

Strategic Air Mobility and

Global Power Projection



▲ Download as computer wallpaper at ndupress.ndu.edu

C-17 drops combat delivery system bundles in Afghanistan

By **ARTHUR J. LICHTÉ**

As we search for context and insight both in the past and in today's national security environment, it becomes clear that strategic air mobility has grown increasingly important to the deployment, employment, and sustainment of global combat power over our nation's history.

While the surface and naval segments of the mobility process have always been critical to global power projection, the diminishing size of our military's forward-basing structure, the change in the nature of our adversaries, the forces of globalization, and other factors have spotlighted the increasingly critical role of strategic air mobility to national security and foreign relations.

But the present role of strategic air mobility did not always exist. Prior to the birth of modern flight on the dunes of Kitty Hawk in 1903, naval power defined the potential of empires. Great Britain symbolized the height of the era in the 1920s with over 400 million people and almost a quarter of the Earth's land mass under its control. But Orville and Wilbur Wright's 12-second and 120-foot flight signaled the beginning

of the end of both the age of empires and the dominance of naval transportation. Over the decades that followed, airpower destroyed the concept of distance as the limiting factor in the breadth of national control and interests.¹

In the new era, airpower has become the critical enabler in fulfilling the classic military wisdom to "get there first with the most."² As such, the ability to mobilize and deploy forces rapidly remains as critical as the forces themselves in defining the upper limit of a nation's military effectiveness. One measure of this ability is the amount of time between the spark that starts a conflict and the resulting use of military force—a period, for the purpose of this article, known as the *crisis-to-employment timeline*.

Accelerating Timelines

While it is unclear whether airpower's role is a cause or an effect of this concept (or both), one thing is clear: the timeline has accelerated drastically since the creation of our robust strategic air mobility force. In fact, the crisis-to-employment timeline continues to accelerate with each year of our rapidly maturing information age. When combined

with changes to the national security landscape, it is clear that strategic air mobility is, and will remain, a critical pillar of military power for the foreseeable future.

Starting in World War I, after the birth of aerial flight but before the emergence of strategic air mobility doctrine and capabilities, we see elongated crisis-to-employment timelines in their original form. Even if we disregard the June 28, 1914, assassination of Archduke Franz Ferdinand as a crisis point and use the U.S. declaration of war on April 6, 1917, as a more accurate milestone, there was still a 17-month lag before General John Pershing's American Expeditionary Force engaged during the Battle of Saint-Mihiel on September 12, 1918. Naval transportation was the de facto strategic transportation method of the era since airpower was still in its infancy. In fact, air mobility systems had yet to be created, as the world's first transport plane, the 12-seat Glenn L. Martin T-1, was not produced until 1919, the year following the end of World War I.

General Arthur J. Lichte, USAF, is Commander, Air Mobility Command, Scott Air Force Base, Illinois.

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 2008		2. REPORT TYPE		3. DATES COVERED 00-00-2008 to 00-00-2008	
4. TITLE AND SUBTITLE Strategic Air Mobility and Global Power Projection				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Defense University, Institute for National Strategic Studies, 260 Fifth Avenue SW Bg 64 Fort Lesley J. McNair, Washington, DC, 20319				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

As we fast-forward to the opening days of World War II, there was still an 11-month lag from the attack on Pearl Harbor to the opening salvos of the invasion of North Africa on November 8, 1942. Granted, the campaign in North Africa was preceded by significant naval engagements in the Pacific (notably the battles of the Coral Sea in May 1942 and Midway in June), but these engagements were either fought on a strategic defensive or were small compared to the 100,000-troop force that waded ashore in Morocco and Algeria.³

In both World Wars I and II, the reasons for the long crisis-to-employment timelines

after the Japanese blocked the Burma Road into China, Allied airpower responded by launching a 3-year airlift over the Himalayas

owed much to the prewar pacifism and election timelines of the era and do not accurately represent the true surface and naval mobility capabilities of those times. But even while the “sleeping giant awoke” at the beginning of U.S. involvement in World War II, we began to see the birth of strategic air mobility doctrine (specifically for airlift) forming as part of the “Hump” operation in the China-Burma-India theater.

After the Japanese army blocked the Burma Road into China, Allied airpower responded by launching a 3-year airlift resupply effort along a 500-mile route over the Himalayas. Surpassing the original April 1942 goal of delivering 10,000 tons every month to the Chinese army, improvements to doctrine,

U.S. Air Force



C-47 was the workhorse transporting supplies and food during the Berlin Airlift, 1948

safety, and aircraft maintenance resulted in increased monthly tonnage of more than 24,000 tons by October 1944. Under the visionary leadership of Major General William H. Tunner, the “Hump” established itself as the first “air bridge” in military history and proved to be the crucible that created modern-day air mobility doctrine.⁴

The Cold War

With air mobility doctrine now in hand, one might expect the first major armed conflict of the Cold War to yield clear proof of strategic air mobility’s role in the new era of accelerated crisis-to-employment timelines.

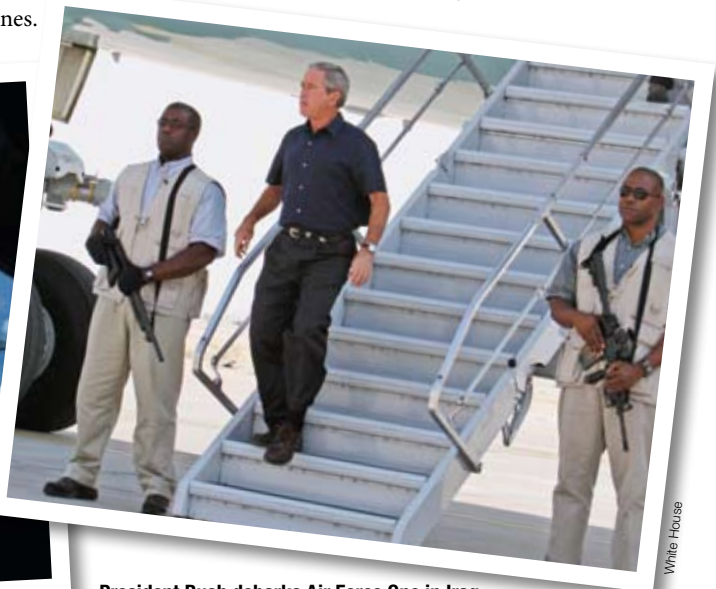
But while significant forces were engaged within 2 weeks of North Korea’s invasion of South Korea on June 25, 1950,⁵ the Korean War’s impressive timeline is primarily attributable to the in-theater presence of American occupation forces in Japan following World War II, a basing construct that is progressively less common in the post-Cold War era.

The Cold War, however, does provide one of the more critical insights into airpower’s role through the emerging use of strategic air mobility as an instrument of U.S. policy. In perhaps the most publicized example, the newly formed U.S. Air Force responded with lifesaving⁶ airlift to 2.5 million West

KC-135 prepares for midflight refueling with B-2



U.S. Air Force (Brian Kimball)



White House

President Bush debarks Air Force One in Iraq

Berliners only 2 days after the Soviet Union blocked access to Western-held sectors of the city on June 24, 1948. Solely through air mobility, the United States not only defeated the Soviet attempt to lock West Berlin behind the Iron Curtain, but it did so without firing a single shot.

Perhaps the most dramatic example of the use of air mobility as an instrument of foreign policy was Operation *Nickel Grass*, the desperate resupply of Israel during the 1973 Arab-Israeli War. After 7 days of deliberations by a White House preoccupied with the Watergate scandal and Vice President Spiro Agnew's resignation, President Richard Nixon ordered the Air Force to resupply Israel by "send[ing] anything that can fly."⁷ Within 9 hours of that decision, C-141s and C-5s were ready to depart. The first aircraft landed in Tel Aviv carrying 97 tons of 105mm howitzer shells just as the Israelis were expending their last ammunition.⁸ Follow-on shipments of M-60 tanks, howitzers, antitank weapons, and ammunition allowed the Israelis to go on the offensive and drive the Soviet-supplied

Egyptian and Syrian forces out of the Golan Heights and from most of the Sinai Peninsula.⁹ While neither the Berlin Airlift nor Operation *Nickel Grass* involved American forces in combat, the use of airpower as an instrument of U.S. policy was a watershed event, restoring the regional balance of power and influencing airpower for decades.¹⁰

with Operation Enduring Freedom, we begin to see how fast the crisis-to-employment timeline can accelerate

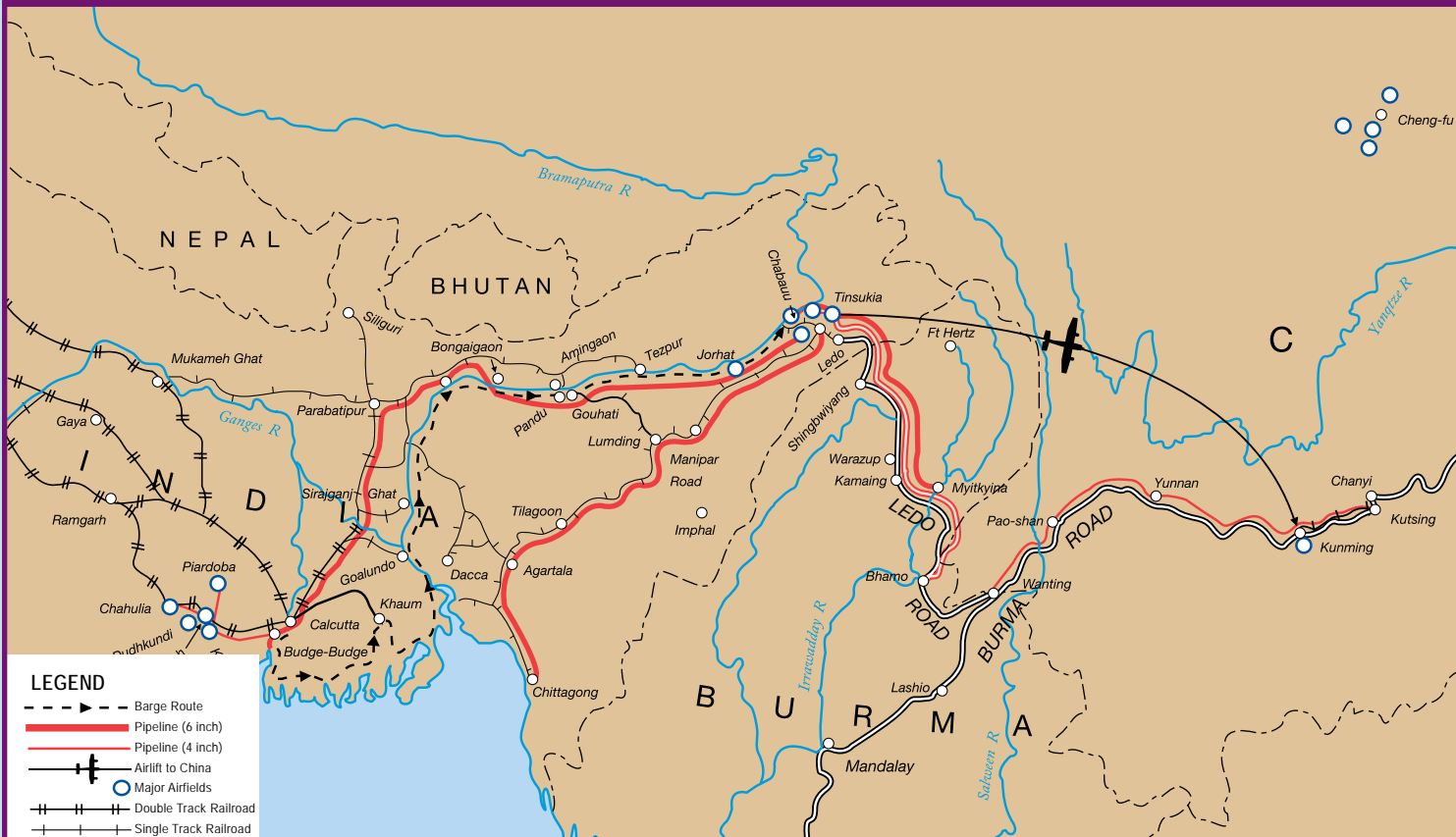
The Modern Era

Taking these lessons of U.S. airpower forward to the modern era of warfare,¹¹ we find Operations *Desert Shield* and *Desert Storm* providing more conclusive proof of air mobility's contributions to accelerating crisis-to-employment timelines. Within days of Iraq's invasion of Kuwait on August 2, 1990, strategic air mobility transported personnel and equipment to the theater in preparation

for the start of the air war on January 27, 1991. While this 6-month timeline does not appear impressive, it is important to remember that the deadline for United Nations Resolution 678, which authorized the use of force if Iraq did not withdraw its troops from Kuwait, did not expire until January 15, 1991. Despite the impact that coalition-building had on artificially extending the crisis-to-employment timeline, strategic airlift ended up carrying 500,720 people and 542,759 tons of cargo in and out of the theater, and tankers delivered over 1.2 billion pounds of fuel during 85,000 refuelings to help joint and coalition forces expel Iraqi forces from Kuwait.

Finishing with Operation *Enduring Freedom* (OEF), we begin to see how fast the crisis-to-employment timeline can accelerate, with less than 4 weeks between the terrorist attacks of September 11, 2001, to the first engagement of U.S. forces on October 7, 2001. Despite fundamental differences from other conflicts because of the operation's heavy emphasis on the use of special operations forces, air mobility still played a key role by

Moving Supplies from India to China: "Flying the Hump," 1942-1944



Source: Charles F. Romanus and Riley Sunderland, *Time Runs Out in CBI* (Washington, DC: U.S. Army Center of Military History, 1985).

performing numerous air refueling missions to extend the range of combat aircraft¹² and airdropping humanitarian daily rations to the suffering citizens of Afghanistan.¹³ The latter demonstrates one of the critical insights of the modern era: the increasing importance of humanitarian assistance delivered nearly simultaneously with combat power.

With roots that trace back loosely to the Marshall Plan following World War II, it is clear that humanitarian assistance is just as critical in determining the long-term efficacy of military power as the application of force itself. And when that humanitarian assistance is provided simultaneously with combat power, mobility forces are the ones who answer the call.

In fact, the implications of today's national security environment on the role of air mobility are as clear as the historical context of airpower's contribution to the joint team. Just as accelerated crisis-to-employment timelines have demonstrated the increasing role of air mobility to global power projection (from 17 months in World War I, to 11 months

in World War II, to 6 months in *Desert Storm*, to 1 month in OEF, to hours in Operation *Nickel Grass*), other factors continue to reinforce air mobility's critical role in the deployment, employment, and sustainment of global combat power.

Air Mobility Today and Tomorrow

The most significant factor underscoring the role of air mobility is multifaceted and includes the diminishing forward-based force structure combined with a national defense environment that calls for military power (both combat and humanitarian) to engage more often in distant locations. The tyranny of distance created by the Integrated Global Presence and Basing Strategy, which will eventually return over 50,000 U.S. military members from overseas bases, will place an increased reliance on the mobility airlift system. Additionally, dependence on host nations for en-route basing and military support in a changing global political arena could place U.S. forces farther from the fight and influence future strategic lift requirements.¹⁴ To over-

come these geographical challenges, unique capabilities are being developed through necessity and innovation.

Expeditionary organizations have been created whose express purpose is to open airbase access for follow-on deployment and employment of forces. For example, Air Mobility Command's (AMC's) Contingency Response Groups (CRGs) establish airfields in conjunction with the Joint Task Force-Port Opening (JTF-PO) construct. While CRGs enable the airlift en-route system (the modern equivalent to the maritime coaling stations of the British Empire), JTF-PO capabilities streamline the military logistic support process for land, sea, and air forces.

in the future, the role of strategic air mobility will prove even more critical in direct support of the diplomatic community

Our nation's role as the lone global superpower has made our joint mobility team the critical enabler for responding to multiple crises anywhere in the world simultaneously. More specifically, the accelerating crisis-to-employment timelines have made air mobility the preferred capability for globally projecting that power in either hard or soft forms. It is a burden that only the United States can shoulder, within timelines that only air mobility can support, and underscores the importance of strategic lift systems such as the C-17, which is capable of supporting multiple simultaneous operations. Multirole aircraft such as the Globemaster III provide options for the joint force air component commander that include aeromedical evacuation capability, intratheater tactical airlift, or intertheater strategic airlift as dictated by operational requirements. Strategic lift, coupled with CRG and JTF-PO expeditionary combat support, allows us to take the fight to our adversaries on their soil while simultaneously providing hope to those in need through humanitarian relief.

Not to be understated, the change in the nature of the adversary is equally important when assessing strategic air mobility's role. The end of the Cold War left an America threatened less by near-peer superpowers than by failing states, aspiring hegemons, and transnational entities, giving rise to a corresponding increase in irregular challenges



in the national security environment. The new threats differ historically from those of dual superpowers, not only in size but also in tactics, techniques, and procedures. Air mobility has become increasingly important in this new world because it has been able to adapt to these challenges with new technologies, weapons systems, and tactics.

Through simple tactics and operational changes, AMC has eliminated the need to place 12,000 troops and 5,000 trucks in harm's way each month in Iraq by elevating the supply chain above the threat of improvised explosive devices and delivering critical supplies by airlift rather than truck convoy. In Afghanistan, AMC uses technology for maximum effect by airdropping supplies with the Global Positioning System-guided parachutes of the Joint Precision Airdrop System, further reducing the number of troops in bottlenecked mountain passes. And with the coming addition of the Joint Cargo Aircraft to the Air Force and Army fleets, we will enhance support to the joint warfighter in the last tactical mile.

However, mobility effects are not just seen on the battlefield. In the future, the role of strategic air mobility will prove even more critical in direct support of the diplomatic community. The continued emphasis on reorienting the State Department toward transformational diplomacy and focusing on results-oriented partnerships has many implications, one of which is more direct face-to-face diplomacy between senior State Department officials and foreign dignitaries. In the mobility community, that is accomplished through operational support airlift/VIP special airlift mission aircraft and crews, most prominently the 89th Airlift Wing at Andrews Air Force Base. In fact, the President's trip to Iraq this past Labor Day weekend aboard Air Force One further highlights the new critical dimension of air mobility in today's era of transformational diplomacy.

Finally, the new age of increasing globalization presents a series of second-order effects that continue to reinforce the critical role of air mobility in today's national security environment. While the characteristics of globalization (at least superficially) are closely interdependent economies on a global scale with common adherence to mutually accepted accounting (and sometimes political) ground rules, globalization's unintended second-order effects spread the tragedy of environmen-

Patient loaded onto C-17 for transport to Germany



DOD (Cecilio M. Ricardo, Jr)

tal, human, and economic devastation far beyond physical borders if left unaddressed. In this environment, humanitarian assistance is a growing part of our national security strategy.¹⁵ The Air Force steps into this gap as one of the world's first responders in support of both international and stateside humanitarian relief. With our C-17 and C-5 strategic airlift fleet and the KC-135 and KC-10 "tanker bridge," the role of strategic air mobility is proving to be increasingly important in our globalized world.

With history providing the context for accelerating crisis-to-employment timelines and today's national security environment providing insight into future requirements, it is undeniable that strategic air mobility is, and will remain, critical to the deployment, employment, and sustainment of global combat power. The implication is clear: it is our moral imperative to maintain the decisive edge in global vigilance, global reach, and global power both for ourselves and for future generations of Americans.

This imperative can be expressed in different ways but is most succinctly defined by the current Air Force priorities: to fight and win the war on terror as we prepare for the next war; to develop and care for Airmen and their families; and to recapitalize and modernize our air, space, and cyberspace systems. At every turn, Airmen are dedicated to these priorities so they can secure the legacy of airpower for future generations of joint warfighters.

The results are all around us. Every day, aerial porters and aircrews send 10 Mine-Resistant Ambush-Protected vehicles to troops on the front lines of the war on terror, in a time-critical effort to protect our troops as they take the fight to the enemy. In addition, with 46,000 Soldiers, Sailors, Airmen, and Marines aeromedically evacuated since October 2001, we reaffirm our commitment to provide hope to the sons and daughters of America as they fight for the cause of freedom. As we press ahead with the Air Force's number-one acquisition priority, the KC-X next-generation aerial tanker, we ensure that future generations of Airmen will retain the decisive combat edge that our predecessors gave us.

This imperative comes on the eve of an important milestone, the 60th anniversary of the Berlin Airlift. As we pause to reflect on the symbolic nature of strategic air mobility, we must never forget that today's Airmen are able to serve as a critical part of the joint mobility team only by standing on the shoulders of the heroes who preceded them.

The importance of strategic air mobility has risen disproportionately over the history of airpower. In fact, a mobility aircraft with an American flag on its tail takes to the air somewhere around the world every 90 seconds, providing unrivaled global reach to our troops and hope to our nation's friends in need. As future conflicts individually dictate the relative contribution of each segment of the mobility system (air, surface, and naval),

one constant will remain: an insatiable appetite for mobility of all types in the modern era of warfare.

This appetite carries with it the corresponding national obligation to preserve this capability for future generations—to continually invest in our air mobility fleet so it can, in turn, provide sovereign options for national leaders both today and tomorrow. The deployment, employment, and sustainment of the joint warfighter depends on it. Moreover, our nation’s ability to project power globally—with a clenched fist or an outstretched hand—hangs in the balance.

I am proud to be a member of the joint mobility team as we influence world events through rapid, flexible, and responsive mobility. I am proud, too, to stand beside the men and women of Air Mobility Command as we continue to support the joint warfighter. **JFQ**

NOTES

¹ William Manchester, *The Last Lion: Winston Spencer Churchill, Visions of Glory, 1874–1932* (New York: Little, Brown and Company, 1983).

² While mass, offensive/initiative, surprise, and maneuver have remained consistent principles of war since time immemorial (but, perhaps, have been best codified since the era of Jomini and Clausewitz), they are most succinctly expressed in this statement by Lieutenant General Nathan Bedford Forrest during the U.S. Civil War.

³ Rick Atkinson, *An Army at Dawn: The War in North Africa, 1942–1943* (New York: Henry Holt and Company, 2002).

⁴ See Billy J. Hoppe, *Lieutenant General William H. Tunner in the China-Burma-India “Hump” and Berlin Airlifts: A Case Study in Leadership in Development of Airlift Doctrine* (Maxwell Air Force Base, AL: Air War College, 1995).

⁵ While Task Force Smith represents the initial deployment and engagement of American forces in Korea (on July 5, 1950), it constituted only 540 personnel (roughly two rifle companies reinforced with heavy mortars and recoilless rifles). The follow-on actions by the 24th Infantry Division a few days later represented the first large-scale engagement of U.S. forces in Korea. See Richard W. Steward, ed., *American Military History, Volume II: The United States Army in a Global Era, 1917–2003* (Washington, DC: U.S. Army Center of Military History, 2005).

⁶ At its peak, 1,398 sorties delivered 12,941 tons of supplies in a single 24-hour period (a rate of nearly 1 flight every minute). By the time the 15-month campaign ended in September 1949, 276,926 sorties were flown, delivering 2,323,067 tons of food, fuel, clothing, and medical supplies to Berlin. See William

H. Tunner, *Over the Hump: The Story of General William H. Tunner* (New York: Duell, Sloan and Pearce, 1964).

⁷ Walter J. Boyce, “Nickel Grass,” *Air Force Magazine* (December 1998).

⁸ Ibid.

⁹ Ibid. Moscow supplied the Arab states with 600 surface-to-air missiles, 300 MiG–21 fighters, 1,200 tanks, and hundreds of thousands of tons of consumable war materiel.

¹⁰ Operation *Nickel Grass* reinforced the need for fleetwide aerial refueling (the C–141 did not possess the capability at the time), as well as upgrades to command and control and organizational alignment of airlift assets under AMC’s predecessor, Military Airlift Command. See Chris J. Krisinger, “Operation *Nickel Grass*: Airlift in Support of National Policy,” *Airpower Journal* (Spring 1989).

¹¹ Several notable conflicts (for example, the Vietnam War, the U.S. invasion of Panama, Operation *Allied Force*, and the Iraq War/Gulf War II) have been excluded from this analysis since U.S. involvement followed a gradual escalation with singular employment points that are less clear or whose “crisis” points occurred over a preceding multiyear timeline of escalating tensions and international agency coordination, allowing for prepositioning of forces. Many of these cases do, however, offer contributions for strategic airlift and aerial refueling that are tempting to cite, but the selection of accurate crisis-to-employment timelines becomes overly subjective.

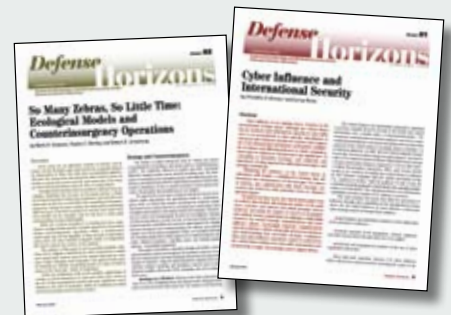
¹² From September 11 through the end of 2001, air mobility aircraft flew 1,757 airlift missions in support of Operation *Enduring Freedom*. C–17s and C–5s flew, respectively, 45 percent and 29 percent of the missions. Tanker aircraft played a critical role, too, by performing 953 air refueling missions. KC–135s flew 838 missions and KC–10s 115 missions.

¹³ On October 8, 2001 (1 day after the bombing campaign began), two C–17s airdropped approximately 35,000 humanitarian rations over eastern and northern Afghanistan. The two airdrops were the C–17’s first combat missions and combat airdrops and the first humanitarian airdrops of *Enduring Freedom*. The C–17s flew more than 6,500 miles round trip from Ramstein Air Base, Germany, and were air refueled multiple times on the 22-hour flights. By the end of the same month (October 31, 2001), airlift had dropped the millionth humanitarian daily ration over Afghanistan.

¹⁴ In 2006 alone, AMC completed 140,814 airlift departures from 150 different countries.

¹⁵ In addition to national security benefits, there are also potential benefits in foreign relations, especially when the relief provided goes to societies whose culture, religion, and so forth do not mirror our own (for example, earthquake relief to Pakistan, or tsunami relief to Indonesia, the world’s most populous Muslim-majority country).

NEW Defense Horizons
from the
Center for Technology and National Security Policy



Defense Horizons 62

So Many Zebras, So Little Time: Ecological Models and Counterinsurgency Operations

The authors, struck by the observation that many mathematical models developed by ecologists have considerable applicability to the field of counterinsurgency, have conducted a preliminary study on the topic. Mark D. Drapeau, Peyton C. Hurley, and Robert E. Armstrong suggest that although the predator-prey model may be too simplistic for the more complicated aspects of counterinsurgency, other ecological models may capture the essence of the problem. They hope in this work to suggest a framework whereby other researchers more adept at the use of such models will improve our predictive ability in combating terrorism and waging unconventional warfare.

Defense Horizons 61

Cyber Influence and International Security

Franklin D. Kramer and Larry Wentz are concerned that although the United States has an enormous cyber information capacity, its cyber influence in the world is not proportional to that capacity. After analyzing the impediments to American cyber influence, the authors offer a strategy to increase influence: understand the audiences, societies, and cultures; increase the number of geographic, cultural, and language experts; augment resources for strategic communications and influence efforts; encourage long-term communications; and include our allies and partners both to shape our messages and support theirs.

Visit the NDU Press Web site for more information on publications at ndupress.ndu.edu