired, *Duke University*
Dr. J. Douglas Beason, Colonel, USAF, Retired, *Los Alamos National Laboratory*
Dr. Alexander S. Cochran, *National War College, National Defense University*
Prof. Thomas B. Grasse, *Naval War College*
Lt Col Dave Mets, USAF, Retired, *School of Advanced Air and Space Studies*
Col Bobby J. Wilkes, USAF, *College of Aerospace Doctrine, Research and Education*

The *Air and Space Power Journal* (ISSN 0897-0823), Air Force Recurring Publication 10-1, is published quarterly. You may subscribe by writing New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh PA 15250-7954; calling (202) 512-1800 (voice) or (202) 512-2250 (fax); or visiting <http://bookstore.gpo.gov/subscriptions/alphabet.html>. Annual rates are \$32.00 domestic and \$44.80 outside the United States. The GPO stock number is 708-007-00000-5. See *Air and Space Power Journal* on-line. Visit *Air and Space Power Chronicles* at <http://www.airpower.maxwell.af.mil/>.

The *Journal* welcomes unsolicited manuscripts. Address them to Editor, *Air and Space Power Journal*, 401 Chennault Circle, Maxwell AFB AL 36112-6428. E-mail or submit your manuscript via electronic file in either MS Word or WordPerfect format. All submissions will be edited in accordance with the standards set forth in the *Air University Style Guide for Writers and Editors* (available on-line in the *Air and Space Power Journal* section of *Air and Space Power Chronicles* at <http://www.au.af.mil/au/oas/aupress/style>). *Journal* telephone listings are DSN 493-5322 and commercial (334) 953-5322.