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Cover photo: Soldiers from the 1st Battalion, 124th Infantry Regiment, assigned to Combined Joint Task Force-Horn of Africa, make their way across a portion of the mountain obstacle course 10 October 2016 as part of the final day of the French Marines Desert Survival Course at Arta Plage, Djibouti. As part of the course, the soldiers and French marines completed training in desert operations, combat lifesaving skills, weapons, survival cooking, and water decontamination, and they completed both the water and the mountain obstacle courses. (Photo by Staff Sgt. Tiffany DeNault, U.S. Air Force)

Next page: Soldiers set off on a foot patrol 4 September 2018 after disembarking from a UH-60 Black Hawk helicopter in Afghanistan. (Photo by Senior Airman Christine Groening, U.S. Air Force)

WINNERS!

2018 General William E. DePuy

Special Topics Writing Competition

The 2018 theme was "World Hot Spots: Which of the world's hot spots is the Army least prepared for? Should resources be diverted to prepare for them? What is the most efficient way to become ready for conflict in this region?"

1st Place

Maj. Matthew Kuhlman, U.S. Army

"Strengthening Partnerships to Face the Complexities of Africa"

2nd Place

Col. Eugenia Guilmartin, PhD, U.S. Army

"No 'Ordinary Crimes': An Alternative Approach to Securing Hotspots and Dense Urban Areas"

3rd Place

Col. Erik Claessen, Belgian Army

"Waging Wars Where War Feeds Itself"

Honorable Mentions

Maj. Amos Fox, U.S. Army
"Time, Power, and Principal-Agent Problems: Why the U.S. Army is Ill-Suited for Proxy Warfare Hotspots"

Jose Delgado
"Venezuela-A 'Black Swan' Hot Spot: Is a Potential Operation in Venezuela Comparable to Operation Just Cause in Panama?"

For updates and information on the DePuy writing competition, please visit https://www.armyupress.army.mil/DePuy-Writing-Competition/.

Suggested Themes and Topics

- Futures Command
- What nations consider themselves to be at war or in conflict with the United States? Nonstate actors? How are they conducting war, and what does this mean for the Army?
- What operational and logistical challenges are foreseen due to infrastructure limitations in potential foreign areas of operation and how can we mitigate them?
- What lessons did we learn during recent hurricane relief operations?
- What is the role of the military in protecting natural resources?
- What lessons have we learned from U.S. counterinsurgent military assistance in Africa?
- What are the security threats, concerns, and events resulting from illegal immigration into Europe?
- Saudi Arabia and Iran: How are cultural changes in both societies affecting the operational environment and potential for conflict between them?
- Iran: What should the U.S. military do to prepare for and promote normalization?
- Case study: How does Japan's effort to establish the "Greater East Asia Co-Prosperity Sphere" compare with current Chinese efforts to expand control over the South China Sea?
- Are changes demanded to the professional development models of the officer and NCO structure in the face of large-scale combat operations and increased readiness requirements?
- What is the correlation between multi-domain operations and large-scale combat operations? How should this impact the Army's training, readiness, and doctrine?

- What material solutions are required to fulfill the Army's unified land operations obligations in large-scale combat operations?
- What is needlessly duplicated in the Army (e.g., what should be done away with, how should the Army adjust, and how would it benefit)?
- What must be done to adjust junior leader development to a modern operational environment?
- What must we do to develop a more effective means of developing and maintaining institutional memory in order to deal with emerging challenges?
- What is the role for the Army in homeland security operations? What must the Army be prepared for?
- Case studies: How do we properly integrate emerging technology?
- What are the potential adverse impacts on military standards due to factors associated with poor integration of new cultures, ethnicities, or racial considerations and how can those impacts be mitigated?
- Case study: How is gender integration changing the Army and how it operates?
- Case study: How does tactical-level military governance during occupation following World War II and Operation Iraqi Freedom compare?
- After eighteen years of institutional/operational experience largely focused on counterinsurgency, how do we return to preparing for large-scale combat operations (LSCO)?
  - See/understand/seize fleeting opportunities?
  - Develop the situation in contact and chaos?
  - Offset "one-off" dependencies and contested domains?
  - Rapidly exploit positions of advantage?
  - Survive in hyperlethal engagements?
  - Continuously present multiple dilemmas to the enemy?
  - Decide and act at speed?
  - Fully realize mission command?

Strykers and military support vehicles belonging to the 3rd Squadron, 2nd Cavalry Regiment (2CR), stage for departure 18 June 2018 in Sochazcew, Poland. 2CR conducted a tactical road march from Lithuania to Germany after Saber Strike 18 concluded. (Photo by 1st Lt. Ellen Brabo, U.S. Army)

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Strengthening Partnerships to Face the Complexities of Africa

Maj. Matt Kuhlman, U.S. Army

There is only one thing worse than fighting with allies, and that is to fight without them.

—Winston Churchill

While Africa may not be the first region that people think about when it comes to the modern security environment that emphasizes near-peer competition and the challenges, complexity, and potential for crises, they do exist more there than in any other region of the world. While some of the challenges in Africa also exist elsewhere, the scale to which the crises may spread is greater in this region due to various characteristics of that expansive, underdeveloped, and often misunderstood continent. The key to overcoming these challenges is an emphasis on strengthening partnerships with our long-standing allies and with our developing partners. The aim should be to turn our partners of today into our allies of tomorrow. To understand how the Army can better prepare for conflict in this region, we must first gain an understanding of the challenges in the region.

Great Power Competition in Africa

The *U.S. National Security Strategy*, released in December 2017, places emphasis once again on great power competition as the greatest threat to national security.[1] This is a departure from previous security strategies that have largely focused on terrorism and sponsors of terrorist activities. While great power competition will undoubtedly unfold in the South China Sea and in Eastern Europe, it will also take place in Africa, although in more subtle ways.

As the *National Security Strategy* focuses on Russia and China as the nearest competitors, both countries have interests in Africa that will undoubtedly challenge the decades of work by the United States and partner nations to establish democratic institutions on that continent. Although we must prepare for it, direct military confrontation is an unwanted scenario. However, the potential for a new Cold War exists, and Africa will be the front line where this competition will take place.

China's interests in Africa are predominantly economic due to the nation's need for natural resources to support industrialization and continued economic growth. A tactic of China is to offer low-interest-rate loans to finance infrastructure and development projects in emerging countries, which are enticing up front but are hard to recover from. A recent example of this is the takeover of the Sri Lankan port of Hambantota by the Chinese government. The former president of Sri Lanka, Mahinda Rajapaksa, signed numerous deals with unfavorable lending conditions for projects deemed unnecessary or unprofitable by analysts.[2] The mounting debt led to insurmountable payments, and the government was more or less forced to hand over the port for ninety-nine years in return for temporary debt relief.[3] This is one example of the numerous attempts by China to invest in infrastructure and commercial networks across the world under the auspices of the Belt and Road Initiative. The harshest accusations about President Xi Jinping's Belt and Road Initiative are that the global investment and lending program amounts to a "debt trap" for vulnerable countries around the world, and that it fuels corruption and autocratic behavior in struggling democracies.[4] While the consequences of these debt traps may take years, or even decades, to play out, the Chinese will have patience with their investment due to the payoffs and the potential control of strategic locations.

Militarily, China's presence has steadily increased on the continent. China's Belt and Road Initiative is based on economic opportunities and expansion, yet often these projects support Chinese military access to the region.[5] Current Chinese development efforts will lead to the control of strategic choke points such as the Suez Canal and the Straits of Malacca.[6] China has built or obtained leases for ports in the Horn of Africa (Djibouti), East Africa (Tanzania), and Southern Africa on the Atlantic Ocean (Namibia).[7] Most widely reported was China's establishment of a military logistics base in Djibouti. An increased presence of Chinese troops will undoubtedly increase the likelihood of potential conflict, particularly if located near U.S. forces. Reminiscent of a Soviet tactic used during the Cold War, there have been several incidents involving high-power military laser attacks against U.S. Air Force pilots, resulting in minor eye injuries,

Previous page: A young Afar boy walks through failed crops 26 January 2016 on farmland in the Magenta area of Afar, Ethiopia. The crops failed and farm animals died during a severe drought that left Ethiopia appealing for international help to feed its people. (Photo by Mulugeta Ayene, Associate Press)

Police disperse the crowd as Sudanese President Omar Hassan al-Bashir arrives to give an address 4 April 2016 during a Darfur peace campaign rally at Nyala in South Darfur. (Photo by Mohamed Nureldin Abdallah, Reuters)

which emanated from the Chinese base in Djibouti or a Chinese naval vessel nearby.[8]

Also, Russia appears to be reasserting its influence in the region largely through military equipment sales and donations. Russia may not be the preferred partner, but less stringent Russian regulations and quick delivery timelines for military equipment make it an easy partner to work with. Data from the Stockholm International Peace Research Institute Arms Transfer Database shows that Russia has consistently been the second largest contributor to the global arms trade over the last ten years.[9] During that period, between 15 and 25 percent of Russian arms transfers have been to Africa, with the countries of Algeria, Sudan, Uganda, Ethiopia, and Angola as the largest recipients.[10] Some of these countries were key partners of the Soviet Union in Africa during the Cold War, and a rekindling of these relationships must be closely watched.

Environmental Challenges to Security

Great power competition is not the only security concern in Africa. Perhaps more disconcerting and less understood than Chinese and Russian actions in Africa are the challenges brought about by climate change, population density, and poor governance. These challenges are often interconnected and tend to exacerbate each other.

In the other regions of the world, the environmental aspects are not often an area of primary concern. However, in Africa, climatic changes continually pressure national governments, international

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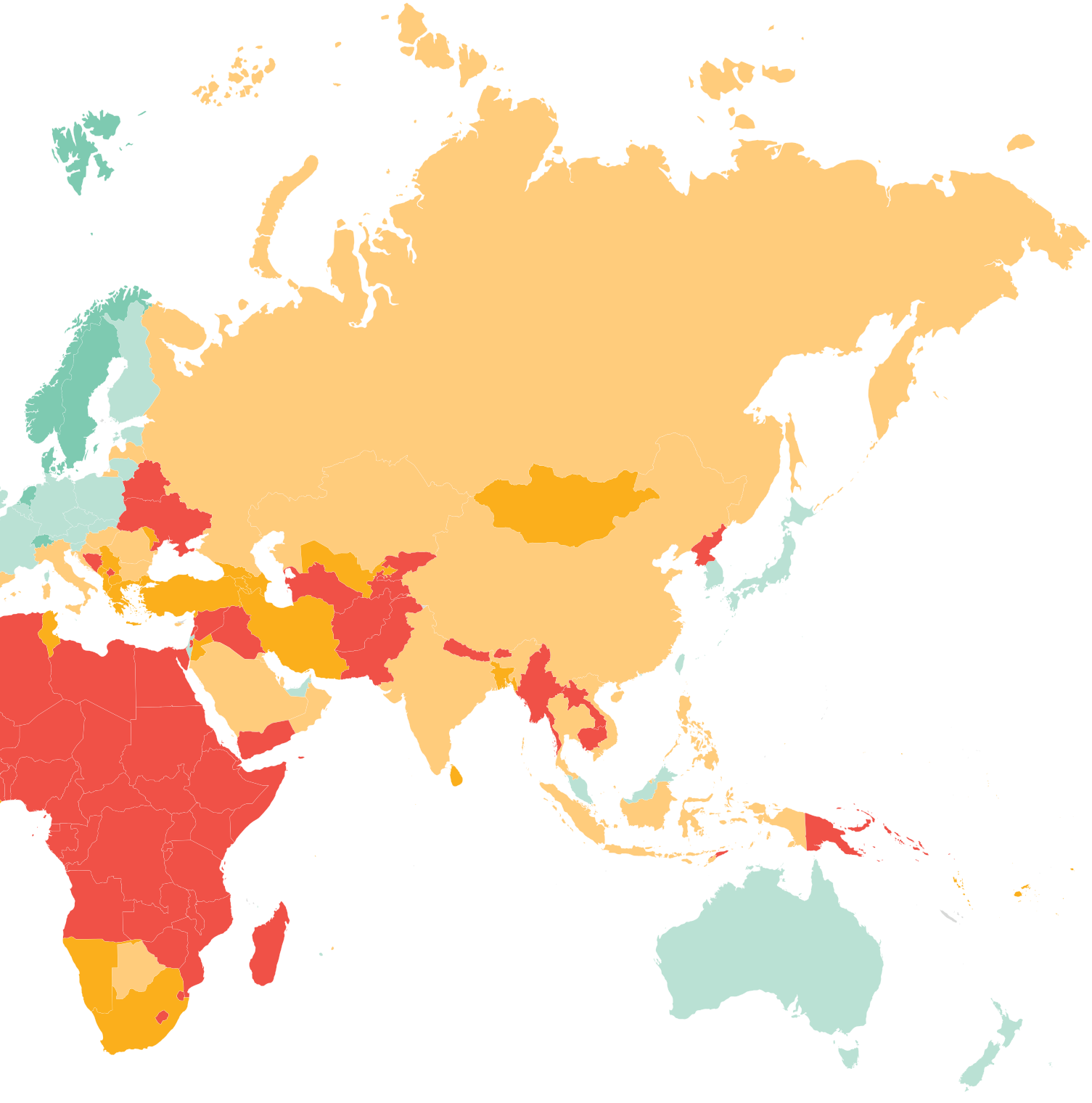
Political Risk Map 2018

Based on data and insight from BMI Research, Marsh & McLennan Companies' interactive Political Risk Map provides country risk scores for more than two hundred countries and territories. Updated annually, the overall risk scores are based on three categories of risk—political, economic, and operational—and reflect both short- and long-term threats to stability.

The 2018 map (*shown here*) depicts changes in the political risk landscape during the past twelve months and looks ahead to continuing trade, socioeconomic, and political risks, and other emerging concerns that affect global political stability. The findings highlight geographic regions where festering ethnic strife, social and economic inequities, exploding populations, and diminishing access to resources are continuing to produce social and political instability. The greater portion of vicinities where such adverse conditions exist are currently found on the continent of Africa, as well as in parts of Latin America and Asia. For more information and to view the interactive map, please visit https://www.marsh.com/us/campaigns/political-risk-map-2018.html.

(Map courtesy of Marsh & McLennnan Companies; risk scores courtesy of BMI Research, A Fitch Group Company)


Country risk index
80-100
70-79
60-69
50-59
<49
No data
Stable
Unstable

Chinese People's Liberation Army personnel attend the opening ceremony of China's new military base 1 August 2017 in Djibouti. China has deployed troops to its first overseas naval base in Djibouti, a major step forward for the country's expansion of its military presence abroad. (Photo from STR/Agence France-Presse)

organizations, and nongovernmental organizations to support vulnerable populations. If a security crisis is not the direct result of an environmental challenge, it will likely be a contributing factor.

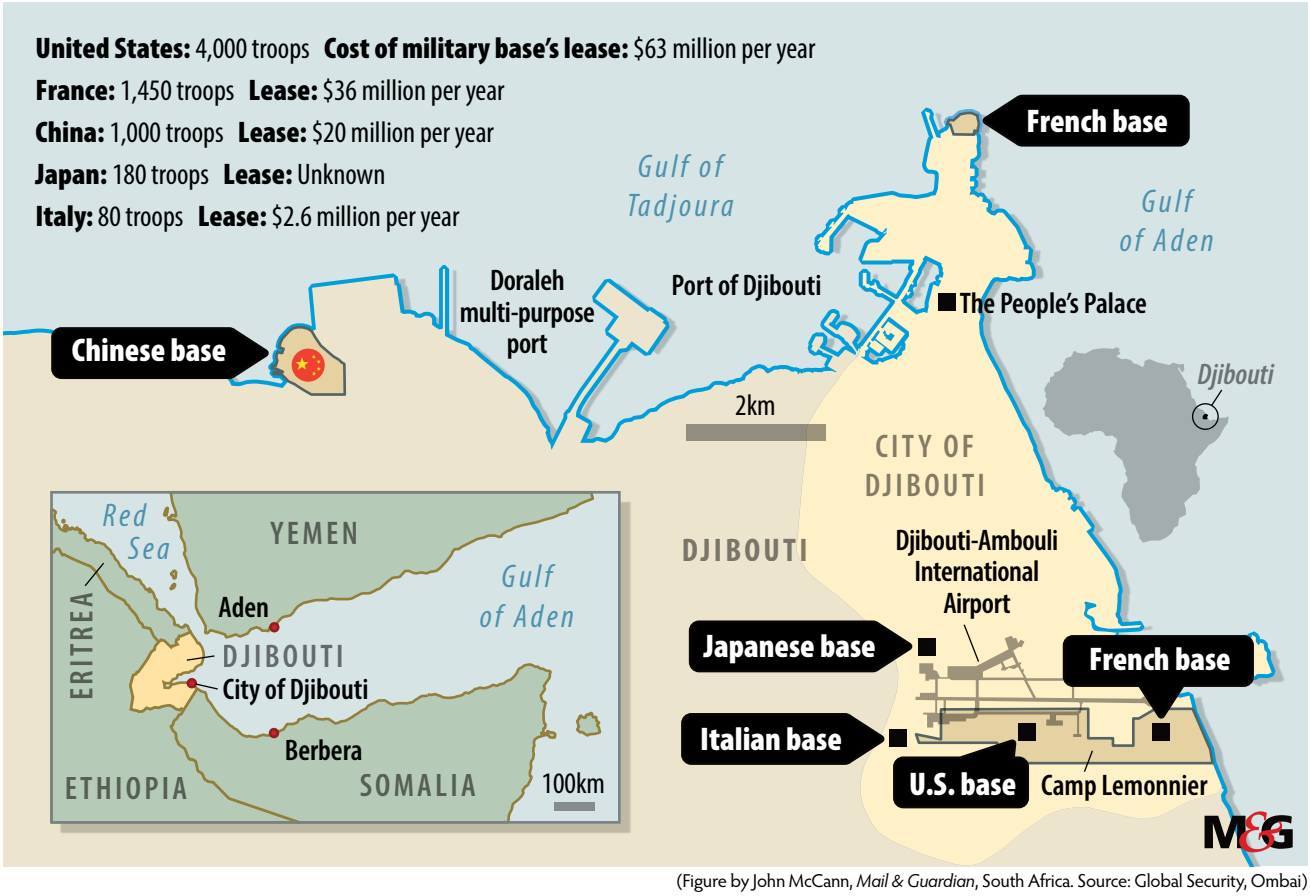
The Lake Chad Basin is one of the better-known environmental issues in Africa. Lake Chad, which traverses the countries of Cameroon, Chad, Niger, and Nigeria, was once the sixth largest freshwater lake in the world but is now only one-tenth its original size.[11] The size reduction of the lake, which is used by farmers, grazers, and for general livelihood, is estimated to impact fifty million people by 2020, all competing for fewer resources that will require international participation to maintain stability.[12]

Famines are almost synonymous with Africa. More people are affected by famines in Africa than any other region of the world, and they remain a persistent challenge for the international community. Famines are often the result of droughts, but conflicts have also been an exacerbating factor. A famine in Somalia in the early 1990s resulted in the need for humanitarian aid and lead to the well-known "Black Hawk Down" incident. Recently, the Islamic militant group Al-Shabaab has prevented the delivery of humanitarian aid to starving populations in Somalia, perhaps as a way to lure the international community back into Somalia.[13] The world cannot neglect the fact that the frequency and severity of droughts and famines in East Africa has steadily increased and is forecasted to continue along this trend.[14]

These are only a few specific examples of climatic challenges that affect stability; it is not an all-inclusive list. While some may disagree with the concept of climate change or global warming, no one can refute that severe conditions persist in Africa today or that these challenges contribute to fragility and insecurity.

Demographics and Urban Density

For those that live in the rural parts of Africa, there are often limited options for employment. One must usually choose from being a fisherman, a farmer, or a herdsman. All are respectable professions but often provide only for subsistence living. As a result, many youths choose to migrate to one of the larger cities within their



(Figure by John McCann, *Mail & Guardian*, South Africa. Source: Global Security, Ombai)

Playground of the Superpowers: The Foreign Bases in Djibouti

countries with the prospect of increased opportunities for employment and education. The infrastructure of these cities, often established in the mid-twentieth century, cannot meet the demands of the increased population. Roads, electricity, water, and sewage remain persistent issues for African nations whose financial resources are strained or are reliant on foreign partners.

In recent years, the term "megacity" has gained traction within the military profession as a potential future operational environment. The United Nations defines a megacity as an urban area that has more than ten million people.[15] Currently, there are three megacities in Africa—Cairo; Lagos, Nigeria; and Kinshasa, the Democratic Republic of the Congo—but it is expected to double to six megacities by the year 2030, with the addition of Johannesburg; Dar es Salaam, Tanzania; and Luanda, Angola.[16] Megacities in Africa are unique because they spread over a larger area than found elsewhere in the world. The chief of staff of the Army's Strategic Studies Group conducted an assessment and identified that megacities are an unavoidable aspect of future conflict, and the Army is currently unprepared to deal with the complexities of the megacity.[17]

Pundits and novices alike are familiar with the term "fragile state." The Fund for Peace annually publishes the Fragile States Index that assesses country fragility based on cohesion (security), economic, political, and social indicators. According to the most recent report, Africa is host to more fragile states than any other region in the world.[18] The endemic fragility of nations increases the likelihood that a security situation can quickly escalate in scale and magnitude due to government inability to properly address the problem.

Other demographic challenges such as high fertility rates and youth population bulges, along with the language and cultural diversity make Africa more distinct than other regions of the world. In Africa, population growth outpaces the rest of the world, and it is estimated that over half of the population is currently less than twenty years old.[19] This youth bulge places another

A RUSSIAN PORT IN EAST AFRICA

(Map courtesy of CIA World Factbook)

> Russia is engaged in a frantic new scramble for influence in Africa, which is being spearheaded by a rash of military cooperation and arms deals signed across the continent in 2018. The most recent—an agreement for a planned Russian logistics base in Eritrea, which would give it access to the Red Sea—was announced in early September after nine months that have seen Kremlin officials crisscross from the Horn to the Great Lakes and southern Africa. The pace of Russia's renewed intervention has raised fears over the human rights and security implications of selling arms to regimes that are weak or in conflict, particularly as the US has signalled its own plans to withdraw troops and close missions. … The moves, say observers, have accelerated markedly in 2018 as senior Russian officials have shuttled between capitals offering arms and military services deals—often with few conditions attached—in exchange for diplomatic support and potentially lucrative mineral extraction contracts.

Source: "Russia's Scramble for Influence in Africa Catches Western Officials Off-Guard," *The Guardian* (website), 11 September 2018, https://www.theguardian.com/global-development/2018/sep/11/russias-scramble-for-influence-in-africa-catches-western-officials-off-guard.

stress on governments who must factor in higher costs of education and health care associated with a larger population. If governments cannot provide the basic services that most people expect, then a large youth demographic disenfranchised with the capacity of their government could be fertile ground for recruitment by extremist groups.

Violent Extremism

One cannot discuss the security challenges of Africa without mentioning the rise of Islamic extremism. Porous borders and underresourced security institutions enable such groups to exist. A recent study shows that violent attacks by extremist groups in Africa have drastically increased over 300 percent since 2010.[20] Groups such as al-Qaida in the Islamic Maghreb, Al-Shabaab, Boko Haram, the Islamic State, and numerous other groups in central Africa and across the Sahel have posed challenges to governments and U.S. forces as well. Although not common, the United States has suffered casualties from these groups, such as the well-known attack on U.S. forces in Niger in October 2017 that resulted in the tragic loss of four soldiers.

Though the challenges and complexities are evident and clearly daunting, they are not insurmountable. No country can do it alone; therefore, an emphasis on cooperation and partnerships is necessary to effectively face these challenges.

How to Prepare for the Complexities of Africa

U.S. resources dedicated to Africa are not likely to increase in the coming years. Not only are resources more constrained, but irregular budget cycles resulting in continuing resolutions have also led to delayed or missed opportunities. Furthermore, the security situation in Africa is not often on the top of the priority list when strategies and resource allocations are determined, as evidenced by the recent *National Security Strategy* that emphasizes near-peer competition. Africa remains unique in the fact that the U.S. Africa Command (AFRICOM) was

Brig. Gen. Kayanja Muhanga, Ugandan contingent commander of the African Union Mission in Somalia's (AMISOM), visits the site of a vehicle-borne improvised explosive device attack 15 October 2017 that was conducted by the militant group Al-Shabaab in the Somali capital of Mogadishu. (Photo by Tobin Jones, AMISOM)

established knowing that military activities would "directly support U.S. diplomatic and development efforts," as stated by its commander, Gen. Thomas D. Waldhauser, during his 2018 Posture Statement to Congress.[21]

Due to AFRICOM's unique mission and the fact that resources are unlikely to be diverted to the region, we must consider redefining how the Army views the region and the potential opportunities that exist for the Army. Without a doubt, the Army must be prepared to deploy, fight, and win a war anywhere at any time. In order to ensure the Army is ready to answer this call, the secretary of the Army and the chief of staff of the Army recently released an updated Army Vision, which states that the Army of 2028 will be ready to "deploy, fight and win decisively against any adversary, anytime and anywhere, in a joint, multi-domain, high-intensity conflict, while simultaneously deterring others and maintaining its ability to conduct irregular warfare."[22] Often overlooked, all those characteristics are found in Africa. The Army Vision also emphasizes the need to strengthen alliances and build partnerships to offset future challenges. It is in Africa where the U.S. Army can work on strengthening these relationships with the largest payoff to contribute to international security.

The Army must focus on increased cooperation with long-standing allies who have more experience in the region such as British and French forces who have a history of being heavily engaged in the region. The interests of long-standing allies often align with the United States, and coordinated efforts could save those allied countries valuable resources and reduce duplicative efforts that have the same intent. Partner nations already have liaison officers at the geographic combatant commands, but more coordination needs to take place on the ground between the embassies.

A common challenge when working with international partners is determining who covers the logistical costs. A potential work around, which would require

a Department of Defense-wide effort, would be to create a new authorization in future National Defense Authorization Acts that would enable the U.S. government to cover some of the costs required to incorporate partner nations. If the authority exists, then the appropriations would likely follow. Of course, the intent of this effort would not be to cover all the costs of partners and allies to train with U.S. forces, but there would need to be some middle ground. Many partners want to do more in the realm of security cooperation but are often hamstrung financially. This authority would largely focus on developed allies such as NATO partners through multilateral engagements, because authorities already exist to train partner nations bilaterally in the developing world, like in Africa.

As well as increased cooperation with our enduring allies, the Army should focus on bringing more partners from Africa to train with U.S. forces during combat training center (CTC) rotations. This would be mutually beneficial to U.S. and partner forces to build relations, increase influence, and ensure U.S. forces meet readiness requirements. The focus of this effort should be on partners that will likely volunteer for future peacekeeping operations or have the potential for future combined joint operations. There has been a great success in Europe with bringing partners to the Joint Multinational Training Command in Germany, and this should be replicated with our African partners. The United States has the premier training centers in the world, and the opportunity to train at CTCs alongside U.S. troops would be a point of pride for these nations. There is already a long list of potential partners that all have unique combat experiences that the United States can learn from. The *National Security Strategy* emphasizes increased military cooperation, and this is achievable by partnering units with international partners at each CTC rotation.

In addition to focusing on strengthening partnerships, the Army should increase emphasis on security cooperation activities. Currently, security cooperation activities (sometimes referred to as security force assistance or building partnership capacity) are commonly viewed as a detriment to unit readiness. However, if done properly, security cooperation activities can sustain or even enhance unit readiness. There have been recent calls by members of Congress to create a security force assistance brigade (SFAB) and dedicate it to Africa.[23] The SFAB is a great concept, but all are currently aligned to the U.S. Central Command area of operations. An Africa-focused SFAB would assist the Army in providing forces for the numerous building-partner-capacity missions that exist yet remain unfilled by the Army. The demand signal is out there, but the U.S. Army has fallen out of favor as the service of preference because of the inability to allocate or assign forces to the region, the unresponsiveness of the process for requesting forces, and the constraints on available units and personnel due to the "readiness" argument.

Furthermore, to face the challenges of Africa, the Army must be responsive. And to be responsive, the Army must be able to gain access and entry into the region. The Army has done this by establishing cooperative security locations (CSLs) across the region. A CSL functions as a bare-bones launching pad for quick-reaction troops called into the region to secure U.S. diplomatic facilities and personnel.[24] These locations are essential in a region characterized by poor infrastructure and vast distances, and they enable entry to the region to prepare for onward movement to a crisis. Investments in new technologies such as 3-D printing will increase the effectiveness of these CSLs and reduce the need for long logistics trains if items and equipment can be produced on site. This capability would not be required in each country, but only at the few CSLs within the component command's area of responsibility. Having this forward-deployed capability at a CSL would be the perfect alignment of posture, responsiveness, and sustainment.

A program that is often overlooked or unknown to the active-duty force is the National Guard Bureau's State Partnership Program. This program, established following the end of the Cold War, partners a U.S. National Guard state with an ally to bolster and support their military. If the Army is unwilling to allocate or assign forces to U.S. Army Africa, then an increase in support to the State Partnership Program would be extremely beneficial to our partners, helping to develop long-lasting relationships, capabilities, and institutions, as well as adding to the experience of our National Guard soldiers.

In addition to increasing U.S. Army participation in security cooperation activities, there are various other opportunities to improve the Army's preparedness to operate in Africa should the need arise. Not just specific to Africa, but all soldiers in the Army should be assigned a region of study to be tracked like an additional skill identifier. This would build a bench of knowledge of the various regions of the world across

the entire force. If each soldier is assigned a region, their regional knowledge can be developed through specific research focused on that region throughout their professional military education courses. This will ensure that both personal and professional education will continue and increase over a soldier's career.

Although the U.S. Army is touted as the most lethal and capable ground force in history, the complexities of the African continent could prove to be the greatest challenge to date. With extremist groups benefiting from fragile governments with urban and demographic challenges exacerbated by climatic changes over vast distances, the Army must reenergize efforts to strengthening our partnerships to mitigate the complexities of future conflict. The opportunity for gain is too great to ignore. The Army must prioritize engagement and multilateral training opportunities to build and strengthen our current partners into our allies of tomorrow. ■

Notes

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Uncovering Hidden Patterns of Thought in War

Wei-Chi versus Chess

Maj. Jamie Richard Schwandt, U.S. Army

We use metaphors and analogies to help us connect the dots and uncover hidden patterns of thought. They provide us with a way to go far beyond the meaning of words and are tools guiding the manner in which we think and act. Gen. David Perkins describes how the U.S. Army Training and Doctrine Command is preparing the Army for the future of warfare in "Big Picture, Not

Details, Key When Eyeing Future." Perkins uses metaphors as he compares warfare to checkers and chess:

> Checkers and chess are played on the same style board but the games are far from similar. For a long time, the Army has designed forces based on a "checkers-based" world outlook. Today, we're switching to a "chess-based" appreciation of the world. In this world, there are many paths to victory; few events allow for linear extrapolation. Victory no longer comes from wiping out an opponent's pieces, but by removing all his options. By employing pieces with varying capabilities in a concerted manner, one creates multiple dilemmas that over time, erode a challenger's will to continue.[1]

Perkins is attempting to use an argument from analogy; however, this is a false analogy. He is attempting to compare the U.S. Army's contemporary outlook on war to that of the board game checkers and compares the future outlook to chess. I argue that the U.S. military already designs forces using a chess-based outlook, not checkers. The U.S. military and Western way of war is a theoretical expression of Carl von Clausewitz and Antoine-Henri Jomini.[2] Taking a Clausewitzian approach is similar to chess, whereby you focus the energy of your forces on a center of gravity (COG). The fixation on COG has led to a number of costly disasters for the U.S. military. Examples include conflicts in Vietnam, Iraq, and Afghanistan. Examining the "Strange model" for conflicts in Iraq (1991 and 2003), Robert Dixon writes,

> The fixation on the Republican Guard (operational COG) and Baghdad (the strategic COG) led leaders to ignore the emergence of something that did not fit their template. This is the true danger of the term: while looking for Clausewitz's focal point (something central, the source of all power, the hub, etc.) leaders forget that they are not observing a static system. Dynamic systems do not have centers, and if they did it would constantly move.[3]

Soldiers assigned to 3rd Squadron, 3rd Cavalry Regiment, conduct an operations brief 15 February 2018 during Decisive Action Rotation 18-04 at the National Training Center in Fort Irwin, California. (Photo by Spc. Esmeralda Cervantes, U.S. Army)

Perkins is actually moving strategy back to the chess-based outlook used by Gen. William Westmoreland in Vietnam. Evidence of this can be found in the new Field Manual (FM) 3-0, *Operations*. FM 3-0 signals a shift in military strategy and a focus back to that of large-scale ground combat operations against near-peer threats, where belligerents possess technology and capabilities similar to the U.S. military. Gen. Mark Milley, the Army's chief of staff, discussed the new FM and remarked,

> Adversaries including Russia, China, Iran and North Korea have spent nearly two decades studying the U.S. military's strengths and vulnerabilities as it has fought terrorist groups. Those nations have invested in modernizing their forces and preparing them to exploit vulnerabilities developed while the United States focused on fighting insurgents.[4]

The U.S. military, just as in chess, focuses on the centrality of physical force and maintaining an edge in capabilities; yet, it is weak in regards to strategy and stratagem.[5] I argue that, to truly understand threats such as North Korea and China, we must shift from a chess-based approach to a *wei-chi* approach; this is where we will find a true understanding of complexity. Where chess is a game of power-based competition representing the American way of war, wei-chi is a skill-based game representing the Chinese way of war.[6] Furthermore, an understanding of wei-chi will help us bridge the gap between how the U.S. Army perceives conflict and how our threats perceive conflict. It is only through a deep metaphorical understanding of this topic that we can uncover our hidden patterns of thought in war.

The Cynefin Framework

Militarily, we succeeded in Vietnam. We won every engagement we were involved in out there.

—Gen. William Westmoreland[7]

H. W. Dettmer describes the Cynefin framework as a sense-making framework providing leaders with a way to identify the correct tools, approaches, and methods that are likely to work in any given domain. In this framework, no one cell is more valuable than another.[8] The framework possesses five domains: simple (or obvious), complicated, complex, chaotic, and disordered.

The Cynefin framework helps us when identifying both the state of knowledge and state of available

Table 1. Five Domains of the Cynefin Framework

Domain	Definition	State of knowledge and information	Military theorist for domain	Metaphor for domain (games)
Simple	Systems are stable. Cause-and-effect is clear.	Right answer is easy to identify. Information needed is available and we have it.	Antoine-Henri Jomini	Checkers
Complicated	Domain of experts and continuous process improvement.	There is no single right answer. We know the information we need, but we don't have the answer.	Carl von Clausewitz	Chess
Complex	Difficult to differentiate between complicated and complex domains. This domain is where Complex Adaptive Systems (CAS) thrive.	The right answer is hard to identify. The information we need is out there somewhere, but we don't know what we are looking for.	Sun Tzu	Wei-chi
Chaotic	Realm of the unknown. Understanding of a cause-and-effect relationship is typically useless.	We don't know what we don't know. We don't know what to ask.	John Boyd	Diplomacy
Disordered	Domain to avoid—organizations can easily slip into this domain from any other.	Extremely difficult to recognize this domain.	Genghis Khan	Twister

(Table by author)

Table 2. Three Phases of Chess

Phase	Description
Opening	The strategic aim focuses on four components: development (move pieces on useful spaces to influence the game), control of the center, king safety, and pawn structure.
Middlegame	The phase of the game when most combinations or attacks occur.
Endgame	The aim of this phase focuses on two primary components: importance of the pawn (they become more important during the endgame) and the king (center of gravity).

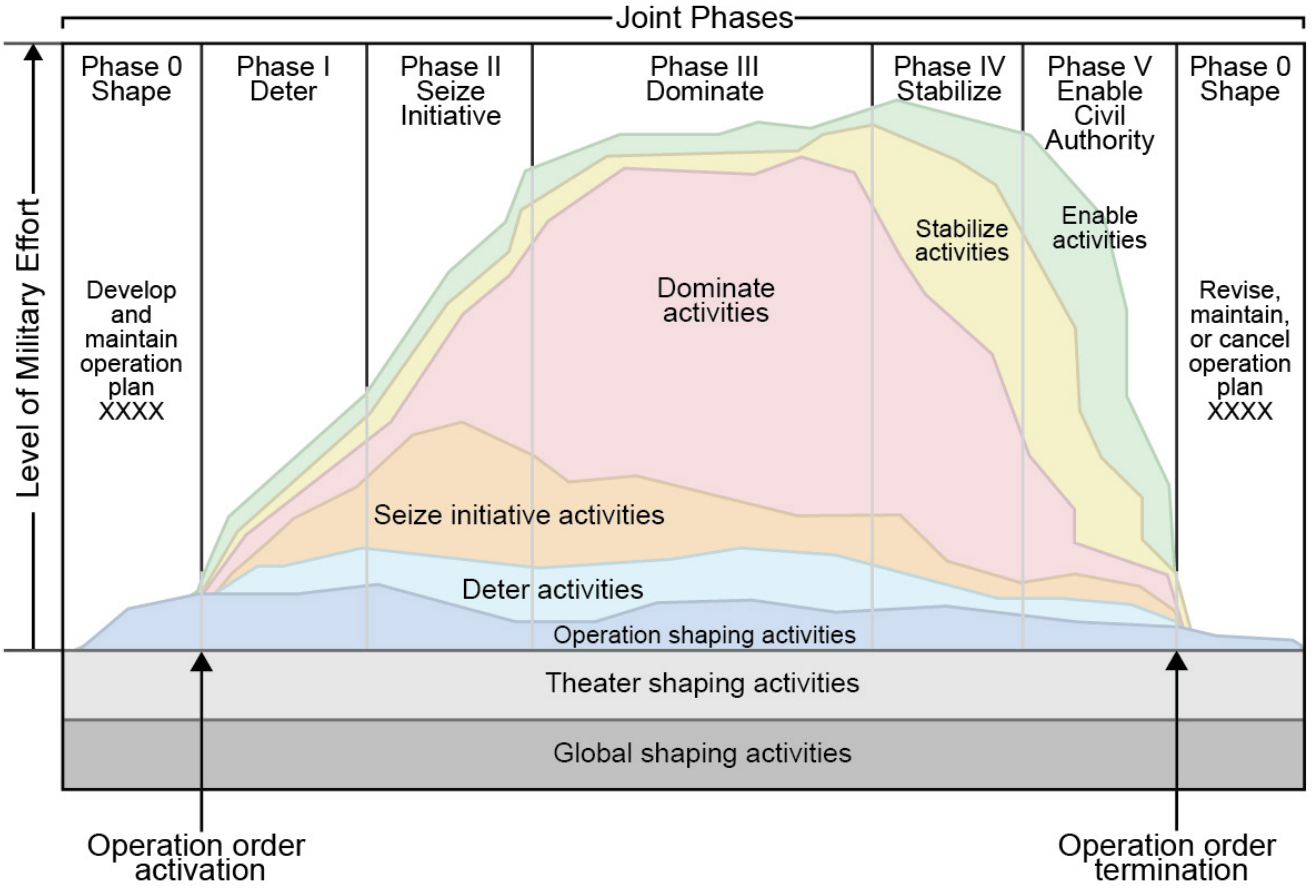
(Table by author)

information for a problem; essentially, identifying the state of what is certain to what is uncertain.[9] Table 1 describes each domain within the Cynefin framework.[10]

The U.S. military seeks a strategy for complex problems, and chess deals with complicated issues. Evidence of this is within the game itself. As we initiate a game of chess, we first start with all the pieces on the board; hence, we have the information, just not the correct answer. Compare this to the game of wei-chi, where we start a game with no pieces on the board; the information is out there somewhere, we just do not know what we are looking for.

Chess—Center of Gravity

In chess, the underlying philosophy is winning through decisive victory with a clear objective in



(Figure from Field Manual 3-0, *Operations*)

Figure 1. Notional Large-Scale Combat Joint Phasing Model

capturing the enemy king and destroying enemy forces.[11] Chess is a linear game with a simple center of gravity (COG)—the king. We initiate a game of chess with all the pieces on the board, seeking then to move forward linearly in a war of attrition. As described in table 2 (on page 20), chess is typically divided into three distinct phases: opening, middlegame, and endgame.[12]

FM 3-0, Operations, Compared to Vietnam-Era Doctrine

It appears as though we have decided that insurgents are no longer a threat and would rather fight a near-peer enemy. FM 3-0 provides an interesting comparison to chess when comparing its phases to the shift to large-scale combat.

As depicted in figure 1, the joint phasing model moves through a linear approach similar to the three phases of chess.[13] To further illustrate this point, let's examine the specific roles of the U.S. Army (see figure 2, page 22).[14]

The strategic, operational, and tactical approaches identified in FM 3-0 resemble Westmoreland's approach in Vietnam, where he used a strategy of attrition warfare. He sought victory by winning a head-to-head war through the collapse and defeat of the enemy by "grinding it down."[15] He saw the battlefield like a game of chess and wanted

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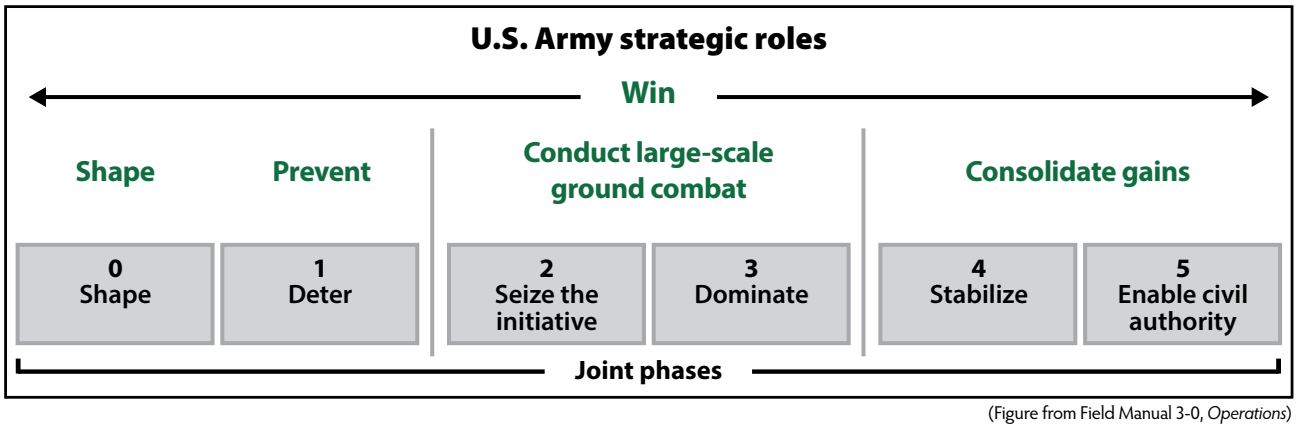


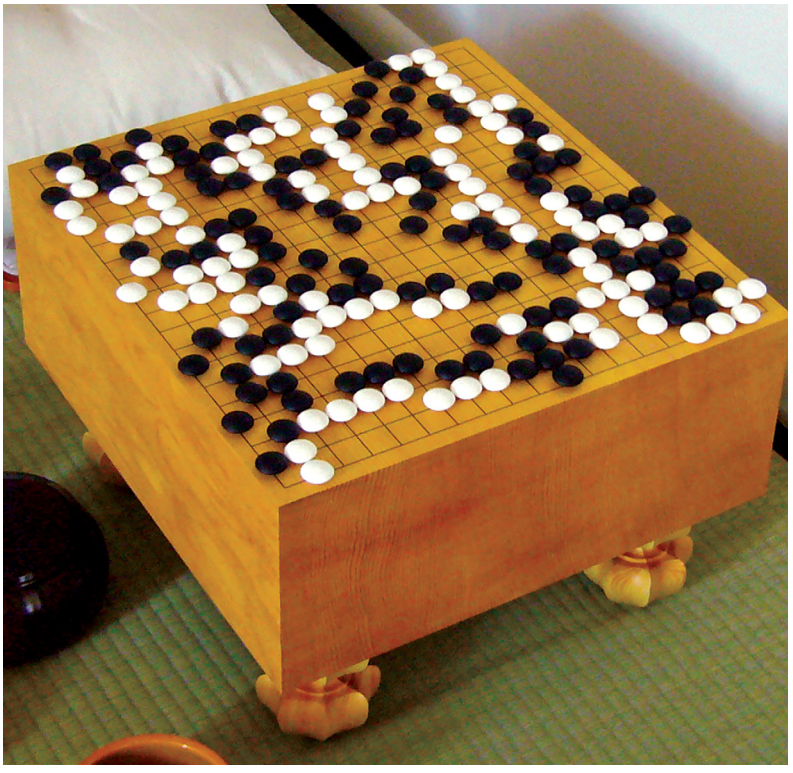
(Figure from Field Manual 3-0, *Operations*)

Figure 2. Army Strategic Roles and their Relationships to Joint Phases

to destroy as many pieces as possible. Westmoreland was predictable and placed his pieces on the table. In contrast, the North Vietnamese did not.

We find similarities when comparing the recently published FM 3-0 in October 2017 to that of FM 100-5, *Operations of Army Forces in the Field*, published in September 1968 while Westmoreland was the chief of staff of the Army (see table 3, page 23).[16]

A quick glance at a tactical approach described in FM 3-0 as compared to a chess board demonstrates the similarities between the strategies of current doctrine to the strategies of chess (see figure 3, page 24).[17] In the opening stage of a chess game, control of the center is of particular importance as it allows for increased mobility of your pieces as well as the ease of access for the remaining parts of the board.



Wei-Chi board showing a game in progress. (Photo courtesy of Goban1 via Wikipedia)

Westmoreland Strategy in Vietnam

"You know you never defeated us on the battlefield," said the American colonel.

The North Vietnamese colonel pondered this remark a moment. "That may be so," he replied, "but it is also irrelevant."

—Conversation in Hanoi, April 1975[18]

The biggest flaw in Westmoreland's strategy in Vietnam was that he sought to win battles through a war of attrition; he measured success by counting the number of enemy dead. Westmoreland defined winning as fulfillment of objectives, yet the objectives were never clear in Vietnam. Just as in chess, winning is the achievement of its objectives by defeating the enemy to such a degree that your opponent can no longer resist; this is essentially checkmate. Finally, to conclude my point, let's examine the definition of winning as described in FM 3-0:

> Winning is the achievement of the purpose of an operation and the fulfillment of its

Table 3. Comparing of Terminology between FM 100-5 and FM 3-0

FM 3-0		FM 100-5	
Terminology	**Description**	**Terminology**	**Description**
Combat Power (Chapter 2, Section III, 2-108)	Ultimately, commanders achieve success by applying superior combat power at the decisive place and time.	**Combat Power** (Chapter 5, Section I, 5-5)	Superior combat power must be concentrated at the critical time and place for a decisive purpose.
Phase (Chapter 1, 1-53)	A phase is a definitive stage or period during a joint operation in which a large portion of the forces and capabilities are involved in a similar or mutually supporting activities for a common purpose that often is achieved by intermediate objectives.	**Phasing** (Chapter 5, Section III, 5-18 [c][2])	A phase is a distinct period of an operation, at the conclusion of which the nature and characteristics of the action change.
Offensive Operations (Chapter 7, 7-1)	Offensive tasks impose the commander's will on the enemy. Against a capable, adaptive enemy, the offense is the most direct and sure means of seizing, retaining, and exploiting the initiative to gain physical, temporal, and cognitive advantages and achieve definitive results. Executing offensive tasks compels the enemy to react, creating or revealing additional weaknesses that the attacking force can exploit.	**Principle of the Offensive** (Chapter 5, Section 1, 5-4)	Offensive action is necessary to achieve decisive results and to maintain freedom of action. It permits the commander to exercise initiative and impose his will on the enemy, to set the pace and determine the course of battle, to exploit enemy weaknesses and rapidly changing situations, and to meet unexpected developments.
Multi-Domain Extended Battlefield (Chapter 1, 1-23)	The interrelationship of the air, land, maritime, space, and the information environment (including cyberspace) requires a cross-domain understanding of an operational environment.	**Multicapable Forces** (Chapter 4, Section III, 4-15)	The organization of Army forces must provide the capability to conduct successful operations in all forms of conflict as well as in a wide range of environments without major change in organization and equipment.
Conflict Continuum and the Range of Military Operations (Chapter 1, 1-1)	Threats to U.S. interests throughout the world are countered by the ability of U.S. forces to respond to a wide variety of challenges along a conflict continuum that spans from peace to war. U.S. forces conduct a range of military operations to respond to these challenges.	**Spectrum of War** (Chapter 1, Section II, 1-8)	The spectrum of war encompasses the full range of conflict—cold, limited, and general war—and reflects the nature and magnitude of violence involved in each form.

(Information taken from respective field manuals; table by author)

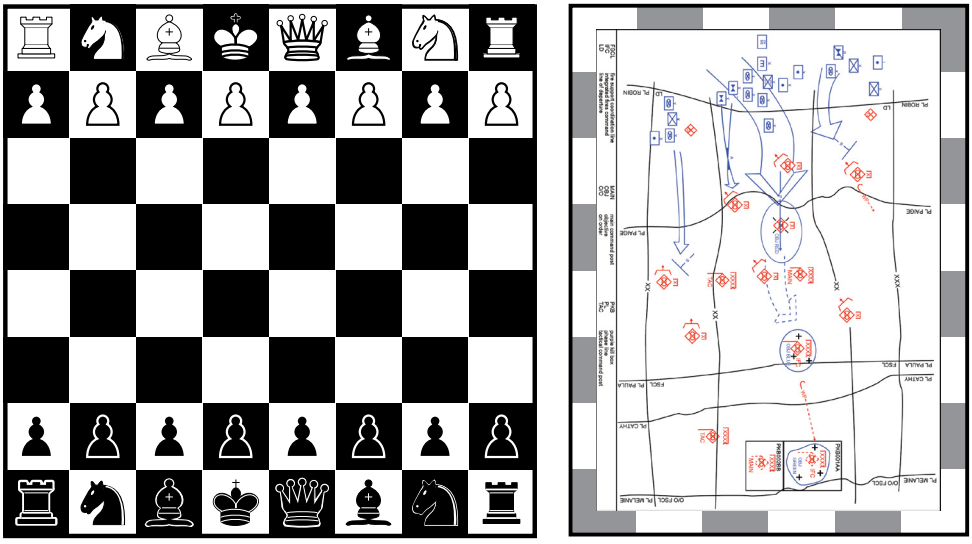
objectives. The Army wins when it successfully performs its roles as part of the joint force during operations. It wins when it effectively shapes an OE for combatant commanders, and when it responds rapidly with enough combat power to prevent war thorough deterrence during crisis. When required to fight, the Army's ability to prevail in ground combat at any scale becomes a decisive factor in breaking the enemy's will to continue fighting. The Army wins when an enemy is defeated to such a degree that it can no longer effectively resist, and it agrees to cease hostilities on U.S. terms. To ensure

that the military results of combat are not temporary, the Army follows through with its unique scope and scale of capabilities to consolidate gains and win enduring outcomes favorable to U.S. interests.[19]

Wei-chi—Understanding North Korea and China

Wei-chi (otherwise known as Go in Japan and Baduk in Korea) is an abstract strategy board game. Having its origin in China roughly four thousand years ago (making it the oldest board game in the world), it is an abstract way to examine the Chinese way of war and diplomacy.[20] David Lai writes in *Learning from the Stones: A Go Approach to Mastering China's Strategic Concept, Shi,*

> The game board is conceived to be the earth. The board is square representing stability. The four corners represent the four seasons, indicating the cyclical change of time. The game pieces, the stones, are round, hence mobile. The spread of stones on the board reflect activities on earth. The shape of the stone engagements on the



(Chessboard graphic courtesy of ILA-boy via Wikimedia Commons; maneuver graphic from Field Manual 3-0, *Operations*; composite graphic by author)

Figure 3. Chess Board and Maneuver Graphics

Table 4. Characteristics and Descriptions of Wei-Chi

Characteristic	Description
Type of game	Wei-chi is a two-person game where the board takes the form of a square grid containing 361 intersections (nearly six times as many squares of a chess board).
Pieces	Wei-chi is played with black and white pieces called "stones" on an empty board.
Intersections	Stones are played on the intersections, where chess is played within the square.
Objectives	There are two objectives in wei-chi: control of territory and capture of hostile stones; where "territory" is defined as intersections impregnably surrounded by the stones of one or the other side.
Key to victory	The game ends when neither side considers itself able to gain further territory or to kill or capture additional enemy stones.
Scoring	The score of a side is the sum of the number of intersections of territory (in chess, territory is not important) that it has encircled, and the number of stones captured or killed by the end of the game.
Winning	The side with the higher scores wins.

(Descriptions from Scott Boorman, *The Protracted Game*; table by author)

Table 5. Key Points to a Successful Wei-Chi Strategy

Point	Description
#1	Utilize the edges of the board as an aid in encircling the maximum amount of territory.
#2	The edges form natural walls, from beyond which no hostile group can penetrate into the border area base.
#3	Play first near the corners, where two edges of the board do half the work for the player, next along the sides.
#4	**Key difference from chess.** Last of all, play in the center regions where encirclement of territory is most difficult.
#5	Minimize congestion of stones. Calculated dispersion of forces to maximize influence dissemination.

(Descriptions from Scott Boorman, *The Protracted Game*; table by author)

> board is like the flow of water, an echo in Sun Tzu's view that the positioning of troops be likened to water.[21]

In *The Protracted Game: A Wei-Chi Interpretation of Maoist Revolutionary Strategy*, Scott Boorman remarks, "The structure of the game [wei-chi] and in particular, its abstractness makes possible a depth of analogy which has no parallel in the relatively superficial comparisons of Western forms of military strategy to chess or poker."[22] Boorman compares wei-chi to the writings of Mao Tse-tung, for which Mao wrote in a 1938 essay, "Problems of Strategy in Guerrilla War against Japan,"

> Thus there are two forms of encirclement by the enemy forces and two forms of encirclement by our own—rather like a game of wei-chi. Campaigns and battles fought by the two sides resemble the capturing of each other's pieces, and the establishment of strongholds by the enemy and of guerrilla base areas by us resembles moves to dominate spaces on the board. It is in the matter of dominating the spaces that the great strategic role of guerrilla base areas in the rear of the enemy is revealed.[23]

Table 6. Complex Nature of Wei-Chi Using Characteristics of the Conflict System Compared to Wei-Chi

Wei-chi concept	Conflict system
Actor	Side (black or white)
Conflict space	Board
Boundary of conflict space	Boundary of board
Unit of conflict space	Intersection
Distance from boundary of conflict space	Distance from the edge of the board
Unit of force	Stone
Zone of control	Territory and influence
Elimination of force units	Capture of stones

(Descriptions from Scott Boorman, *The Protracted Game*; table by author)

Table 7. Common Vietcong Tactics

Tactic	Meaning	Salient feature
Encircle-point-strike-reinforcements (aka fishing tactic)	Encircle a point in order to induce reinforcement and wipe out the reinforcements on the way.	Attack unexpectedly and force your enemy reinforcements into battle under your own control.
Block-reinforcements-strike-point tactic	Concentrate thoroughly a superior number of troops to engulf a smaller number.	Troops blocking the reinforcements make a sustained defense so as to trade space for time.
Surprise-attack-from-a-distance tactic (including raids)	A sudden strike to wipe out your enemy from a concealed location.	Attack on exposed troops from concealment.
Mobile attack	The tactic implies the Communist Chinese mobile-warfare principle: fight when you are sure to win; retreat when you are not sure to win.	Shift the main point of attack. Seek out the opponent's weak point, initiate an unexpected attack and pull out quickly whenever the offense meets a setback.
Gap penetration by counter-advance	Enter enemy territory by making use of gaps between troops.	Implies: You come to my home and I go to yours.
Gap penetration by unexpected attack (Achilles' heel tactic)	Crack troops are selected to penetrate to the enemy's rear from a thinly deployed enemy position by taking advantage of enemy negligence.	Coordinated with a simultaneous frontal attack.
Point assault	Strong force of attack troops is concentrated at the position to be broken through, forming an assault spearhead.	The spearhead is composed of different echelons to breakthrough the center like stabbing with a sharp sword.
Infiltration-and-splitting tactics	Piercing	Advance assault troops into the opponent's position by means of infiltration.
	The splitting method	A wide frontal area with no exposed flank.
Two-line tactic	Harass and contain the enemy forces by a large-scale guerrilla raid in the rear.	Conducted in coordination with a frontal attack.

(From Pen-t'ao Chung, "Vietcong Strategy Tactics"; table by author)

Table 4 (on page 24) describes some of the characteristics of the game of wei-chi.[24] A key definition Boorman provides us is the tactic of *encirclement*, which he describes as, "First, encirclement should be roughly outlined in such a manner that the enemy group cannot conduct an effective breakout to safety. Next, the encirclement should be tightened, and attempts made to prevent creation by the opponent of an invincible position."[25] Moreover, Boorman provides a description of successful strategies for wei-chi (see table 5, page 25).[26]

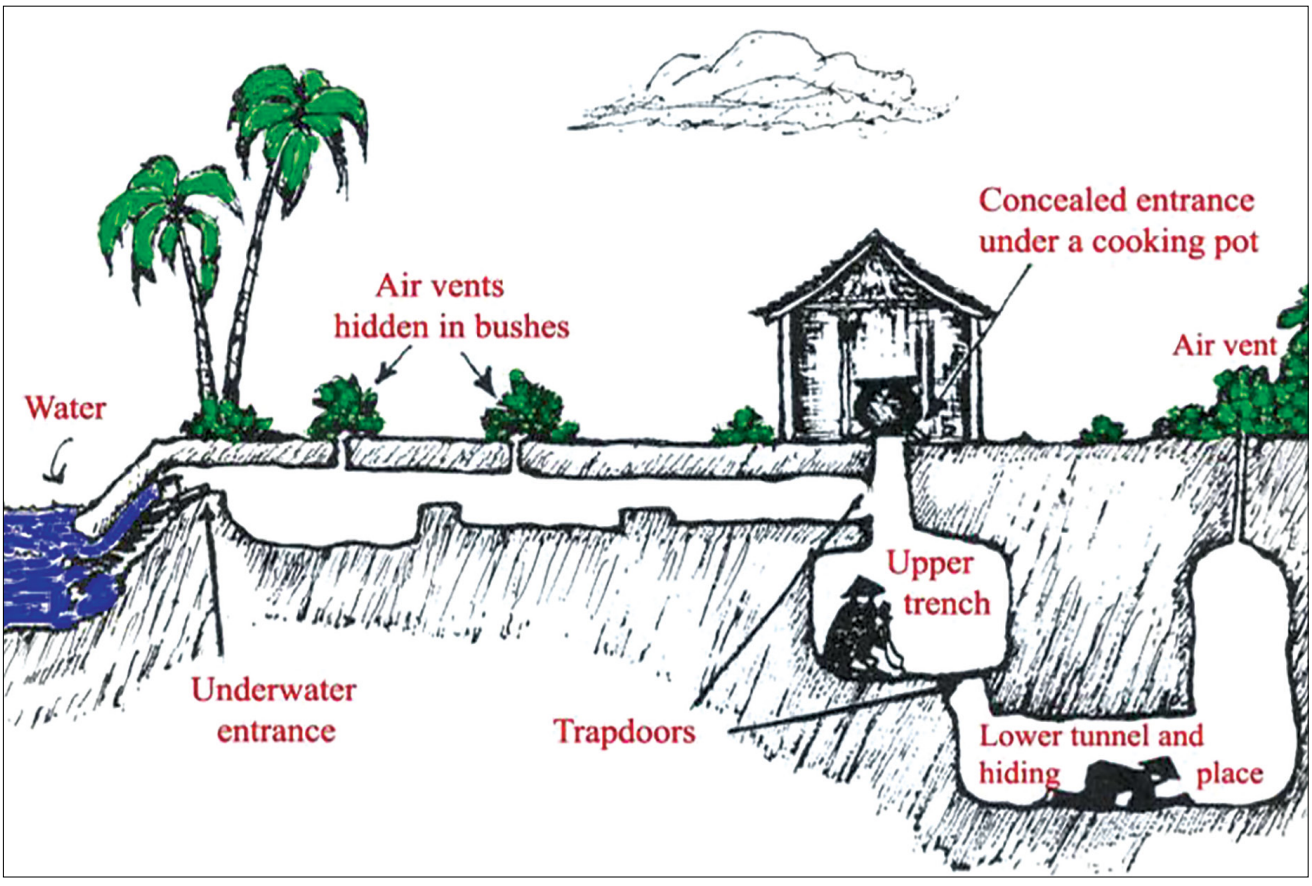


Diagram depicting a Vietcong tunnel network. (Graphic courtesy of the U.S. Army Corps of Engineers)

Finally, let's examine how Boorman connects wei-chi to Chinese military strategy. Table 6 (on page 25) represents the complex nature of wei-chi and similarities to systems theory and systems thinking, where "a system is a group of interacting, interrelated, and interdependent components or subsystems that form a complex and unified whole," and where "systems thinking is a process of understanding how parts of a system work and influence each other as part of a greater whole."[27]

Vietcong Strategy and Tactics

Ever since Ho Chi Minh got to know Mao Tse-tung, he has treated Mao as his tutor and copied Mao's notes on military thinking.

—Pen-t'ao Chung[28]

In *Vietcong Strategy and Tactics,* Pen-t'ao Chung writes about the origin of Vietcong military thinking. Chung also provides a list of tactics the Vietcong most often used during the Vietnam War (see table 7, page 26).[29]

The Vietcong dug tens of thousands of miles of tunnels, which included an extensive network that ran underneath Ho Chi Minh City (formerly Saigon).[30] They went underground for protection and concealment from the better-equipped and better-supplied U.S. forces. The tunnels served a wide array of purposes, including as a venue for booby traps and ambushes against pursuing forces. Some were equipped with field hospitals, and some included sleeping areas. Some tunnels even navigated underneath American bases. The Vietcong would use these tunnels to fight and then essentially disappear.

Moreover, Vietnamese communist leader Ho Chi Minh and Gen. Vo Nguyen Giap were both students and avid readers of Sun Tzu's *Art of War.*[31] Where Westmoreland tried to kill as many enemies as possible, Giap used Sun Tzu tactics such as:

- using insurgent forces to conduct hit-and-run attacks while avoiding confrontation;
- forcing the enemy to reveal himself, which also revealed enemy weak spots to attack;

- remaining as close to his enemy as possible, which essentially limited close air support for U.S. troops; and
- through a tactic for which Sun Tzu applies great importance to, using deception through a vast network of spies.

With an emphasis on strategy and stratagem, the Chinese way of war is the polar opposite of the American way of war.

> A popular saying in the Chinese diplomatic and defense communities is about the Chinese way of war and diplomacy and its difference to that of the West: Chinese place heavy emphasis on strategy and stratagems whereas the West relies more on overwhelming force and advanced capabilities.[32]

Moreover, the China Security Review Commission in 2002 warned of miscalculation and misunderstanding in our thinking and planning regarding the Chinese.[33]

> Chinese strategic thinking and military planning differ markedly from our own, underscoring the need to study such differences more carefully. … The possibilities of miscalculation, miscommunication, and misunderstanding are high, given the substantial differences in each country's thinking and planning, and require far more attention from U.S. policymakers and the Congress.[34]

Lastly, there is an old Chinese saying, "When you kill 10,000 enemy soldiers, you are likely to lose 3,000 lives as well."[35] If we enter into conflict with North Korea and/or China, we will discover (just as we did in the Korean War and the Vietnam War) that we will not be able to sustain a war of attrition with an enemy poised to throw an endless number of soldiers at us. We cannot plan for war by playing chess when our enemy is playing wei-chi. If we identify North Korea and China as our next threats, we must start doing our homework and start learning Chinese strategic thought.[36] As Sun Tzu wrote, "If you know the enemy and know yourself, you need not fear the result of a hundred battles."[37] ■

Notes

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The Use of "Stryker" in Doctrine Is Limiting and Symptomatic of Doctrinal Shortcomings That Are Harmful to Small-Unit Leaders

Capt. Matthew Allgeyer, U.S. Army

In doctrine, the use of the term "Stryker" to refer to formations and their associated capabilities is unduly limiting.[1] It is symptomatic of shortcomings in the U.S. Army's doctrinal framework behind the medium-force concept. These gaps in the Stryker program's doctrine, training, and materiel are causing the total Stryker concept to function sub-optimally as a whole. Changing "Stryker" to "Medium" in doctrine

would help drive any additional doctrinal changes necessary to allow small-unit leaders to think comparatively about peer-competitive concepts. This change would also help clarify the medium concept's place in the current Army brigade combat team (BCT) framework and establish the medium force's role distinct from infantry brigade combat teams (IBCTs) and armored brigade combat teams (ABCTs).

A Problem of Words

At first glance, it may seem excessive to cavil over suggesting that simply changing a term could help induce a cascade effect that produces a paradigmatic change of thinking. After all, the first thing a soldier learns about a Stryker is that it is light, armored, and highly mobile.[2] Changing the name might be interpreted by many as merely using different terms uselessly to refer to the same thing. However, though it is true that changing the name of the Stryker brigade combat team (SBCT) to medium brigade combat team (MBCT) with no other changes would be meaningless, changing the name would help signal a change in thinking surrounding the Stryker concept that would lay the conceptual groundwork for fostering other changes.

The Stryker concept currently exists in a vacuum. At present, the Stryker doctrine overlooks near-peer forces of similar makeup. In fact, U.S. doctrine does not currently possess the language to talk about other forces of similar material design to the Stryker concept. For example, if we were to try to talk about the closest peer competitor to an SBCT, the Russian motor-rifle brigade and regiment, or a peer friendly force like the German *Jägerbataillon*, our current doctrine hobbles thought as it is constrained by thinking circumscribed by one type of named weapons system.[3] In contrast, doctrinal discussions would be less constrained if they substituted a term that enabled discussion of a medium-range class of general weapons systems rather than attaching it to just one specific platform.

An Infantry Carrier Vehicle Dragoon (ICVD) from Ghost Troop, 2nd Squadron, 2nd Cavalry Regiment, provides overwatch for a dismounted squad's maneuver May 2018 as part of a movement to contact during the ICVD/Common Remote Weapons Station mounting a Javelin missile (CROWS-J) operational test at the Joint Maneuver Readiness Center in Hohenfels, Germany. (Photo by Tad Browning, U.S. Army)

To illustrate this point, let us consider discussion of the capabilities of a similar-type German capability. The Jägerbataillon fields the *gepanzertes Transport-Kraftfahrzeug* (GTK) Boxer, a vehicle remarkably similar in intent and design to the current generation of Stryker. The GTK Boxer, like the Stryker, is an eight-wheeled lightly armed vehicle capable of carrying troops. It also has multiple variants for different mission requirements, similar to the Stryker. Additionally, it fields the M3M .50 caliber machine gun, the modernized German version of the M2, or the GMG 40 mm grenade launcher as its primary armament. This armament is identical to the current generation of Stryker. In contrast, the Russian motor-rifle regiment fields the *Bronetransporty* (BTR) family of vehicles.[4] The Stryker shares some similarities with the BTR vehicles but has some major differences. Each are both eight-wheeled, lightly armored troop carriers, but where the Stryker fields light weapons as its main armament, the later BTR models field a 30 mm cannon.

Though both of these units and vehicles have important similarities and difference to the U.S. SBCT and Stryker, the U.S. military has no term for a set of materiel and organization similar to those used by our peer units. For example, we cannot talk about the Russian SBCT because quite obviously they do not use Strykers, nor is it similarly appropriate to talk about the German motor-rifle concept. Here is the first place where we can see that the adoption of the term "Stryker" to refer to formations instead of just in-kind materiel is limiting to tactical thought.

The use of not just a term for material—for example, rifle—but the use of a materiel model name designator, Stryker, is patently inappropriate and unwieldy in any other setting. Referring to an infantry battalion as an M-4 battalion is clearly inappropriate, it does not acknowledge the other weapons systems or capabilities of the formation and focuses thinking on the most common type of weapon system. It may be appropriate to call a platoon of Abrams tanks a tank platoon, because a formation of "tanks" is a type of material that has specific capabilities and associated tasks.[5] However, we do not call

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A BTR-82A armored personnel carrier from 27th Separate Motor Rifle Brigade took part in the Victory Day parade for the first time 12 April 2013 in Alabino near Moscow. (Photo by Vitaly Kuzmin, www.vitalykuzmin.net)

them, "Abrams Platoons," because tanks as a concept in the setting of the ABCT and contrasted against a competitor mechanized force is much more important than the specific model of tank. To use the model type as a naming convention in these last two examples would result in the same issues as we have seen with the use of the term "Stryker." Such narrow language use limits the scope of tactical thinking and requires further terminology to discuss comparable units. For example, how would we talk about Russian infantry? Using current Stryker doctrinal naming convention we would have to call them *Kalashnikov* companies. We would then be forced to invent a parity term to acknowledge peer formations and to discuss their capabilities. This may seem like a reductio ad absurdum argument, but it is the situation a U.S. soldier finds himself in when talking about peer medium formations. The SBCT's break from established military taxonomy is not only verbally confusing, it is also doctrinally hazardous.

This inability to capture a common understanding of medium forces through preexisting doctrinal terms and an inability to use doctrine to adequately contrast and describe peer and threat medium forces can lead to real-world problems. Stryker formations in Europe have made requests to field the "Dragoon" version of the Stryker infantry carrier vehicle outfitted with the 30 mm cannon, as well as other short-suspense fieldings to make up perceived shortfalls.[6] This is in response to the near-peer threat posed by Russian motor-rifle formation fielding the BTR manufactured in the 1980s (BTR-80) and possibly the BTR replacement platform, the "Bumerang."[7] Both vehicles field a 30 mm cannon and optional antitank guided missile systems. In addition, the SBCT must also consider materiel shortfalls stemming from the standard Russian difference in medium forces. Russian motor-rifle regiments regularly attach tanks and infantry fighting vehicles to form a standard formation.[8] The makeup and capabilities of these units are well known; U.S. military planners have been analyzing and planning against them since the Russians first created them during the Cold War.[9] It would seem logical that when V Corps and its

subordinate ABCTs were deactivated and its mission given to the 2nd Calvary Regiment and corresponding SBCTs, these shortfalls would be identified.[10] Once these shortfalls were identified, materiel fixes should have been implemented before arrival in the country, or at a minimum, they should have had a materiel solution and implementation plan beforehand.

to bear on the objective. To do this requires a much larger tooth-to-tail ratio and much more complex support trains. It will consequently take a great deal of time to build armored combat power in an area of operation.[12] We can easily contrast this BCT with another well-established BCT, the IBCT. The IBCTs, in many ways, are the inverse of the ABCT. They are slower and have less

> Most would reflexively say the SBCT falls in between the two: the ABCT and the IBCT. But that is too generalized a statement to be meaningful in combat-operation planning and materiel management.

This issue is more complex than just doctrinal terms, but part of the reactionary nature of the current situation must be due in part to the fact that every leader does not immediately understand that the SBCTs near-peer competitor is the motor-rifle regiment. Common doctrinal understanding of medium elements, their similarities, and their differences would give planners a common starting point from which to work. As it stands, planners currently think of Stryker formations as a unique item. When they plan against peer and near-peer forces, leaders must consider the threat military's entire materiel makeup in totality, not start from a point of parity like sister BCT's planners.

A Problem of Words Leads to a Problem of Organization

Further exacerbating these issues of doctrine is the lack of doctrinal-shaped thinking about materiel and formations as a whole. Returning to the example of the tank, the term "tank" encompasses a group of materiel. That group of materiel is placed in a doctrinal framework with associated units that allows us to think holistically about the larger formations that drives its capabilities and creates its limitations. An American tank platoon will be part of an armor company and battalion. That battalion will have standard supporting materiel, like Bradleys and M-88 Recovery Vehicles.[11] The associated material and unit types are specific and selected to make up an ABCT. Supporting materiel and formations are selected with the primary intent of an ABCT in mind. Simply, an ABCT will maneuver quickly and bring a great deal of firepower

firepower but require much less support and take less time to build combat power.[13] This is close to something that could be called bedrock Army doctrine.

So where does the SBCT fall into this planning spectrum? Most would reflexively say the SBCT falls in between the two: the ABCT and the IBCT. But that is too generalized a statement to be meaningful in combat-operation planning and materiel management. What are the specific aims of the SBCT? How does it bridge the gap between IBCT and ABCT? Current doctrine does not reflect a unified answer to this question. The purpose and method of a Stryker infantry battalion fielding traditional Strykers armed with M-2 .50 caliber machine guns and Mk 19 grenade launchers is much different than a Stryker battalion fielding the purposed 30 mm cannon.[14] The materiel change is significant and, perforce, will alter the overall employment of the Stryker platform. Another significant change to the SBCT organization happened recently, taking the mobile gun system platoons from the infantry battalions and task organizing them with the antitank guided missile systems in one troop under the cavalry squadron. This is a significant structural adjustment and signals a change in the way of thinking about the proper employment of supporting units.[15]

This is not just a higher-level strategic concern about when and how to utilize an SBCT as opposed to another type of BCT. The strategic problem is arguably of least concern. Division and higher staffs will do an exhaustive analysis of the employment of any troops into a combat environment. They will overcome most shortcomings caused by doctrinal uncertainty in the same way they

An Infantry Carrier Vehicle Dragoon (ICVD) from Ghost Troop, 2nd Squadron, 2nd Cavalry Regiment, overwatches the engagement area May 2018 from its battle position during the ICVD/Common Remote Weapons Station mounting a Javelin missile (CROWS-J) operational test at the Joint Maneuver Readiness Center in Hohenfels, Germany. (Photo by Tad Browning, U.S. Army)

mitigate any perceived risk; through attachments, enablers, and other force multipliers. Though doctrinal issues might slow down the analysis, eventually solutions will be proposed, as in the case of the modification of the 30 mm cannon mentioned earlier.

The greater issue is that small-unit leaders within the SBCT may focus on contrary proficiencies depending on their experience, background, and inclinations. Two infantry company commanders in the SBCT could reasonably train at opposite ends of the tactical spectrum. One could emphasize the dismounted mission and train his or her company similarly to an IBCT using his Strykers as combat taxis. Another could focus on armored mobility and have his or her platoons operate in close proximity to the Stryker using it as a fire superiority platform like an ABCT. Both of these solutions may be correct depending on the situation. This flexibility and ability to operate in the gap between an IBCT and an ABCT is a key point to the Stryker platform; having two companies within the same battalion trained and operating on completely different ends of the tactical spectrum is a problem, however.

Current doctrine does not establish where on the spectrum the limits are. Doctrine and materiel need to create focus and prevent commanders from training and fighting as an IBCT with better-armored transport or an ABCT with underpowered vehicles. It also needs to better identify proficiencies and firmly establish where and how the medium force will fight.

Changing a Term to Signal a Change in Thought

The starting point to reform doctrine is to remove Stryker from our terms and doctrine except where it refers specifically to the M11XX family of vehicles based on the General Dynamics LAV-III.[16] The replacement term should signal our intent for our formations and understanding of peer-like formations. I propose "medium" as shorthand for medium-armored as originally used

by the 2001 RAND study commissioned by the Army.[17] This would start to solve some of our current doctrinal problems immediately; SBCTs would become MBCTs, allowing us to talk about peer medium forces. It would give all soldiers a starting point from which to plan; for example, Russian medium forces field the 30 mm cannons as prime armament as opposed to German medium forces that use .50 caliber machine guns and 40 mm automatic grenade launchers like the United States.[18] This simple ability to use common terms to capture a shared idea allows junior leaders to extrapolate some simple but important ideas. If we were to integrate with the German army in a combined operation, for example, soldiers would easily understand that our forces are similar, and then the integration of the different platforms could use the same planning factors since they have comparable weapon systems. Conversely, if we were fighting the Russian army, we could expect to be overmatched by their standard equipment in their peer formation.

> “Removing Stryker from our doctrinal terminology can lead us to being the premier medium force in the world today.”

Once we establish “medium,” or some other Department of the Army-approved word, as the doctrinal term of choice to replace “Stryker,” we need to build off this change. This change will allow us to take a fresh look at what the medium force is and what the medium force is designed to do. There are a lot of historical and current answers to this question, and we need to find where the MBCT will fit into our current BCT framework. For example, do we expect the MBCT to fight near-peer armored units with its organic equipment? Do we expect the MBCT to fight near-peer threat medium forces like the Russian motor-rifle regiment? In both these cases, we need to analyze our materiel programs and doctrinal organization.

Currently, the SBCT fights at a disadvantage against these units and requires significant attachments to achieve parity. Similarly, will the Stryker platform be used to support the MBCT in dismounted operations to provide fire superiority or as quick lightly armored combat taxis? How do we balance the light fighting rapid deployability with the ability to fight armored units organically? How many additional support requirements are we willing to accept? (I personally believe we need to expand out materiel in the medium force beyond just the Stryker platform to other lightly armored platforms to be able to strike the proper balance and better meet both mission requirements.) Regardless of how we decide to answer the current problems, the answers to these questions will be distinctly American. The answers must acknowledge other medium forces historically and in the present to be valid. However, it will be difficult to properly answer these questions in a larger holistic context being stymied by the unwieldy term of Stryker. Regardless of what the Army finally determines, doctrine needs to be firmly established and our common training tasks refined to give better guidance and oversite of the MBCT.

Once we have rooted in doctrine what the medium force can and cannot do, Stryker modernization should take place. A common doctrinal thesis will drive materiel acquisitions and reduce reactionary fixes. Doctrinal and material refinement of the medium concept along these lines will create a better and more synchronized force, which will be better able to meet and overcome new challenges posed by the rapidly evolving battlefield. Removing Stryker from our doctrinal terminology can lead us to being the premier medium force in the world today. The medium force concept has some very strong arguments for it. Medium forces perform very well in complex terrain.[19] Medium force also offer a rapidly deployable option that allows us to bridge the gap between fast-deploying, low-footprint light forces and slow-deploying, large-footprint heavy forces. Stryker may have been appropriate to refer to all things medium when the program was new and we were just creating the Army’s current iteration of a medium force, but the time has come to refine and move forward.

We can most easily start by dropping the term Stryker and expanding our thinking to encompass medium. ■

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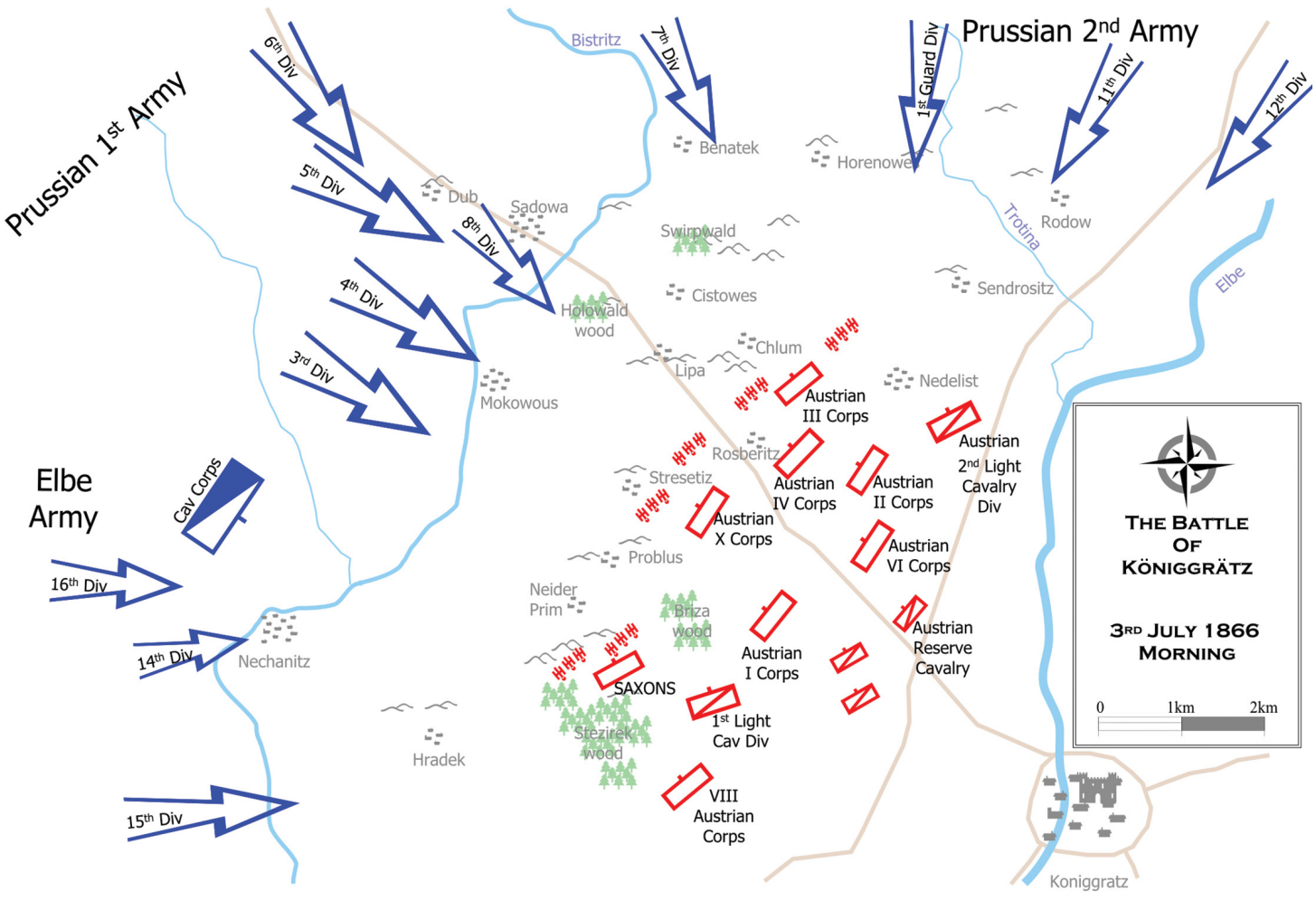
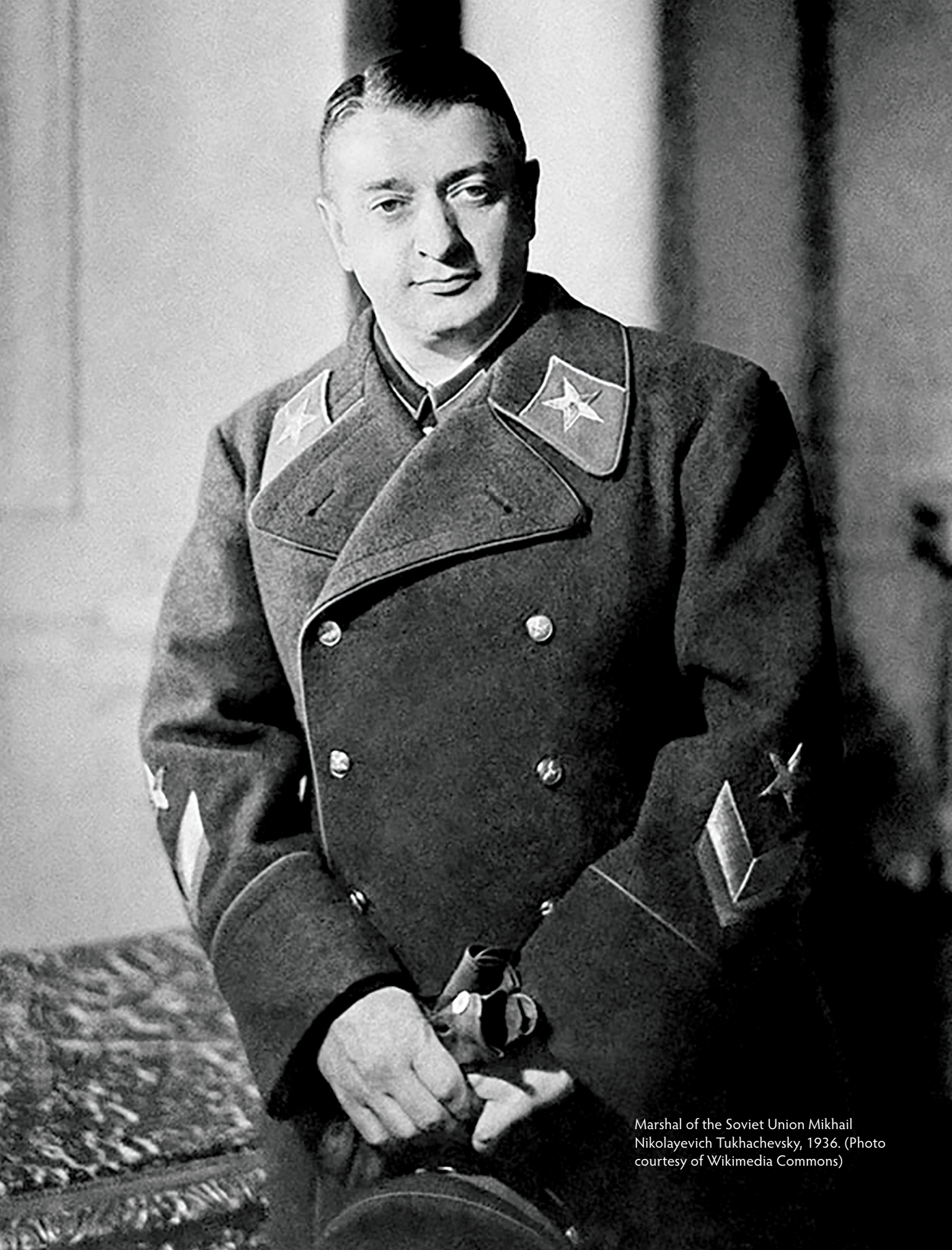


The Battle of Königgrätz on the morning of 3 July 1866. (Graphic courtesy of www.battlefieldanomalies.com)

A History of Operational Art

Lt. Col. Wilson C. Blythe Jr., U.S. Army

Operational art is among the most noteworthy and controversial concepts in modern military thought. Operational art emerged out of the Soviet Union during the interwar era, and by the end of the twentieth century was an integral component of the doctrine of the major military powers. The theoretical construct of operational art combines characteristics of the tactical and strategic levels of war while providing a linkage to make tactical actions serve strategic ends. Operational art ensures this harmony of effort by translating abstract strategic goals into mechanical terms that commanders can then accomplish. In this way, operational art serves as the "mediating, integrative synthesis standing between modern strategy and tactics" and "ensures that the arrangement of tactical actions is not random, but more importantly, that the device that



Marshal of the Soviet Union Mikhail Nikolayevich Tukhachevsky, 1936. (Photo courtesy of Wikimedia Commons)

always and everywhere unites the arrangement of tactical actions is the pursuit of the strategic objective, not some other factor."[1] This article discusses the development of the concept of operational art in the Soviet Union, its eventual adoption by the U.S. Army, and contemporary debates about the utility of operational art.[2]

The Effect of a More Lethal, Longer-Range Battlefield

The massive growth in the size of armies that began with the French Revolution coupled with changes in the means of war—advances in transportation and in weaponry—led to changes in how armies fought. As the range of weaponry increased to the point that the enemy could be engaged as soon as his forces became visible, a critical change in the pace of battle emerged. Commanders saw the disappearance of the pause between the approach march and the battle. The two were now merged. An example of this can be seen in the Prussian defeat of the Austrians at Königgrätz in 1866. There was no interval between the Prussian approach march and their attack on the Austrians. The battle and the march were parts of an organic whole, with the needs of the battle dictating the organization and conduct of the march.[3]

These developments also meant that combat was no longer focused on a single point, as in Napoleon's era; rather, armies deployed into lines of ever increasing length. These lateral dispositions resulted in the dispersal of effort as combat was distributed spatially along the increasingly broad line of contact between the armies. These developments ushered in "a new era in the evolution of military art—*the epoch of linear strategy.*"[4] Despite the growth in the size of armies and the changes in the means for war, the fronts of the second half of the nineteenth century were not continuous. Instead, these fronts were broken and consisted of distinct points of contact between the two forces.[5]

The Wars of German Unification highlighted to military theorists the need for stronger linkage between strategy and tactics. In the wake of the Wars of German Unification, armies continued to expand because of their desire to reach a decisive outcome on the enemy's flank. This lateral extension of the front was accompanied by an increase in its depth. This change in depth transformed how time was a factor in war because the greater the depth of a front, the longer it took the attacking force to fight its way through the defense and achieve its objectives.[6]

From at least Prussian Field Marshal Helmuth von Moltke onward, commanders were tasked with not only directing but also linking distinct tactical actions to achieve their objectives. These actions were geographically, and increasingly temporally, separated from one another. This meant that "the planning and conduct of campaigns began to be based upon 'chunks,' or portions of the whole campaign. These portions came to be known as *operations* and eventually gave rise to *operational art*."[7] The ability to conduct a successful offensive against fronts of an operational scale was key to obtaining strategic objectives.[8]

The armies of the Great War were largely unable to achieve decisive offensive results on an operational scale. Tactical considerations were often allowed to dictate the terms of the operation. This meant that the main offensive thrust was often aimed at a point in the enemy's line that could be easily pierced tactically, not "along an axis that promised operational results."[9] Further complicating the task of the attacker was that armies had become more resilient since the Wars of German Unification. The lethality of weaponry continued to increase, which resulted in a greater use of entrenchments and dispersion by armies in the field, giving an advantage for the defender. Additionally, means of transportation and supply continued to improve, which facilitated the ability of armies to continuously stay in the field.[10]

There was another factor that made it increasingly difficult for armies to achieve operational success. Armies continued to grow in size as they sought a decision on the enemy's flank. However, by World War I, the lateral extension of armies had reached such extremes that it confronted strategy with the problem of a continuous front. The attacking army now had to pierce the enemy's defensive front to achieve a breakthrough. Otherwise, the defenders could simply withdraw and regroup to either reestablish their defense or to counterattack.[11]

Soviet Development of Operational Art

Whether operational art was first demonstrated by Napoleon as Robert M. Epstein maintains, or in the U.S. Civil War as James Schneider argues, is open for debate.[12] However, it is widely acknowledged that it was interwar Soviet military theorists who developed the theory of operational art. They were inspired by the Russian Revolution and guided by their experiences in the attritional struggles of the Great War, along with the

more maneuver-centric campaigns of the Russian Civil War (1917–1922) and Polish-Soviet War (1919–1921) to question military orthodoxy.[13]

An additional catalyst to this bold examination of the character of warfare was the recurring belief among the interwar Soviet leadership that the Soviet Union was under threat of attack from the encircling capitalist powers. By studying recent campaigns, trends in weapons development, and force structure requirements, these Soviet theorists sought to break the stalemate of positional warfare and restore mobility and maneuver to the battlefield. Soviet theorists, led by future Marshal of the Soviet Union Mikhail Tukhachevsky, rejected the emphasis placed on obtaining victory through a single decisive battle of annihilation. Their work led to a new conception of warfare that recognized that the accomplishment of strategic objectives could only be obtained through the cumulative operational success of successive operations. This focused the Soviet theorists on the intersection of strategy and tactics and led to the creation of a new area of military science *operativnoe iskusstvo*, or operational art.[14]

Following the Russian Civil War, the Soviets initially continued to view warfare largely through the traditionally accepted bifurcation of war into the realms of strategy and tactics. However, new, ill, or undefined terms such as "grand tactics" or "lower strategy" were also used by some faculty of the Worker's and Peasant's Red Army (RKKA) Military Academy to describe the complexity of modern war. A. A. Svechin, in a series of lectures on strategy given at the academy in 1923 and 1924, proposed an intermediate category of war that he called operational art.[15]

Svechin defined operational art as the "totality of maneuvers and battles in a given part of a theater of military action directed toward the achievement of the common goal, set as final in the given period of the campaign."[16] In this way strategy set the parameters for the conduct of operational art, which in turn served as the conceptual bridge between strategy and tactics. To put it another way, "battle is the means of the operation. Tactics are the material of operational art. The operation is the means of strategy, and operational art is the material of strategy."[17] Commanders were to use operational art to link together tactical successes into operational bounds designed to achieve a strategic goal.[18]

During the mid-1920s, N. E. Varfolomeev, the deputy head of the Department of Strategy, built upon Svechin's work. Varfolomeev used strategy as the organizing framework for the war in its entirety and tactics as the employment of forces in the engagement, while operational art acted to integrate disparate tactical actions into a unified operation. Varfolomeev described the modern operation as "the totality of maneuvers and battles in a given sector of a [theater of military actions] which are directed toward the achievement of a common objective that has been set as final in a given period of the campaign. The conduct of an operation is not a matter of tactics. It has become the lot of operational art."[19] Working within this framework, Varfolomeev studied the employment of a deep pursuit to annihilate the enemy.[20]

Varfolomeev theorized that it was not possible to achieve the annihilation of the enemy in the course of a single operation, and that it required the execution of successive operations into the enemy's depth. Successful successive, deep operations necessitated "the zigzags of a whole series of operations successively developed one upon the other, logically connected and linked together by the common final objective."[21] This meant that the breakthrough must be integrated with the pursuit in depth along with the use of reserves to maintain the tempo of the offensive to prevent the enemy from reestablishing a coherent defense. Furthermore, Varfolomeev drew attention to the critical importance of logistics to operational art in combating operational exhaustion. Henceforth, Soviet theorists sought to better detail how to accomplish these operations in depth in order to formulate a practical theory of operational art.[22]

Vladimir Triandafillov, chief of operations of the Red Army staff, was given the task of developing a useable theory of operational art. Triandafillov was the intellectual protégé of Mikhail Tukhachevsky. In

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1922, Tukhachevsky was appointed head of the RKKA Military Academy, where he lectured on operations during the recently concluded Russian Civil War. In February 1923, Tukhachevsky stated,

> Since it is impossible, with the extended fronts of modern times, to destroy the enemy's army at a single blow, we are obliged to try to do this gradually by operations which will be more costly to the enemy than to ourselves. The more rapidly we pursue him, the less time we give him to organize his retreat after the battle, and the more we hasten the disintegration of his armed forces and make it impossible, or at all events difficult, for him to enter upon another general engagement. In short, a series of destructive operations conducted on logical principles and linked together by an uninterrupted pursuit may take the place of the decisive battle that was the form of engagement in the armies of the past, which fought on shorter fronts.[23]

Gen. Alexander Andreyevich Svechin, Imperial Russian Army, 1923. (Photo courtesy of Wikimedia Commons)

Under Tukhachevsky's tutelage, Triandafillov, in his 1929 book *The Nature of Operations of Modern Armies*, filled in the details to the theory of successive deep operations that had been outlined by Varfolomeev.[24] Successive operations were soon formally enshrined in Soviet operational art when Triandafillov and Tukhachevsky wrote the first official statement of Red Army doctrine—*Provisional Field Regulations 1929* (PU-29). These regulations guided how the Red Army would employ the future fruits of its embryonic mechanization program during the conduct of operations by waging a "deep battle" throughout the full depths of the enemy's defense.[25]

After Triandafillov's 1931 death in an airplane crash, Tukhachevsky continued to expand upon the idea of deep battle in PU-33, *Temporary Instructions on the Organization of Deep Battle*. Tukhachevsky boldly sought to create one uninterrupted deep operation through the merger of several successive operations. The campaign and the operation would become a single entity through the linking of the initial and subsequent operations into a single unbroken operation that was extended both spatially and temporally so that it coincided with the campaign.[26]

The integration of a series of operations into a single entity extended to campaign-like depths geared to serve a strategic end was a logical consequence of Soviet military thought and the opportunities afforded by the fielding of increasingly sophisticated military means—increasingly motorized and mechanized forces, improved tanks, and military aviation. Tukhachevsky's "theory of deep operations represented a qualitative jump in the development of operational art, and it offered a total escape from the impasse of World War I positional warfare."[27] The next edition of Red Army doctrine, PU-36, *Provisional Field Regulations for the Red Army* (1936) further developed the concept of deep operations and offered detailed instructions for its execution.[28]

Georgii Isserson further advanced Soviet operational art with his *The Evolution of Operational Art*. Isserson was made an instructor at the Frunze Military Academy in 1929 and in his 1936 revision to his 1932 book "The golden age of military thinking in the 1920s and 1930s reached its full culmination."[29] Isserson had also worked with Tukhachevsky on PU-36.

> The single most coherent core of theoretical writings on operational art is still found among the Soviet writers.

Isserson maintained that "an operation is a weapon of strategy, while strategy is a weapon of politics."[30] He argued that the major challenge to operational art was to link tactical actions so as to create "a highly efficient system coordinated purposefully and sequentially along the front and throughout the depths to bring about the enemy's defeat."[31] Tactical actions were only a milestone en route to a larger objective and not the objective itself. He dismissed as a "useless fact" those tactical actions that did not lead to the obtainment of operational success.[32]

In *The Evolution of Operational Art*, Isserson expanded upon Tukhachevsky's theory of deep operations. According to Isserson, the problem confronting Soviet operational art was that the offensive had to defeat the enemy throughout the entirety of his defense, to operational depths. At the same time, this meant that the power of the offensive would dissipate as it advanced into the depths of the defense. Instead of advocating for a series of successive operations, he argued that a modern operation was a series of successive operations because the thickening of the defense meant that modern offensive efforts could not all occur at the same time or in the same place. He further extrapolated that a modern campaign consisted of a system of consecutive deep operations while "a *system of consecutive deep campaigns*—air, land and sea—integrated in space and time" were the component parts of modern war.[33]

The lessons that the Soviets took from the Spanish Civil War (1936–1939) called some to question the application of operational art through the Soviet theory of deep operations. But the lethal blow to Soviet theories of operational art came in 1937, the same year that the final edition of Triandafillov's *The Nature of the Operations of Modern Armies* appeared. That was when Soviet leader Joseph Stalin began his purge of the officer corps of the Red Army during which "the cream of the crop of innovative military theorists, were purged and killed."[34] Labeled a traitor and enemy of the people, Tukhachevsky was executed in 1937, followed by Svechin the next year. Varfolomeev died in prison. Comparatively, Isserson was lucky; he was arrested in 1941 and spent the next fourteen years in a labor camp.[35]

Not only were the theorists of operational art liquidated; their ideas were also now suspect on political-ideological grounds. Those officers who survived the purge were largely unable or unwilling to openly use the operational theories developed by Tukhachevsky and his confederates. The Red Army now possessed an operational theory and doctrine for its employment that was frozen by the Stalinization of military science, separated from its strategic context, and severed from its theoretical roots.[36]

However, before these Soviet theorists were purged, they were able to enshrine their work into Soviet military theory and doctrine. While Red Army operations during the Second World War avoided references to the theory of deep operations, the work of these military thinkers clearly provided the theoretical template that undergirded Soviet operations. Early in the war, the lingering effects of the purges, Stalin's poor strategic leadership, and changes in force structure handicapped the application of their ideas. Nevertheless, the Soviet 1941 winter counteroffensive in front of Moscow looked eerily similar to Triandafillov's model of successive operations. As the war progressed, and Soviet commanders became more competent at handling large mechanized formations, Soviet operational art returned to the concept of deep operations that Tukhachevsky and Isserson outlined in PU-36. By the end of the war, Soviet operational art achieved the stunning successes that the prewar theorists had promised.[37]

In the postwar era, Soviet military thought focused on the requirements of nuclear war. In the mid-1960s, following de-Stalinization, deep operations was resurrected and many of the theorists purged during the interwar era were rehabilitated. However, "Until *glasnost* and *perestroika*, an appreciation of the contributions of that period to military theory, as General-Colonel V. N. Lobov noted in 1989, were little known and poorly appreciated even within the Soviet Armed Forces."[38] While these prophets may

not have been honored in their own land, their work found an appreciative audience in the U.S. Army. One professor at the U.S. Army's School of Advanced Military Studies wrote, "The single most coherent core of theoretical writings on operational art is still found among the Soviet writers."[39] The work of Tukhachevsky and his fellow travelers was fundamental to the doctrinal reform of the U.S. Army following the Vietnam War, which included the incorporation of operational art into U.S. Army doctrine and the acceptance of a doctrine—AirLand Battle—that bore an uncanny resemblance to deep operations.[40]

The U.S. Army's Embrace of Operational Art

The U.S. Army was vaguely aware of advances made by the Soviets in military theory during the interwar era. However, the U.S. Army was contemptuous of them, particularly the concept of operational art. It was dismissed as a "mere pretension and an artificial creation imposed between tactics and strategy that had no content or merit"[41] and was deemed to be "of limited utility. Its usefulness may have been high in a period of wars of the World War II type, but even then that is questionable."[42] With the benefit of hindsight, these pronouncements seem ironic considering that, after looking to Tukhachevsky and his confederates for inspiration, the U.S. Army formally embraced operational art in 1980s.[43]

In the wake of the Vietnam War, the U.S. Army refocused itself on its responsibility to defend NATO from the Soviet-led Warsaw Pact forces. This change in emphasis led to an attempt to formulate a doctrine suitable to the reemphasis on war in Europe. In 1976, U.S. Army Training and Doctrine Command published its first post-Vietnam vision of how to fight the Soviets in Europe in Field Manual (FM) 100-5, *Active Defense*. This highly tactical doctrine sought to achieve victory through the amassing of uncoordinated tactical successes achieved through the attrition of the Soviet first echelon in force-on-force direct fire engagements while leaving Soviet follow-on echelons unscathed. Active Defense was an unsophisticated doctrine that was defensive and reactive in nature, and as such the Army rejected it. Just as importantly, Active Defense reinforced the tactical myopia of the U.S. Army and contributed to the growing disconnect between strategy and tactics.[44]

In June 1979, U.S. Army Chief of Staff Gen. Edward C. "Shy" Meyer directed Gen. Donn Starry, commanding general of U.S. Army Training and Doctrine Command to revise FM 100-5. The new chief of staff of

Soldiers of the 1st Battalion, Lancashire Fusiliers, fix bayonets in a communication trench 1 July 2016 prior to the attack on Beaumont Hamel during the Battle of Albert in Somme, France. They are wearing "fighting order," with the haversack in place of the pack, and with the rolled groundsheet strapped to the belt below the mess-tin containing rations. The officer in the foreground (*right*) is wearing a lower-rank uniform to be less conspicuous. (Photo by Ernest Brooks, Imperial War Museums collection no. 1900-09; Q744)

the Army wanted the focus of the doctrine to be at the brigade level while also addressing higher levels of command such as the corps and theater, unlike Active Defense, which focused almost exclusively on the company level. This order eventually led to the U.S. Army's acknowledgment of operational art. Meyer desired that the U.S. Army's operational concept possess a broader applicability than its current doctrine of Active Defense. He expressed this in a white paper issued in February 1980. In it, he laid out his belief that the Army must be able to meet threats that arose outside the NATO paradigm while not degrading the force's ability to accomplish its critical task of defending Europe.[45]

Two midlevel officers, Lt. Col. Huba Wass de Czege and Lt. Col. L. Don Holder, played key roles in the writing of AirLand Battle and the acceptance of operational art by the U.S. Army. Holder was an armor officer who had previously taught history at the United States Military Academy. He commanded the 2nd Armored Cavalry Regiment during Desert Storm and rose to the rank of lieutenant general. Regarded as one of the best tacticians in the Army, Holder's realistic world view was a good counterweight to the romantic notions of Wass de Czege.

Huba Wass de Czege was born in Hungary to a prominent novelist. His father was forced to flee with his family to the United States in 1956. A Harvard educated infantry officer, Wass de Czege was highly critical of the Army's current doctrine and had begun to look outside the Army for fresh ideas, going so far as to invite retired Air Force Col. John Boyd to lecture at the U.S. Army Command and General Staff College. Wass de Czege became the leader of the Leavenworth writing team. These two officers overshadowed other

contributors to the doctrine's development and played a major role in both drafts of AirLand Battle.[46]

The first step toward the formal acceptance of operational art by the U.S. Army was the inclusion of the operational level of war in Army doctrine. This was initially proposed by Edward Luttwak in an article published in *International Security* during the winter of 1980. The Army War College was another proponent of AirLand Battle's inclusion of the operational level of war. After striking it in 1973, the *Bundeswehr* (German armed forces) was also deliberating the inclusion of the operational level in their doctrine. Starry had originally ensured the exclusion of the concept. The writing team believed that it was too advanced of a theoretical construct for the U.S. Army at large to comprehend. However, the operational level of war was eventually incorporated at the urging of Starry's successor, Gen. Glenn K. Otis. This decision had major effects on Army doctrine as it helped ensure that the new doctrine did not have the narrow tactical focus that characterized Active Defense and it set the conditions for the second edition of AirLand Battle to stress the essential nature of operational art to achieve victory.[47]

The 1982 edition of FM 100-5 introduced the operational level of war into American military thought. Army doctrine now recognized three levels of war: strategic, operational, and tactical. Strategic goals were largely determined by the nation's political leadership. Tactics had previously been the exclusive focus of Army doctrine, now the Army's capstone doctrinal manual emphasized the operational level while subordinate manuals concerned themselves with tactical matters. Typically, operational warfare occurs between the tactical and strategic levels and addresses the employment of large formations (corps and armies) in conventional campaigns.[48]

In the American Army of the period, the corps was the lowest echelon of command capable of self-sufficient and independent operations. The corps, which typically contained between two and five divisions, possessed its own logistics means and the redundancy of capabilities necessary to conduct protracted campaigns. Since the coordination of Army and Air Force assets occurred at the corps, AirLand Battle was fought at the operational level. Like the rest of the material in the new manual, operational level warfare was attentive to the principles of war. However, the writers noted that application of these timeless principles varied depending upon the echelon of command concerned. Instead of being primarily concerned with tactical engagements, corps commanders had to plan and direct operations that furthered strategic objectives. AirLand Battle introduced these operations, called campaigns, into Army doctrine. Since commanders at the operational level were concerned with achieving strategic goals, their decisions about where, when, how, and even if to fight the enemy were of phenomenal importance.[49]

The introduction of operational warfare in official Army doctrine preceded its instruction at both the Command and General Staff College and the Army War College. In order to educate the officer corps in this theoretical construct, the Army established the School of Advanced Military Studies (SAMS) in 1983. Wass de Czege, who conceived SAMS, served as its first director. (Holder, a key figure in the writing of AirLand Battle, would later become the third director.) Lt. Col. Richard Sinnreich, the primary author of the 1986 revision of AirLand Battle, was the second director of the school. The officers at SAMS spent a considerable amount of their time analyzing campaigns through the prism of Clausewitzian theory. Col. David Glantz, a historian of the Soviet military, conducted seminars on the eastern front in the Second World War for the officers. The writings of Marshal of the Soviet Union Mikhail Tukhachevsky and Vladimir Triandafillov provided the basis for a significant portion of the study of operational art. In addition to providing the Army with a pool of officers trained in the employment of corps and echelons above corps, the 1986 revision of AirLand Battle was written at SAMS.[50]

The 1986 edition of AirLand Battle refined and evolved the operational of level of war into the more advanced concept of operational art. While the original statement of AirLand Battle introduced the operational level of war to the Army, it failed to adequately explain the concept. The Army wrote the 1986 revision of AirLand Battle in large part to rectify this shortcoming. In doing so, the Army placed itself ahead of the other services and the joint staff, who were forced to follow the Army's lead despite the still-broad direction given to operational-level commanders.[51]

In September 1984, Gen. William R. Richardson, the new commanding general of U.S. Army Training and Doctrine Command, informed Wass de Czege that AirLand Battle would undergo a revision. While the manual paid greater attention to low-intensity conflict and expanded the leeway given to commanders, this

edition left the basic doctrine of deep operations and the manual's emphasis on moral factors untouched and instead focused on refining the Army's position on operational-level warfare. The 1986 FM 100-5 is generally regarded within the Army and by defense commentators as the most crisp and lucid doctrine presented by the American military. Among the changes in the discussion of operational warfare, Wass de Czege sought to ensure that corps commanders would understand that theater priorities determined their allocation of scarce air assets. The formal recognition of an operational level of war evolved into the embrace of operational art. Operational art expanded upon the previous manual by acknowledging that the conduct of war at the operational level required greater creativity from commanders at that level. This creative process was needed during the act of campaign planning where commanders translated strategic goals into tactical objectives. In this manner, operational art was the centripetal force uniting competing strategic and tactical demands. The new FM 100-5 also gave a superior treatment to multiengagement operations and the conduct of campaigns. Interestingly, the American explanation of campaign and theater was made into almost an exact translation of the Soviet definition. Finally, concepts such as branches and sequels that would lead to the playbooks of the First Persian Gulf War were introduced to the U.S. Army's planning process.[52]

Despite the attention historians give to the Israelis' supposed influence on AirLand Battle, (because of the amount of analysis devoted to the Yom Kippur War) and the Germans (because of the fascination exhibited by many officers with the Wehrmacht's performance in World War II along with the close working relationship with the Bundeswehr in the context of the NATO alliance), the most important and profound influence on AirLand Battle is often overlooked—that of Soviet military theory. The 1970s saw an increased study of Soviet military thought within the U.S. military, prompted in part by the publication of numerous translations of Soviet works by the U.S. Air Force. Another important influence was the scholarly examination of Soviet Marshal Mikhail Tukhachevsky's deep operations theory by scholars such as Richard Simpkin and John Erickson. This greater exposure to sophisticated Soviet doctrinal thought led to the Sovietization of American Army doctrine. AirLand Battle was very similar to deep operations. Developed in the 1930s, Tukhachevsky's doctrine proposed that it was possible to attack the enemy throughout the depth of the battlefield through the use of self-contained and highly maneuverable forces that coordinated their actions with artillery and especially air support to cause the collapse of the enemy operational system and thus ensure his defeat. AirLand Battle reflected not just the study of Soviet operational concepts but their wholesale adoption by the U.S. Army.[53]

Unlike its predecessor, the officer corps accepted AirLand Battle and believed that the Army's new capstone doctrine would bring victory on the battlefield. With AirLand Battle, the Army abandoned the belief that victory would be achieved through combat within a narrow band of territory along the forward line of own troops. This linear view of battle, with its most radical expression in Active Defense, gave way to a doctrine with a much more sophisticated conception of depth. This new American understanding of depth was born of the inability to surrender space for tactical gains, due to internal NATO political constraints, and an overdue detailed examination of the echeloned nature of the Soviet adversary. These factors caused AirLand Battle not only to abandon Active Defense's myopic focus on the close fight but also to obtain the needed depth by targeting enemy follow-on echelons. This reconceptualization of depth led to the adoption of Soviet theories of deep operations and the recognition of the significance of operational art.[54]

Contemporary Debates

Operational art remains a central component of U.S. Army doctrine. However, operational art has not remained static since its introduction in the 1986 edition of FM 100-5; it has evolved in the course of armed conflict and in response to changes in technology. Despite operational art's acceptance in official doctrine, the concept has come under increasing criticism, which is unsurprising given the inability of the United States to conclude its wars with a favorable strategic outcome.[55]

Critics charge that contemporary operational art as practiced by the U.S. Army has sidelined strategy through the creation of an "independent level of war, served by its own level of command and operating free from unwelcome interference from strategy."[56] They go on to claim that operational art is at fault for widening the gap between politics and strategy and for marginalizing the political leadership so that they are mere

"strategic sponsors."[57] In contrast, contemporary operational art stresses the importance of understanding the applicable strategic context in its totality—policy objectives, enemy, terrain, etc.—in order to successfully gauge risk and thus determine whether one's actions are suitable to the strategic objective being pursued. A far simpler answer to the charges that operational art has consumed strategy and led to the estrangement of the political leadership from the wars that are supposedly being waged on their behalf is that in recent wars there has been a litany of both poor operational artists and untalented or uninterested political leadership.[58]

One strain of criticism regarding operational art conflates it with the operational level of war. Often the terms are used interchangeably to argue that operational art is a "false and unneeded link between strategy and tactics."[59] By conflating the terms "operational art" and "operational level of war," such critics show their lack of understanding of both concepts. The operational level of war is not "just an odd articulation of the need to be good at tactics."[60] Instead, the operational level of war was developed in the European context as a means to address the "problems specific to the employment of large operationally durable formations in distributed operations in Europe."[61] Contemporary theorists of operational art contend that the operational level of war retards the proper application of operational art. This is because the operational level of war ignores the reciprocal relationship between policy, strategy, operational art, and tactics in favor of a fixed hierarchy in which every problem can be easily paired with a corresponding echelon of command.[62]

In reality, operational art is not tied to any specific level of command. Instead, operational art is about the task of deliberately linking strategy and tactics through the arrangement of tactical actions in time, space, and purpose to achieve a strategic goal. This problem is not confined to any single echelon of command and will vary depending on the context.[63]

Other commenters argue that operational art "is inadequate to the demands of the contemporary operating environment" because of the concept's origins as an answer to the problem of waging mass mechanized warfare within a continental setting that the Soviet Union faced.[64] Because Soviet theories for the application of operational art (i.e., deep operations) do not explicitly address contemporary challenges such as counterinsurgency or low-intensity conflict, these critics contend that operational art is no longer a useful theoretical construct. However, "in a purely abstract sense, the specific tactical actions do not matter to operational art, only that they are arranged in time, space, and purpose to pursue the strategic objective."[65] Or as Isserson so aptly stated, "It would be absurd to teach operational art as a kind of ready-made scheme or recipe. The very essence of operational art presupposes freedom of methods and forms which should be carefully chosen each time to fit a concrete situation."[66] The critics ignore that the types of conflicts they cite as making operational art obsolete still challenge commanders with the requirement to sequence tactical actions, no matter how dispersed temporally and spatially, in pursuit of a strategic objective—in essence the same task that the Soviets developed operational art to address prior to the Second World War.[67]

Many of those critical of U.S. conceptions of operational art come from the United Kingdom or Australia. They may have a point with regard to the utility of operational art to their unique strategic context. The United States, or even just the U.S. Army, employs military force on a scale that vastly dwarfs these nations. For small powers such as these, where one's entire commitment to a conflict could be no more than a battalion, it is conceivable that their strategy and campaign may be very much the same. This difference in scale and thus complexity of commitment is also important to understanding the context in which such critics exist when they challenge whether a concept like operational art is relevant in the age of global communications and strategic corporals.[68]

Despite these criticisms of operational art, the concept remains firmly embedded in the military doctrine of the major military powers. It is likely that the interwar Soviet military theorists who played key roles in this revolution in military thought, "General Svechin, G. Isserson, and Marshal Tukhachevskii would be at once impressed and flattered, sufficiently so even to overlook the protracted intrusion upon their copyright" by forces such as the U.S. Army.[69] Since this theoretical construct's development in the interwar Soviet Union, subsequent theorists have continued to build upon their work by adapting operational art in response to changes in technology and to fit their specific strategic context. Operational art will continue to retain its utility as long as this adaptation continues since it offers a valuable tool to help commanders achieve their strategic objectives. ■

Notes

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3. Isserson, *The Evolution of Operational Art*, 18–21; Bruscino, "The Theory of Operational Art," 7; for a fuller discussion of the Austro-Prussian War, please see Geoffrey Wawro, *The Austro-Prussian War: Austria's War with Prussia and Italy in 1866* (New York: Cambridge University Press, 1996).

4. Isserson, *The Evolution of Operational Art*, 18.

5. Ibid., 18–20.

6. Bruscino, "The Theory of Operational Art," 7; Isserson, *The Evolution of Operational Art*, 19, 21, and 23.

7. James Schneider, introduction to *The Nature of the Operations of Modern Armies*, by V. K. Triandafillov, trans. William A. Burhans (Portland, OR: Frank Cass, 1994), XXXVI–XXXVII.

8. John Erickson, "The Development of Soviet Military Doctrine: The Significance of Operational Art and the Emergence of Deep Battle," in *The Origins of Contemporary Doctrine*, ed. John Gooch (Camberley, UK: Strategic and Combat Studies Institute, 1997), 81; Isserson, *The Evolution of Operational Art,* 19 and 23.

9. Ibid., 7–8.

10. Bruscino, "The Theory of Operational Art," 11–12; Isserson, *The Evolution of Operational Art,* 7–8.

11. Bruscino, "The Theory of Operational Art," 11–12; Isserson, *The Evolution of Operational Art,* 29–30; Schneider, introduction to *The Evolution of Operational Art*, VIII.

12. Robert Epstein, *Napoleon's Last Victory and the Emergence of Modern War* (Lawrence, KS: University Press of Kansas, 1994); James Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, CA: Presido, 1994).

13. David Glantz, "Soviet Operational Art and Tactics in the 1930s" (paper presented at the American Military Institute Conference, 30–31 March 1990), 2 and 4, accessed 31 July 2018, http://www.dtic.mil/dtic/tr/fulltext/u2/a232954.pdf; Schneider, introduction to *The Evolution of Operational Art*, IX.

14. Jacob Kipp, "Soviet Military Doctrine and the Origins of Operational Art, 1917-1936," in *Soviet Doctrine from Lenin to Gorbachev*, ed. William C. Frank Jr. and Philip S. Gillette (Westport, CT: Greenwood, 1992), 108; Glantz, "Soviet Operational Art and Tactics in the 1930s," 1 and 2; David Glantz, "The Nature of Soviet Operational Art," *Parameters* 15, no. 1 (Spring 1985): 4–5; Schneider, introduction to *The Evolution of Operational Art*, VIII; Jacob Kipp, "Mass, Mobility, and the Red Army's Road to Operational Art 1918-1936" (report, Soviet Army Studies Office, Combined Arms Center, Fort Leavenworth, KS, July 1987), 17, accessed 31 July 2018, http://www.dtic.mil/dtic/tr/fulltext/u2/a195053.pdf.

15. Jacob Kipp, foreword to *The Nature of the Operations of Modern Armies*, XIV; Kipp, "Soviet Military Doctrine," 88.

16. Svechin, quoted in Kipp, "Soviet Military Doctrine," 108.

17. Ibid.

18. Kipp, "Soviet Military Doctrine," 88 and 108; Kipp, foreword to *The Nature of the Operations of Modern Armies*, XV; Aleksandr A. Svechin, *Strategy*, trans. Kent D. Lee (Minneapolis: East View, 1999), 68; Glantz, "The Nature of Soviet Operational Art," 5.

19. Varfolomeev, quoted in Kipp, "Soviet Military Doctrine," 88.

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21. Kipp, "Soviet Military Doctrine," 112.

22. Kipp, "Mass, Mobility, and the Red Army's Road to Operational Art 1918-1936," 19; Kipp, "Soviet Military Doctrine," 112.

23. Tukhachevsky quoted in Schneider, introduction to *The Nature of the Operations of Modern Armies*, XXX.

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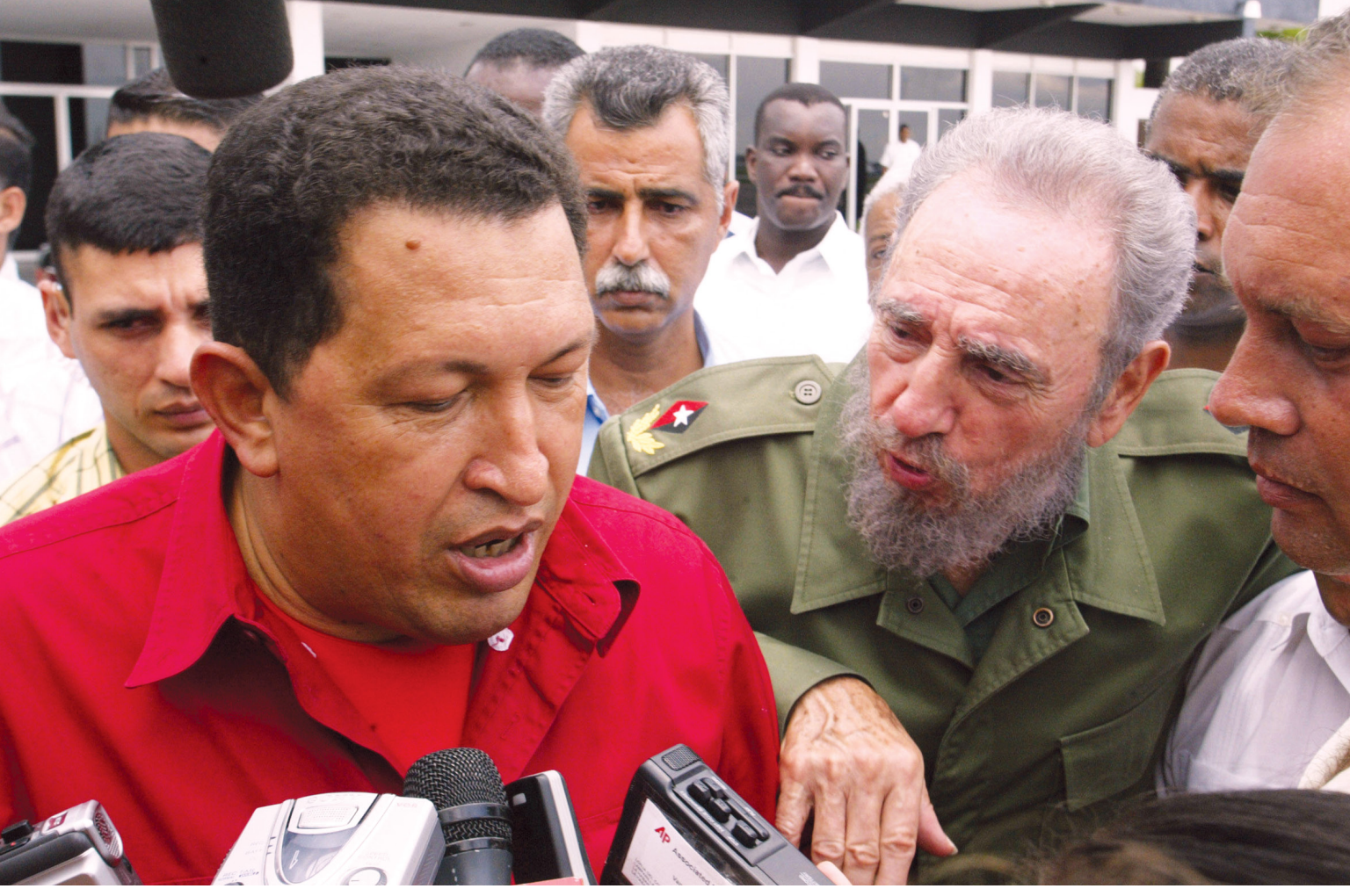

Former Venezuelan President Hugo Chávez (*left*) and former Cuban President Fidel Castro speak to the press 23 August 2005 at José Martí International Airport in Havana. (Photo by Jorge Rey, Media Punch/Alamy Stock Photo)

The Cubazuela Problem

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For years, a form of irregular war has been underway in the Western Hemisphere.[1] The war's initiators refer to their method as a "combination of all means of struggle," a long-in-the-tooth expression of Marxist-Leninist provenance.[2] In the case of this war, "all means" includes violent applications of power by regular, guerrilla, paramilitary, clandestine, and surrogate forces orchestrated over an extended period of time and geographic expanse. The struggle's lead strategists also inspire and sustain sophisticated jurisprudential, diplomatic, informational, and economic operations. We would be inaccurate to suppose these latter, nonviolent enterprises support the former, or vice versa. The two categories of effort, violent

and nonviolent, form a fluid whole intended to take, increase, and concentrate power in the proponents' organizations. The identity of those organizations is not a mystery. They are armed political parties that, among other features, loudly announce themselves as anti-United States in tone and message, and behave accordingly.[3] Prominent in the mix are the *Partido Comunista de Cuba* (Communist Party of Cuba, or *PCC*) and the *Partido Socialista Unido de Venezuela* (United Socialist Party of Venezuela, or *PSUV*). These Marxism-inspired parties and their allies self-style as "Bolivarian." The PCC/PSUV couple has dispossessed so many persons who call themselves Venezuelans that Venezuela itself retains little meaning as a collective political identity. It is nevertheless a unique place with immense potential wealth from natural resource exploitation, a long if interrupted tradition of democracy, and an educated population with a tenaciously hopeful attitude.

Venezuelans can justifiably claim a tight cultural weave with both South and North America. Misery in their country did not just happen; identifiable persons caused it, imposed it, and will continue to do so as long as they can maintain their impunity and ability to grant impunity to their followers and agents. All this considered, Venezuelans opposed to domination by the Bolivarians can retake their country and turn things around, but not without outside help.

In this article, we look briefly at what the Bolivarians have done and consider how action or inaction against the Bolivarians matters. The single environmental condition most conducive to the preservation and expansion of Bolivarian impunity is the near-total absence of any effective physical pursuit. So long as there is no physical threat to Bolivarian leaders, there is no reasonable likelihood that their dominance and abuse of power will ameliorate. Therefore, any action proposed to restore Venezuela as a liberal republic will necessarily include some amount of physical coercion. Venezuela, however, is not the geographic locus of the strategic mens rea of the region's aggressive Marxism—Cuba is. Venezuelan territory is but one of the venues and prizes in the war, the future of the entire region perhaps inextricably connected to its fate. Colombian territory, however, may be the geographic fulcrum. (See figure 1, page 52; the principle actors and primary lines of communication in the irregular war unfolding in the Circum-Caribbean are located within this extent.)[4] Political power in Colombia is on the precipice of sliding toward Bolivarian domination, and avoiding that domination may be the key to many Venezuelans' material salvation.[5]

Cubazuela

Generalized societal failure continues to deepen in Venezuela such that any detailing of worrisome events would be unimpressive by the time this article is read.[6] By the end of September 2017, however, a political stasis was reached, as all potential for electoral or legislative change or opposition to the government had been effectively suppressed.[7]

Notably, Venezuela's collapse is not of recent origin; things have been on a steep, steady slide for years, and for some time now, the country has excelled in several dubious categories. Its government runs the least efficient oil company in the world.[8] That same government is a major illegal narcotics trafficker.[9] "Since 2005, the U.S. government has determined annually that Venezuela's Bolivarian government has 'failed demonstrably' to adhere to its obligations under international counternarcotics agreements and to take certain counternarcotics measures."[10] It has had a miserable record of human rights, including transnational trafficking in humans. "The government of Venezuela does not fully meet the minimum standards for the elimination of trafficking and is not making significant efforts to do so."[11] It has been a direct supporter of the Colombian *Ejército de Liberación Nacional* (National Liberation Army, or *ELN*) and the *Fuerzas Armadas Revolucionarias de Colombia* (Revolutionary Armed Forces of Colombia, or *FARC*), both of which are on the U.S. State Department list of terrorist organizations.[12] It became the worst economic performer in the hemisphere years ago and now vies for worst in the world.[13] "A country that was once the richest in Latin America is now a basket case, and the Bolivarians are to blame."[14]

On the 2016 Corruption Perception

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Index, it rated 166th of 176 countries and worst in the hemisphere.[15] At some point, being worst in so many ways has to be viewed as some kind of accomplishment. It is unmistakably a Bolivarian accomplishment, and the mens rea of that accomplishment is as much Cuban as it is Venezuelan.[16]

R. Evan Ellis, a scholar at the U.S. Army War College, asserted that the situation can be understood as "the capture and systematic looting of a state, achieved by first capturing its institutions through mass mobilization and bureaucratic machinations, then increasing the control of the state through military force."[17] Whatever the particular sequence of efforts, the capturing and looting of a central government apparatus for the purpose of increasing the power of a party faction is not a unique or unprecedented formula in the region. Rather, it is a well-understood rubric that has been and is being tried in numerous countries, and has succeeded in several.[18] The overtaking of Cuban central government functions by Marxist revolutionaries, who in 1965 would form the PCC, is the region's exemplar. Venezuelan revolutionary Douglas Bravo was an admirer of the Cuban Marxist method and a central figure in failed Venezuelan guerrilla attempts in the 1960s and 1970s. He was also an early, influential mentor of then Lt. Hugo Chávez. "The trick, Bravo and others believed, was to gain power by force, then take on a populist disguise to present your uprising as the will of the masses."[19]

The PCC, however, not only served up the takeover model, but it also has been serving up takeovers. In his 2008 *The Cuba Wars*, author Daniel Erikson relates an observation made to him by Teodoro Petkoff, a well-known Venezuelan politician, journalist, and former communist guerrilla. "Hugo Chávez adores Fidel Castro," Petkoff said. "And for Fidel Castro, who truly cares for nobody, he saw Chávez as naïve, and he threw a lasso around him and roped him in. … I believe that this whole path that the Venezuelan state is traveling—of being authoritarian, autocratic, and militaristic—comes from Fidel."[20]

(Map courtesy of One Stop Map, https://www.onestopmap.com)

Figure 1. The Circum-Caribbean

In a recent editorial, Mary Anastasia O'Grady reminded her readers of the complete takeover by Cuban intelligence of the Venezuelan national identity papers and passports office in 2005.[21] That takeover was a significant milestone in structural influence by the Cuban Communist Party, an influence that Fidel Castro had sought for decades. Perhaps Castro had not captured the loyalties of the earlier generation of Venezuelan Marxists like Douglas Bravo.[22] Nevertheless, as early as the late 1980s, Cuban communist operatives were laying organizational foundations that led to the creation and

Venezuelan President Nicolás Maduro (*left*) listens to then Cuban President Raul Castro 14 December 2017 during the thirteenth anniversary celebration of the founding of the Bolivarian Alliance for the Americas in Havana. (Photo by Desmond Boylan, Associated Press)

empowerment of the notorious motorcycle *colectivos* that today serve (if loosely) as one column of coercive control for both the Cuban and Venezuelan parties.[23]

Today, the firmament of pro-socialist political parties in Venezuela presents some organizational and ideological differentiation. In a way, however, it is differentiation without difference. Party leaders who would call themselves "Chavists" are likely also to consider themselves "Castroists," that is, adherents to the principles and guidance of the Cuban Revolution, which Cuban and Venezuelan party leaders adaptively recode as the Bolivarian Revolution. Most of those who tag themselves Bolivarians (Castroists, Chavists, and Marxists) follow with evident discipline the policies and messaging of the PCC and of its Venezuelan partner, the PSUV.

It would be imprudent to allow our hopes to exaggerate the potential consequence of disagreements within the Castroist-Chavist-Marxist revolutionary movement, including resistance to Nicolás Maduro's presidency.[24] Meanwhile, disagreements within what briefly surfaced as an opposition electoral coalition called the *Mesa de la Unidad Democrática* (Democratic Unity Table, or *MUD*) *did* prove consequential.[25] Disillusionment and lost resolve reflected ideological heterogeneity within that coalition. Leaders of Chavist socialist parties in the MUD showed their willingness to negotiate with and ultimately to submit to the continuing dictate of the PSUV and PCC.[26] In any case, the PCC is the locus of mens rea for a lion's share of the organized violence in the region over the past few decades. It is not a lone hierarchal peak, nor is it able to discipline all components of the region's Marxism-inspired revolutionary movement, but it is and has been the author, motivator, and guide for much of the "struggle" and especially that part of the struggle causing widespread Venezuelan woe. While being careful to identify the PCC and PSUV as principal organizational culprits, we should be careful to avoid wishful thinking as to the role of the regular armed forces in Venezuela. Emblematically, they are the "Bolivarian" National

Venezuelan Defense Minister Vladimir Padrino speaks 1 August 2017 during a news conference in Caracas, Venezuela. The senior Venezuelan military leadership is now so thoroughly co-opted by a combination of Cuban domination, profit taking from protection of international criminal cartels involved in the illicit drug trade, and crony corruption that has converted the military into a syndicate to exploit Venezuelan oil production that a military coup against the regime is extremely unlikely. (Photo by Marco Bello, Reuters)

Armed Forces, not the "Venezuelan" Armed Forces. From the widow of Marxist writer Régis Debray,

> What I see is that they [the Venezuelan armed forces] are a copy of the Cuban institutions. For example, ceding to the officers the most important Venezuelan economic portfolio, which is the mining sector, is exactly what they have done in Cuba. That is to say, what little economy exists in Cuba, tourism, that is in the hands of the armed forces. Cuba is a military dictatorship and a militarized society.[27]

Positive geopolitical change in Venezuela does not hinge on decisions of the armed forces there. What the formal military in Venezuela does or does not do is not the crux of the matter. From what we can see, the armed forces hierarchy is in solidarity with the PCC and PSUV. Together they have cemented a common resolve; they are Bolivarian Marxists. That is not to say that morale within the Bolivarian military rank-and-file is sound, or that even mid-ranking officers are all decidedly loyal to the high command or to party leaders. Numerous reports indicate the opposite.[28] Those reports of disaffection might provide reason for some to entertain various kinds of operations that, in the right context, might weaken the Bolivarian Armed Forces. Troop level disaffection may lead to acts of indiscipline. Frustration regarding economic mismanagement and its consequences may even lead to clashes among official armed institutions. Nevertheless, the country's fate is unlikely to be determined because of a military mutiny.

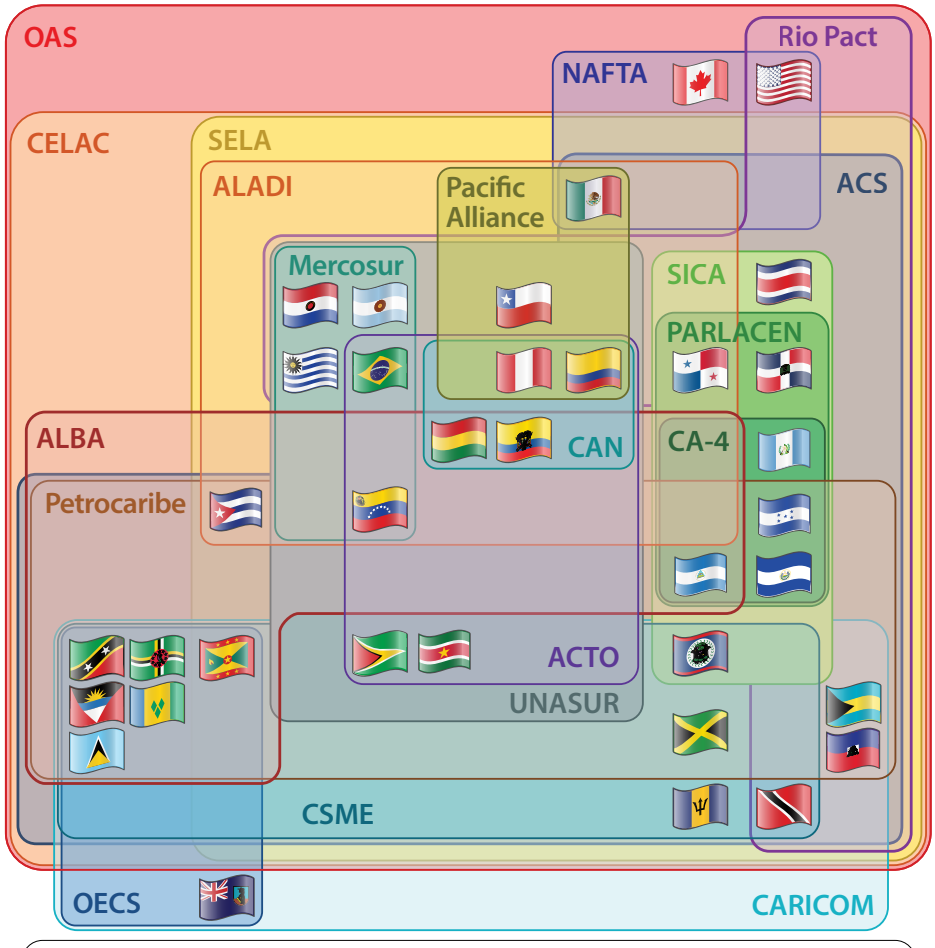
Available public evidence provides little justification to hope for an anti-Bolivarian uprising within the military that would steer Venezuelan society away from the single-party totalitarian path it is on.[29] For one thing, there are several distinct armed organizations that protect the Bolivarian hierarchy and serve to counterbalance each other. These include the Bolivarian National Guard, Bolivarian National Police, Bolivarian National Armed Forces, Cuban advisory units (Ministry of Intelligence),

the *Colectivos* (described elsewhere herein), the Colombian FARC, the Colombian ELN, and armed civilian militias.[30] Still, many Venezuelans became aware of and displeased with Cuban presence and political domination years ago.[31]

International Organizations and Parties

Beyond party structures inside Venezuela, international alliances made by the PCC and PSUV are in good measure reflected in the list of political parties that are members of the FSP.[32] (Understandably, the São Paulo Forum [FSP] enthusiastically supported dialog between the Maduro administration and the MUD.)[33] Fidel Castro and Luiz Inácio Lula da Silva founded the FSP in the early 1990s to address the survival of the hemisphere's revolutionary parties in the wake of the Soviet demise. Some FSP parties, including those to later comprise the PSUV, took control of central government apparatuses. As in Venezuela, several of the region's FSP parties achieved government takeovers, in part by democratic electoral competition.

While we tend to describe the meetings of international organizations (IOs) according to country participations (e.g., Cuba, Venezuela, Ecuador, Argentina, etc.), the more revealing participatory categorization would be by political party nuclei. In 2004, Castro and Chávez launched the *Alianza Bolivariana para los Pueblos de Nuestra América* (Bolivarian Alliance for the Peoples of Our America, or *ALBA*), a regional organization with an ostensible economic purpose of countering the U.S.-inspired Free Trade Area of America. ALBA centers on the five parties most closely aligned ideologically.[34] Beside the PCC and PSUV, they include the Sandinista National Liberation Front (Nicaragua), Movement to Socialism (Bolivia), and the Country Alliance (Ecuador).[35] After the creation of



Legend

ACS—Association of Caribbean States (Asociación de Estados del Caribe)
ACTO—Amazon Cooperation Treaty Organization
ALADI—Latin American Integration Association (Associação Latino-Americana de Integração)
ALBA—Bolivarian Alliance for the Peoples of Our America (Alianza Bolivariana para los Pueblos de Nuestra América)
CA-4—Central America-4 Border Control Agreement (Convenio Centroamericano de libre movilidad)
CAN—Andean Community (Comunidad Andina)
CARICOM—Caribbean Community
CELAC—Community of Latin American and Caribbean States (Comunidad de Estados Latinoamericanos y Caribeños)
CSME—CARICOM Single Market and Economy
Mercosur—South American trade block
NAFTA—North American Free Trade Agreement
OAS—Organization of American States (Organización de los Estados Americanos)
OECS—Organization of Eastern Caribbean States
PARLACEN—Central American Parliament (Parlamento Centroamericano)
Petrocaribe—Oil alliance between many Caribbean states and Venezuela
Rio Pact—Inter-American Treaty of Reciprocal Assistance
SELA—Latin American and the Caribbean Economic System (Sistema Económico Latinoamericano y del Caribe)
SICA—Central American Integration System (Sistema de la Integración Centroamericana)
UNASUR—Union of South American Nations (Unión de Naciones Suramericanas)

(Figure by SiBr4, courtesy of Wikimedia Commons. Membership in the depicted organizations is represented by national flags, but more consequential is the weight of political party membership behind those flags. Note that the status of Cuba within the Organization of American States is complicated.)

Figure 2. Supranational American Bodies

Table. Parties of the Forum of São Paulo (FSP) by Country

Country	Country flag	Parties in the Forum of São Paulo (FSP)	FSP presence in government
1. Antigua and Barbuda		?	?
2. Argentina		1. Broad Front 2. Transversal National and Popular Front 3. Evita Movement 4. Southern Free Peoples Movement 5. Communist Party 6. Communist Party—Extraordinary Congress 7. Humanist Party 8. Intransigent Party 9. Posadist Revolutionary Workers Party 10. Socialist Party 11. Party of Solidarity 12. Union of Militants for Socialism	In opposition
3. Bahamas		?	?
4. Barbados		1. People's Empowerment Party	No representation
5. Belize		?	?
6. Bolivia		1. Movement to Socialism 2. Free Bolivia Movement 3. Communist Party of Bolivia	Totalitarian control, President Evo Morales (Movement to Socialism)
7. Brazil		1. Democratic Labor Party 2. Communist Party of Brazil 3. Brazilian Communist Party 4. Free Homeland Party 5. Popular Socialist Party 6. Brazilian Socilist Party 7. Workers Party	In opposition, former President of Brazil Luiz Inácio Lula da Silva (Workers Party) was cofounder of the FSP
8. Canada		N/A	N/A
9. Chile		1. Citizen Left 2. Broad Social Movement 3. Left Revolutionary Movement 4. Communist Party 5. Humanist Party 6. Socialist Party 7. Allendist Socialist Party 8. Democratic Revolution	Lead government, President Sebastián Piñera is of the National Renovation Party, part of the Let's Go Chile coalition

(Table is modified from version found on Wikipedia; flags courtesy of CIA World Factbook)

Table. Parties of the FSP by Country (continued)

Country	Country flag	Parties in the Forum of São Paulo (FSP)	FSP presence in government
10. Costa Rica		1. Broad Front Party 2. Popular Vanguard Party Communist Party	Minority party
11. Colombia		1. Patriotic March 2. Progressive Movement 3. Green Alliance Party 4. Colombian Communist Party 5. Alternative Democratic Pole 6. Present for Socialism 7. Patriotic Union	?
12. Cuba		1. Communist Party of Cuba	Totalitarian control, Fidel Castro was cofounder of the FSP
13. Dominica		?	?
14. Dominican Republic		1. Alliance for Democracy 2. Force of the Revolution 3. United Left Movement 4. Country Alliance Party 5. Homeland for All Movement 6. Communist Workers Party 7. Dominican Liberation Party	Dominant control of government, President Danilo Medina (Dominican Liberation Party)
15. Ecuador		1. Pachakutik United Plurinational Movement—New Country 2. Proud and Sovereign Fatherland Alliance Movement 3. Popular Democratic Movement 4. Communist Party of Ecuador 5. Marxist-Leninist Communist Party of Ecuador 6. Socialist Party-Broad Front	Dominant control of government, tending toward totalitarian
16. El Salvador		1. Farabundo Martí Front for National Liberation	In power, President Salvador Sánchez Cerén
17. Granada		?	?
18. Guatemala		1. Convergence 2. Winaq Political Movement 3. Guatemalan National Revolutionary Unity	In opposition, minor representation
19. Guyana		?	?
20. Haiti		?	?

(Table is modified from version found on Wikipedia; flags courtesy of CIA World Factbook)

Table. Parties of the FSP by Country (continued)

Country	Country flag	Parties in the Forum of São Paulo (FSP)	FSP presence in government
21. Honduras		1. Liberty and Refoundation Party	In opposition
22. Jamaica		?	?
23. Mexico		1. Party of Mexican Communists 2. Communist Party of Mexico 3. Party of the Democratic Revolution 4. Labor Party	Party of the Democratic Revolution is a minority party, aligned ideologically with leading Revolutionary Institutional Party, which is not a member of the FSP
24. Nicaragua		1. Sandinista National Liberation Front	Totalitarian control
25. Panama		1. Peoples Party 2. Democratic Revolutionary Party	In opposition
26. Paraguay		1.Guasú Front 2. Paraguayan Communist Party 3. Popular Socialist Convergence 4. Popular Patriotic Movement 5. Movement to Socialism 6. Country in Solidarity 7. Citizen Participation Party 8. Tekojoja Popular Party	In opposition, several parties in opposition as Guasú Front
27. Peru		1. Citizens for Change 2. Communist Party of Peru—Red Fatherland 3. Peruvian Communist Party 4. Nationalist Party of Peru 5. Peoples Party 6. Socialist Party of Peru 7. Land and Liberty	In opposition, some in coordination as Broad Front
28. Saint Kitts and Nevis		?	?
29. Saint Lucia		?	?
30. Suriname		?	?
31. Trinidad and Tobago		1. Movement for Social Justice	No representation

(Table is modified from version found on Wikipedia; flags courtesy of CIA World Factbook)

Table. Parties of the FSP by Country (continued)

Country	Country flag	Parties in the Forum of São Paulo (FSP)	FSP presence in government
32. United States of America		N/A	N/A
33. Uruguay		1. Uruguay Assembly 2. Ample Front Compromise 3. Broad Front 4. 26th of March Movement 5. Tupamaros National Liberation Movement 6. Popular Participation Movement 7. Popular Broad Front Movement 8. Communist party of Uruguay 9. Trotskyite–Posadist Revolutionary Worker Party 10. Peoples' Victory Party 11. Socialist Workers Party 12. Socialist Party of Uruguay 13. Artiguist Viewpoint	In power, Broad Front has presidency and majority in both houses
34. Venezuela		1. Socialist League 2. Electoral Movement of the People 3. Commuist Party of Venezuela 4. Unified Socialist Party of Venezuela 5. Homeland for All	Totalitarian control

(Table is modified from version found on Wikipedia; flags courtesy of CIA World Factbook)

Martinique, an insular region of France in the eastern Caribbean Sea, is a member of the Organization of Eastern Caribbean States, although its flag does not appear in the Euler diagram in figure 2 (on page 55). The São Paulo Forum (FSP) website lists two parties from Martinique, The Communist Party for Independence and Socialism and the National Council of Popular Committees. Aruba, located off the coast of Venezuela and a constituent part of the Kingdom of the Netherlands, also has a party appearing on the FSP list, the Red Democratic Party. Similarly, the FSP website lists a party from Curaçao, the Sovereign People Party. The flag of The British Virgin Islands, a British overseas territory, is shown on the Euler diagram as a member of Organization of Eastern Caribbean States. The FSP website does not list a party member from the British Virgin Islands or from the other British territories in the Caribbean. The FSP website does, however, list three parties from U.S. territory.

ALBA, Cuban and Venezuelan party leaders acted as midwives to a number of other regional organizations, the overlap of which is shown by the Euler diagram in figure 2 (on page 55).[36] The table (on pages 56–59) provides a guide to the flags, correlated to FSP parties.[37]

Note in figure 2 the marginalization of the United States and Canada, which was a columnar purpose of the Bolivarians' multifaceted organizational effort. Not visible is the ubiquitous membership participation of FSP party leaders. A simple review of party affiliations in the curricula of individual participants at meetings of ALBA or the *Comunidad de Estados Latinoamericanos y Caribeños* (Community of Latin American and Caribbean States, or *CELAC*) will show that the FSP is heavily represented.

Perhaps the most ambitious regional contraption was the *Unión de Naciones Suramericanas* (Union of South American Nations, or *UNASUR*).[38] Due greatly to the pro-Bolivarian content of its membership, UNASUR has been of little weight in the face of the Venezuela matter, even with its new president (Mauricio Macri, president of Argentina), who is decidedly anti-Bolivarian.[39]

The FSP parties made great advances in stealing money using central government apparatuses. Party control of a country's central government is lucrative in so many ways: printing money, selling passports, building sinecures in myriad IOs, borrowing money, exchanging money, taxing commodity transport, etc. A

recent, astoundingly efficient example has a nickname, "Odebrecht."[40] Odebrecht is a Brazilian construction conglomerate at the heart of what is arguably the biggest commercial corruption scheme in Latin American history. Fraudulent financial flows (created from overbidding, underperforming, overpaying, kickbacks, and so forth) apparently went preferentially to member parties of the FSP. Max Brooks, author of *World War Z*, suggested that what was going on in Venezuela might usefully be compared to what was going on in Syria. He offered an outline for a response, one that to this analyst could not have been farther from optimal. He suggested we enlist the assistance of CELAC and UNASUR. In other words, his advice is that we go to the perpetrators to implore them to please be gentle.[41] CELAC and UNASUR are mechanisms of the parties in the FSP. Energetic, effective anti-Bolivarian effort in the irregular war in the region cannot be planned around an expectation of positive multilateral assistance from regional IOs, and especially not these.

The Organization of American States (OAS), too, has been ineffectual as an ameliorating influence on the situation in Venezuela, in great measure because of the ALBA block of countries. In an otherwise insightful article, Gustavo Coronel makes the commonplace assertion that military action, were such to be taken against the Bolivarians, would need to be done in concert with the OAS or the United Nations.[42] According to Coronel, failure to do so would be counterproductive. His is a misleading warning in at least two ways. First, given the fluid political tendencies of their staffs and representatives, almost any action taken against the Bolivarians *by way of* those institutions is likely to be ineffective, if not counterproductive. Second, powerful alliances and coalitions can be built outside any of the other extant IOs.[43]

Colombian Politics

What will happen in Venezuela is intimately, inseparably joined to what is going on politically in Colombia. Indeed, the near-term outcomes of party politics in Colombia may be more important to the futures of the majority of Venezuelans than what is now occurring inside Venezuela. No strategy seeking a durable improvement of things Venezuelan can be reasonably designed without attention to Colombia. For one thing, the financial health of the Bolivarian hierarchies appears to depend on contraband gold, cocaine, emeralds, coltan, and other commodities besides hydrocarbons. The smuggling routes over which the movement of these commodities depends span across several countries, with many of the routes originating in Colombia. Control of these routes appears to be a central responsibility of select elements within the panoply of armed organizations belonging to the Bolivarian enterprise.[44]

In September 2016, Colombian President Juan Manuel Santos declared to an audience at the United Nations that the war against the FARC was officially over.[45] He made another declaration to the end of the FARC war in mid-August 2017.[46] To some Colombians, their president's repeated pronouncements of the end of the war are off-putting, considering that he almost simultaneously declared war against corruption, illegal mining, organized crime, and other behaviors that together fairly describe the modus operandi of the FARC and ELN.[47] Many Colombians, perhaps a majority, fear that Santos and his administration surrendered far too much power to the same people who are abusing power in Venezuela—if not to the self-same personalities, at least to a group of their close allies with shared heroes, money flows, sanctuaries, arguments, and ruthless behaviors.[48] In other words, there exists within Colombia a reasoned premonition that the country has entered a path toward the economic underperformance, foreign dependence, criminality, and abuse of liberty that the PCC imposed in Cuba and the PSUV is imposing in Venezuela. That reasoning is in part based on the observed consolidation by Bolivarian elements of control over smuggling routes.[49]

The process of negotiation between the FARC and the Santos administration was itself an ominous indicator that the FARC might attain more power through the negotiations than it had achieved in decades of war. That process included welcoming the PCC as host and arbiter, and the PSUV as a good-will observer (in their guises as constructive neighboring governments). The FARC, ELN, PCC, and PSUV are on the same team. Despite the Santos administration's public fanfare of total FARC disarmament, many in Colombia see that disarmament as a dubious supposition.[50] The FARC leadership did not adjust its ideological azimuth or abandon its resolve to take over the whole state, or has it rejected the use of violence. It is an odd situation in which a president of a country would concede so much political power and impunity to a group which, at its zenith, represented

> The Cubans are there; the Russians are there, the Iranians, Hezbollah are there. This is something that has a risk of getting to a very, very bad place, so America needs to take this very seriously.

perhaps a half a percent of the population. In doing so, Santos seems to have generated disapproval of his FARC policy from a hundred times that portion of his countrymen.[51] As it stands, prospects that the Colombians' national government will actively oppose Bolivarian power in the region seem to depend a good deal on the results of the 2018 presidential elections.

The Colombian political parties in the FSP are the Patriotic March, the Progressive Movement, the Green Alliance Party, the Communist Party of Colombia, the Alternative Democratic Pole, Present for Socialism, and the Patriotic Union. It is all but given that the new FARC political party will emerge as a member. The way things appear, Santos's Social Party of National Unity might become a member of the FSP as well. All of these parties support the continuation and expansion of FARC political power within the confines of the FARC-Santos accords, as the leaders of those parties interpret them. The leading electoral-party entity opposed to that consolidation of FARC power is called the Democratic Center, its key personality being former President Álvaro Uribe. Within the parameter of electoral prospects, however, if the FARC continues to gain power in Colombia and its leaders continue to enjoy impunity—especially as to control over smuggling routes into and out of the country—physical pursuit against Bolivarian elements and leadership throughout the region will be a much more difficult strategic option for anyone.

Brazilian Foreign Policy

More people in South America speak Portuguese than Spanish, a consequential fact that is too easy for many strategists to misplace. It might not be true that as goes Brazil goes the success of all foreign policies regarding the situation in Venezuela. Still, for or against, the posture taken by Brazil's leadership will undoubtedly weigh on outcomes. A positive relationship with Brazil is of itself a valued object of international diplomacy, so the policies of a Brazilian administration will of course influence foreign decision-making.

It is hard to imagine a Brazilian government supporting a landing of exclusively extraregional military formations on South American soil, but planners should not presume that a Brazilian government would necessarily disapprove any kind of military action or any mix of formations.[52] As in the rest of Latin America, as in Venezuela, the Brazilian political party firmament is well-populated by pro-Bolivarian elements. Nevertheless, opposite positions are also present. External actors would want, in most contexts, to provide credible assurances that Brazilian strategic influence would not suffer, but rather be enhanced by the outcomes from any coercive action.

Conclusion

Of the situation in Venezuela, Mike Pompeo, then director of the CIA, asserted, "The Cubans are there; the Russians are there, the Iranians, Hezbollah are there. This is something that has a risk of getting to a very, very bad place, so America needs to take this very seriously."[53] We might want to call obliviousness toward the irregular war in Latin America "management by exception" or "economy of risks." Rather than being oblivious to it, foreign strategy makers might simply not have sensed the severity of the danger posed. They might also have considered the parties responsible for the Venezuelan disaster benign.

In any case, with the exception of some transnational counternarcotic prosecutions, little authority of any kind has actively pursued the Bolivarians, whether for past transgressions or ongoing illegalities and violations. In the absence of any pursuit, Bolivarian impunity is made easy, if not perfected. The lines of communication on which Bolivarian strength depends appear to be increasingly secure. Those lines lead to geographic sanctuary, the overall extent of which appears to be growing. Although the Bolivarians have lost some international sympathy due to the miserable optics of their Venezuela franchise, the loss of face has been offset by the internationally popular FARC power arrangement with a Colombian administration that itself is looking more and more Bolivarian.

Unless and until there is increased, physical opposition to Bolivarian impunity—active, physical pursuit that blocks smuggling routes, closes sanctuaries, and disempowers Bolivarian leaders—foreign interests will be negatively affected in the following ways:

- Cocaine and heroin production and transnational trafficking will flourish.[54]
- Human rights violations, including human trafficking, will continue.
- Unregulated and undocumented migration flows will increase.
- Illegal mining will continue to expand.
- Environmental degradation will accelerate.
- Select foreign powers (Russia, China, Iran) are likely to advance significant military staging space and increase their preferential access to key strategic mineral and hydrocarbon resources.[55]
- Countries within the region may move away from the region's nuclear-free tradition.
- Other countries will suffer the effects of Marxist takeovers.
- The overall commercial and material health of the region will likely decline.

Venezuela has all but ceased to exist as a valid geostrategic concept. Venezuela is not an isolatable place, nor is "Venezuelan" an accurate identity to be intoned in terms of the perpetrators of widespread material privation, corruption, and abuse. Strategy makers should contemplate all of northern South America and the Caribbean. Instead of a place name or a national government, the PCC and the PSUV would be the more meaningful bullseye organizational identities for counteraction.

Today, the impunity enjoyed by leaders of the PCC and PSUV is not being challenged on any appreciable scale in any sphere. The PCC/PSUV is the principal source of the tragedy (willfully causing the privation). For an external strategy to have success in the long run, that is, to reset the populations of northern South America and the Caribbean on an improving material, pro-liberty and pro-United States political azimuth, the PCC and PSUV will have to be confronted and their impunity ended. The FARC and ELN are of the same cloth, in the same club as the PCC and PSUV, and they, too, have been given a pass (allowed if not provided impunity for violent illegal behaviors) in recent years. These four organizations are backstopped by a broader network of organizations, including some formal multinational regional IOs. The counter to all this would ideally be an orchestration of disparate elements and forms of effort, the counterpart of the Marxist "all forms of struggle," perhaps including military action of some kind. ■

The observations, opinions, and assertions expressed in this article are those of the author, Geoff Demarest, alone and do not represent the official policy or position of the U.S. government or any part of the U.S. government.

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Brazil-Russia Military-Technical Cooperation

A Fruit of the Post-Cold War World Order

Imanuela Ionescu

In the evolution of human civilization, the necessity for cooperation among groups to produce coalitions for mutual benefit has been a constant. However, the character of such cooperation, the variety of forms such cooperation takes, and the many differing end states stemming from cooperation among groups have always depended on a wide variety of internal and external factors with interlacing influences from both the past and present linked to influences anticipated from the future.

Assuming the existence of an underlying human imperative for employing cooperation between groups to achieve success in obtaining mutual ends, in this article, I will briefly examine the gradual emergence of the de facto "strategic and technological alliance" that exists between Russia and Brazil. In doing so, I will identify and highlight relevant events leading to the current cooperative relationship as much as the constraints of an article-length treatment allow. In developing this analysis, I have assumed that the basis and purpose for each country's interest in the other is not friendship but a desire of each to increase its own power to protect its political and economic interests.[1]

Background

I begin by providing a brief chronological overview of cooperation between the two nations followed by a more detailed description of salient events with analysis of the benefits derived from such instances of cooperation as they apply principally to the enhancement of Brazil's military power:[2]

- 1828: Russia and Brazil formalize diplomatic relations[3]
- 1828–1993: A low level of relations, mostly in commerce; interrupted during the Cold War until about 1991, after the end of the military regime in Brazil and the fall of the Soviet Union
- 1994–present: Cooperation becomes strategic—in political, military, and technical areas—but results do not meet declared purposes

Previous page: Brazilian astronaut Marcos Pontes takes part in zero-gravity training 13 February 2006 aboard a plane flying near Moscow. Pontes blasted off from the Baikonur Cosmodrome in Kazakhstan on 30 March 2006 with Russian cosmonaut Pavel Vinogradov and U.S. astronaut Jeffrey Williams. He spent eight days on the International Space Station before returning to Earth with the outgoing two-man crew. (Photo from the Associated Press)

Setting aside the many non-security-related initiatives focused on building better relations and cooperation during the epochs noted above, this article focuses on the development of military-technical cooperation between the two countries from the early 1990s through today. What has been set aside includes dialogue in a multilateral context in formal organizations such as Brazil, Russia, India, China, and South Africa (BRICS), the Group of 20 (or the G20, an international forum for the government and central bank governors of nineteen nations and the European Union), and the UN.[4]

However, while not analyzed here, it is important to note that Brazil and Russia have offered each other support in many areas of mutual interest outside of military-technical cooperation. For example, Russia has supported Brazil's quest to obtain a permanent seat on the UN Security Council, while Brazil has facilitated dialogue between Russia and members of Mercosur (a South American trade bloc established by the Treaty of Asunción in 1991 and Protocol of Ouro Preto in 1994). Brazil also passionately supported Russia's draft agreement posed at the UN to ban the deployment of weapons in space. Additionally, Russia and Brazil have old and strong bilateral commercial relations; for example, Russia is one of the largest importers of Brazilian beef.

History of Bilateral Relations between Brazil and Russia in the Military-Technical Domain

The increased emphasis on military-technical cooperation between Brazil and Russia was first raised formally in 1992 by Georgy E. Mamedov, the deputy chancellor of Russia. After a meeting between Mamedov and the Brazilian ambassador to Moscow, Sebastião do Rego Barros, Barros noted in a follow-up confidential telegram, "I think I can say that I see a Russian effort that has not been demonstrated yet in the development of relations with our country."[5] From 1992 to 1994, several rapport-focused events occurred across government entities that demonstrated Russian interest in Brazil:

- A Russian trade delegation visited Brazil and proposed, among other things, the opening of a Yak airplane assembly plant in Rio Grande do Sul (in southern Brazil).[6]
- A Brazilian mission to Russia caused disappointment on the Russian side because no Brazilian representative of the Department of Aerospace

The Sazhen-TM-BIS laser monitor station located on the campus of the University of Brasília in Brazil. Activated in 2013, it was the first such station built outside of Russia. The station was integrated into GLONASS (*Globalnaya Navigazionnaya Sputnikovaya Sistema*, or Global Navigation Satellite System), the global positioning network operated by the Russian Space Agency. (Photo courtesy of the Russian Federal Space Agency)

Science and Technology was included in the delegation. This was reportedly interpreted by the Russians as a "relative lack of interest from the Brazilian interlocutors during that event."[7]

- Subsequent confidential telegrams between the Brazilian Embassy in Moscow and the secretary of state in Brasília highlight additional Russian overtures for cooperation in the military-technical field as well as for the transfer of technology and the creation of joint ventures (i.e., observing the Missile Technology Control Regime).[8]
- Although Russia's 1993 Foreign Policy Concept mentioned Latin America as the last continent on Russia's list of priorities for engagement, it nonetheless nominated three states—Mexico, Argentina, and Brazil—as Latin American countries with which Russia would be interested in cooperating in areas like nuclear research, space exploration, and information technology.[9]
- Russia signed a contract in 1994 to provide Brazil the first set of Igla antiaircraft missile systems (followed by three more sales).[10]

These events mark a transition from rhetorical optimism to a concerted, tangible effort to develop military-technical relations. And while there were subsequent crises and delays across the next decade, they contributed to the increased technology alliance seen in the last seven years.

In 1997, Brazil's establishment of a High Level Cooperation Committee with Russia advanced the proposal for cooperation in technical-scientific fields, including in the nuclear and space sectors. This culminated at the end of the same year with the signing of the *Agreement on Technical and Scientific Cooperation* and the *Agreement Concerning Cooperation in Outer Space Sector for Peaceful Purposes*. After a meeting in 2002 between the Brazilian and Russian presidents, a joint declaration established the promotion of bilateral cooperation on the level of a long-term strategic partnership and the signing of a memorandum on military-technical cooperation.[11]

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Later, Russia's cooperation with Brazil ironically received a significant boost following an accident at the Brazilian orbital launch center, Centro de Lançamento de Alcântara (Alcântara Launch Center). In August 2003, three days before its scheduled launching, the VLS-1 satellite launch vehicle (Veículo Lançador de Satélites) exploded on the ground.[12] Russia responded by offering to lend its expertise in rocketry to help investigate the causes of the accident. The Russian team arrived in Brazil coincidentally during negotiations for an agreement between the Ministries of Defense, and Science and Technology of the two states. The same year, Russia and Brazil signed a basic agreement on military technology and transfer. The revision document of the VLS-1 subsequently led to a series of changes to the VLS-1 rocket model and supporting launch tower.[13]

Later, in 2004, a consortium of Russian companies opened a company in Brazil to launch satellites from Brazil's Alcântara Launch Center and for the development of rockets of different sizes, starting with VLS, with its first launch by 2008.[14] This proposal was made through official channels in February 2004. Investors spent approximately $2.5 million on this project until April 2004, although there was no official guarantee or technology safeguards agreement.[15]

At the end of 2004, a seminal event in the relationship between the two countries occurred when Brazil hosted the first official visit of a Russian president to its shores. In the same year, a memorandum was signed between the Brazilian Ministry of Science, Technology, and Innovation, and the Russian Federal Space Agency on the cooperation program in space activities, which facilitated the development of VLS-1. After signing this memorandum, the Russian president stated that the most promising areas for further bilateral cooperation included the airline, energy, and space-building sectors.[16]

With some changes to the Brazilian version of the rocket, Russia and Brazil subsequently shared development of a new family of rockets and geostationary satellites as well as further development of the infrastructure of Alcântara Launch Center.[17]

In October 2005, the Russian and Brazilian presidents met in Moscow to sign an agreement on cooperation in space. The joint statement asserted

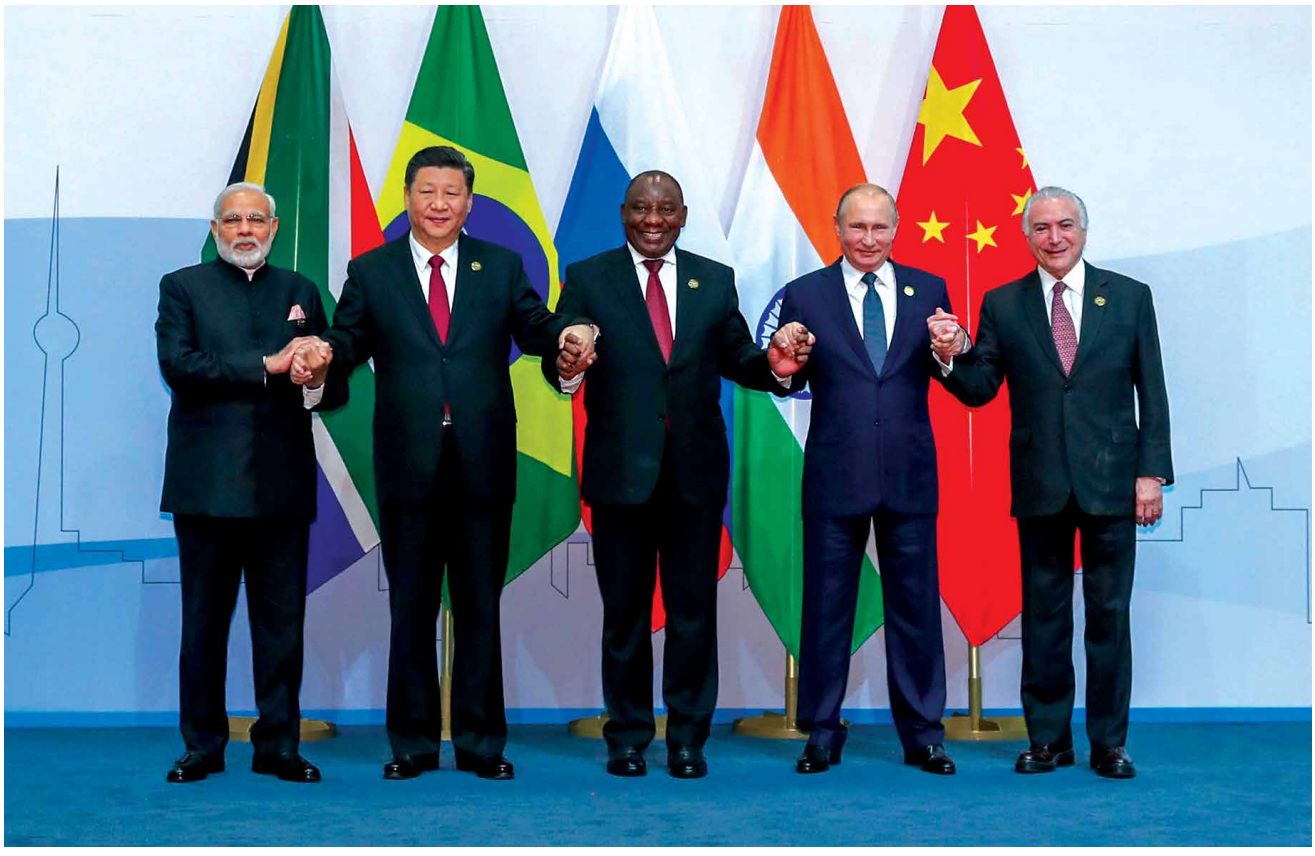
A mock-up of a Russian-built VLS-1 rocket is positioned in the mobile integration tower 13 July 2012 at the Alcântara Launch Center in the state of Maranhão, Brazil, in preparation for an actual rocket assembly. In 2005, the Brazilian government announced its intention to jointly develop with Russia five different closely related launch systems (including the VLS-1) based on Russian designs under the Southern Cross program. (Photo courtesy of the Brazilian Air Force)

the existence of a "strategic alliance" between the two states and the intention to explore the potential of other forms of military-technical cooperation.[18] According to the joint statement, the presidents of Russia and Brazil viewed favorably the entry of Russian Mi-171A helicopters and Be-103 seaplanes in the Brazilian market and the possible establishment of an Embraer's assembly plant in Russia.[19]

A week after the October 2005 meeting, the Brazilian government officially announced its ambitious Cruzeiro do Sul (Southern Cross) program. According to this agreement, Brazil would develop with Russia a five-rocket family, the smallest being further development of the VLS-1, with twenty-five changes recommended by the Russian State Rocket Center Makeyev Design Bureau.[20] This was done in connection with a first-ever contract to send a Brazilian astronaut to work on the International Space Station.[21]

In 2006, Marcos César Pontes—the only Brazilian astronaut to date—spent ten days in space with Russian cosmonauts, two days on board the Soyuz, and eight days on board the International Space Station. This mission has been an enormous source of national pride that provided great visibility of the Brazilian space program to the Brazilian people while promoting public support for Brazil's expanding relationship with Russia. The price that Brazil paid to Russia for this launch was $10 million, which was reportedly half the usual price Russia usually charged during that period.[22]

In 2007, the Brazilian government organized a tender for the acquisition of thirty-six aircraft for retrofitting and upgrading the Brazilian supersonic aircraft fleet (the FX-2 program), and Russia offered the Su-35 aircraft as a prospective item for sale. Although it was one of the favorites, the Brazilian Air Force (Força Aérea Brasileira) announced in 2008 that the Su-35 was out of the final selection process.[23] However, a year later, Brazil signed an agreement to offset the purchase (through commercial



(*Left to right*) Indian Prime Minister Narendra Modi, Chinese President Xi Jinping, South African President Cyril Ramaphosa, Russian President Vladimir Putin, and Brazilian President Michel Temer during the plenary session of the 10th BRICS (Brazil, Russia, India, China, South Africa) Summit 26 July 2018 in Johannesburg. (Photo by Xie Huanchi, Xinhua/Alamy Live News)

compensation) of twelve military Mi-35 helicopters worth about $150 million for the air force.[24]

In 2008, Brazil and Russia signed a defense technology cooperation agreement for the joint development of fifth-generation fighter jets and a satellite launcher as well as joint use of submarines, satellites, mapping systems, remote guiding technology, and information security.[25] In the same year, the spatial agencies of Brazil and Russia launched a program for cooperation in the use and development of the Russian Global Navigation Satellite System (GLONASS), the Russian equivalent to GPS.[26] One year later, within the limits of the signed technology protection agreement, Brazil and Russia ratified an elaboration of the pilot study of the VLS Alfa rocket (a modified version of VLS-1).[27]

Later, in 2010, as Brazil organized for the 2014 World Cup and the 2016 Olympics, the country bought armored Tigr vehicles from Russia to support security measures.[28] The following year, Gazprom (Russia's largest natural gas supplier) opened a representative office in Rio de Janeiro. Subsequently, Russian tycoon Igor Zyuzin created a binational company with the Pará Steel Plant (in Northern Brazil). Later, Rosoboronexport (Russia's Federal State Unitary Enterprise, the intermediary agency for Russia's exports/imports of defense-related and dual-use products, technologies, and services) began talks with the Brazilian government regarding upgrade and procurement of Brazilian police vehicles.[29]

In December 2012, after a state visit by Brazilian President Dilma Rousseff to Russia, Brazil signed an agreement to buy Russian antiaircraft systems in February 2013. In conjunction, the state-owned Russian Technologies State Corporation (Rostec) and the Brazilian Odebrecht Defense and Technology *(Odebrecht Defesa e Tecnologia)* signed a memorandum on technical cooperation committing to establishment of a joint venture for production of helicopters, air defense weapons, naval vehicles, etc.[30] These included signed agreements on the creation of a joint enterprise in Brazil for assembling the Russian-made Mi-171 family helicopters, establishing a service center for Mi-35M

helicopters, and developing an integrated air defense system on behalf of the Brazilian armed forces.[31]

The head of the Brazilian armed forces delegation, Gen. José Carlos de Nardi, said on that occasion that it was negotiating Brazil's acquisition of two batteries of Igla-S (Needle) portable air defense systems and three Pantsir-C1, which would include receiving both the technology and the right to build a factory for their assembly in Brazil.[32] Almaz-Antey, a Russian state-owned company in the arms industry, proposed a project through which Brazil's air defense system would be divided into five parts, using only Russian armaments. Proposed arms included S-300 missiles and modified versions of the Buk and Tor air defense systems.[33] In 2012, Almaz-Antey began talks with Brazil on bilateral cooperation for security support to the World Cup, then planned for 2014 in Brazil and 2018 in Russia, and the Olympic Games scheduled to take place in winter 2014 in Russia and summer 2016 in Brazil. Subsequently, the Brazilian Atlas airline company bought seven Ka-62 helicopters at the end of that year.[34]

In 2013, Dmitry Shugaev, general manager and deputy of Russia's Rostec (established in late 2007 to consolidate strategically important companies) and the head of the Russian delegation at the 2013 Latin America Aero and Defence Security Conference in Rio de Janeiro, spoke about the technology alliance with Brazil (referring to Odebrecht and its high-tech subsidiary, Mectron) and the Brazilian firm Marcopolo, which produces buses in Russia together with Kamaz (a Russian truck and engine manufacturer), as well as the implementation of the facial recognition system in Brazil for the World Cup and the Olympics.[35]

In the same year, Sergei Shoigu, the Russian defense minister, went on a formal visit to Brazil to close a sale of missile systems worth about $1 billion.[36]

Also that same year, the Sazhen-TM-BIS laser station (the first of its kind built outside of Russia) was installed at the Brasília University located in the Brazilian capital. This system is part of GLONASS.[37] A second system was installed the following year.[38]

As a result of the tensions over claims against of U.S. espionage conducted against the Brazilian president's personal emails, Brazil became very interested in cyber defense systems.[39] Russia, in turn, as a result of the embargoes against it by the international community following its annexation of the Crimean Peninsula and concerns related to the increasing U.S. influence in Europe due to military deployments to NATO countries on Russia's borders, became more interested in cooperation with Brazil in a range of high-tech security areas.[40]

In 2015, following the expression of Brazil's interest in upgrading its nuclear power plant following the 2011 earthquake and tsunami that released radioactive materials at Fukushima in Japan, Rosatom (Russia's state-run nuclear energy corporation) opened an office in Rio de Janeiro next to the Brazilian company Eletronuclear in 2015.[41] Rosoboronexport announced its intention to export Su-35 fighters to Brazil, including technology transfer—although this company had previously declined such a transfer in 2008.[42]

Earlier, in mid-2014, representatives of the Brazilian armed forces participated as observers to the Russian armed forces exercises (exercises adapted to the Brazilian requirements) at the Russian Defense Ministry's Tula Training Camp (two hundred kilometers from Moscow). Part of these exercises included tracking the real-time use of the Pantsir-S1 systems.[43] This was followed by nine days of analysis in anticipation of entering into the contractual phase for the acquisition of three systems.[44] The purpose of this acquisition was to protect Brazilian civilian and military strategic infrastructure.[45]

With the inauguration of Sazhen-TM-BIS (GLONASS equipment), Brazil and Russia signed an agreement to install other stations at the Federal University of Santa Maria (Rio Grande do Sul) and the Pernambuco Technological Institute (north of the country).[46] Later, at the São Paulo Latino American LABACE (Brazilian trade show) Conference and Exhibition 2014, the Helipark Taxi Aereo Service Center was authorized use of Ka-32 helicopters together with training and technical support to their Brazilian colleagues provided by their Russian partners.[47] Toward the end of 2014, a Russian delegation visited Brazil to see the "operational part of the Brazilian airspace defense and antiaircraft defense systems.[48]

In 2015, Rostec declared its intentions to continue its strategic partnership with Brazil by using intelligent Safe City and E-Government systems, and providing air defense weapons and civilian and military dual-use helicopters.[49] As a consequence, Mi-35M and Mi-17 helicopters were delivered to Brazil for civilian use, which prompted the Brazilian government to express interest in acquiring the Ka-62.[50]

That same year, the Brazilian minister of science, technology, innovation, and communication, Aldo

Rebelo, and the Brazilian Space Agency president, José Raimundo Braga Coelho, made an official visit to Russia to expand bilateral cooperation in the fields of their respective institutions. One of the topics discussed was the expansion of GLONASS calibration stations. Another topic was the installation of a Russian station for monitoring the space debris in Itajubá (Minas Gerais).[51]

Also discussed was a future exchange between the specialists of the Skolkovo Technology Park (in Russia, under construction) and Brazil's São José dos Campos (São Paulo) technological parks.[52]

In an interview with Brazil's *Tecnologia e Defesa* magazine on 2 June 2015, Sergei Goreslavskiy, deputy general manager of Rosoboronexport, said that the company was promoting the Podsolnukh-E radar system in Brazil, which could be integrated into the maritime area control system, a very relevant issue given the great length of the Brazilian coast. He also discussed plans for the development of SisGAAz Coastal Infrastructure as well as the sale of Yak-130 aircraft and Kornet-E missile systems.[53]

At the BRICS Summit in 2015, Brazil's Rousseff took the opportunity to announce that Brazil was interested in further partnering with Russia in atomic energy development, satellite launches, rocket construction, and Russian involvement in Brazil's Aster mission—the first Brazilian deep space, multi-institutional project to build a small space probe to explore asteroid 2001SN263 between Mars and Jupiter.[54]

Soon after this meeting, Brazil decided to acquire the Pantsir S1 surface-to-air system as the medium-altitude missile of the Brazilian armed forces. The decision was communicated to Russian Prime Minister Dmitri Medvedev by the Brazilian Vice President Michel Temer (president after Rousseff's dismissal) at the seventh meeting of the Russian-Brazilian High Level Cooperation Committee in Moscow, 16 September 2015. According to the negotiations, the sale would include 100 percent "technology transfer, allowing the production of 100 percent Brazilian national systems within six years after signing the contract." The total cost of the package was estimated at $1 billion, to be made through trade compensation. The Russian side said that if it is in Brazil's interest, Russia could "offer more economic packages with less technology transfer but more suited to the economic crisis in Brazil."[55]

Also in 2015, Brazil said it would implement a recent Russian innovation to protect companies against cyberattacks. Sanepar, a state-owned company, was the first Brazilian company to benefit from the implementation of this Russian innovation.[56]

In the same year, on 16 September, the Brazil-Russia Intergovernmental Commission signed a cooperation agreement between Nuclebrás Equipamentos Pesados S. A. and Rosatom América Latina for the construction of a Brazilian nuclear reactor for peaceful uses.[57]

On 27 January 2016, Brazil received a set of Russian missile systems—Igla-S short-range missiles, also known as man-portable air defense systems. These were delivered to antiaircraft artillery units across the country. The Igla-S can be used "both in urban areas and in uninhabited areas such as the Amazon forest, mainly when using radars such as the SABER M-60 and BRADAR, integrated with antiaircraft artillery."[58]

That same year, Ivan Dybov, deputy president of Rosatom, suggested that Russia "might build a radioactive waste repository for the company Electronuclear (a company operating the Angra I and II plants)" in Brazil.[59] Additionally, there were inaugurations for the third and fourth stations for the improvement of the satellite location of GLONASS," at the Pernambuco Technological Institute and the Federal University of Santa Maria.[60]

In June 2017, Brazilian President Michel Temer visited Russia, emphasizing that the purpose of the visit was "to encourage Russian investors to invest in various sectors of the Brazilian economy."[61] He noted that there were over fifty sectors, including energy, oil, and gas, which potentially could be of economic interest to Russia.[62]

Analyzing the Technical-Military Cooperation between Brazil and Russia from Other Perspectives

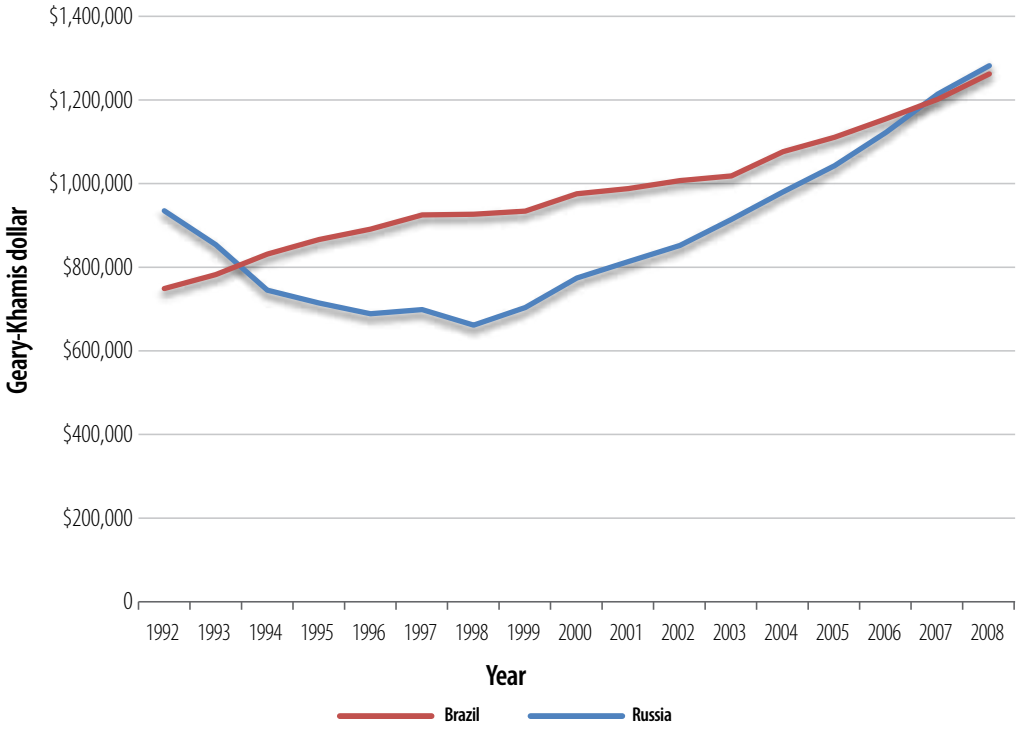
To summarize the development and current state of bilateral military-technical cooperation between Brazil and Russia, the two graphs illuminate the precedence that each of the two countries gives to their own nations' military sectors. Figure 1 (on page 75) reflects the gross domestic product (GDP) of the two countries, and figure 2 (on page 75) reflects their respective military expenditures since the beginning of the military-technical cooperation between Brazil and Russia.[63]

The figures show that, while Russia's GDP was generally less than Brazil's, its military spending was higher with a single exception. To complete the data, as a percentage of GDP, between 1992 and 2016, Brazil spent a minimum of 1.39 percent in 2016 and a maximum of

2 percent in 1991, 1994 and 2001, while Russia spent a minimum of 3 percent in 1998 and a maximum of 5.39 percent in 2016. The comparison implies that Russia is more focused on increasing its military power, while military power is not a priority of Brazil's politics.

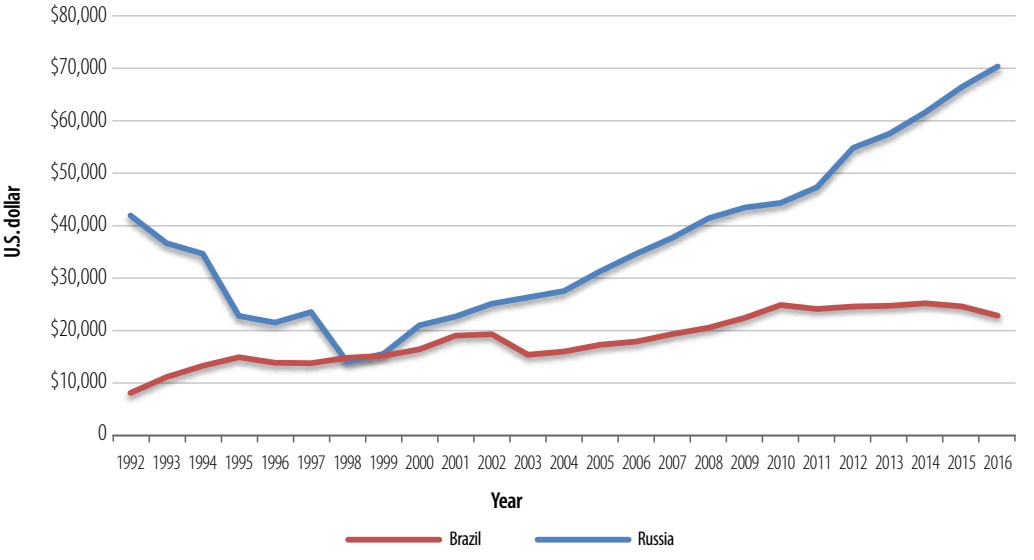
Conclusion

University of Chicago professor John J. Mearsheimer has argued that it is often difficult for states to cooperate and especially difficult for that cooperation to evolve when two factors inhibit it. The first is mistrust if there is a perception of possible fraud by one of the partners. The other refers to the cost/benefit advantage that states generally seek when contemplating cooperation as they compare what they are investing as opposed to what they are gaining in a partnership. Mearsheimer shows that great powers are often reluctant to cooperate, particularly in the military sector, because of the fear that



(Figure by author, data from Maddison Project Database and the World Bank; The Geary–Khamis dollar, more commonly known as the international dollar, is a hypothetical unit of currency that has the same purchasing power parity that the U.S. dollar had in the United States at a given point in time.)

Figure 1. Gross Domestic Product Million 1990 International Geary-Khamis (GK) Dollars



(Figure by author, data from the World Bank)

Figure 2. Brazil and Russia Military Expenditure in Constant 2015 U.S. Dollars

Lt. Col. João Ricardo da Cunha Croce Lopes poses with Russian cadets to whom he was teaching Portuguese in 2017. The Brazilian army has an agreement to send an officer to teach Portuguese to students training at the Military University of Moscow in an effort to cultivate better relations and cross-cultural understanding, and Croce was the second officer selected to serve under this program. (Photo by Lt. Col. Croce Lopes/courtesy of Centro de Comunicação Social do Exército [CComSEx/EB])

cooperation may lead to the transfer of technological advantages associated with modern weapons that could foster rapid changes in the balance of power, creating stresses that no level of cooperation can eliminate due to the dominant logic of security competition.[64]

From such a perspective, in the special relationship that has emerged between the two countries, "the geographical distance between Brazil and Russia … decreases the mutual preoccupation regarding their security, and this fact allows more confidence between [them]."[65] In other words, since Brazil and Russia are so geographically distant from each other, neither poses a direct threat to the other irrespective of their advances in military capabilities. This appears to have been a major favorable factor that promoted both less concern for fraud in their relationships and greater trust in pursuing mutually beneficial relationships.

In 2014, Konstantin Sivkov, president of the Russian Academy of Geopolitical Problems, said, "Any economic alliance will inevitably turn into a military and political one for one simple reason: once close economic cooperation begins between two countries, the question of protection of their interests immediately arises."[66] The cooperation between Brazil and Russia can be characterized as very promising for both states, and through it, each one of the two countries seeks to increase its power. At the same time, the cooperation is heavily affected by the national priorities and the consequence of the technological gap between the two states: while Brazil aims to obtain know-how in the field of military equipment and has always insisted on the transfer of technology (facilitating Brazil's aspirations to gain a place among the select club of great powers), Russia on the other hand views Brazil as

primarily a customer and aims to sell Brazil services and finished products using as capital its acquired military expertise.[67] It is stated that "the technology transfer rate between states and firms is very low, having, historically speaking, the predominance of the 'black box' spirit."[68]

From both historical and geopolitical perspectives, Russia and Brazil are not traditional partners. Each of the two states has always prioritized relations with other states in accordance with its own interests, and most of those interests have for each of them been mainly regional. So the current level of cooperation ought to be seen through the lens of the period in which it took place, namely in the post-Cold War period, often described as a period of unipolar hegemony dominated by the United States, in which both Russia and Brazil share a common interest in challenging such hegemony by fostering through strategic partnerships global multipolarity, with each of them vying for a role as one of the poles.[69]

We cannot yet draw conclusions about the effects of the political instability in Brazil on its relationship with Russia following the impeachment of Rousseff and during Temer's tenure. Nor can we gauge the gnawing influence of Brazilian corruption at the highest levels on the one side or continuing influence of broad sanctions imposed on Russia due to its actions on the Crimean Peninsula.[70] One result of the latter concern is that the sanctions on Russia, mainly applied by the United States and Europe, are placing a great deal of stress on relevant Russian business deals affecting Brazil. As a consequence, "both [countries] are dealing with a serious political crisis, and corruption is endemic in the system; … inflation is coming down in both countries, and so are interest rates."[71]

In 2018, presidential elections took place both in Russia and Brazil. The priorities of each country remain the same, and they are not concerned with each other. However, history has taught us that the world of politics can have a plot twist at any time. Also, we have to take into account that, in this turbulent period for international politics, the usually similar positions of Russia and Brazil within relevant international organizations might have an increased importance for both countries. However, since this article has shown that this cooperation was the result of changes in the post-Cold War international system, we can expect it to continue in the same pattern as long as there are no major changes in the balance of power in the current system of international politics. ■

A basic version of this article (in Romanian), titled "Cooperarea tehnico-militară dintre Brazilia și Rusia: aspirații post-Război Rece," was originally published in Monitor Strategic *(3-4/2016), 51–62.*

Notes

1. This is a main principle of political realism theory.

2. As it is characterized in "Russian Federation," Ministry of Foreign Affairs [of Brazil], accessed 6 September 2018, http://www.itamaraty.gov.br/en/ficha-pais/6573-russian-federation.

3. Ibid.

4. Ricardo Wegrzynovski, "União de dois gigantes – Nova parceria com a Federação da Rússia pode levar o Brasil ao topo da tecnologia de defesa [Union of two giants – New partnership with the Russian Federation may lead Brazil to the top of defense technology]," *Desafios do Desenvolvimento* Ano 5, Edição 43 (17 May 2008), accessed 30 May 2018, http://www.ipea.gov.br/desafios/index.php?option=com_content&view=article&id=1511:catid=28&Itemid=23. Referring to aerospace cooperation, Himilcon Carvalho, interim president and director of Spatial Policy and Strategic Investments of the Brazilian Space Agency, underlined that BRICS (Brazil, Russia, India, China, and South Africa) "strengthens as a technological development bloc." It is also worth mentioning that within the BRICS, cooperation has been developed over time in the fields of military, nuclear, and aerospace technology.

5. Bruno Mariotto Jubran, "Brasil e Rússia: Política, comércio, ciência e tecnologia entre 1992 e 2010 [Brazil and Russia: Policy, trade, science and technology between 1992 and 2010]" (master's thesis, Federal University of Rio Grande do Sul, 2012), 80.

6. Ibid., 85.

7. Ibid., 84.

8. Ibid., 85.

9. Andrei Melville and Tatiana Shakleina, *Russian Foreign Policy in Transition: Concepts and Realities*, in Vinícius Gurtler da Rosa, "Brasil e Rússia: uma parceria verdadeiramente estratégica? [Brazil and Russia: an actual strategic partnership?]" (master's thesis, University of Rio Grande do Sul, May 2014), 85.

10. "'Rosoboronexport' na LAAD 2011 – Defence & Security. Entrevista com o chefe da delegação da Rosoboronexport Serguei Ladiguin ['Rosoboronexport' at LAAD 2011 – Defense & Security. Interview with the head of the Rosoboronexport delegation Serguei Ladiguin]," DefesaNet, 30 March 2011, accessed 30 May 2018, http://www.defesanet.com.br/laad2011russia/noticia/142/%E2%80%9CRosoboronexport%E2%80%9D-na-LAAD-2011-%E2%80%93-Defence-&-Security/.

11. "At the End of Negotiations, President Vladimir Putin and President Cardoso of Brazil Signed a Joint Statement," Kremlin, 14 January 2002, accessed 30 May 2018, http://en.kremlin.ru/events/president/news/42469.

12. There were two attempts to launch the VLS rocket in 1997 and 1999, but the rockets blew up a few minutes after launch.

13. Nelson Jobim, "A Defesa e o Programa Espacial Brasileiro [Brazilian Defense and Space Program]," in *A Política Espacial Brasileira, Parte I* [Brazilian Space Policy, Part I], ed. Rodrigo Rollemberg, Cadernos de Altos Estudos Série no. 7 (Brasília, DF: Edições Câmara, Centro de Documentação e Informação, 2010), 96.

14. Salvador Nogueira, "Russos querem lançar satélites do Brasil [Russians want to launch satellites from Brazil]," *Folha de São Paulo* (website),

accessed 29 September 2018, https:// www1.folha.uol.com.br/fsp/ciencia/fe2605200401.htm. The Brazilian launch center, due to its geographical position, offers many advantages—including a lower launch cost due to substantially less fuel consumption compared to the launch centers used by Russia at that time. Currently, Russia launches missiles not only from its territory and from Kazakhstan but also from the launch center of the European Union in French Guiana, with similar advantages to Brazil. A Russian launch project was initiated in Christmas Island (Australia), but it has not been successfully completed. Russia is also part of the Sea Launch multinational (alongside Norway, the United States, and Ukraine), a Pacific Ocean launching center located on the equatorial line that launches Zenit rockets, produced collaboratively by Russia and Ukraine, but the tensions between the two countries in 2014 have left this base in a situation still uncertain. In April 2018, the Russian aviation group S7 completed the Sea Launch purchase; however, the Zenit rocket is not likely to be produced in the near future, and adapting the Soyuz-5 rockets for launch from this platform could take at least until 2022. For more information, see Caleb Henri, "S7 Closes Sea Launch Purchase, Future Rocket TBD," Spacenews, 17 April 2018, accessed 2 October 2018, https://spacenews.com/s7-closes-sea-launch-purchase-future-rocketbd/.

15. Nogueira, "Russos querem lançar satélites do Brasil."

16. "Russia Is Ready to Expand Its Long-term Cooperation with Brazil in High Technology and Science-intensive Fields," Kremlin, 22 November 2004, accessed 22 August 2018, http://en.kremlin.ru/events/president/news/32207.

17. Ministério da Ciência e Tecnologia (MCTI) da República Federativa do Brasil e Agência Federal Espacial da Rússia, *Memorando de Entendimento entre o Ministério da Ciência e Tecnologia da República Federativa do Brasil e a Agência Federal Espacial a respeito do Programa de Cooperação sobre Atividades Espaciais* [Memorandum of understanding between the Ministry of Science and Technology of the Federal Republic of Brazil and the Federal Space Agency of Russia regarding the cooperation program on space activities], 22 November 2004, article 1, item 2.

18. Luiz Inácio Lula da Silva and Vladimir Putin, *Declaração Conjunta sobre os Resultados das Conversações Oficiais entre o Presidente da República Federativa do Brasil, Luiz Inácio Lula da Silva, e o Presidente da Federação da Rússia, Vladimir V. Putin* [Joint statement on the outcome of the official talks between the president of the Federal Republic of Brazil, Luiz Inácio Lula da Silva, and the president of the Russian Federation, Vladimir V. Putin], 18 October 2005, item 3.

19. Ibid.

20. Portal DefesaBR, "Programa Cruzeiro do Sul [Southern Cross Program]," 21 January 2013, http://www.defesabr.com/Tecno/tecno_PCS.htm (website not available).

21. "Russia and Brazil Have Good Prospects for Cooperation in the High-tech Field," Kremlin, 18 October 2005, accessed 22 August 2018, http://en.kremlin.ru/events/president/news/34266.

22. "Astronauta brasileiro inicia viagem ao espaço [Brazilian astronaut begins space travel]," *Folha de Sao Paulo* (website), 29 March 2006, accessed 21 August 2018, http://www1.folha.uol.com.br/folha/ciencia/ult306u14424.shtml; Karen Zraick, "NASA Names Astronauts for Boeing and SpaceX Flights to International Space Station," *New York Times* (website), 3 August 2018, accessed 2 October 2018, https://www.nytimes.com/2018/08/03/science/nasa-astronauts-boeing-spacex.html. Following the latest contract changes, NASA pays about $81 million per seat to send astronauts to the International Space Station (ISS); after November 2019, Boeing and SpaceX will take over that role and transport astronauts to the ISS at a lower price.

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24. Jubran, "Brasil e Rússia: Política, Comércio, Ciência e Tecnologia entre 1992 e 2010," 149.

25. Wegrzynovski, "União de dois gigantes."

26. Agência Espacial Brasileira, "Rússia," last updated 22 April 2018, accessed 4 February 2019, http://www.aeb.gov.br/ programa-espacial-brasileiro/cooperacao-internacional/russia/.

27. Rodrigo Rollemberg, "O Programa Espacial Brasileiro [Brazilian space program]," in *A Política Espacial Brasileira*, *Parte I*, ed. Rodrigo Rollemberg, Cadernos de Altos Estudos Série n. 7 (Brasília, DF: Edições Câmara, Centro de Documentação e Informação, 2010), 41.

28. "PM do Rio recebe novo blindado para testes [Rio military police receive new armored vehicles for tests]," Forças Terrestres [Ground Forces] website, 1 September 2010, accessed 19 September 2018, https://www.forte.jor.br/2010/09/01/pm-do-rio-recebe-novo-blindado-para-testes/.

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50. Ibid.

51. "Autoridades Brasileñas discuten acuerdos espaciales en Moscú, incluyendo nuevas estaciones de Glonass y de monitoreo en el norte y sudeste del país [Brazilian authorities discuss space agreements in Moscow, including new Glonass and monitoring stations in the north and southeast of the country]," Defensa.com, 19 June 2015, accessed 30 September 2018, https://www.defensa.com/brasil/autoridades-brasilenas-discuten-acuerdos-espaciales-moscu-nuevas.

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64. John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001), 52.

65. Guilherme Belli, "A Evolução das Relações entre a Rússia Pós-Soviética e o Brasil [The evolution of relations between post-Soviet Russia and Brazil]" (master's thesis, Ministry of Foreign Affairs Rio Branco Institute, 2009), 104.

66. Anton Mardasov, "Moscow Eyes Joint Development of Weapons within BRICS," Russia Beyond, 18 August 2014, accessed 22 August 2018, http://in.rbth.com/world/2014/08/18/moscow_eyes_joint_development_of_weapons_within_brics_37623.

67. Walter Bartels, "Prioridade da indústria quanto ao Programa Nacional de Atividades Espaciais – PNAE e a cooperação internacional [Priority of the industry regarding the National Program of Space Activities – PNAE and international cooperation]," in *A Política Espacial Brasileira*, 151. Brazilian studies cite such situations, and we will give an example: at a meeting between the Brazilian and Russian space agencies on a geostationary satellite, the Russian side brought a Russian company that offered a finite and complete service package—the satellite and its launch from Russia.

68. Marcílio Boavista Cunha and José Carlos Albano do Amarante, "O Livro Branco e a Base Científica, Tecnológica, Industrial e Logística de Defesa [The white paper and the scientific, technical, industrial, and defense logistics base]," *Revista da Escola de Guerra Naval* 17, no. 1 (June 2011): 24–25. A "black box" is defined in this article as "the system whose real operations are unknown and whose operations can only be studied between the values of input and output. The internal mechanisms are not entirely open to observation."

69. Angelo Segrillo, "As Relações Brasil-Rússia: Aspectos Históricos e Perspectivas Atuais [Brazil-Russia relations: historical aspects and current perspectives]," in *A Política Externa Brasileira na era Lula: um Balanço*, ed. Adriano de Freixo, Luiz Pedone, Thiago Morreira Rodrigues and Vágner Camilo Alves (Rio de Janeiro: Apicuri, 2011), 149.

70. It is interesting to mention Brazil's position on Ukraine's territorial integrity at the 68th UN General Assembly on Ukraine's Territorial Integrity. Brazil made the demand for a solution to the conflict, highlighting both Brazil's strategic partnership with Ukraine (one of the main points of strategic cooperation is in the space field, regarding the launch of the Ukrainian Cyclone rocket from the Brazilian launch center) and the fact that Brazil has one of the largest non-European communities of Ukrainian descendants, according to "General Assembly Adopts Resolution Calling States not to Recognize Changes in Status of Crimea Region," 27 March 2014, United Nations press release, accessed 22 August 2018, http://www.un.org/press/en/2014/ga11493.doc.htm.

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The primate of the Russian Orthodox Church celebrates liturgy at the Cathedral of Saints Peter and Paul on 21 February 2016, the last day of his visit to Latin America, in São Paulo, Brazil. (Photo courtesy of the Russian Orthodox Church, Department for External Church Relations)

The Russians of Latin America

Moscow's Bid for Influence Over Russian-Speaking Communities in the Region

Brian Fonseca

Vladimir Rouvinski, PhD

Russia's rebound in the international system following the collapse of the Soviet Union in 1991 has led it back to Latin America in search of economic and geopolitical opportunities. However, Russia's limited capacity to exercise influence in a Western-dominated international system using traditional instruments of power—such as diplomatic, economic, and military—has forced Moscow to search for alternative sources of influence. To that end, Russia is increasingly relying on informational and sociological approaches to achieve its foreign policy objectives—what some scholars describe as hybrid warfare.[1] For example, Russia is courting its diaspora around the world, including in Latin America, to leverage Russian-speaking communities as a source of Russian national power.

Since the early 1990s, mobilizing Russian diaspora has been a key feature of Russian foreign policy in its "near abroad"—that is, former Soviet Republics and Warsaw Pact countries in close geographic proximity to Russia.[2] However, in recent years, Moscow has also stepped up efforts to organize and engage its diaspora in its "far abroad"—that is, regions as far away as Latin America. Over the last decade, there has been a coordinated effort to consolidate diaspora in Latin America and the Caribbean in an attempt to strengthen Moscow's connectivity to growing and increasingly more organized Russia-speaking communities. Diaspora-focused organizations range from compatriot movements to cultural centers, the Russkiy Mir Foundation, Russian media outlets, and of course, the Russian Orthodox Church—all of which help cultivate Russian-speaking communities as a source of Russian national power. This article will examine the evolution of Russian diaspora engagement in Latin America and the Caribbean, and assess its potential to support Russian domestic and foreign policy objectives.

Diaspora as an Emerging Source of Russian National Power

Moscow's inspiration to use diaspora as a component of foreign policy stems largely from structural changes that occurred immediately following the collapse of the Soviet Union in 1991. The fourteen independent nations established along Russia's new border comprised territories that were up until then elements of Moscow's domestic affairs. These territories were vulnerable to Western influence and needed to be quickly incorporated into Russia's foreign policy strategy. One perceived advantage by Moscow was that the populations in these territories maintained strong Russian roots, and large segments of their respective populations were native Russian speakers. To that end, Russia developed a near abroad strategy that included policies to cultivate influence among pro-Russia communities. In a speech to the United Nations in 1994, Russian President Boris Yeltsin asserted Russia's role in protecting ethnic Russians and ensuring peace in the newly independent nations that formerly comprised the Soviet Union, a concept later referred to as the Yeltsin Doctrine.[3] Yeltsin's foreign minister, Andrei Kozyrev, drafted the first

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Russian Foreign Policy Strategy in 1993 that sought to protect the rights of millions in Russian-speaking communities in former Soviet Republics.[4]

Starting in 1994, Moscow began establishing important policies—State Commission on Compatriots Issues, Federal Law of the Russian Federation toward Russian Compatriots, and State Program for the Support of Voluntary Migration of Compatriots to the Russian Federation—aimed at developing Moscow's connectivity with Russians living aboard.[5] The Ministry of Foreign Affairs established the Department of Compatriot Affairs in 2005 and the Federal Agency for the Commonwealth of Independent States, Compatriots Living Aboard, and International Humanitarian Cooperation (*Rossotrudnichestvo*). These organizations analyze diaspora communities, develop strategies to engage compatriots, and coordinate work with compatriot organizations encompassing an estimated thirty million Russians around the world.[6]

Initially, policies were largely targeting diaspora living in Russia's near abroad. However, there has been greater intentionality in developing a globally connected Russian diaspora over the last decade, thanks in large part to Russian President Vladimir Putin. In 2006, Putin asserted, "cooperation with the diaspora, legal advocacy and support for them is one of our national priorities."[7] In fact, Putin often includes Russian diaspora into definitions of the Russian nation-state and views engagement with Russian-speaking communities around the world as an increasingly important component of its public diplomacy strategy. Putin publicly refers to this as the Russian world, also known as *Russkiy Mir*, a concept that builds on Russian identity all over the world and bonds Russian-speaking communities together under a nationalistic moniker.[8] According to Russia's 2016 Foreign Policy Concept, foreign policy objectives include "consolidating the Russian diaspora around the world" to advance Russian foreign policy interests.[9] Moscow wants Russians around the world to preserve cultural and historical ties and the Russian language as well as to promote a positive image of Russia in host countries to aid Russian commercial and diplomatic efforts.[10] Evidence of successes in using Russian diaspora to support Moscow's foreign policy include Georgia, the annexation of Crimea from Ukraine in 2014, and interference in the Estonian and Latvian elections, among others.

History of Russian Diaspora in Latin America

Russian migrants first appeared in Latin America and the Caribbean in the early nineteenth century. The first waves consisted largely of labor migrants from the European part of the Russian Empire and, to a lesser extent, political opposition from the Baltic provinces in Poland and western Ukraine. After October 1917, only a relatively small number of Russians escaping communist rule had chosen the region as their place of refuge, mostly because they were unable to establish their new homes either in Europe or Asia. The second wave of Russian migration to Latin America occurred following the end of the Second World War and consisted largely of Soviet citizens residing in the occupied territory liberated by the Western allies who did not want to return to the Soviet Union. These Russians expanded the diaspora footprint in Latin America to Argentina, Brazil, Chile, Mexico, Paraguay, Uruguay, and Venezuela. Early Russian migrants laid the foundation for important cultural exchanges between Russia and countries in the Americas. In fact, some ethnic Russians of the early waves went on to become famous political figures in Latin American history. For example, Juan Belaieff, born Ivan Timofeyevich Belyaev in Saint Petersburg, Russia, migrated to Argentina in 1923 and then Paraguay in 1924. Belaieff was a cartographer and soldier in Paraguay and is revered for his role in mapping the Chaco region ahead of Paraguay's victory over Bolivia during the Chaco War (1932–1935).[11]

The contemporary Russian diaspora in Latin America consists mostly of Russian-speaking populations who migrated to the region following the collapse of the Soviet Union in 1991, largely for economic reasons. More recently, starting in about 2012, there has been a surge in Russian outbound migration. Some analysts suggest that Russian emigrants today consist largely of middle and upper-middle classes who had successful careers in Russia but saw limited opportunities for growth at home.[12] Since there are no restrictions to leaving Russia to live abroad, and given that most Latin American countries are visa free for Russian passport holders, many Russians have chosen to migrate to Latin America in search of work or to simply experience living abroad before making a final decision to relocate permanently out of Russia.

Russian oil workers at the Astra deposit, circa 1936, in Chubut, Patagonia, Argentina. (Photo courtesy of Wikimedia Commons)

According to ethnographic studies, the Russian diaspora maintains a strong sense of Russian identity and an overall ethnic group consciousness unified largely through common language.[13] Culture, food, art, and literature also serve as unique Russian identifiers within its diaspora. The diaspora tends to include Russian-speaking populations from former Soviet republics like Ukraine, Georgia, and Belarus. Members of the contemporary Russian diaspora tend to assimilate quickly, and most successfully integrate within host societies.[14] Russians living in Latin America tend to have a strong collective memory about their homeland that reflects a perception of Russian greatness, a trait that Moscow exploits in its engagement. Russian diaspora tend to remain patriotic and well connected to Russia through interpersonal relationships and commercial and religious ties. Russian media outlets—television, radio, and web-based programming—and Russian government-funded programming are critical to unifying diaspora and defining and promoting Russianness to and through the Russian diaspora in the region.

Only recently has the Russian government started to request that Russians living abroad report their citizenship or permanent resident status to the authorities in Russia, so it is difficult to provide the exact number of Russians living in Latin America and the Caribbean. However, the Russian embassies and independent researchers estimate that between one hundred thousand and three hundred thousand reside permanently in Argentina; from one hundred thousand to two hundred thousand live in Brazil, between fifty thousand and one hundred thousand reside in Mexico; and a much smaller number (between one thousand and five thousand) live in other Latin American countries and the Caribbean.[15] It is important to mention that Russian-speaking communities are present and identifiable in most, if not all, Latin American nations, and that the Russian government considers Russians residing in Latin America and the Caribbean as an important resource in its engagement with the region.

Engaging the Russian Diaspora in Latin America

Since about 2007, the Russian government has been consolidating and engaging Russian-speaking

communities in Latin America through a variety of organizations. These organizations include coordinating councils, Russian cultural centers, the Russkiy Mir Foundation, the Russian Orthodox Church, and Russian media—in many cases, with direct support from Russian embassies. These organizations are still in rather young and varying stages of development in Latin America and the Caribbean. Furthermore, there are limited signs of regional cooperation among these organizations, which limits the scope and reach of diaspora across the region.

The Russian Foreign Ministry's Federal Agency for the Commonwealth of Independent States, Compatriots Living Aboard, and International Humanitarian Cooperation was established by presidential decree in 2008 and has representative offices in Russian embassies and Russian science and cultural centers in eighty countries around the world, including eight in Latin American and Caribbean.[16] Rossotrudnichestvo representatives are located in Argentina, Brazil, Chile, Cuba, Mexico, Nicaragua, Peru, and Venezuela. They openly foster relations with diaspora and conduct joint activities to promote Russian language and culture, along with Moscow's political views. They enlist the diaspora to aid in "developing friendly relations between countries."[17] Putin is responsible for nominating the head of Rossotrudnichestvo. Some of Rossotrudnichestvo's key partners in Latin America include Coordinating Councils of Russian Compatriots, the Russkiy Mir Foundation, the Russian Cultural Foundation, and media outlets like RT, Sputnik, and TASS.

Russian embassies. Russian embassies are important sources of support for diaspora organizations to promote and engage members. Russian embassies often use cultural centers as venues to hold meetings with Russian nationals residing in the region. Formally, meetings are organized by compatriot organizations and not by the embassies directly. However, embassy representatives chair the meetings and take minutes to record the proceedings. This is because these meetings are considered of ultimate importance: they are where the staff of the Russian embassies and representatives of compatriot organizations can communicate direct messages of the government in Moscow to Russians living abroad and explain what is expected from the members of the Russian diaspora in one or another country. In particular, Moscow expects members of the Russian diaspora to maintain highly positive images of Russians living abroad— to promote "a country to be proud of" among Latin American colleagues and friends and to spread Moscow's view on important events in which Russia is involved.[18] In return, the staffs of the Russian embassies receive detailed information about the involvement of local Russians in economic, political, and cultural activities, and they update their dossier files on Russians in their respective countries. This kind of information would be difficult and time-consuming to obtain by other means. In addition, representatives of the Russian embassies show keen interest in learning from local Russians what their Latin American colleagues and friends think about Moscow's domestic and foreign policies.

Coordinating councils. Moscow also relies on the International Council of Russian Compatriots and the Coordinating Councils of Russian Compatriots to help consolidate and coordinate Russian-speaking communities in more than ninety-eight countries around the world.[19] There are Coordinating Councils of Russian Compatriots in fifteen countries in Latin America and the Caribbean.[20] Coordinating councils are often established, guided, and funded by their affiliated Russian embassies.[21] For example, in Argentina, the Coordinating Council of Russian Compatriot Organizations (KSORS), established in 2007, and the Coordinating Council for Russian Youth, established in 2012, are prominently promoted on the Russian embassy website in Argentina.[22] In 2015, when newly elected Argentine President Mauricio Macri proposed cutting commercial rights to Russian government-funded RT, KSORS launched a letter-writing campaign, likely supported by the Russian embassy, demanding Macri keep RT in Argentina.[23] In addition to the country-specific coordinating councils, there is also a regional Coordinating Council for Latin America that meets once a year and brings together representatives from around the region to develop strategies and programming to support Russian-speaking communities. The 2017 meeting was held in Costa Rica and the 2018 meeting took place in Havana.[24]

Russian cultural centers. The reemergence of Russian cultural centers in the region is further evidence of Moscow's growing interest in connecting with people in the region. Many of these cultural centers were almost completely abandoned following the collapse of the Soviet Union in the 1990s and the beginning of the 2000s. Examples of these centers include Russian Centers for Science and Culture in Buenos Aires, Santiago de Chile, and Lima; Leo Tolstoy

As a way of honoring cultural pluralism, the city of Buenos Aires, Argentina, celebrates Russian culture 3 June 2018 with traditional Russian dress, food, dance, and music in the streets. (Photo courtesy of the Government of the City of Buenos Aires)

Institute in Bogota; Maxim Gorky in Montevideo; and others. Nowadays, many of the above-mentioned centers have been renovated and offer many services ranging from Russian language classes to free Russian movies showing highlights of Russian theater and dance performances.

Although these activities are open to any interested person, with an obvious exception of language classes, most of the attendants are local Russians. For the Russian authorities, this is one of the ways to engage members of the diaspora and to show them that the Russian government cares about them. From time to time, there are also meetings with famous Russian journalists, writers, and public figures who give lectures on historical or current developments. In addition to the previously existing cultural center, the Russkiy Mir Foundation sponsors a number of new programs similar to China's Confucius Institutes. These Russian cultural centers are usually alliances between the foundation and a university or high school. They receive direct funding from Moscow to promote the learning of the Russian language and culture. According to the Russkiy Mir Foundation website, there are twelve Russkiy Mir Foundation-sponsored Russian centers in Latin America—two in Argentina and one each in Brazil, Colombia, Costa Rica, Chile, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, and Peru.[25]

The Russian Orthodox Church. The Russian Orthodox Church is another important source of influence among Russians in the region, and Moscow relies heavily on it to help create a sense of Russianness among the diaspora. Many Russians are believers, but there are only few Russian Orthodox churches in Latin America. However, the Moscow Patriarchate's Department for External Church Relations has divided all Latin America into church districts, and a representative of the Russian Patriarch has been assigned to each of the districts. Yet, these offices lack the logistical capacity to reach out to the majority of local Russian orthodoxies, so information about religious activities arrives to Russians via the Russian

Head of The Federal Agency for the Commonwealth of Independent States, Compatriots Living Abroad, and International Humanitarian Cooperation (Rossotrudnichestvo), Lyubov Glebova (*left*), and Russian Federation Council member Konstantin Kosachev, former head of Rossotrudnichestvo, attend the first meeting of the 2017 World Festival of Youth and Students organizing committee 8 February 2017 at the VDNKh Exhibition Centre in Moscow. (Photo by Vladimir Gerdo, TASS via Alamy)

embassies through the members of the recognized diaspora organizations. Many religious ceremonies are held in the above-mentioned Russian cultural centers.

Russian media. Russian government-sponsored media outlets like RT, Sputnik, TASS, and Voice of Russia are actively engaging Russians in Latin America to communicate Russian government views to and through diaspora. Amplifying Russian strategic communication efforts are its use of growing platforms to deliver information—television broadcasting, social media, and the internet.[26] Russian authorities monitor the presence of Russians residing in Latin America on social networks like Facebook or VK (a Russian version of Facebook). In recent years, there has been an extraordinary growth of Facebook managed by Russians living in Latin America and the Caribbean. There are more than fifty Facebook groups in the region focused on bringing together Russian diaspora. Some examples include Russians in Latin America with 4,200 members, Russian Forum in Argentina with 1,300, and Russians in Colombia with 1,400 members.[27] For the Russian government, monitoring of Facebook pages is a source to gather information about the social, political, economic, and cultural activities of local Russians. It is also a means to disseminate fake news and information from the Russian perspective. This information can be easily shared with a diaspora's broader social media following.

One may wonder why many Russians residing in Latin America decide to answer the call and attend the meetings organized by the embassies. There are several reasons. In many cases, Russians living in Latin America enjoy a positive attitude toward the meetings simply because they serve to raise the Russians' self-esteem through a shared pride in and satisfaction with the Russian community. The Russian authorities are aware of this and offer some incentives like awarding diplomas in recognition of important contributions made by individuals in "the strengthening of a positive image of Russia abroad."[28] These diplomas are signed by

the ambassador and, sometimes, even by the minister of foreign affairs or Putin himself. Another reason is of a different nature. Many Russians residing abroad fear difficulties in getting documents like passports, certificates, and paperwork for receiving pensions from Russia or dealing with real estate left in the home country. Being recognized by the embassy as a member of a Russian diaspora is considered useful to facilitate formal procedures and, in fact, Russian authorities demonstrate readiness to help people they know well.

Conclusion

The diaspora as an instrument of Russian national power in Latin America and the Caribbean is still in a relatively young stage and has not yet yielded any serious benefits outside of aiding in cultural awareness. Still, it is important to note that Latin America and the Caribbean have been used to test Russian foreign policy in the past—consider the violent proxy wars that took place with Russian backing during the 1970s and 1980s. Although the region is of relatively little value to Russia economically or politically, it still sits close enough to the United States to have an upside if emerging methods prove useful in achieving foreign policy objectives. To that end, Russia will likely continue strengthening a community of pro-Russian organization using diaspora in Latin America and the Caribbean. In the near-term, Russian-speaking communities will remain available but limited in their ability to advance Moscow's interests, given that diaspora have not gained significant widespread commercial or political influence. Still, diaspora will be used to communicate Russian views to Latin American audiences in the hopes of bolstering the Russian brand in the region.

In the long term, diaspora could increase their commercial and political value by moving into influential spaces in Latin American societies, giving Moscow greater access to the region. Because of the important Soviet legacy and the presence of the Russian diplomatic posts in the region, and the mostly positive attitude toward common Russians combined with the easiness in carrying out the activities described in this essay, for Moscow, the Russian diaspora in Latin America enjoy a privileged position in comparison with other parts of the world. This is just one of the reasons why Russia values current and future engagement with its Russian compatriots in Latin America. Diaspora living in Argentina, Chile, Uruguay, and Brazil offer Moscow the greatest potential return on investment given that these countries remain primary destinations for Russians moving into the region. ■

Notes

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8. Ibid.

9. "Foreign Policy Concept of the Russian Federation," Ministry of Foreign Affairs in the Russian Federation, 1 December 2016, accessed 8 January 2018, http://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248.

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U.S. marines guarding their camp (*foreground*) watch Iraqi civilians looting a government warehouse 9 April 2003 on a main road leading into Baghdad in a southeastern suburb of the Iraqi capital. Initial reluctance by U.S. forces to immediately assert control over domestic law enforcement after the fall of the Saddam Hussein regime undermined the Iraqi population's confidence in the competence and willingness of the United States to assure its safety while also encouraging the rise of insurgent and criminal groups, which emerged in part because of an unfilled security vacuum. (Photo by Laurent Rebours, Associated Press)

Government versus Governance

Why the U.S. Military Must Understand the Difference

Maj. Jennifer Jantzi-Schlichter, U.S. Army

When a country is being subverted it is not being outfought; it is being out-administered.

—Bernard B. Fall

The American experience in war has shown that, despite superior combat power and capabilities, the United States cannot win wars through force alone. For example, while the United States was successful in completing all phases of a stability campaign as we know them today following World War II, a process that established the foundation for peaceful prosperity in Germany and Japan that has lasted for more than seventy years, it currently struggles in Iraq and Afghanistan to establish stability due in large measure to a lack of planning and preparation for postconflict state building.[1]

While both conventional forces and special operations forces have been tasked to build and foster government capability in those countries, writ large, the U.S. military has thus far not been able to achieve desired effects, which has resulted in prolonged wars in Iraq and Afghanistan that the United States continues to fight with marginal success.

This article argues that there are two main reasons that the U.S. military has been unable to achieve success in building sustainable governments in those countries. The first is because the U.S. military has failed to differentiate between government and governance. The second, which stems from the first, is that the military did not effectively train and educate its personnel on how to execute the task of governance—a failure that continues to institutionally persist within training and education given to U.S. military personnel even today.[2]

Reengineering Government as the Wrong Objective

Historically, U.S. activity in Iraq and Afghanistan has been largely focused on attempting to build democracies and democratic government institutions in the Western mold such as election processes, security structures, the rule of law, and new host-nation capitalist structures to promote Western-style market-driven economies.[3] Despite a continued focus on reconfiguring core functions of government to emulate Western democratic models and institutions, the governance in Iraq and Afghanistan remains unstable. One reason for this is that the U.S. military has been overly focused on attempting to rebuild those governments into democracies using culturally unviable models rather than examining and using the traditional governance structures already in place and building upon what has traditionally been successful. Another reason is that the U.S. military would rather focus on conducting combat operations than conducting postconflict stabilization actions, possibly because stabilizing a nation and rebuilding governance is viewed as more difficult than defeating the enemy on the battlefield.[4]

Government versus Governance

To more clearly understand why the U.S. military has failed to build sustainable governments in Iraq and Afghanistan, it is important to distinguish the difference between governance and government. The UN defines governance as "the process of decision-making and the process by which decisions are implemented (or not implemented)."[5] The UN further articulates,

> Governance is the result of interactions, relationships, and networks between the different sectors (government, public sector, private sector, and civil society) and involves decisions, negotiation, and different power relations between stakeholders to determine who gets what, when, and how. The relationships between government and different sectors of society determine how things are done and how services are provided. Governance is, therefore, much more than government or "good government" and shapes the way a service or any set of services are planned, managed, and regulated within a set of political social and economic systems.[6]

U.S. military doctrine has definitions of governance as well that clearly differentiate it from the government, though more narrowly than the UN. Joint Publication (JP) 3-07, *Stability*, defines governance as,

> The state's ability to serve the citizens through the rules, processes, and behavior by which interests are articulated, resources are managed, and power is exercised in a society, including the representative participatory decision-making processes typically guaranteed under inclusive, constitutional authority.[7]

In contrast, the UN defines government more broadly as follows:

> Government is one of the actors in governance. Other actors involved in governance vary

Afghan guards provide security for the Khost-Gardez National Highway construction project 30 March 2010 in Afghanistan. The project, which included the creation of an all-weather national highway by building bridges, causeways, and drainage structures, and asphalting pavement to international standards, was completed in December 2015. (Photo courtesy of U.S. Agency for International Development)

> depending on the level of government that is under discussion. In rural areas, for example, other actors may include influential land lords, associations of peasant farmers, cooperatives, NGOs [nongovernmental organizations], research institutes, religious leaders, finance institutions, political parties, the military etc.[8]

There are other key terms that are often used alongside governance and government such as stabilization and reconstruction that need to be precisely defined in order to analyze the flawed U.S. approach. To prevent confusion regarding the usage of each, JP 3-07 defines stabilization as,

> The process by which military and nonmilitary actors collectively apply various instruments of national power to address drivers of conflict, foster host-nation resiliencies, and create conditions that enable sustainable peace and security.[9]
>
> Military contributions to stabilization consist of those various military missions, tasks, and activities conducted outside the U.S. in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief.[10]

Therefore, there is agreement that governance is a concept that comprises a range of government functions and institutions, stabilization activities, and reconstruction. Thus, stabilization operations are understood to be essential elements to establish governance and build governments. Similarly, reconstruction is described as a subelement of stabilization that involves rebuilding damaged physical and government infrastructure and restoring essential services.[11]

Governance, therefore, is an overarching concept that ties all such elements together by integrating the activities of the inherent networks, relationships, and interactions that exist; the means of negotiation; power sharing; and the balance between formal and informal leadership. It describes how and why things get done, taking into consideration the values and leverage of the local population.

Role of Civil Society Organizations

To be successful, governance must involve members of the local population in the stabilization process by giving them a platform for involvement. One key component of this process is the use of what are termed civil society organizations (CSOs). CSOs exist in multiple forms in most societies to channel voluntary public participation and the interests and concerns of the population to influence public policy, provide checks and balances to governmental power, gain access to public resources, and prevent social abuse. Some examples of CSOs include faith-based groups, tribal and ethnic organizations, media outlets, and women's and minority advocacy groups. Other CSOs may involve social, sports, and recreation organizations charities, youth groups, labor unions, noncommercial business associations as well as organized social movements and organizations that express opinions on government policy.[12]

The Mexican War: Effective Governance

While the United States currently struggles in governance and stabilization in Iraq and Afghanistan, there are significant examples from the past in which the United States successfully executed stabilization and reconstruction tasks to produce effective governance. These include one notable example in the early history of the U.S. military derived from the Mexican War. An examination of U.S. actions during and after the Mexican War can provide valuable insight to the U.S. military with regard to its planning and operations for the future to achieve greater success in establishing postconflict governance.

Gen. Winfield Scott's leading role during the Mexican War was largely conducive to the successful execution of a postconflict stabilization campaign by a young United States that focused on advising and assisting the Mexican population and government leadership on improving methods of governance.

Before the invasion of Mexico, Scott carefully studied Napoleon's invasion of Spain, observing how the terrible conduct and poor discipline of the French army resulted in the uprising of Spanish irregulars. This uprising led to the death of over three hundred thousand French soldiers, which was drastically higher than the French estimate of only twelve thousand, and the French withdrawal from Spain.[13]

Based on his research, Scott recognized and prioritized the importance of disciplined soldiers and their respect toward the local population. Additionally, because his army of regulars and volunteers was militarily outnumbered by the Mexicans, Scott knew that earning the trust and loyalty of the local populace would be essential for success. Consequently, Scott emphasized the importance of providing for the basic needs of the population in a more effective way than the Mexican government itself.[14] To accomplish these goals, before Scott's invasion, he drafted his plan for martial law (General Order No. 20), which established the rules and regulations for postconflict occupation, applying them equally to U.S. and Mexican soldiers and civilians.[15] This planning prepared Scott for postconflict governance and the conduct of stabilization operations.

In March 1847, Scott's army achieved its first victory in Veracruz and immediately put General Order No. 20 into effect. His first priority was to set up food distribution to the locals, who had suffered throughout the siege. Additionally, he made several public proclamations, the first being that the United States was a friend to the Mexicans and would abolish the harsh treatment that existed under the Mexican government.[16] Following through with this plan of action required strict discipline from his soldiers, which meant holding them accountable for all crimes and infractions as articulated in General Order No. 20. For example, if a soldier was caught stealing, he was imprisoned in the local town jail in the same manner as Mexican thieves.[17] This created a transparent system, demonstrating to everyone that U.S. regular soldiers and volunteers were being held equally accountable for their crimes. As proclaimed, Scott also employed capital punishment for U.S. soldiers and citizens when they committed heinous crimes such as murder and rape, and ensured punishments were visible to the population.[18] Scott's General Order No. 20 created a rule-of-law system that was both predictable and fair to everyone by holding both Mexicans and Americans equally accountable for

their crimes. Based on Scott's public proclamations regarding General Order No. 20, Americans and Mexicans alike knew the rules and regulations and the punishments that would ensue if they were broken.

In addition to focusing on the rule-of-law system, Scott effectively communicated with the Mexican population and civic leaders, ensuring them that, if the Mexicans cooperated with American occupiers, the war would quickly end and civilian life would return to a state of normalcy.[19] To demonstrate this, Scott took steps to improve the existing local economy in Veracruz by assuring merchants that their goods and property were protected by the U.S. Army and then following through with this promise. This resulted in businesses quickly reopening, reestablishing the local economy. Additionally, Scott required his soldiers to pay Mexican merchants in full at the time of purchase.[20] This bolstered the social contract between the Mexican population and the U.S. occupying force. The locals knew if they cooperated, their families and property would be protected. In this manner, Scott's troops protected the population and their property, and in return, received the cooperation of the local populace. As a result, Scott's policies increased his social capital in Mexican society, resulting in improved trust and confidence in the U.S. occupiers. As the United States followed through with promises in a transparent manner, the local population extended its radius of trust to include the U.S. occupying force.

Scott's policies illustrate that transparency and accountability are key tenants for establishing good governance. Adherence to these principles demonstrated to the population that the government was operating in an honest and legitimate manner when executing its responsibilities.[21]

To maintain legitimacy in local government structures and systems in the eyes of the population, Scott kept existing civic leaders in place and worked through them to enforce General Order No. 20.[22] Maintaining existing leadership (rather than replacing

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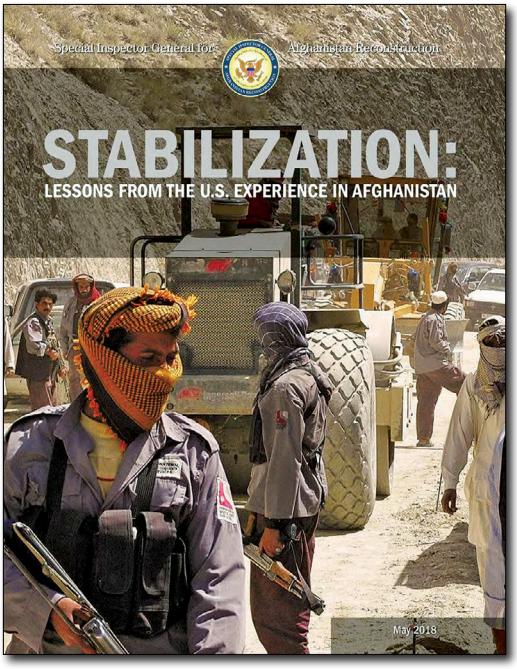

For those interested in reading more on stability operations, *Stabilization: Lessons from the U.S. Experience in Afghanistan*, the fourth lessons-learned report issued May 2018 by the special inspector general for Afghanistan reconstruction, provides unvarnished critical assessments detailing how the U.S. Agency for International Development and the Departments of State and Defense tried to support and legitimize the Afghan government in contested districts from 2002 through 2017. The report identifies lessons learned together with recommendations regarding how to mitigate errors committed in hopes of informing future U.S. policies and actions to stabilize a country or region before and during a contingency operation. With the rise of the Islamic State, its affiliates, and other similarly motivated insurgencies, making poorly governed spaces inhospitable to transnational terrorist groups remains a vital U.S. national security priority. The analysis reveals the U.S. government greatly overestimated its ability to build and reform government institutions in Afghanistan as part of its stabilization strategy. It also found the stabilization strategy and the programs used to achieve it were not properly tailored to the Afghan context, and successes in stabilizing Afghan districts rarely lasted longer than the physical presence of coalition troops and civilians. The report provides invaluable insight to prospective commanders and their staffs preparing to deploy into such operational environments. To view the overview of the report, please visit https://www.sigar.mil/interactive-reports/stabilization/index.html. The complete report may be downloaded at https://www.sigar.mil/pdf/lessonslearned/SIGAR-18-48-LL.pdf.

them with U.S.-appointed officials) demonstrated to the population that Scott acknowledged and respected their social norms and values. Empowering local civic leaders resulted in their increased loyalty and cooperation, which was apparent to the population and led to the spread of trust to the local populace.

Additionally, in an effort to increase employment and diffuse tensions, Scott created programs that hired locals to clean city streets after the conflict was terminated. This visibly demonstrated that the war was over, increased the quality of life, infused money into the economy, and introduced employment opportunities.[23] These programs were strongly supported by the population.

When executing his governance and stabilization campaign, Scott relied on discipline, cultural understanding, and good public relations to prevent the emergence of guerrillas and the seeds of insurgency. Despite Secretary of the Army William Marcy recommending that Scott destroy cultural landmarks such as the castle at Veracruz, Scott refused because he knew it would upset the populace and invoke anger and resentment toward the U.S. occupiers.[24] And in an attempt to appeal to the social norms and values of the population, Scott attended Catholic church services when he was available. This also demonstrated his dedication to the protection of the church and church property.[25]

Scott's stabilization efforts in Veracruz during the Mexican War demonstrated his sophisticated understanding of the importance of governance, specifically with regard to respecting and valuing the government systems in place and enforcing regulations in ways that were fair, accountable, transparent, and predictable, and that also appealed to the already established social and cultural norms within Mexican society.

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Iraq

Scott's successful efforts stand in sharp contrast to the U.S. experience in Iraq. His focus on bolstering governance in lieu of rebuilding government institutions was far more successful than the disjointed and often haphazard efforts of the United States while attempting to build a functioning democracy in an effort to stabilize Iraq.

In January 2003, President George W. Bush formally gave the Department of Defense (DOD) primary responsibility for the postinvasion efforts in Iraq.[26] At the same time, U.S. leaders declared that the main goals were regime change and establishment of a free, unified, and democratic nation, which constituted a commitment to reshape government systems and political infrastructure.[27] This indicated that from the beginning, the United States was more focused on creating a democratic Iraqi government—on the assumption that once built it could take care of itself—than providing immediate practical governance for the Iraqi people postinvasion.

Despite the announcement of these lofty goals, the United States was not prepared to execute the required stabilization tasks to achieve them following the dismantling of Saddam Hussein's government and, arguably, should not have been focused on restructuring the Iraqi government in the first place.[28] After ousting Hussein, more realistic and sustainable goals would have been to focus on the reestablishment of governance and stabilization first, which should have included providing human and physical security, security of key infrastructure and essential services, maintenance of public access to basic necessities, and reestablishment of existing government systems and leadership.[29]

Instead, the DOD focused on militarily defeating the Hussein regime with little concern or planning for what would follow. Later, it focused on defeating a rising insurgency, apparently operating under the assumption that the Department of State would handle postconflict stabilization, which proved not to be the case.[30] Additionally, because the U.S. military was able to defeat Iraq militarily in only three days, the focus on combat operations quickly shifted to stabilization operations, which was something it was not prepared for.[31] As the DOD shifted to postinvasion governance and stabilization, planning was poorly coordinated and

Civil affairs officer Capt. Jennifer Jantzi-Schlichter meets with the district governor, village malik, and other local representatives November 2012 in the Panjwai District to discuss building civic capacity. (Photo by Sgt. 1st Class Joseph Lemmon, U.S. Army)

disjointed, and indicated that the DOD had an ambivalent attitude toward the mission writ large.[32]

Because the United States was unprepared for the challenges it faced, efforts to execute essential stabilization tasks were severely delayed, causing a lack of Iraqi support for the United States as occupiers and, more importantly, the failure of the Iraqi government to reestablish essential governing structures and necessities in a timely manner. This resulted in the United States having to refocus on rebuilding the Iraqi government infrastructure instead of building governance upon the Iraqi governance systems in place that were functional before to the conflict.

Priority Need to Establish Security

Following the defeat of the Iraqi Baathist regime, the coalition chose to disband all Iraqi security forces instead of attempting to vet them. This eliminated almost immediately potential security forces that could have been used for Iraqi internal security.[33] With disbandment, the security situation within Iraq became terrible.

Providing security is a key element in government infrastructure and governance in any case, and especially necessary for the restoration of and stabilization of society in a postconflict environment in which the rule of law may have collapsed. Because there was no effective and comprehensive plan in place for postinvasion stabilization in Iraq, the U.S. military was not prepared to provide security for critical infrastructure. Therefore, Iraqi civilians were soon looting and vandalizing shops, businesses, government buildings, and essential service hubs such as electrical substations and hospitals.[34]

Coalition failure to immediately establish security after the fall of Hussein's government was a major setback to all other stabilization efforts. Poor security conditions

prevented government officials from returning to work.[35] This resulted in a lack of governance that led to overall chaos. For example, lack of security prevented the operation of businesses, severely impacting the economy, including the ability of people to find employment to feed and care for their families. This generated great resentment against the U.S.-led coalition. There are various arguments regarding why the U.S. military did not step in immediately to provide the necessary security to prevent chaos. One is that there were not enough U.S. security forces to fulfill the task, and another is that the United States simply did not use all military forces available to their potential since it wanted to disentangle itself from Iraq and leave as quickly as possible.[36]

As a result, instead of maintaining and leveraging the already trained existing Iraqi security forces to provide security over critical infrastructure, the United States chose to disband them, releasing thousands of unemployed but well-trained soldiers onto the streets. These dissatisfied individuals became willing to take up arms against the occupiers, spread anti-U.S. sentiment, and often became future al-Qaida fighters.[37]

Additionally, the disbandment of the Iraqi security forces forced the time consuming and expensive reconstruction of an entire army. Arguably, it would have been more productive to analyze the performance and effectiveness of the existing Iraqi military security forces and the population's satisfaction with them and vet the force of undesirables to quickly establish security instead of creating a whole new security apparatus.

The lack of security resulted in the destruction of infrastructure and a shutdown of essential services. Prior to the invasion of Iraq, major cities such as Baghdad had running water, electricity, trash collection services, and access to fuel for heating and cooking, and these services were protected by the Iraqi government.[38] Additionally, government employees, teachers, and religious facility workers were regularly paid.

Following the invasion and largely because of the postconflict vandalism, looting, and lack of security, all of these basic necessities were disrupted, and many people went without pay (with all the impacts failing to have an income implies), which bred deep popular resentment.[39] While initially viewed by many as liberators from the oppressive Hussein regime, as security and basic needs went unfulfilled for months after the invasion, U.S. forces became viewed as hostile occupiers that were not capable of restoring Iraq to preinvasion conditions.

Many of the things that went ignored by the United States were key elements that comprise effective governance within society. Since these systems were all running and in place prior to the conflict, the United States should have prioritized the identification of key individuals and aspects of those systems and restored them to a functional level. Instead of doing this, it resorted to infusing rather capriciously billions of dollars into reconstruction projects that were supposed to enable the creation of a democratic Iraqi government and rebuild its damaged infrastructure. However, these projects were largely unsynchronized with Iraqi needs and did little to actually improve the stabilization of Iraq.[40]

In an attempt to garner support from Iraqis and rebuild Iraq following months of insecurity and a lack of governance that had resulted in a dearth of essential services, the U.S. military executed thousands of reconstruction projects using the Commander's Emergency Relief Program funds. These localized projects included rebuilding schools, power plants, government buildings, military police stations, and many others. While the intent of this funding source was to respond quickly to the needs of Iraqis, a lack of preparation and training in governance and stabilization coupled with a lack of synchronization and effective targeting efforts resulted in billions of dollars being wasted on projects that resulted in very few positive strategic effects. In fact, many had just the opposite effect, as this author experienced as a brigade engineer projects offer during her 2009 deployment to Iraq. She witnessed how a brigade combat team might agree to fund a school construction before identifying teachers or students to attend the school. This could result in a building being used as an al-Qaida safe house rather than as an education establishment. Such poorly synchronized efforts were often an attempt to circumvent Iraqi government infrastructure, rather than working with the local Iraqi leadership to improve their support (government or tribal) to the population.

Money as a Weapons System

As the necessity for building local projects as a means of co-opting the public became an article of faith of the counterinsurgency effort, the concept of using money as a means to execute counterinsurgency (COIN) operations was validated and basically codified in the *Commander's Guide*

to Money as a Weapons System, a document that gained wide circulation. It states, "Coalition money is defeating COIN targets without creating collateral damage by motivating antigovernment forces to cease lethal and nonlethal operations, by creating and providing jobs along with other forms of financial assistance to the indigenous population, and by restoring or creating vital infrastructure."[41] This handbook was widely employed among coalition forces in Iraq and Afghanistan as a guide to generating local projects aimed at undermining the insurgency by supporting stability operations and governance that emphasized providing jobs and an infusion of money into local economies.

However, what the handbook does not articulate is the limited and temporary nature of many projects supported, which sows the seed of discontent when money for such projects runs out. Similarly, it does not discuss that many of the jobs it created had a limited timeline, resulting in Iraqis not getting paid after the United States cut funding. An example of this is the Sons of Iraq program, which employed military-age males to secure their communities in Iraq. Though this program was initially very successful, it turned into a liability when the United States cut funding, resulting in a large number of trained and armed young men suddenly becoming unemployed with few long-term opportunities for employment.

The *Commander's Guide to Money as a Weapons System* also does not articulate how unsynchronized attempts at building infrastructure would improve governance and stabilization in Iraq. In sum, using "money as a weapons system" was a ultimately a futile concept fostering short-term stabilization efforts that would have been more productive had the military focused on identifying the current governance systems in place and working with legitimate leaders of

U.S. Army Corps of Engineers workers construct a building 20 September 2010 in Iraq. This was one of the more than five thousand projects completed in Iraq from 2004 to 2011 in support of that nation's new government. (Photo courtesy of U.S. Army Corps of Engineers)

An Islamist rebel group in Aleppo, Syria, called "the Authority for the Promotion of Virtue and Supporting the Oppressed" reviews applications for aid 25 February 2013. In addition to handing out aid, the Islamist group said it carried out civilian administration in parts of Aleppo. Conflicts are ultimately settled when the populace decides who has sovereign authority over it. As a result, one main goal of insurgents like the Islamic State is to supplant the authority of the presiding government in the popular mind, operating on the premise that a new caliphate would usurp authority by "out administering" both the Syrian and the Iraqi governments. (Photo by Hamid Khatib, Reuters)

them to develop long-term projects to meet locally defined needs in a way that better supported the Iraqi populace long term. Rather than focusing on rebuilding infrastructure with U.S. dollars, time and money would have been better spent examining the social contract within the local Iraqi population by asking questions, such as: Did locals trust their leadership? Were they willing to invest in their society? What were the local leadership and the government providing to the population? What was the population providing in return?

Instead of analyzing these aspects of social well-being and Iraqi society, money was frivolously thrown at problems, resulting in few campaign-supporting effects.

Giving Back Sovereignty

Because of the numerous and immediate difficulties faced in the stabilization phase of Iraq, the United States decided to turn over sovereignty to the Iraqi government by 1 July 2004 (some would argue prematurely).[42] The Coalition Provisional Authority was responsible for this transition plan, which was reliant on holding Iraqi national elections in January 2005. However, at the time, sectarian violence and Iraqi disunity were leading to an increased insurgency, which al-Qaida capitalized upon.[43] While the concept of elections to settle differences makes sense to Americans from their own cultural perspective, it was not a concept that was deemed legitimate or necessary by large portions of the Iraqi population. This was demonstrated when the disenfranchised Sunni population boycotted the elections, leaving Shia Arabs and Kurds to dominate the government, which only escalated the sectarian violence.[44] The emphasis on imposing new government institutions (in this case, democratic elections) without analysis of existing Iraqi social norms and values is one example of how

futile the U.S. attempt to force American government systems on the Iraqis was.

A failure to acknowledge and predict a lack of participation from large portions of the Iraqi populace was another factor that resulted in the elections yielding an unproductive result. Additionally, this was the first time that democratic elections had been held in Iraq for many decades, indicating that elections were not a part of Iraqis current respected ideology.

Large portions of the population did not respect the new system or view it as legitimate, which was demonstrated in boycotts of the elections. Instead of solving governance problems, the election process led to continued control of the Iraqi government by sectarian Shia elements, exacerbating the sectarian divide in Iraq, which is still a problem today.

Rather than attempting to impose new methods for selecting leaders on the Iraqi people, the United States could have explored a multitude of other options to foster improved governance such as examining the power-sharing relationships, personal networks, and governance systems already in place in Iraq, and working off of those.

Summary of Governance Failures

Struggles to stabilize Iraq continue to haunt the United States today. Emphasis on rebuilding the government of Iraq by disbanding and reestablishing its security forces, failing to reestablish essential services and government systems, attempting to impose democratic elections on a society not culturally accepting of such elections, propping up sectarian leadership, and continuing to focus on reconfiguring government infrastructure in Western forms led to instability levels that the Islamic State of Iraq and Syria later capitalized on when successfully expanding its territory into Mosul and to the gates of Baghdad. Perhaps the occupation and stabilization of Iraq would have been more successful if the United States had focused on studying successful case histories of the past that emphasized building upon already existing governance structures such as those employed by Scott during the Mexican war.

Training and Education

One reason for the recent U.S. struggles in governance operations can be attributed to the lack of education and training military units receive on governance, government, and stabilization activities. Despite stabilization being a planning responsibility for DOD and a key focus for the U.S. military in its recent theaters of Iraq and Afghanistan, the U.S. military continues to fail to train and prepare soldiers for governance and stabilization operations in anticipation of successful combat operations.[45]

By contrast, in 1942, the United States began planning for the occupation of Germany and Japan, which included the establishment of the School of Military Government in Charlottesville, Virginia.[46] There, soldiers attended courses focused on stability, reconstruction, peace enforcement, foreign languages, and cultural studies.[47] The U.S. government even sent civilian experts to assist the military during these operations in Germany and Japan.[48] These preparations resulted in good governance and stabilized countries.

While U.S. doctrine for stability operations exists, it is not useful unless it is operationalized and practiced through hands-on education and training.[49] Today, however, the focus remains on training tactical tasks even when deployed, although many U.S. military units are mainly employed executing governance and advise-and-assist missions. Instead of formally and rigorously training for establishing governance, the U.S. military has substituted an investment in actual training with the introduction of catchy mnemonic aids to assist in analysis, namely ASCOPE (areas, structures, capabilities, organization, people, events) and PMESII (political, military, economic, social, information, and infrastructure) analyses, both of which barely scratch the surface of what is required to successfully execute a governance mission. Such superficial and shallow techniques to educate and train fail to adhere to the U.S. military mantra of performance-oriented training.[50]

The lack of emphasis can be attributed to the so-called traditional "American way of war," which emphasizes the importance of kinetic and logistical aspects of warfare, indicating that civilian-centric stabilization efforts have no comparable status.[51] As previously noted, many military leaders would rather focus on combat operations and largely dismiss postconflict stabilization training, possibly because stabilizing a nation and rebuilding governance are viewed as more difficult than merely eradicating the enemy on the battlefield.[52]

Additionally, many military members believe that other U.S. government departments and agencies such as the Department of State are better equipped to execute

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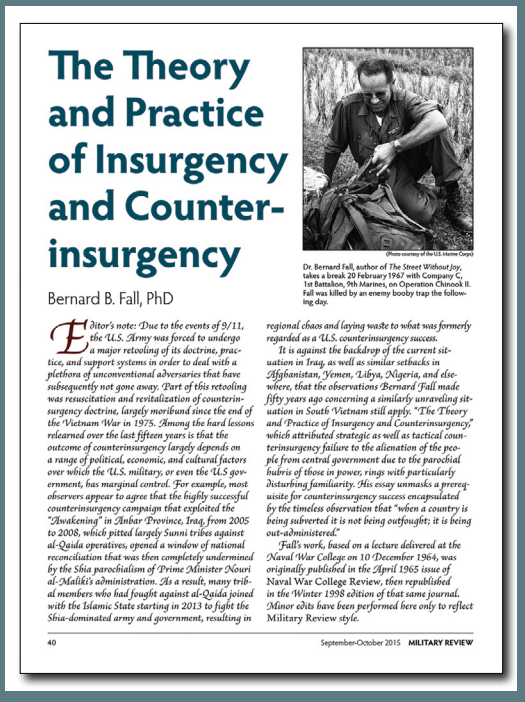

The Theory and Practice of Insurgency and Counter-insurgency

Bernard B. Fall, PhD

(Photo courtesy of the U.S. Marine Corps)

Dr. Bernard Fall, author of *The Street Without Joy*, takes a break 20 February 1967 with Company C, 1st Battalion, 9th Marines, on Operation Chinook II. Fall was killed by an enemy booby trap the following day.

Editor's note: Due to the events of 9/11, the U.S. Army was forced to undergo a major retooling of its doctrine, practice, and support systems in order to deal with a plethora of unconventional adversaries that have subsequently not gone away. Part of this retooling was resuscitation and revitalization of counterinsurgency doctrine, largely moribund since the end of the Vietnam War in 1975. Among the hard lessons relearned over the last fifteen years is that the outcome of counterinsurgency largely depends on a range of political, economic, and cultural factors over which the U.S. military, or even the U.S government, has marginal control. For example, most observers appear to agree that the highly successful counterinsurgency campaign that exploited the "Awakening" in Anbar Province, Iraq, from 2005 to 2008, which pitted largely Sunni tribes against al-Qaida operatives, opened a window of national reconciliation that was then completely undermined by the Shia parochialism of Prime Minister Nouri al-Maliki's administration. As a result, many tribal members who had fought against al-Qaida joined with the Islamic State starting in 2013 to fight the Shia-dominated army and government, resulting in regional chaos and laying waste to what was formerly regarded as a U.S. counterinsurgency success.

It is against the backdrop of the current situation in Iraq, as well as similar setbacks in Afghanistan, Yemen, Libya, Nigeria, and elsewhere, that the observations Bernard Fall made fifty years ago concerning a similarly unraveling situation in South Vietnam still apply. "The Theory and Practice of Insurgency and Counterinsurgency," which attributed strategic as well as tactical counterinsurgency failure to the alienation of the people from central government due to the parochial hubris of those in power, rings with particularly disturbing familiarity. His essay unmasks a prerequisite for counterinsurgency success encapsulated by the timeless observation that "when a country is being subverted it is not being outfought; it is being out-administered."

Fall's work, based on a lecture delivered at the Naval War College on 10 December 1964, was originally published in the April 1965 issue of Naval War College Review, *then republished in the Winter 1998 edition of that same journal. Minor edits have been performed here only to reflect* Military Review *style.*

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If you have interest in the relationship between governance and insurgency, Bernard B. Fall, professor of international relations at Howard University, conducted extensive field research throughout the 1950s and 1960 on the Cold War era conflicts unfolding then in Southeast Asia. His research chronicled and analyzed the expulsion of the French from their colonial control over Indochina and the gradual enmeshing of the United States in Indochina as it pursued policies aimed at stemming the expansion of Chinese-style communism.

Fall's "The Theory and Practice of Insurgency and Counterinsurgency," based on a lecture he delivered at the Naval War College on 10 December 1964, was originally published in the April 1965 issue of *Naval War College Review*. In this article, Fall coined the now often repeated aphorism related to governance and insurgency: "When a country is being subverted it is not being outfought; it is being out-administered." He was among the first to predict the failure of the United States in its prosecution of the war in Vietnam because of what he noted were tactics formulated without an understanding of the societies in which the conflict was being fought. To view this reprinted article featured in the September-October 2015 edition of *Military Review*, visit https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20151031_art009.pdf.

governance and stabilization, which is not true.[53] Still other military members relegate these tasks to attached civil affairs units in an effort to wash their hands of further responsibility for establishing governance postconflict. However, similar to conventional army units, civil affairs units do not receive formal training in governance. Surprisingly, in light of now sixteen years of ongoing stabilization operations, governance is not covered in the Civil Affairs Qualification Course (CAQC), and there are few opportunities in the form of niche governance training.

Despite reluctance by the military to participate in governance and stabilization operations, lessons learned in past operations, such as the ones described in this article (and many others such as Operation Sea Angel, Operation Just Cause, Operation Enduring Freedom, as well as numerous forays in Haiti, to name a few) suggest a gap exists that only the military can fill when conducting governance tasks in support of campaign objectives.

To successfully execute governance and stabilization missions in the future, it is necessary that military leaders receive adequate training on how to execute those missions. To accomplish this, the Army must reevaluate its training priorities with an emphasis on the importance of incorporating hands-on governance and stabilization training to those units who have the potential to become responsible for certain operational areas. This training should be evaluated during unit- and national-level training exercises to ensure an acceptable level of proficiency.

While the United States has been rebuilding foreign armies, emplacing formal democratic elections, altering economies, spending millions of dollars on infrastructure projects, and attempting to create strong central democratic governments, it has failed to take actions that acknowledge the elements of governance that made societies functional prior to a U.S. invasion.

Postconflict actions should include becoming informed on the occupied nation's societal cultures, values, and norms; taking advantage of the existing informal governance structures such as tribal leadership; analyzing governance effectiveness; and using existing systems in place to strengthen America's indigenous partners' ability to govern themselves.

As the United States prepares for future operations such as the continued stabilization of Iraq and

Afghanistan and other missions to come, it is critical that differentiation between governance and government be made, ensuring that the United States is prepared to execute these missions with more success in the future. ■

Notes

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Partner of Choice
Cultural Property Protection in Military Engagement

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In today's operational and sociopolitical environment, the ability to partner effectively with military organizations from other countries with diverse cultural backgrounds has become a vital strategic and tactical skill for the U.S. military. We can foresee very few scenarios in which the United States will, or even can, conduct unilateral military action in foreign areas. Whether it is large-scale combat operations, fighting the Islamic State, responding to natural (or man-made) humanitarian disasters, interdicting weapons and drug traffickers, or executing any number of a wide diversity of other potential operations, the U.S. military will routinely, by necessity, be operating in coalitions within environments where success may largely depend on how well we are able to develop a nuanced understanding of the culture, customs, training, and thought processes of our allied forces, as well as of the populations among whom we will be operating and of the opponents we face. As a consequence,

future operational success may ultimately be a function of how well we develop a sophisticated understanding of what will motivate our coalition partners to sustain their commitment to achieving common objectives.

To achieve such levels of sophistication and depth of cultural understanding, it should be self-evident that we must "train as we will fight" in foreign environments. Such opportunities for cultural training will take many forms: coalition exercises, war games, civil-military projects, executive seminars, and other creatively designed training events. Moreover, planning for each operational activity needs to be more closely considered with regard to the 360-degree cultural impact not only on the immediate discrete military objectives of any given training activity or real-world contingency but also on the wider and longer term operational and strategic impacts our actions may have on other factors woven into the plans.

Background Context

The United States is a comparatively young nation that has emerged relatively recently in history and as a nation that prides itself on amalgamating and homogenizing the national identity of immigrants from widely diverse backgrounds in an ongoing attempt to forge a single nation unified by a shared, reified national narrative. It has attempted to do so by inculcating into new citizens what Harvard scholar Samuel Huntington referred to as the American creed, a nationalist narrative that attempts to instill a perception that Americans are bound to each other by a peculiar national identity supposedly based on respect for universally shared natural human values and rights, especially individual rights.[1]

For average Americans acculturated over time by the American creed, it is often difficult to understand or relate to older, more ossified cultures that derive their community identity from deep-seated psychological attachments that may not embrace as universal either natural individual values or rights, or the unique American emphasis on abstractions related to individualism and individual human rights. In other cultures, sacred places and cultural relics often serve as the key emblems and anchors of community identity, especially among communities that have grown up steeped in deeply embedded cultural traditions fortified by ancient rituals and practices, some with roots that are demonstrably hundreds (if not thousands) of years old.

For example, on the first Sunday in May of each year, tens of thousands of Turkish citizens gather at the ancient city of Sardis. The timing of this celebration predates the emergence of Christianity and Islam, reflecting a tradition of seasonal worship linked to the ancient veneration of the goddess Artemis, a temple cult once centered at Sardis. Current celebrations at Sardis are believed to descend from similar rituals practiced in this same place dating back to antiquity.

Participation in such celebrations is not merely traditional community diversion; for many, such celebrations at ancient revered sites reify and reinforce a sense of community continuity and identity that stems back into the dim recesses of time. The response of one young participant who was asked why she had come to the celebration highlights the deep cultural attachment many Turkish citizens have to the site, as she asserted, "We are here to be in the very old places."[2]

Similarly, a faith in the power of ancient cultural traditions to bind the inhabitants of present communities with those of the past is evident

Previous page: Dhief Muhsen, curator for the historical sites at Ur, shows U.S. soldiers from the 449th Aviation Support Battalion, 36th Combat Aviation Brigade 18 November 2006 how the Iraqi city used to look several thousand years ago. (Photo by Staff Sgt. Lorin T. Smith, U.S. Army)

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throughout the Levant, Iraq and Afghanistan, where it is common to see modern burials in ancient sites. One of the repeating explanations given to outsiders for this phenomenon is that many modern citizens of those countries seek in death to have their remains mingled into the continuity of history and glories found in the ancient roots of their hereditary civilizations.

American military planners should be keenly aware that such entrenched attachment to a community's origins and ancestors is not a quaint or minority view but is the prevailing frame of reference for a majority of people in the world and, therefore, a vital component of understanding how and why people behave the way they do when analyzing them from a security standpoint.

Turkish families gathering for the spring festival 8 May 2011 that takes place at the site of the ancient Temple of Artemis in Sardis, Turkey. These celebrations have probably been taking place for over two thousand years. (Photo by Laurie Rush)

With respect to how these concepts apply to the relative effectiveness of military operations, honed skills to partner effectively with the military establishments of other countries with cultural perspectives and backgrounds much different than our own should be seen not as "added value" but as strategically and tactically essential as the world's cultures crowd even closer together in an overpopulated and very competitive global society. For many of the peoples of the countries we work with, the trappings of cultural heritage are powerful and vivid symbols of pride in their national identity and are therefore essential components for establishing or restoring effective sociopolitical stability. Consequently, one part of our effort should be making it a priority to understand the traditional artifacts and features associated with the community heritage of the allied partners with whom we link arms, emphasizing the identification of what physical manifestations and emblems are viewed by them as culturally invaluable and inviolable.

Such an approach is a necessary component of strategy in the modern era for building and sustaining effective partnerships. Moreover, not only does this approach create deeper understanding and bonds among partners, but it also creates an opportunity for U.S. forces to showcase the values behind U.S. involvement in coalition operations—a commitment to the preservation, or restoration, of a peace based on our universal sense of human decency and respect for others as a means of promoting the stability of their societies.

Cultural Property Protection

As a consequence of recognizing that protection of cultural legacies is an essential component of a forward-leaning strategy to promote coalition cohesion, some segments of the U.S. military have begun to use

cultural property protection (CPP) as a basis for establishing new partnerships. Using CPP is not only a moral responsibility for preserving a population's heritage in a practical sense, but it also enables U.S. military personnel to gain opportunities for acquiring deep insight into the psyche of their partner or potential partner military organizations by carefully noting what they value most in terms of preserving their own nation's culture and why.

As a result, CPP offers deep cultural intelligence insights as well as a nonthreatening means of achieving common ground by providing an excellent platform for international and cross-cultural engagement. Where practiced, this approach has resulted in an impressive track record of successes. A few examples of lessons learned discussed below illustrate the effectiveness of CPP in a wide range of circumstances and forms of engagement with partners and allies. Examples are drawn from the Middle East, South America, and Africa to demonstrate the global potential of this approach.

Cultural Property Protection Engagements in the Middle East

During combat operations in 2003, U.S. Marines and Polish forces occupied the site of the ancient city of Babylon. Before the war, Babylon was a site that engendered great national pride among Iraqis because it was seen as palpable evidence of the ancient roots of Iraqi civilization and the contributions Iraqi ancestors had made to the rise of world civilization. Because of its significance, the former regime leader Saddam Hussein placed great emphasis on using the site for propaganda purposes to promote Iraqi national identity and unity. Additionally, Babylon attracted wide global concern as a religious site. The fate of Babylon was of particular concern to the worldwide community of Christians and Jews because of the prominence it has in the accounts noted in the Judeo-Christian Bible. Thus, from both a Western and Middle Eastern historical perspective, the site was distinguished early on as among the most important and iconic locations in the world, justifying that it be singled out for special need of military protection. Consequently, early coalition war planners were prescient enough to at least send forces to this area for the specific purpose of securing the site from looting.

Unfortunately, neither force sent was prepared to occupy any form of an archaeological site, let alone a

Ruins of the Temple of Artemis 8 May 2011 in Sardis, Turkey. The temple site dates back to the sixth century BC. Every spring, thousands of Turkish families gather here for a festival. (Photo by Laurie Rush)

biblical site of global significance. By the fall of 2004, damage to the site by military personnel had become a widely disseminated adverse international news story for the coalition.[3] The damage done to Babylon not only cast the U.S. military in a very negative light globally with regard to apparent insensitivity to indigenous Middle Eastern cultures generally, but it also created a localized impression among the Middle Eastern coalition partners that the United States was neither respectful nor caring of Iraq's ancient Mesopotamian heritage specifically, a devastating blow to coalition prestige and internal trust.[4]

Learning from the damage done at Babylon, the U.S. Central Command (USCENTCOM) environmental engineer and members of the Office of the Secretary, Joint Staff realized that USCENTCOM needed to be more proactive about recognizing and minimizing damage to other archaeological sites during its occupation of Iraq and presence elsewhere for a host of practical political and humanitarian reasons. They also realized that the United States could only regain the moral and information operations high ground in this area of concern by demonstrating to coalition partners across the Middle East that the United States was making a commitment to take appropriate action to effectively protect Babylon as well as to preclude future problems by establishing a program for CPP to help avoid such situations at other such sites in the future.

In the United States, military protection and stewardship of archaeological sites fall under the environmental portfolio. Within the typical organization of a domestic military installation, the installation archaeologist or cultural resources manager works for the environmental program that is usually found within the Directorate of Public Works. Military environmental programs manage

A Muslim cemetery 3 June 2014 along the Eastern Wall of the Old City of Jerusalem. Many Muslims and Jews throughout the world seek to be buried near Jerusalem as a means of joining their remains to the continuity of their religious and ethnic history. (Photo by Nikodem Nijaki via Wikimedia Commons)

hazardous waste, solid waste, radioactive waste, petroleum, recycling, water quality, air quality, forests, land, and endangered species. Within the combatant commands, military engineers take responsibility for cultural property and all of the other aspects of environmental compliance. Each combatant command should have a full-time environmental engineer serving at the rank of lieutenant colonel or equivalent.

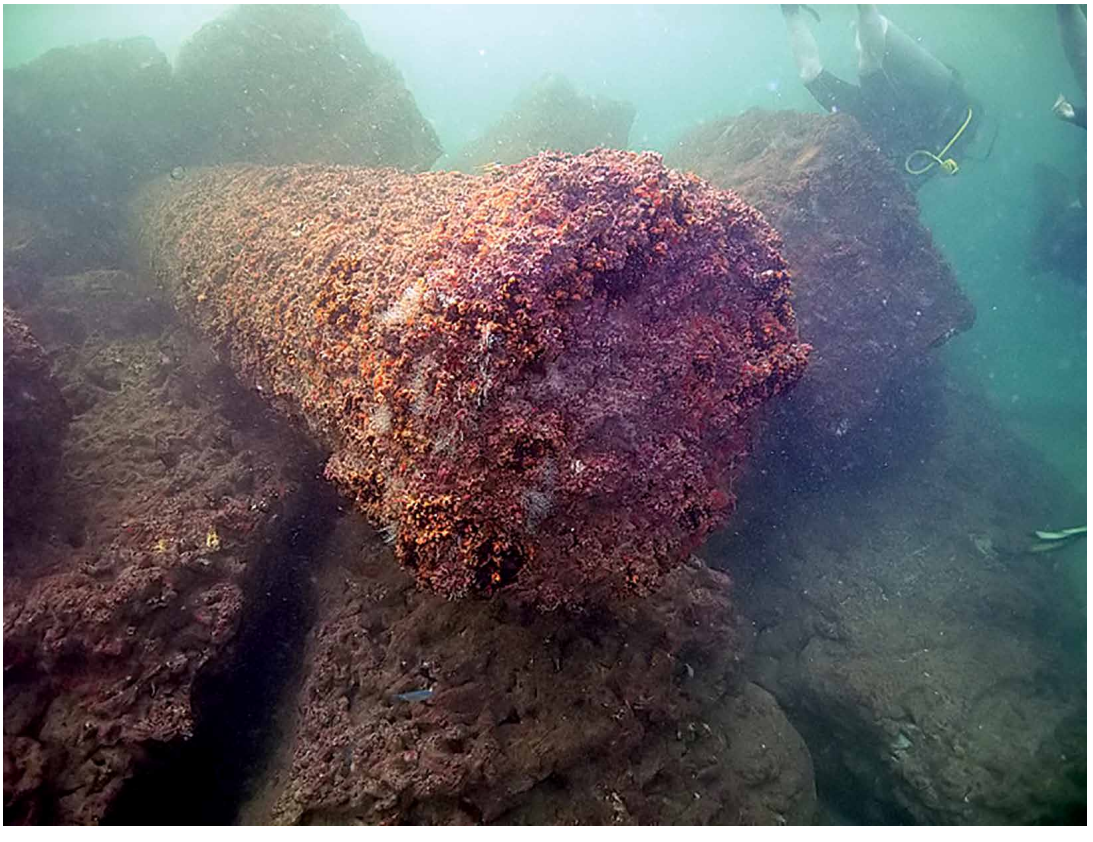
In 2006 and 2007, serious environmental issues beyond the damage at Babylon began to emerge in Iraq. Burn pits, the associated smoke, and issues surrounding waste began to creep into the press. The USCENTCOM environmental engineer, Lt. Col. Daniel Brewer, was tasked with tackling the range of problems. When the Office of the Secretary of Defense presented their list of environmental priorities to Brewer, archaeology made it into the top five. It is possible that First Lady Laura Bush's personal interest in historic preservation may have contributed to this prioritization.

In partial response to USCENTCOM's adverse experience with Babylon, Brewer and his colleagues decided to add CPP concerns as a topic in Middle Eastern exercises, including the long-standing Bright Star war games in Egypt and two sets of Eagle Resolve exercises, one in Abu Dhabi and another in Qatar. In addition, Brewer added the topic of cultural property protection to a series of environmental partnership engagements in Jordan as well as to two environmental *shuras* (meetings between coalition leaders and prominent regional and local leaders) in Kabul.[5]

Bright Star, 2007. For 2007's Operation Bright Star in Egypt, the CPP consisted of small-scale engagement with local Egyptian archaeologists, to include an awareness briefing and field trips to cultural sites for a small group of coalition officers. During one such briefing, one of the Navy divers, in a moment of serendipity, asked about the proposed demolition operations at Abu Qir in Alexandria Harbor. Coordinated naval operations including underwater demolition had traditionally been a part of the games, and Egyptian and U.S. Navy divers planned the event together. Alexandria Harbor,

A damaged *Mušhuššu* (dragon) relief image on the western wall of the lower Ishtar gate in Babylon, Iraq. Investigators concluded that much of the damage to the mušhuššu figures was apparently caused at the same time by a person or persons trying to remove decorated bricks from the figures when the area was being used as a base for U.S. and Polish forces. Both a 2009 UNESCO report and a 2010 U.S. State Department report extensively documented damage attributed to the excavation and construction activities related to the establishment of Camp Alpha in 2003 and 2004. (Photo by Jane Sweeney, Art Directors and TRIP/Alamy Stock Photo)

A detailed research effort and report by the U.S. State Department regarding the damage caused at the Babylonian archaeological site during construction directed by Iraqi leader Saddam Hussein—followed by the adverse impact of site occupation by U.S. and Polish forces commencing in 2003—may serve as a useful resource for commanders and staff planners faced with missions that involve operations on culturally sensitive terrain such as archaeological sites. The April 2010 *Report on Damage to the Site of Babylon, Iraq* may be viewed at https://eca.state.gov/files/bureau/babylondamagereport.pdf.



Above: A 2013 detailed reconstruction of the Pharos of Alexandria lighthouse based on a 2006 extensive study of the building. (Image courtesy of Emad Victor Shenouda via Wikimedia Commons)

Left: Columns at the underwater museum 12 September 2010 near the former lighthouse in Alexandria, Egypt. (Photo courtesy of Roland Unger via Wikimedia Commons)

like many places in Egypt, is a cornucopia of as yet unexcavated archaeological sites dating back perhaps to as much as 3000 BC. Among the most prominent of known sites is the foundation of Pharos, an ancient lighthouse that once served the ancient city of Alexandria, once regarded as one of the Seven Wonders of the Ancient World. Built between 280 and 247 BC, it not only served to guide ships laden with trade goods bound for the markets of Egypt but also served as an international symbol of Egypt's wealth, sophistication, and accomplishments for all those who came to Egypt, including Julius Caesar. Over time, as Egypt lost prestige and power, the tower fell into disrepair and was finally razed for rock to build other structures. However, it had stood for almost a thousand years, and as such, it had become a well-known component of popular Egyptian tradition and folklore, emblematic of Egypt's past scientific and architectural achievements. By the early twentieth century, most of what remained was presumed to be underwater in Alexandria Harbor. In 1994, French archaeologists discovered the remains of the lighthouse on the floor of the harbor, together with evidence of a much greater abundance of unexamined artifacts. As a result of the interest generated by the concern of the Navy diver, coordinates for the proposed demolition locations were shared with two eminent Egyptologists working in the region. Within twenty-four hours, all of the locations were reviewed and found to pose no risk to archaeological remains.

The involvement by distinguished archaeologists in identifying the potential loss of irreplaceable Egyptian antiquities demonstrated to the Egyptians U.S. respect and concern for protection and preservation of Egypt's cultural heritage in a very visible way. It also demonstrated the viability of the instant reach-back concept for cultural property protection to all of the exercise planners. As a result, the 2007 Bright Star exercise set a precedent and established a model for intelligence gathering and landscape analysis that can be used in a deployed setting anywhere and at any time.

Scheduling such partner awareness meetings and cultural tours is time efficient, with potentially big payoff in terms of fostering good will. For example, without the introductory briefing, the Navy diver would have had no clear channel to report on unidentified threats to key cultural property. Failure to identify these threats could have led to the catastrophic loss of irreplaceable research and lucrative tourism opportunities for the Egyptian people, as well as to damaged relations with our Egyptian partners. Incorporating such briefings, coordination meetings, and mutual trips to high-sensitivity sites is a low-risk, low-cost method with potentially huge rewards in terms of building trust and a sense of deep partnership among allies and coalition partners.

Bright Star, 2009. Due in large measure to the 2007 experience with CPP, in 2009, the cultural property component of Bright Star was expanded to meetings with the secretary-general of the Supreme Council of Egyptian Antiquities and staff rides to Saqqara, El Alamein, the Citadel in Cairo, the Egyptian Museum, and the Egyptian Military Museum. Two valuable lessons emerged from the 2009 Bright Star engagement. First, the engagement revealed to U.S. planners the broader secondary psychological and public relations effects the damage done at Babylon had created among other Middle Eastern partners. When the Egyptian generals planning Bright Star were asked about U.S. plans for staff rides, in their initial response, they described U.S. forces as "The destroyers of Babylon, and the last people we want visiting our pyramids."[6] Loss of respect at this level, especially in the Middle East where memories are long, is detrimental to coalition building and difficult to recover.

The second lesson was much more positive. After the discouraging response from the Egyptian military, the cultural property education team approached the secretary-general, Dr. Zahi Hawass, and requested permission for access to the cultural sites. Hawass understood the goals of the U.S. request and personally approved the military visits with the soldiers as his guests. Once the staff rides to Egyptian sites were underway, the academic facilitators discovered that this method of CPP education was extremely effective. Essentially, the experience illustrated that when the teaching takes place on an archaeological site or at a museum, the sites themselves will do most of the teaching. The general reaction of the military participants on the staff ride to the Step Pyramid at Saqqara was, "Now we understand, just help us get this right. We need maps and information."

Identification of key secondary effects. In addition to the basic CPP lessons concerning the identification of and respect for cultural property, the staff ride to Saqqara also illustrated the key role preservation of cultural property may have with regard to building economic stability. As the group traveled from Cairo to Saqqara,

the bus drove through a series of extremely economically stressed communities. However, as the group came closer to the site, the participants began to notice that the communities began to look more prosperous. In the case of Saqqara and the surrounding villages, the tourist economy appeared to have had positive ripple effects throughout the region. The increased prosperity seemed directly related to the ability to attract tourist spending at the site itself, at its museum, and from the purchase of meals and snacks nearby. In addition, an Egyptian rug industry had emerged in the immediate vicinity that appeared to be tenable because it catered to the tourist trade. Of note, tourists purchasing rugs as souvenirs were supporting not just rug merchants near the tourist site but sheep farmers providing the fiber for the rugs.

From this experience, U.S. forces tasked with stability operations missions developed a more thorough understanding of the role that U.S. efforts to respect and protect cultural property might play in achieving desired stability-operation development outcomes. The obverse effect is also true. If cultural property is inadvertently damaged or destroyed during the course of a conflict, economic recovery can be compromised over the long term.

Jordan, 2009 and 2010. The bilateral experiences in Jordan were very positive as well. High-ranking Jordanian officers were very receptive to U.S. presentations on CPP and very interested in the concept of domestic cultural resources stewardship on military land. One of the eastern desert castles of Jordan is located in a military training area, and one of the officers mentioned the importance of protecting it. The Jordanians also extended the opportunity to discuss issues related to culture by mentioning the challenges of cultural awareness training for their personnel. As one Jordanian commander pointed out, just as it is beneficial for U.S. soldiers to learn about culture and customs of the Middle East, the Bedouin soldiers under his command had to learn about the culture and customs of Europe for their peacekeeping deployment to coastal communities of Croatia.

Brewer ensured that the Jordanian engagements would also include staff rides to important Jordanian archaeological sites. One of the most valuable learning experiences in this context was a visit to Umm Qais, a Greco-Roman city located on the Jordanian border with Syria. Umm Qais illustrates the concept that "a defensive position six thousand years ago is a defensive position today," and that modern soldiers may well find themselves in situations where they will need to occupy an ancient site of great importance. The Jordanian military, in fact, has watchtowers on the site, and its example demonstrates that it is possible to minimize the modern military footprint in such a location.

Stewardship of Ur. USCENTCOM's management of the ancient city of Ur offers a contrast to the events at Babylon. During his military construction phase, Saddam Hussein had strategically placed his airbase at Talil adjacent to the famous Ziggurat of Ur and its associated city ruins. A ziggurat is a sacred Mesopotamian temple platform, and Iraqis had reconstructed the outer walls and ceremonial staircase at Ur, making the structure even more iconic. Hussein's expectation was that coalition forces would not bomb Talil due to its close proximity to irreplaceable archaeological features that would generate worldwide condemnation, a cynical example of using cultural property as a shield for a military installation.

In 2003, with the fall of Hussein and dissolution of Iraq's national security forces, looting was endemic across Iraq, but the global community of archaeologists were especially anxious with regard to the fate of the ancient Mesopotamian city sites of southern Iraq, including Ur.

From a force protection perspective, merely separating the ancient city from the base proper using fencing would have created an untenable situation with the potential for criminal behavior going on immediately adjacent to the secure facility. As a result, U.S. forces extended the perimeter of the airbase fence to incorporate Ur. They also began patrolling in the vicinity of the two nearby archaeological sites of Eridu and Ubaid. As a result, for the duration of U.S. and coalition presence, those sites were spared most of the damage experienced by many other archaeological properties in the region.

From 2003 to 2008, most of Ur remained inside the protected perimeter. As a matter of course, installation chaplains organized tours to the ziggurat primarily for coalition military personnel and VIPs, and to the reconstructed ruins that were traditionally regarded as the birthplace of Abraham, the biblical patriarch claimed by both Arabs and Jews as the original progenitor of their faiths. However, for security concerns, Iraqi citizens were not permitted access to the city ruins and could only look through the fence as men and women wearing foreign uniforms visited their heritage, a situation that engendered regional resentment.

Explosive Ordnance Disposal Technician 1st Class Mark Peters, assigned to Explosive Ordnance Disposal Mobile Unit 3, prepares for a dive 11 October 2009 with sailors from Egyptian frogman units during Bright Star 2009 in Alexandria, Egypt. Demolition training locations were approved by two Egyptologists to ensure no damage occurred at underwater archaeological sites. (Photo by Mass Communication Specialist 1st Brandon Raile, U.S. Navy)

At one point, a young soldier manning the gate denied access to Abdul Amir al-Hamdani, the archaeological site inspector for Nasiriyah. The situation created tension and eventually came to the attention of Gen. David Petraeus, then commander of the Multi-National Force–Iraq. At first, the general ended the tours, but security in the area was improving, and al-Hamdani expressed confidence that the Iraqi community was ready to reassume responsibility for the ancient city.

Returning Ur to the Iraqis required moving and reconstructing the existing installation fence and constructing a new building for handling individuals who needed to enter the base. This project was initially alarming to archaeologists with interest in the site since any form of ground disturbance, like fence and building construction, is always a concern in the vicinity of an archaeological site, especially an ancient city like Ur.

Even though he shared the goal of reopening Ur to Iraqis, Hamdani was worried about potential damage to the site. In response, the U.S. State Department, in partnership with the 10th Mountain Division and the Archaeological Institute of America, sponsored a delegation of Americans to inspect the site and the new construction in partnership with him. The U.S. delegation included Diane Siebrandt, the U.S. State Department Iraq heritage preservation officer from Baghdad; Professor

Brian Rose, the president of the Archaeological Institute of America, one of the most respected archaeologists in the world; and myself, the U.S. Army archaeologist from the 10th Mountain Division and Fort Drum, New York.

The delegation arrived at Talil where it was hosted by an Italian-led provincial reconstruction team. Upon arrival, the delegation immediately went to the field with Hamdani, who expressed his concern about the ground disturbances resulting from the fence reconstruction and focused on areas where the artifacts had been exposed. The Archaeological Institute of America president was able to provide reassurance that relative to the site deposits, the observed disturbance was minor, and the entire group agreed that the goal of returning the site to Iraqi stewardship outweighed any of the observed effects.

A second goal of the delegation was to provide reassurance that the United States had taken excellent care of the site and that completing the transition to Iraqi stewardship would be a positive outcome for all involved. I, an archaeologist on the team with experience briefing ranking Army personnel, was able to lead the meeting with members of the Talil garrison command group and the installation military engineers. My major role was to provide the positive results of the site and fence inspection. Subsequent to completion of the delegation mission in April 2009, the fence and new visitor center were completed.

In May 2009, Ur, with its iconic ziggurat, was returned to the Iraqi people. To celebrate the transfer, a rock concert was held on the steps of the ziggurat, and over 350 people attended. Unfortunately, in sharp contrast with the Babylon experience, there was virtually no global media coverage of this story; unfortunate, because it was a very good news story on many levels. A third

A Jordanian army watchtower overlooks the Umm Qais ruins 11 February 2014 on the Jordanian border with Syria. The Jordanians provide a good example of how to minimize military intrusion into a protected site. (Photo courtesy of Man77 via Wikimedia Commons)

lesson learned might be that there be greater diligence in promoting such a good news story to capitalize on efforts to foster more favorable feeling among local as well as regional and global populations.

Afghan shuras, Kabul. Another series of engagements that provide tremendous insight into the value of CPP as part of operational planning were environmental shuras held in Kabul in 2010 with cooperation from the U.S. Army Corps of Engineers, the International Security Assistance Force (ISAF) Afghanistan, a number of nongovernmental environmental and international organizations, and government ministry representatives from the Islamic Republic of Afghanistan. Brewer, in his capacity as USCENTCOM environmental engineer, played a key role in organizing these meetings and ensuring that cultural property protection would be included in the agenda.

Protection of cultural resources also falls within the environmental portfolio in NATO, so with the combined efforts of ISAF and USCENTCOM, CPP emerged as a key topic in these shuras with presentations from the U.S. Army delegation; the United Nations Educational, Scientific, and Cultural Organization (UNESCO); Abdul Wasey Feroozi, director general of the National Institute of Archaeology for Afghanistan; and His Excellency Omar Sultan, the deputy minister of culture for Afghanistan. The Afghans used the opportunity to educate the international forces concerning the wealth of Afghan heritage and its meaning for the people of Afghanistan. The Americans and NATO representatives recognized the importance of these meetings for sharing information about the environmental programs of the western forces along with a discussion of progress and efforts to minimize the environmental impacts of their presence in the host nation.

The U.S. discussion concerning heritage preservation efforts included a report on development of an inventory of significant archaeological sites throughout Afghanistan that was being used as a basis for the Defense Intelligence Agency's "no strike" list for the country. This inventory and associated images of the sites also drove the development of heritage training for 10th Mountain Division personnel preparing to deploy to Afghanistan the following autumn.

Feroozi became the personification of the Army value of "personal courage" as he described his efforts to personally confront Mullah Omar, the infamous Taliban leader, over the issue of destroying the Bamiyan Buddhas.[7] He also described courageous measures taken by members of the staff of the Afghan National Museum to minimize damage to museum objects done by the Taliban.

The deputy minister addressed the shura on the second day, discussing the importance of heritage to the future stability of the country of Afghanistan. He reminded the participants that the ancient heritage of the country and its glorious legacy of the Silk Road predated the religious issues currently facing the country and thus offered a subject where all Afghan people could find common value and pride. The shura was also reminded of the courage of the *tahilwidar*, the key holders who protected the treasures of the National Museum of Afghanistan from both Russian and Taliban occupation.

These examples reminded the U.S. participants of the importance of heritage as a value for Afghans and as a subject capable of providing a building block toward a foundation for local and national unification. In the ISAF setting, demonstration of a commitment by the United States to establish a CPP program also offered common ground with NATO European partners who shared a passion for heritage preservation.

An additional direct result of Feroozi's presentation was the decision by the U.S. Army Corps of Engineers to support construction of an artifact storage facility at the ancient Buddhist city of Mes Aynak, where salvage archaeological operations were underway to save as many artifacts and features as possible prior to destruction of the site by a Chinese copper mine.

The power of cultural property at Bala Hissar. Another example of the power of cultural property and strategic communication in Afghanistan is a ceremony where the 10th Mountain Division transferred the next level of advisory responsibility to Afghan National Security Forces.[8] News of this event was especially meaningful for me because it reflected on my efforts to bring the lessons learned from the cross-cultural engagements home to the 10th Mountain Division and Fort Drum. Security Force Assistance Team "Strike 1," Cross Functional Team Warrior, 10th Mountain Division, together with the 1st Battalion, 1st Mobile Strike Force Brigade, Afghan National Army, selected the Bala Hissar Fortress in Kabul as the location for the ceremony. The selection of an iconic Afghan fortification that was once occupied by Genghis Khan provided the Afghans with an opportunity to share their history from the fifth-century construction of the fortress through the nineteenth-century victories of the Afghan Army.

The willingness of 10th Mountain Division to travel to Bala Hissar with their Afghan counterparts for such an important event demonstrated their respect for centuries of Afghan military strength and their confidence in their Afghan partner's readiness to take on the mission. The U.S. soldiers who were fortunate enough to be present described the emotion at this event. They also were clear that the choice of an iconic location demonstrated their belief that the Afghan unit was ready to be independent. All involved also expressed a fundamental appreciation that they were a part of history.

In addition to the lessons learned from the individual CPP events in the Middle East, one component of culturally attuned activity that needs to be incorporated into all such future planning is an assessment of how our military's behavior and attitudes toward cultural sites and cultural relics impact the attitudes of populations and their governments. Not only must we build an institutionalized knowledge base, but we also must develop assessment methods for the impact of CPP engagements.

U.S. Southern Command's Honduras Engagement

The value of cultural property protection as a subject for engagement is not limited to the USCENTCOM area of responsibility (AOR). Over the past few years, potential partner countries in the U.S. Southern Command (USSOUTHCOM) AOR have made several requests for protection of archaeological sites as a topic for training engagement. The initial response from the command was negative, perhaps because protecting archaeological sites would not immediately come to mind as a USSOUTHCOM military capability.

Soldiers from 17th Fires Brigade make their way up the Ziggurat of Ur 18 May 2010 near Contingency Operating Base Adder, Basra, Iraq. The ziggurat was constructed as a place of worship in the twenty-first century BC, and after more than four thousand years, it is one of the most well-preserved structures of the Neo-Sumerian city of Ur. U.S. protection of the site spared it from most of the damage experienced by many other archaeological properties in the region. (Photo by Spc. Samantha Ciaramitaro, U.S. Army)

Soldiers from Security Force Assistance Team (SFAT) "Strike 1," Cross Functional Team Warrior, 10th Mountain Division, overlook the city of Kabul 26 August 2013 during an Afghan staff ride where the SFAT and their Afghan National Army counterpart ventured to the Bala Hissar Fortress to officially transition to the next level of advising to the Afghan National Security Forces (ANSF) from American Forces in Kabul, Afghanistan. This transition showed the ANSF's ability to conduct security operations on their own with limited advising and assisting. (Photo by Sgt. 1st Class Kenneth Foss, U.S. Army)

It is true that the U.S. military generally does not protect archaeological sites within the United States. In fact, that sort of use of the military could be a potential violation of the Posse Comitatus Act, the law that restricts the participation of the U.S. military in domestic law enforcement activities.[9] However, given the fact that eligible National Register archaeological sites on military land are offered comprehensive protection and stewardship, the U.S. military actually has much more experience with archaeological site protection than many military personnel realize. In addition, effective protection of an archaeological site utilizes basic military skills for establishing secure perimeters.

Just as Brewer played a key role in establishing a CPP program within USCENTCOM, Dr. Amir Gamliel, the USSOUTHCOM environmental engineer, recognized the potential value of adding a more robust cultural property component to the USSOUTHCOM environmental portfolio. Gamliel educated the command, even bringing in the author and an academic expert, Dr. James Zeidler, to provide briefings. He continued to revisit and pursue the idea of responding positively to the requests for archaeology as an engagement topic, and in the summer of 2017, USSOUTHCOM, in partnership with U.S. Army South, the 10th Mountain Division, U.S. Army Civil Affairs, the University of Pennsylvania, and the U.S. Embassy in Honduras, planned and implemented the first-ever USSOUTHCOM CPP engagement exercise.

Representatives of the Honduras Ministry of Defense, including the curator of the Military Museum of Honduras; representatives of the ecclesiastical, archaeological, and museum sectors of Honduras; and representatives of Honduras police, border patrol, and customs all met for three days of presentations and field trips. The inclusion of distinguished academic

personnel enriched the experience for all involved. The combination of academic, law enforcement, ecclesiastical, and military perspectives added a tremendous amount of information to the discussion and opened the door to future interdisciplinary partnership at both the intra- and international levels.

The U.S. Armed Forces learned that of the five brigades of the Honduran military, three are assigned to the protection of archaeological sites within the nation. This fact clearly explains why countries in the USSOUTHCOM AOR request training exercises related to archaeological site protection. In addition to gaining a greater appreciation for the priorities and goals of the military mission of Honduras, the United States also had an opportunity to learn more about the use of ancient pathways for drug, weapons, and human smuggling; an improved understanding of the location of and connections between the ancient sites of Central America is of strategic value. Also, criminal smugglers often include illegally excavated antiquities in their cargo, so an appreciation for the archaeology of the region has direct applications for U.S. interdiction missions in the AOR.

From this engagement, both U.S. entities and Honduran ones developed a deeper understanding and appreciation of underlying factors affecting mission success, and all sides were better positioned to develop strategies to achieve desired outcomes in the region. From this example, it is clear that U.S. efforts in South and Central America would continue to benefit immensely from further incorporation of CPP-related exercises and dialogues. The Hondurans and their neighbors recognize the value as well. The Hondurans would like to continue the conversation on an annual basis, and military representatives from El Salvador, Belize, and Guatemala have all expressed an interest in joining the engagement. There are plans for a 2019 meeting in Honduras with the possibility of delegates from the additional countries.

Gamliel is also pursuing the idea of incorporating CPP into plans for future disaster response exercises in the SOUTHCOM AOR. After the earthquake in Haiti, the U.S. Navy played an important role in assisting the Smithsonian effort to save murals from the collapsed Holy Trinity Cathedral, nine thousand paintings from the Nader Museum, and numerous additional works of art and archival documents.[10] However, the associated "good news" media coverage for the Navy and positive lesson learned has yet to be applied to ensure that the necessary training takes place for increased effectiveness in future disaster response operations, not just in USSOUTHCOM but in any AOR across the world.

Training for Peacekeepers in Africa

An education and training event for African peacekeepers provides another example of how CPP can play a key role in promoting regional cooperation with prospective partners. In the fall of 2017, the UNESCO office in Harare, Zimbabwe, organized a CPP education and training event for African peacekeepers. Hosted by the Southern Africa Development Community Regional Peace Keeping Training Center, the course was attended by delegates from Zimbabwe, Angola, Mauritania, the Democratic Republic of the Congo, Mali, and Malawi. The same principles of cross-cultural competency and the ability to "read" the cross-cultural landscape for identification of sacred and valued features apply in every AOR and deployed situation. The success of the UNESCO Harare course offers a model for future Africa Command and U.S. Army Africa consideration.

One of the key factors of this model is the relationships that were built among the U.S. military, UNESCO, African military partners, and prominent academic experts and organizations. Such relationships allow U.S. actors to gain insight into the unique needs and cultural values of any given region. In addition to international faculty, the organizer set up the course with support from the National Museum of Zimbabwe. This partnership resulted in one component of the course being a field trip to the museum where the military participants were able to learn firsthand about museum security, establishing a secure perimeter around a museum, and proper packing of museum objects for implementation of an evacuation plan.

Another key factor of this model is the tangible and immediate benefit to U.S. peacekeeping operations. The military personnel benefited from the hands-on opportunity to learn and practice CPP skills. The museum staff benefited from the military perspective on how to secure their institution and collections. Even more important, both the military and the museum professionals established an ability to work together, a critical skill in times of crisis or disaster response, especially in parts of the developing world where members of other

Honduran troops guard an expedition team looking for the ruins of a lost pre-Columbian city 22 February 2015 in the Mosquitia jungle, Honduras. Three of the five Honduran brigades are assigned to the protection of archaeological sites within the nation. (Photo by Dave Yoder via Alamy photo)

professions are often frightened of and apprehensive about working with the military.

Another beneficial aspect of the CPP training event was that experienced veterans of peacekeeping operations, especially those conducted in Mali, used the topic of CPP as a jumping off point to initiate discussion of other aspects of deployment with integrity. Discussion of identifying and respecting the sacred sites and property of others lends itself to further discussion of respect for host-nation populations; their women, children, and natural resources; and their valuables. Such discussions need to become incorporated into U.S. military literature and understanding of the region that is available to personnel as they prepare to operate and achieve national security objectives.

Summary

Using CPP as a subject for international military engagement has turned out to be possibly of even greater value to the United States than to its partners.

Engagement in the Middle East offered U.S. representatives a far more nuanced view of the secondary and potentially tertiary effects of the damage at Babylon and the associated negative media coverage. The diverse U.S. participants gained an appreciation for Middle Eastern pride in the glory of their ancient past and the expectations of respect for that heritage. The Afghans reinforced those lessons with their first-hand accounts of putting their lives on the line to save Afghan cultural property. The opportunity to complete staff rides to ancient sites assisted U.S. Army advisors in the development of CPP curricula and the planning of more effective forms of future CPP training.

These experiences also demonstrate that conversations about CPP, as valuable as they are, can also lead to discussion and education focused on other important issues. The Jordanian perspective on cultural awareness, for example, offered the U.S. delegates a completely new point of view concerning the challenges of leading military personnel with no previous international experience into foreign and challenging

situations. In the UNESCO peacekeeping course, the faculty demonstrated how CPP could open the door to critical discussion of all aspects of ethical behavior for a deploying military force.

All of the CPP exercises demonstrated the value of interdisciplinary participation, not just with customs and law enforcement, but with academics and other cultural property professionals like archaeologists and museum curatorial staff. The subject-matter experts provided valuable cultural information ranging from how to track smuggling routes in Central America using the ancient pathways to how to handle and package a valuable object seized during a customs operation. The academic representative was also able to explain to the U.S. military delegates the current organization of the Honduran cultural sector and some of the political dynamics at play that would not have been obvious otherwise. The museum professionals and archaeologists gained from direct exposure to military personnel, learning about their capabilities and their potential to provide assistance during challenging situations.

In the USSOUTHCOM AOR, when the United States learned via the successful engagement that three of the five brigades of the Honduran army were devoted to archaeological site protection, the U.S. delegates began to appreciate the importance of CPP for the Honduran military. The U.S. actors gained an increased awareness of the importance of antiquities and archaeological sites for interdiction missions in the region. Even more important was the positive response of the Central American partners leading to requests for expanded engagements at the regional level in both Central and South America. As a result, the United States is gaining an opportunity to be considered a "partner of choice" for additional nations in the AOR.

The experience in Honduras is a reminder that the United States needs to take requests for engagement topics offered by partner countries seriously and be willing to think a bit further outside of the proverbial box when an unexpected suggestion for an engagement focus arises. Recent CPP efforts demonstrate an important beginning to developing our ability to partner effectively across the globe. ■

The views expressed in this article are solely those of the author and may not necessarily represent the views of the U.S. government, the U.S. Department of Defense, or the U.S. Army.

Notes

1. Samuel P. Huntington, *Who Are We? The Challenges to America's National Identity* (New York: Simon & Schuster, 2004), 66–69.

2. Comment made to Laurie Rush and Christina Luke during the celebration at Sardis, Turkey, 6 May 2011.

3. Rory McCarthy and Maev Kennedy, "US-led Forces Leave a Trail of Destruction and Contamination in Architectural Site of World Importance," *The Guardian* (website), 15 January 2005, accessed 3 May 2018, https://www.theguardian.com/world/2005/jan/15/iraq.arts1; "US Reportedly Damaged Ancient Babylon; Museum Claims Military Caused Substantial Damage," MSNBC News, accessed 3 May 2018, http://www.msnbc.msn.com/id/6829036/ (site unavailable).

4. Lt. Col. Joris Kila (Royal Netherlands Army), personal communication with Laurie Rush, Bright Star cultural property planning meeting, 2009. This sentiment was expressed by ranking Egyptian military personnel in their response to international personnel who requested access to Egyptian pyramids for a U.S. staff ride during Exercise Bright Star 2009.

5. The observations come from Laurie Rush's personal experience and dialogue with Lt. Col. Daniel Brewer.

6. Lt. Col. Joris Kila, a 2009 report back to the Combatant Command Cultural Heritage Action Group after requesting permission for a staff ride to Saqqara be included as part of the war games. When faced with opposition from the Egyptian generals, Kila organized an approach to Dr. Zahi Hawass who understood the goal of the staff ride and welcomed the U.S. personnel to Saqqara and the other sites in and around Cairo as his personal guests.

7. The Bamiyan Buddhas were monumental and iconic ancient statues carved into niches looking out over the Bamiyan Valley of Afghanistan. Carved in the sixth or seventh century, at 150 feet tall, they were the largest standing Buddhas in the world and considered a treasure for all humanity. As one of the many atrocities Taliban leader Mullah Omar committed, he commanded them to be destroyed in March 2001, with the empty niches left behind.

8. Kenneth Foss, "Ancient Fortress Marks Site for Advisory Transition in Afghanistan," *The Mountaineer Online*, 12 September 2013, accessed 3 May 2018, http://www.drum.army.mil/mountaineer/Article.aspx?ID=7804.

9. Eric V. Larsen and John E. Peters, "Overview of the Posse Comitatus Act," appendix D in "Preparing the U.S. Army for Homeland Security" (monograph, Santa Monica, CA: RAND Corporation, 2001), accessed 3 May 2018, https://www.rand.org/content/dam/rand/pubs/monograph_reports/MR1251/MR1251.AppD.pdf.

10. Smithsonian Magazine, "About the Smithsonian Institution–Haiti Cultural Recovery Project," Smithsonian.com, 31 August 2010, accessed 3 May 2018, https://www.smithsonianmag.com/arts-culture/about-the-smithsonian-institution-haiti-cultural-recovery-project-56233582/.

NASA astronaut Jack Fischer photographed the SpaceX Dragon capsule as it reentered Earth's atmosphere 3 July 2017 at 8:12 a.m. (EDT) before splashing down in the Pacific Ocean west of Baja, California. Fischer commented, "Beautiful expanse of stars-but the 'long' orange one is SpaceX-11 reentering!" (Photo courtesy of NASA)

Space-Land Battle

Trevor Brown, PhD

Digital nations have centers of gravity (COGs) that are critical to their functioning: space-based assets.[1] For example, the GPS enables the digitization of national economies. The timing signal of the GPS has become ubiquitous for ATM time stamps across digital nations, and the GPS positioning capacities have become vital for a vast array of other commercial activities as well, "ranging from just-in-time logistics, international air and maritime traffic control, and the functioning of cellular telephone networks."[2]

To state Carl von Clausewitz's famous dictum, "One must keep the dominant characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed."[3] One example of this is the electronic intelligence that U.S. space-based assets are able to gather. One of the most vital aspects of U.S. capabilities "is the ability to detect" enemy activity through the manipulation of the electromagnetic spectrum.[4] In this regard,

> A kindred class of satellites monitor the Earth, not in the optical portion of the electromagnetic spectrum but through the radio and radar atmospheric windows. These electronic intelligence (ELINT) gathering satellites listen patiently to the radio and radar emissions of ground, air and sea emitters. For example, the detection and location of emissions of the search and tracking radars of mobile air defense units provide valuable assistance to the planning of tactical air strikes. Likewise, the interception of communications may disclose not only the contents of the messages, but also the locations and identities of the communicators. Together, these types of information permit the construction of an electronic order of battle (EOB) which would influence the conduct of an engagement.[5]

Because of these capabilities, U.S. forces are "able to develop high rates of change in battle that cannot be outpaced, while sharply narrowing the strategic choices of the enemy."[6] The United States is now able to "emphasize precision firepower, special forces, psychological operations, and jointness—as opposed to the purported traditional dependence on overwhelming force, mass, and concentration—and the resultant qualities of speed, maneuver, flexibility, and surprise."[7] The first Persian Gulf War was a manifestation of the power of space-based assets. Space-based assets for command, control, communications, and intelligence made possible tremendous "quality and quantity of information," which proved decisive to the successful operations of that war.[8] The United States "structured its campaign around the free flow of information at the tactical, operational, and strategic levels" and obtained an invaluable advantage that led to the utter annihilation of Iraqi forces.[9] The famous flanking maneuver of the United States through the desert was made possible by the GPS. This movement only strengthened the position of the United States that it must control space at all costs.[10] Indeed, according to Colin Gray,

> Most of the information that fuels the alleged information-led RMA [revolution in military affairs] is collected by, or is transmitted via, space vehicles. Of course there are alternative platforms on which sensors can be deployed, but the highest of high "ground," which is to say outer space, offers dramatically superior performance over rival geographies for most intelligence-gathering missions. If space control is lost, an information oriented RMA will not work. In the view of this school, even if space systems themselves are not the real revolution, at the very least they constitute the key contributing element. If one loses the war for space, or in space, one loses the war (on land, at sea, and in the air) as a whole.[11]

> Space power enables the United States to plan, coordinate, and deliver overwhelming firepower and dominant maneuver in the conventional operational environment.

The capabilities that space-based assets provide—from precision movement and precision strike; to meteorology; to photo, signal, and electronic intelligence that help to determine enemy orders of battle—shift the terrestrial balance of forces heavily. The United States has significantly reduced the friction and fog its forces face by linking its space, air, and ground assets into an intelligent sensor web that allows warfighters to zoom between a picture of a larger battle, or theater space, to narrowly focused views that then enable warfighters to sense and react as a coherent organism.[12] Space power enables the United States to plan, coordinate, and deliver overwhelming firepower and dominant maneuver in the conventional operational environment.[13] Enemies of the U.S. military must successfully knock off-line the GPS and other space-based assets or be forced into an insurgent or terrorist strategy. With space capabilities in play, no enemy can withstand a conventional assault on U.S. forces due to the American ability to sense, move, and strike with precision.

However, the space-enabled land dominance of the Army is increasingly threatened by the missile and other anti-access/area denial capabilities of adversaries, and it must have missile defense capabilities of its own to protect its forces from those threats. The missile batteries of adversaries, especially those that possess tactical nuclear weapons, could impede the movements of the Army's columns, or indeed, destroy the main forces of the Army. The ground-based kinetic interceptors that the U.S. military has focused its missile defense development efforts on are woefully inadequate. They cannot reliably stop the missile forces of adversaries, especially if the adversary attempts to overwhelm the U.S. military's kinetic missile defense capabilities with an intense barrage of numerous missiles. Also inadequate would be any effort to move kinetic ballistic missile defense assets into space. (At the same time, the financial dynamics of moving kinetic ballistic missile defense assets into space would require that the size of the Army be drastically reduced.) The U.S. military's air-to-air kinetic interceptors as well as its airborne lasers are also not entirely reliable. However, a new and nonkinetic missile defense capability in the domain of space with a large variety of uses has recently emerged that can effectively neutralize all missiles and hypersonic weapons of all adversaries while simultaneously minimizing the expenditure of significant resources. This new and nonkinetic space-based missile defense capability is the inflatable spherical solar power satellite (SPS). The inflatable SPS, when combined with other American enabling satellites, will provide the U.S. Army with complete dominance in space-land battle.

Trevor Brown, PhD, is currently developing intellectual property for an emerging new space company. He possesses a PhD from Auburn University and a Master of Science from Nanyang Technology University in Singapore. Upon graduating from Auburn University, he became an adjunct professor at Auburn University before moving on to developing technology for a nascent space enterprise. He wrote *The Digital Galactic Complex*, and he has published articles in *Astropolitics*, *Air and Space Power Journal*, *High Frontier*, *Comparative Strategy*, and The Space Review.

The Inflatable Sphere Solar Power Satellite—the Power Star

A revolutionary new design for space solar power has emerged; it is called the Power Star. This design for space solar power is inflatable, enabling it to overcome the mass and volume constraints of existing and future rockets. It is spherical, reducing the complexities of station keeping and attitude control in orbit, especially with respect to larger classes of the satellites. Power Star satellites will require no mechanical motions in orbit, and they can do station keeping as well as boost and lower their orbits with the radiation they generate.

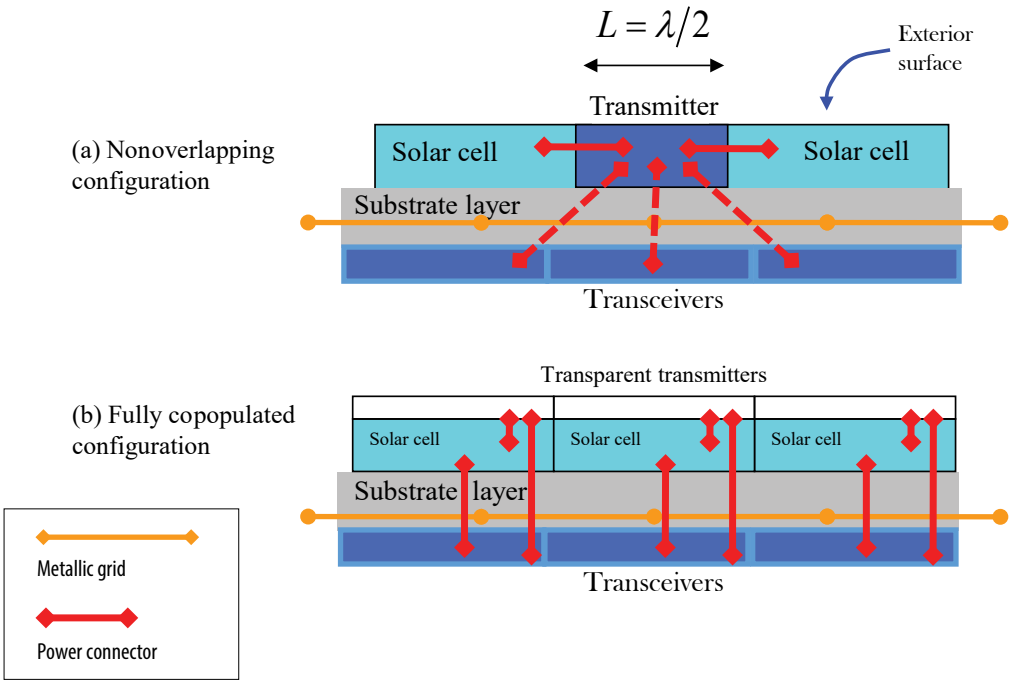
The satellites will have their photovoltaics and microelectronics 3-D printed onto flexible fabrics. Also 3-D printed onto the fabrics will be transparent patch antennas printed over the collecting solar cells. Such a configuration is intended to resolve intrapower distribution issues and eliminate the need for large wires. It will also allow the full surface area of the satellite to be illuminated for the maximum amount of energy generation while simultaneously alleviating the need for cover glass. A transceiver will line the inner surface of the inflatable sphere and will coordinate the pointing of beams with energy collection sites on the surface of the Earth. Therefore, the inflatable spherical SPSs will both collect and beam solar energy across the entire surface of the sphere with the solar-microwave fabric, alleviating the need for more traditional, massive, and cumbersome transmission equipment.

Indeed, the strategic situation prevailing since both the United States and the Soviet Union acquired atomic bombs has been similar to the Clausewitzian concept of an equipoised play of forces, where both sides in the contest maneuver for advantage without actually engaging. The inflatable spherical SPS will collapse the deterrence regime based on mutually assured destruction with nuclear weapons and intercontinental strike capabilities and revolutionize warfare.

> The Power Star is already fully developed: The design concept discussed here carries modularity and multiple-functionality several steps ahead of all other SPS designs. The concept combines a technology that is so new it is often overlooked with a technology that is so old it is almost forgotten. The new technology is the printing (via photolithography, ink-jet processes, etc.) of solar cells interspersed with microwave patch antennas on thin, flexible sheets (Mylar, Kapton, paper, fabric, etc.). The printed sheets are produced in mass quantities. The old technology is that of the Echo satellites. Large, thin sheets are assembled into a spherical balloon. For launch, the sphere is compactly packaged in a small container that fits into the launch vehicle payload faring. Once on orbit a volatile material is made to sublimate to provide the gas pressure for initial inflation. Metallic layers within the printed sheets are forced into yield to provide rigidification and the Power Star sphere is then evacuated. Electromagnetic propagation theory shows us that a completely decentralized control algorithm allows us to coordinate the numerous (printed) microwave antennas to transmit multiple beams to any desired ground-based power collection locations. The system is a single, very simple structure and no slewing or mechanical motion is required. Further, the power distribution technique involves power transmission within the "skin" only over distances of a few centimeters. Thus power transference is localized and requires neither complex and high voltage power distribution and management systems nor large power-conducting wires. The system has no moving parts, requires no slewing or rotating elements, can be deployed from a single launch vehicle, is extremely robust to component failures and is composed of material that can be manufactured in great quantity.[14]

One of the most critical aspects that will enable the technology will be its solar-microwave fabric:

> The very new and rapidly advancing element of Power Star technology is the solar-microwave fabric. Large scale production of inexpensive solar arrays is well underway. Printed microwave antennas are also well known and are being advanced at a rapid rate for numerous communication applications. Solar-Microwave Fabric combines these two components on the surface of the same flexible substrate. The solar cells and patch antennas are interspersed (without overlapping) with a randomized tessellation in order to eliminate grating lobes. This pattern is printed on what is to become the exterior surface of the substrate sheet or "skin." In the full system, there may also be an array composed solely of microwave transceivers (dual transmitters and receivers) printed on the opposite surface (due to become the interior surface of the sphere). Patch antennas on the exterior surface draw power from half of the immediately adjacent solar cells (a few centimeters distance) or from the interior transceivers, through the thickness of the skin.



(Figure by David C. Hyland)

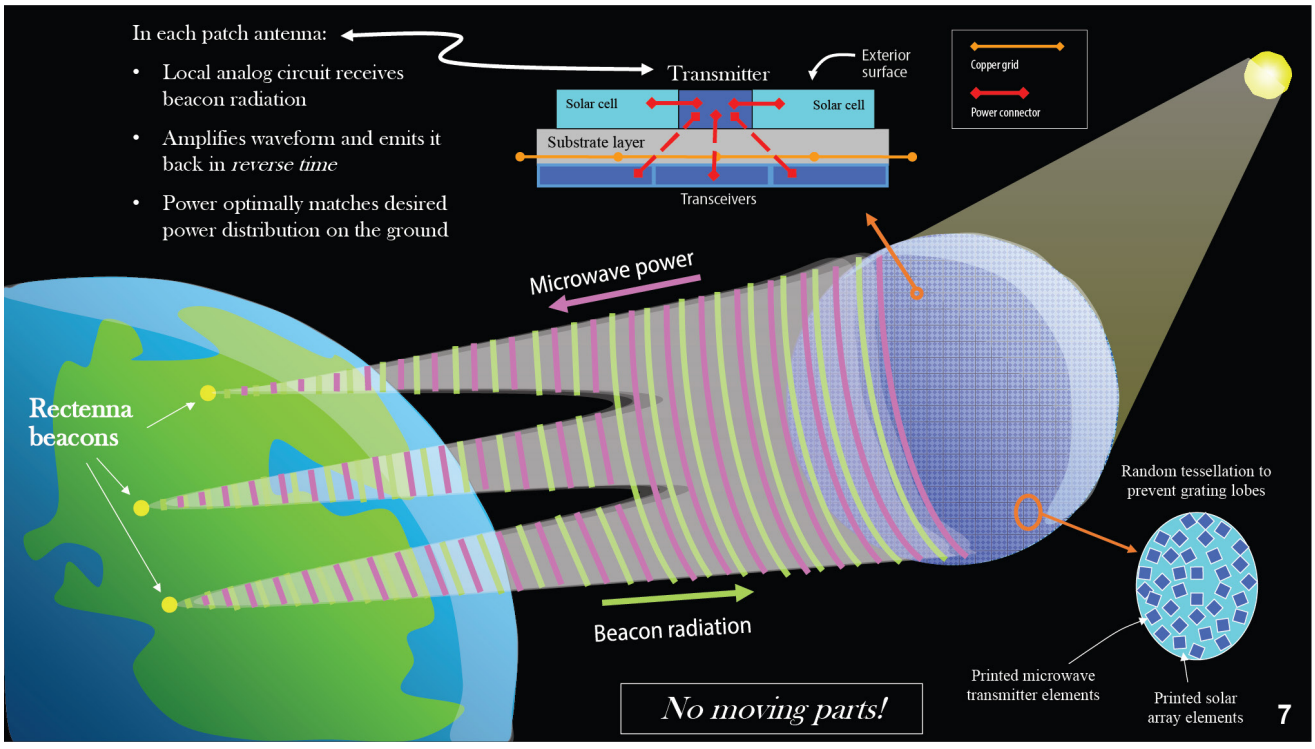
Figure 1. Cross Section of the Power/Communication/ Transmission Embodiment

> Besides the short power leads there is a grid of conducting wires for electrical ground and for rigidizing the sphere prior to evacuation.[15]

However, and again, the true configuration for the fabric in orbit will be transparent patch antennas 3-D printed over the solar cells. Such a configuration will allow the entire surface of the asset to be illuminated for the maximum amount of energy generation, while the transparent patch antennas printed over the solar will eliminate the need for the assets to have cover glass (see figure 1). Proceeding with the dynamic functions of the satellite in orbit, figure 2 (on page 125) sketches the overall composition and method of operation.

Perhaps one of the most ingenious aspects of the design is the intrasatellite power distribution arrangement:

> Since the directions of the sun and the beacons are not coincident, a mechanism for distributing power within the satellite is needed. Figure 3 (on page 126) shows the geometry of irradiation from the sun and the beacons, where we assume that the angular separation of beacons is small so that a single, representative beacon direction may be considered. The quantity ϕ is the angle between the sun direction and the beacon direction. Recall that the interior surface of the sphere is coated with transceivers operating at a higher frequency (to reduce diffraction effects). These transceivers are to be oriented so that the resonant axes of each diametrically opposite pair are parallel. As illustrated in figure 3, the surface of the sphere is divided into four sectors: The sector exposed to both sunlight and beacon radiation (denoted by S,B); that receiving beacon radiation but no sunlight ($\tilde{S},B$); that exposed to sunlight but not beacon ($S,\tilde{B}$), and the region where neither sun nor beacon are visible ($\tilde{S},\tilde{B}$). Clearly, sectors ($\tilde{S},B$), and ($S,\tilde{B}$) are mirror images, such that each point on ($\tilde{S},B$) has a diametrically opposite point on ($S,\tilde{B}$), and *vice-versa*. The same remark pertains to (S,B), and ($\tilde{S},\tilde{B}$). The sector that a particular transmitter and its adjacent solar cells are located is indicated by their output signals. Given this information, the power supply algorithm is indicated in the table (on page 127). Note that no processing is needed for this algorithm. In essence, the transmitters that need to be active because they receive a beacon signal are powered by either the proximate solar cells or by the proximate internal transceivers, whichever is actually producing power. No beacon signal means



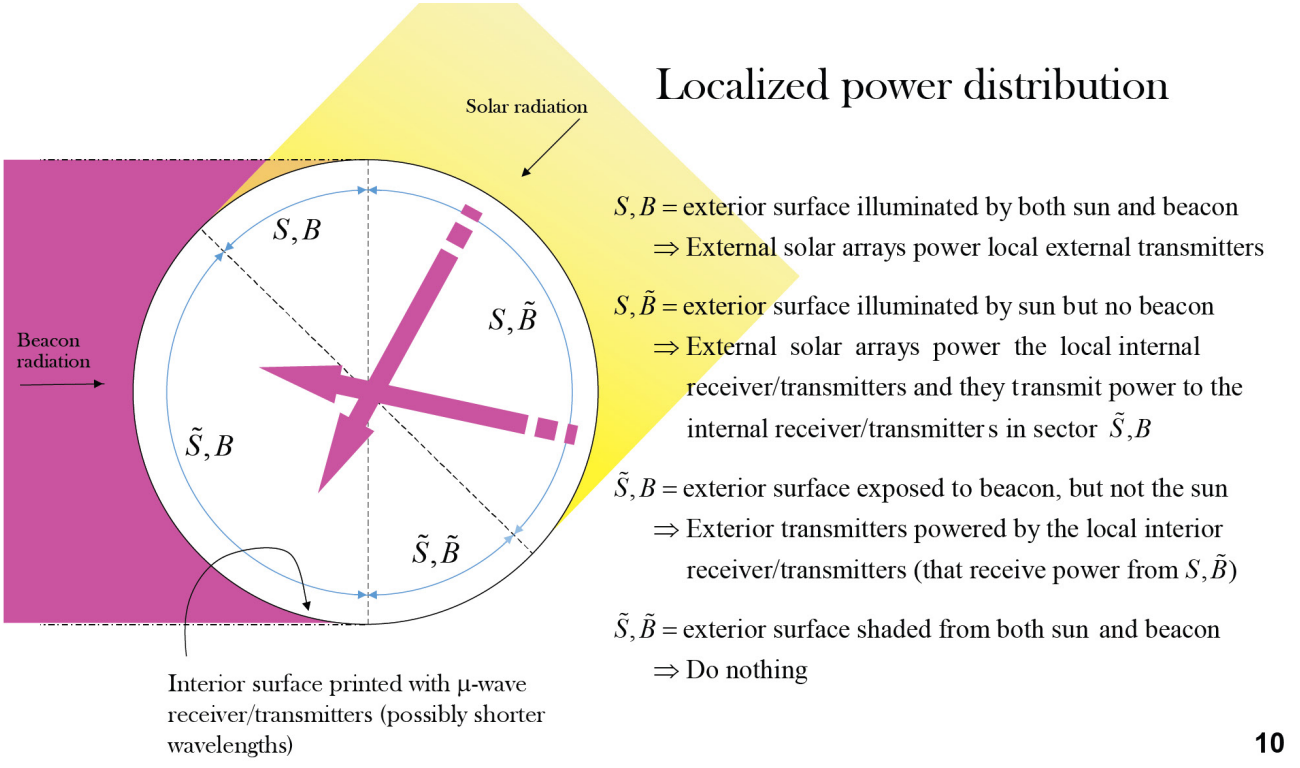
(Figure by David C. Hyland)

Figure 2. Overall Power Star Operation Once Deployed

the transmitter is blocked. Each transmitting antenna draws power from the solar cells in its immediate vicinity (within a few centimeters), or through the thickness of the skin. Each transmitter receives just a few watts, so there are no high voltages or large wires. This localized architecture means ***robustness*** against partial damage.[16]

The Power Star is almost undefeatable in space warfare. Any laser, interceptor, or co-orbiting asset that attacked the Power Star would not be able to disable it due to the distributed and localized nature of the power configuration. Therefore, if a laser preemptively attacked a Power Star in an attempt to disable or defeat it, the Power Star could easily return fire. The Power Star can fire multiple beams in all directions simultaneously even after it has been damaged. The only presently known ways (according to its inventor) to defeat the Power Star is the destructive blast of a nuclear weapon in orbit or an electronic or cyber attack to scatter the beaming algorithm. A five-kilometer-diameter Power Star would generate in excess of 8.5 gigawatts in orbit and could be launched with a single Space Launch System with zero on-orbit assembly required. A one-kilometer-diameter Power Star would generate three hundred megawatts in orbit and could be launched with a single Delta IV rocket with zero on-orbit assembly required. A one hundred-meter-diameter Power Star would generate three megawatts in orbit and could be launched in the air off of an F-35 aircraft with zero on-orbit assembly required.[17]

Not only will the Power Star effectively neutralize all enemy antiaccess/area denial capabilities, but another potential niche dual-use terrestrial application for the inflatable sphere SPS is also the provision of energy to the Army's forward operating bases. By beaming over fifty megawatts of power on demand from space to a forward operating base, the Power Star will dramatically reduce the tooth-to-tail ratio of the Army's forces, making them far less dependent on logistical support. Indeed, with just one five-kilometer-diameter asset placed in a geostationary orbit, the joint force will be able to beam at least fifty megawatts to fifty forward U.S. military bases from the western Pacific through the Middle East all



(Figure by David C. Hyland)

Figure 3. Geometry of the Power Distribution System (Angle ϕ denotes the angle between the directions to the sun and a beacon)

at the same time—fifty beams to fifty bases simultaneously—without requiring any mechanical motions from the spacecraft.

In this regard, electric ground vehicles have more torque than do ground vehicles powered by petrochemicals. If the Army's ground forces were to transition to a force composed almost entirely of electric ground vehicles, while American space forces were simultaneously launching Power Stars, then the land force could mostly eliminate the need for convoys to resupply the power needs of its bases as well as refuel its vehicles. Such a dynamic would result in far fewer soldiers and marines going into harm's way to defend resupply convoys while, at the same time, the quality of life at forward operating bases would improve dramatically. A single one-kilometer-diameter Power Star could supply almost the entire operational power needs of a forward operating base manned by thousands of soldiers. Thus, the Power Star will enable the Army to remove fossil fuels as a major supplier of energy and replace the internal combustion engine in war operations. In the process, the Army will become far more mobile and lethal, and will then be in a position to truly realize "supply-less" logistics from an energy standpoint. The Power Star is the innovative idea that will make logistics from 2018 forward, including the period between 2030 and 2050, supply-less and render forward bases more logistically secure.

What is more, the Power Stars will support "space-based radars and imagers of unprecedented size, powerful spaceborne jamming capabilities, and advanced communication architectures—particularly for aperture-limited users."[18] Indeed, a fleet of five-kilometer-diameter Power Stars would possess thirty-nine square kilometer phased arrays for each satellite; their combined effects could overpower an enemy in electronic or cyber warfare. The Power Star fleet could jam all communications and engage in electronic warfare on an unprecedented scale. This would be in addition to neutralizing all missiles of the enemy with the millions-of-megawatt beams that could be broadcasting in all directions simultaneously.

Shifting the Terrestrial Balance of Forces

With respect to space-land battle, unless a decision for the whole war can be obtained by victory in space in a way similar to the wars of the Dutch and English at sea in the seventeenth century, the action in space must necessarily be subordinated to the action on the ground. Although, as has been stated, if a complete command of the space domain is obtained, it is likely that it would shift the balance of forces on Earth so heavily as to decisively determine a terrestrial war's outcome. "For example, if one state or coalition could secure and hold the truly exclusive 'command of space,' the enemy might elect to surrender as a direct consequence (space could be blockaded against passage by an enemy's missiles)."[19] In any event, if control of the space domain is obtained, either through direct battle or by effectively exercising control when a battle cannot be had, significant options are then opened for shifting the balance of forces on the land.

Space-based kinetic and nonkinetic weapons can strike at targets on the earth, perhaps much easier than they could at targets in space. Merely a few dozen space-based kinetic-energy weapons against terrestrial targets could threaten the means of power projection of a maritime power like even that of the United States, and these capabilities are within reach of countries such as China and India.[20] They would work just as well against land forces—with the requisite radar and fire control, they could strike at tanks and other armored vehicles.

Nonkinetic weapons such as lasers were more difficult to field before the Power Star due to the necessity of keeping them adequately fueled, but their ability to strike at light speed on very short notice made them very attractive. Indeed, "space weapons may be the only ones that can reach fleeting targets in time."[21] And, before the Power Star, considerations were for whether "the value of the target was worth expending the weapon."[22] Obviously, following the invention of the Power Star, the magazine for space-based direct-energy weapons is virtually unlimited and free.

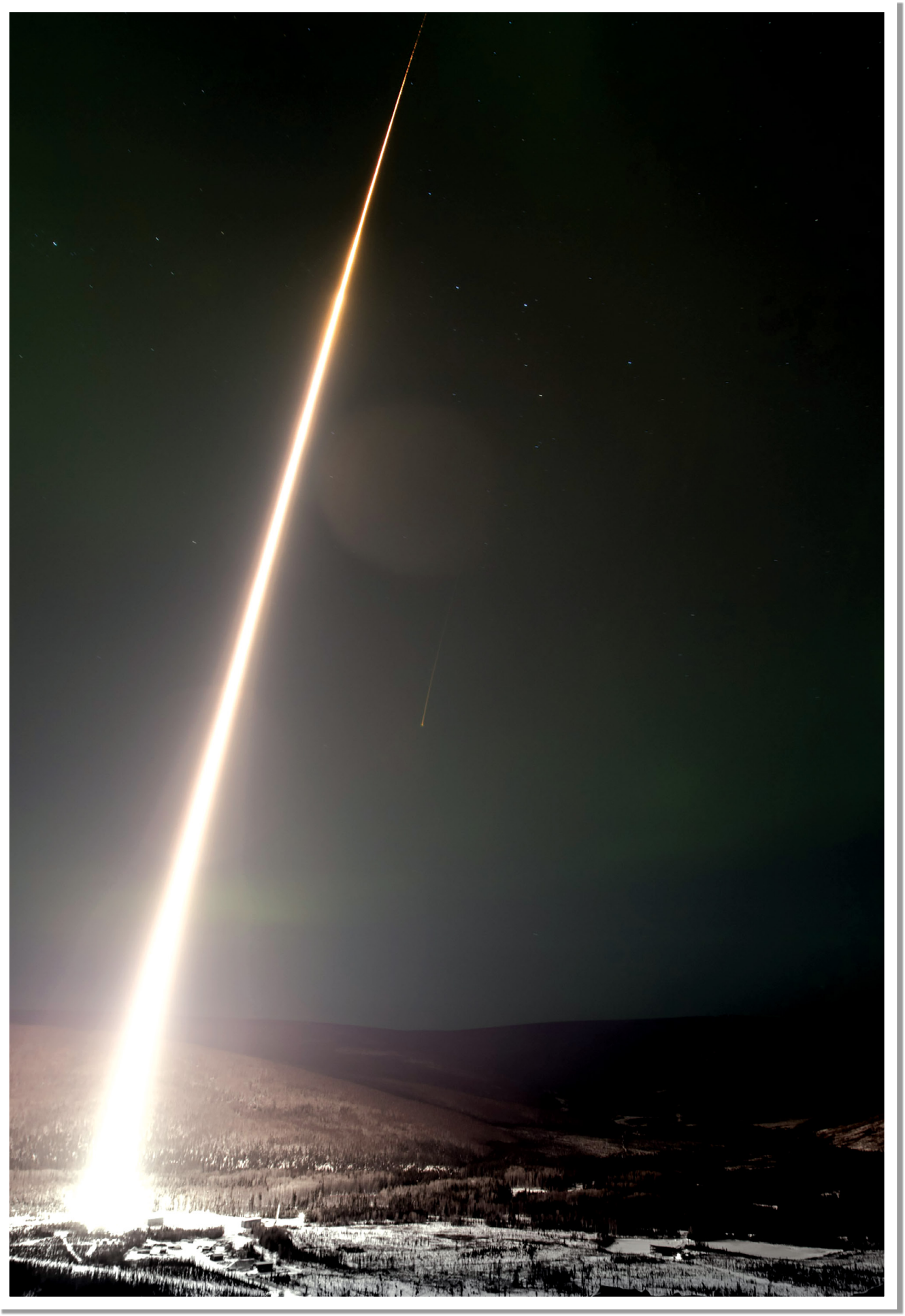
Regardless, the major economies of force that space-based assets have achieved by their complementary effects on friendly weapons systems are tremendous. Again, "one of the salient features of the U.S. Armed Forces is the ability to detect hostile military operations through exploitation of the electromagnetic spectrum":[23]

> Data received from ELINT satellites would add another dimension to the battlefield picture. The movement of radio and radar sites would permit an electronic order of battle which could then be compared with photographic intelligence. For example the relocation of command posts and electronic

Table. Power Transfer Algorithm

Sector	Power Transfer
(S,B)	External surface transmitter draws power from the adjacent solar cells.
$(S,\tilde{B})$	Solar cells transfer power through the skin to their immediately proximate internal surface transceivers. The internal transceivers emit power beams through the center of the sphere to fall on the internal transceivers in sector $(\tilde{S},B)$.
$(\tilde{S},B)$	Internal transceivers transfer received power through the skin to their immediately proximate external surface transmitters.

(Table by David C. Hyland)



> … it is space capabilities that are the gulf between the knowledge of information forces and the ignorance of industrial forces.

> jammers might foreshadow a weakness along the forward edge of battle or a redirection and new push elsewhere along the front. The interception of enemy communications might yield valuable intelligence data.[24]

Indeed, space-based assets are the backbone of information-oriented forces. They have made the operational environment far more transparent and increased the speed and access of U.S. forces in such a way as to profoundly alter the initial conditions of conflict. In space-land battle, U.S. forces are able to develop high rates of change in battle that cannot be outpaced while sharply narrowing the strategic choices of the enemy.[25] Without real-time visuals of operational environments and a variety of sensory images, all linked at the theater level, U.S. forces undoubtedly would not have the same ability to dominate the decision cycles of enemy leadership.

By 2008, even off-the-shelf technology that utilized space-based services for space-land battle had a very large impact on the operational environment. An author writing at that time observed,

> With an iPhone, you can access a map, convert it to satellite photography, and overlay embedded information like addresses and telephone numbers and soon all kinds of additional data like property values and even crime statistics. Eventually this kind of power is going to reach the average soldier in the field, drawing upon satellite data like GPS signals, near-real-time reconnaissance imagery, and weapons performance for enemy targets.[26]

A Black Brant IX sounding rocket launches 22 February 2017 at 5:14 a.m. (EST) from the Poker Flat Research Range in Alaska. This was the first of two launches planned in NASA's In Situ and Groundbased Low Altitude StudieS (ISINGLASS) mission to study the structures of auroras. (Photo courtesy of NASA)

Due to these capabilities, in space-land battle, the United States is now able to "emphasize precision firepower, special forces, psychological operations, and jointness—as opposed to the purported traditional dependence on overwhelming force, mass, and concentration—and the resultant qualities of speed, maneuver, flexibility, and surprise."[27] Space forces shift the balance on Earth so heavily that insurgency and terrorism are forced upon the enemy as its only course of action. Satellite-guided drones enable Americans to reconnoiter enemy positions and drop weapons from a hemisphere away. "With GPS satellites, automated aerial craft can sweep over a target and emit a huge burst of electrical energy into the atmosphere. This pulse of electromagnetic energy acts like a lightning bolt, frying an enemy's computers, radios, telephones, and critical communications devices."[28]

In space-land battle, space power was the critical enabler of concepts such as operational net assessment, effects-based operations, and rapid decisive operations during the second Bush administration (concepts created to facilitate operations during the RMA). In short, it is space capabilities that are the gulf between the knowledge of information forces and the ignorance of industrial forces. However, space-based assets are soft and may be the very first to be targeted in wars to come. "Space technology has become so integrated with tactical military operations" that many now question what the target is: "Is it the weapon on the battlefield or the satellite high above that is dramatically enhancing the weapon's power?"[29] As the COG of information-oriented militaries, enabling doctrines such as rapid decisive operations and effects-based operations, space-based assets must be considered primary targets in any war fought by forces that have entered the information age.

In space-land battle, "modern warfighting does not depend simply upon having information, but rather upon moving it from place to place, from weapon system to weapon system."[30] What would be the consequences for an information-oriented military if their celestial lines

of communication were wiped out? The consequences would be grave indeed, as it would mean that not only was the COG of their military wiped out, but the COG of their entire society was wiped out as well. Although only an all-out hostile attack on the ground stations and on the satellites would significantly harm American constellations, the U.S. military should not become complacent in the past performance and strength of U.S. systems, as more and more nations and political entities, from Russia and China to India, are investing in systems to be instruments of space warfare.

Industrialized Conventional Warfare

In space-land battle, the most prudent strategic course is for the land force to be strategically and tactically on the defensive until the space force is able to gain control of the space domain and barricade it. With the space force in control of the space domain, the joint force will then be in a position to bring all of the enabling assets and fires from space-based weapons systems to bear on the terrestrial battlefield. The fires and enabling effects from space will then give the land force decisive advantages when it goes on the offensive.

When deterrence based on nuclear-tipped intercontinental ballistic missiles breaks down, the U.S. Army must be trained and equipped to engage in conventional warfare against all industrialized opponents, as great power war will once again be on. In such a strategic dynamic, warfare may again become somewhat symmetrical and typified by front lines where forces are arrayed in formations against each other. The Army should excel at this mode of warfare, especially given the tremendous advantageous that all of the enabling effects from the space domain can provide, as well as the full-spectrum information dominance they should possess. The Power Stars will shield the Army's forces from enemy missiles, especially those carrying tactical nuclear weapons.

In any event, the Army's space-enabled land forces could potentially conquer entire regions by rapidly defeating enemy armed forces, perhaps under the cover of unlimited beams from space. Power Star artillery and air power could be used to channel or impede the movements of the enemy, disrupt communications, suppress forward defensive fires, and mask the advance of the Army's main land forces. Direct-energy weapons and tungsten bolts from space could support the movements and fires of air, armored, and infantry units to open breaches in the enemy's front. Enhanced by fires and intelligence from space, mobile and armored units could rush forward at tremendously high speeds to penetrate the interiors of the enemy. The action on the ground will be executed in close coordination with space and air support, including space and air reconnaissance as well as air transport. In this way, the space-enabled land forces will achieve defeat of the enemy.

Industrialized, symmetrical space-land battle will continue to be important in the twenty-first century after the Power Stars collapse the dynamic of mutually assured destruction with their ability to neutralize missiles and hypersonic weapons, especially intercontinental ballistic missiles.

Conclusion

The advantages of inflatable spherical solar power satellites are obvious: precise and overwhelming firepower, exceptional survivability, ground force protection, enhanced communication and intelligence collection capabilities, and tremendous cost effectiveness.

Sophisticated space forces help their terrestrial comrades in arms dominate on the ground—with the GPS and communication satellites in play—and enemies of American forces have been placed in insurgent or terrorist predicaments because they cannot withstand conventional warfare with U.S. ground forces due to the American ability to move and strike with precision. The nature of warfare has effectively changed. Space-based assets have allowed American terrestrial forces to take maneuver warfare to the next level. ■

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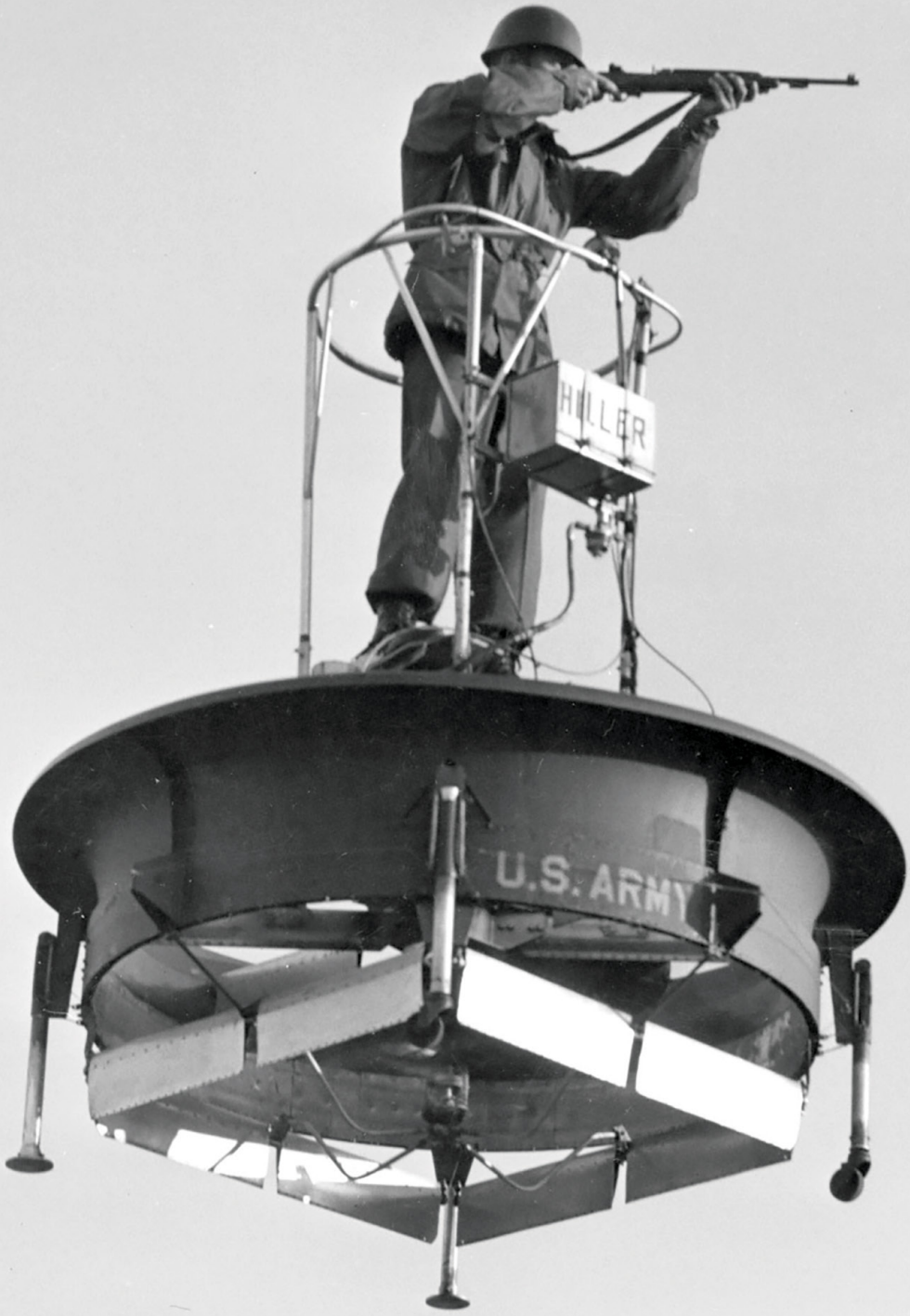

A Hiller VZ-1 Pawnee Flying Platform demonstration in 1958. (Photo courtesy of the National Air and Space Museum, Smithsonian Institution)

Raising the Bar

The Future of Individual Lift Devices in Warfare

Lt. Col. Matthew P. Dirago, Australian Army

In 2013's *The Great American Jet Pack*, Steve Lehto asserts that the idea of personal flight is a mirage, continually eluding the clutch of technological advancement.[1] This article assumes that this assertion is incorrect; instead, it contends that advancements in individual lift (IL) technology are bringing human flight within reach. At some point in the not too distant future, mature IL technology will enhance a military force's ability to conduct distributed maneuver, undermine anti-access/area-denial (A2/AD) defenses, augment autonomous systems, and defeat adversaries in complex terrain. Thus, military planners must better prepare for the integration of individual lift devices (ILD) into existing systems and future programs as well as develop methods to counter an adversary with an advantage in IL technology.

The IL technology development over the last century has been sporadic and underwhelming. From 1940 to 1983, IL technology promised a revolution but delivered merely impractical novelties. The expectations of flying shoes, platforms, ducted-fan lift devices, rocket belts, and jet belts always exceeded the technological limitations of that time.[2] Similarly, progress since 1983 has been unremarkable, stymied by reduced corporate and military research into ILD.

That said, sporadic, small-scale development has continued, primarily by entrepreneurs impassioned by the futuristic vision advanced through popular science. A modest resurgence in military and corporate interest and investment is now apparent and has the potential to advance IL technology beyond science fiction. However, for promising international developments in IL technology to eventually succeed, civilian and military proponents must overcome skeptical views of ILD.

Defining Individual Lift Device Terminology

There is a broad variety of technology that is categorized using the ILD terminology. For this article's purposes, the following generic definition of ILD is used: any physical device below the level of a conventionally sized airframe capable of safely transporting one or two soldiers through the air domain. This definition deliberately avoids limitations of control mechanisms, elevation limitations, payload, and range requirements to allow for a broad understanding of the impact of IL technology on warfare. Defining methods of ILD control is also relevant: kinesthetic control uses human body movement to direct the lateral control of an ILD, whereas electrically or mechanically controlled methods employ componentry to direct flight.

History

In 1958, the U.S. Army encouraged ILD research

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to augment soldiers' abilities to jump and run. At that time, the Army sought a solution by requesting industry to create a backpack-mounted device to move 160 pounds "applying small rocket lift devices" for more than fourteen seconds.[3] Respondents offered two divergent approaches. One employed short-burst rockets to cross obstacles. Another, Bell Aerosystems, advocated limited free flight and delivered a prototype capable of thirteen-second untethered flight.

A subsequent review assessed Bell's project as "highly successful," but its potential was deemed limited by flight duration, noise, and specialized fuel requirements.[4] As a result, the Army-sponsored project was canceled. Despite the project's cessation, Bell continued development and in 1965 secured funding for an alternative solution. The "jet belt" was a turbine rather than a rocket-propelled device.[5] Although not successful in the United States, development overseas offered renewed promise. Sud Aviation, a French company, applied to patent an "augmented thrust rocket system" in 1960 that increased range by increasing fuel efficiency. In 1964, the French army contracted Sud to develop a prototype that enhanced a soldier's ability to "leap over obstacles." The requirements included moving 263 pounds over "several hundred meters" below a fifty-meter ceiling. Despite successful tethered flights, Sud was unable to exceed forty seconds of flight. This shortfall, combined with concerns about noise, led Sud to cease development.[6]

Nevertheless, concurrent advancements in turbojet and turbofan technology led other developers to pursue jet-powered ILDs. For example, the Defense Advanced Research Projects Agency funded Bell and Williams Research in 1966 to develop a new turbojet-powered jet belt for the U.S. Army. However, Bell eventually withdrew from the program citing costs; a suitable engine alone was projected to cost approximately $85,000. Undiscouraged, Williams Research promoted the turbofan as an alternative to turbojet technology, convincing the U.S. Marine Corps (USMC) to support development under the Small Tactical Aerial Mobility Platform (STAMP) program.[7] In response, the Marine Corps stipulated a requirement for a "simple and highly reliable" low-altitude platform to complement existing systems, lifting five hundred pounds over nineteen miles in thirty minutes.[8] The platform was to be a conventionally fueled, helicopter-transportable ILD with a mandated "emergency descent capability from low altitude."[9] The ILD was also to be employable and serviceable by tactical units with limited training. Regrettably, tethered tests of the Williams Aerial Systems Platform (WASP) failed to meet design specifications, and in 1973, the program was also canceled. Not to be deterred, the Army pursued another ILD program, the Small Tactical Aerial Reconnaissance System-Visual (STARS-V) program.[10]

In 1977, the STARS-V program funded two simple WASP II prototypes.[11] By 1983, the prototypes did not meet expectations. Unfortunately, the Army's requirement for simplicity of operation encouraged Williams to return to kinesthetic controls for the WASP II, resulting in a "directionally unstable" platform susceptible to wind gusts and requiring "extensive pilot compensation." Though capable of safe flight within the fifteen-foot altitude test limits, the prototypes required fitment of a parachute, were noisy, and were only capable of five minutes of flight.[12] Moreover, they had an anticipated cost of $250,000 per unit.

During the same period, the Piasecki Aircraft Company proposed an alternative approach—one not selected for development at the time but prominent in today's ILD projects. The Piasecki proposal employed "rotating combustion engine-ducted propeller[s]," that is, four ducted fans powered by twin lightweight, low-cost, low-noise, and fuel-efficient engines. Of note, the initial prototypes exceeded the payload, speed, altitude, and duration requirements.[13] However, the Marine Corps rejected the proposal at the time due to the complexity of the controls and aircraft weight.

Nevertheless, the Piasecki proposal anticipated the developments of today's current ILD technology, including the Malloy Aeronautics Tactical Reconnaissance Vehicle (TRV), sponsored by the U.S. Army Research Laboratory, which is currently undergoing testing and evaluation.[14]

Malloy originally developed the TRV as a "hoverbike" or "flying motorbike."[15] During feasibility and development testing, it evolved into an unmanned logistical vehicle known as the Joint Tactical Aerial Resupply Vehicle (JTARV).[16] The JTARV is a battery-powered or gas-generated, electric-controlled, autonomous platform propelled by four rotors with three hundred pounds of payload capacity.[17] The initial idea was for this ILD to be unmanned; however, the potential for a platform capable of lifting several hundred pounds, coupled with an endorsed feasibility concept for a manned TRV, has

showcased a significant advancement in IL technology.[18] The TRV is just one example of rekindled worldwide increase in ILD research and development fostered in large part from the commercial development of unmanned aerial vehicles with payload capacities exceeding the weight of combat-equipped soldiers. For example, Martin Industries is a publicly listed New Zealand company that has produced advanced ducted-fan ILD technology. In an ongoing partnership with the Chinese Kuang Chi Corporation, they have successfully conducted manned and unmanned test flights of an optionally piloted hovering air vehicle, achieving 265 pounds of lift, a speed of sixty miles per hour, and thirty minutes of flight.[19]

Additionally, Dubai funded the Chinese firm EHang Inc. to develop a drone-based aerial public transportation system using a German-manufactured Volocoptor as the basis for an autonomous air taxi system.[20] Dubai police have also undertaken a memorandum of understanding with Russian developer Hoversurf to produce "hoverbikes" for emergency responders.[21] In September 2017, Russian defense manufacturer Rostec announced its "flying car," an electric battery-powered, ducted rotary-fan platform.[22] Also, Boeing has sponsored the GoFly Prize competition to develop "safe, quiet, ultra-compact, near-VTOL [vertical take-off and landing] personal flying devices capable of flying twenty miles while carrying a single person."[23]

Furthermore, JetPack Aviation (JPA) has developed and tested autonomous and manned ILDs including jetpack and stand-on platform models. This U.S.-based company has a Federal Aviation Administration-accepted turbine-powered jetpack in production. It is also designing a ducted-fan model and an aerial resupply system—the Self Hauling Remote Payload Apparatus

The Army's experimental one-man helicopter during a test flight in 1957. The De Lackner DH-4 Heli-Vector was later redesignated and renamed HZ-1 Aerocycle. (Photo courtesy of the U.S. Army Transportation Museum)

(SHRPA)—and are working with the U.S. Special Operations Command (USSOCOM) under a cooperative research and development agreement to develop ILD for special operations applications.[24] However, all of this development has not yet engendered significant military interest, ideas, or funding.

Considering Military Applications of Individual Lift Devices

Legitimate skepticism derived from decades of overpromising and underdelivering IL technology remains an obstacle to a fair assessment of the military applications of ILD. A realistic evaluation, however, should serve to remove continuing doubts. Current commercial developments in IL technology and ILD demonstrate the feasibility of this concept. Therefore, renewed study of the military potential of ILDs (and development of counter-technologies) is warranted. Since reinvigorated commercial investment and interest has propelled ILD from the realm of science fiction to reality, the services and supporting military institutions must set aside historical skepticism and conduct an impartial assessment of the current feasibility of employing IL technology in future warfare. There are four key potential areas to be studied relative to military application in future warfare: enhancing distributed maneuver, undermining an adversary's A2/AD defenses, augmenting autonomous systems, and enhancing the ability to defeat adversaries in complex terrain.

A turbine-powered individual lift device designed to take off vertically and enable a man to fly for thirty minutes at speeds of up to sixty miles per hour has been successfully flown in a series of free flights by military personnel. It is known as the Williams Aerial Systems Platform (WASP II). The WASP II was considered as a candidate individual lift device by the Army and the Infantry Board in the 1980s. (Photo courtesy of the U.S. Army)

Distributed maneuver. ILDs could provide a great competitive advantage to militaries that employ a distributed maneuver concept. The *Marine Corps Operating Concept* advocates distributed maneuver as it "avoid[s] the disadvantages of mass when required and employ[s] the benefits of mass when operationally favorable."[25] The low signature and highly flexible nature of ILDs could allow military forces to aggregate and disaggregate at speeds that far exceed existing capabilities. This versatility could be used by reconnaissance forces to penetrate an enemy's defenses with minimal risk of detection or in advance-force operations to seize initial objectives.[26] Though the force protection limitations of current ILDs prevent their use as main assault forces, such limitations as reduced armor protection do not preclude the use of ILD as a method of clandestinely maneuvering assault forces toward an objective. An example is a movement by ILDs from offshore vessels to intermediate transfer barges or to lightly defended objectives during amphibious operations. Another example is the movement of forces in rear echelon areas or to rendezvous with protected mobility platforms.

Undermining an adversary's A2/AD defenses. The USMC is developing the Expeditionary Advance Base Operations (EABO) concept as part of its efforts to defeat an adversary A2/AD system. The EABO concept aspires to breach an adversary's defenses yet minimize the vulnerability of concentrated forces.[27] The EABO employs "mobile, relatively low-cost capabilities in austere temporary locations forward as integral elements of fleet operations."[28] The realistically anticipated characteristics of ILDs are not only suitable for this approach, but they are also near synonymous. ILDs are highly mobile,

Chris Malloy, founder of Malloy Aeronautics, performs an initial tethered flight test of the original Hoverbike concept in December 2010 in Sydney. The hoverbike can lift up to three hundred pounds and fly at the same speed and height as a typical light helicopter but also operate close to the ground and around people. (Photo courtesy of Malloy Aeronautics)

whether defined as their ability to deploy to an advance base or be employed from one. They are exceptionally low cost in comparison to existing ground and air movement systems. Finally, their ability to operate without an extensive maintenance and supply infrastructure ensures their suitability for working in austere environments. These characteristics should attract military planners to the benefits of IL technology.

Augmenting autonomous systems. IL technology advancements also demonstrate the potential for ILD to augment autonomous systems. Autonomous systems such as drones, pilotless aircraft, and robotic ground clearance devices risk materiel rather than personnel. Instead of artillery or aviation bombardment, an offensive maneuver in future warfare may commence with a massed attack of armed drones employing swarm tactics. Inherently dangerous tasks such as mine clearance operations may well be conducted using mechatronic devices, and routine functions such as route control may be performed by artificially intelligent robots.

Regardless of the advancement of drone and autonomous system technology, the human factor of warfare will remain. Therefore humans, or more accurately soldiers, will still need to maneuver in the operational environment in the successful conduct of warfare. A combination of human performance combined with the advantages of autonomous or robotic systems, known as manned-unmanned teaming, offers unprecedented opportunities for more effectively conducting operations. ILDs can be integrated using this manned-unmanned teaming concept alongside drones or ground clearance robotics. At their broadest, ILDs could be employed as a redundancy option in case of major system or infrastructure collapse. As an example, a small team of operators using ILDs could maneuver with a reduced chance of detection and faster than rotary-wing aircraft, establishing a local network less susceptible to enemy interdiction than remote systems, and control fires from external platforms or a standalone system such as tactical loitering air munitions.

JetPack Aviation's CEO David Mayman demonstrates the JB-9 jetpack in November 2015 in front of the Statue of Liberty in New York City. JetPack Aviation is a leader in the field of individual lift devices. (Photo courtesy of JetPack Aviation)

Enhancing the ability to defeat adversaries in complex terrain. A global trend toward concentrating of populations in urban areas and in littoral regions together with the emergence of megacities presents the final area to be explored for the generic military application of IL technology. ILDs could prove vital in assisting militaries to negotiate complex urban and littoral terrain. For example, they might be employed by a maneuver force to rapidly isolate an objective. The anticipated size of ILDs would enable them to operate in areas of urban clutter too narrow and confined for rotary-wing aircraft or to achieve simultaneous landings in areas unsuitable for larger craft landing zones. Additionally, the expected maneuverability of ILDs would enable horizontal and vertical envelopment inside the urban terrain, maneuvering above and around infrastructure such as high-rise buildings. ILDs might also provide an individual medical evacuation capability that exceeds the reach and speed of other air and ground assets. Similar benefits apply in littoral regions. In addition, ILDs are unrestricted by ground obstacles such as marshlands, tidal variance, and inadequate or absent port facilities. ILDs' ability to rapidly insert and extract is a significant advantage that developers are promoting among other benefits.

Commercial Advances in Individual Lift Devices

Examining employment of ILDs from a commercial perspective can further illuminate the possibilities as well as challenges of incorporating ILDs in warfare. Of the multitude of companies introduced earlier in this article, the Malloy Aeronautics JTARV is a prominent example of advancements in IL technology. Its developers strike a balance between optimism and realism that was not evident in the claims of some earlier-generation developers. Greg Thompson and Mark Butkiewicz from Survice Engineering, a U.S.-based Department of Defense engineering firm and partner with Malloy Aeronautics, identify the JTARV as a complementary asset to existing military capability that increases options for the last leg of the logistics chain. It is not intended to replace the airplane, helicopter, or truck; it provides rather an alternative for "the last mile." Consequently, integration with existing systems to ensure the control of large drones amid other manned and unmanned aircraft is an important issue for current airspace deconfliction that will only increase. While the developers do not foresee technical hurdles to achieving manned flight using the JTARV, they are realistic about the challenges that a transition to an ILD would encounter and thus have been focused on unmanned uses of the platform.[29]

Thompson and Butkiewicz identify two primary constraints to the employment of ILDs: safety and conceptual aversion. The fundamental issue is safety. Fixed-wing aircraft can glide, rotary-wing aircraft can auto-rotate, both allowing an element of survivability during an emergency or crash landing. Anticipating emergency survivability measures, parachutes were included in the WASP II project. However, this was considered an emergency precaution rather than an inherent redundancy measure. Future ILD platforms will likely need a level of emergency measure redundancy to be approved for manned flight.

The second issue is conceptual aversion, primarily by political and military decision-makers. This aversion likely results from the safety and survivability issues already identified, magnified by a credibility gap generated by decades of failed promises rather than proven capabilities. Thompson recognized that, while technology can quickly be developed, implementation will likely be gradual, and the more significant challenge will be a "paradigm shift to overcome inertia."[30]

The chief executive officer of JPA, David Mayman, has demonstrated a cautious and pragmatic optimism regarding the potential for ILDs. His restrained enthusiasm, however, contrasts with the leading-edge progress of JPA jetpacks. As introduced earlier, this company has developed and tested individual lift devices that "fly faster than any helicopter and produce a lower heat signature," and have passed the Federal Aviation Administration certification requirements.[31] The JPA Jetpack, JumpJet, and load-carrying SHRPA models all have multiple redundancy features. These include the ability to maintain flight with one or more motors inoperable and redundant wiring and control signals, thus countering an enduring criticism of ILD safety. Mayman notes that military developers desire ballistic protection, noise reduction, and the possibility of weaponizing ILDs. These are significant aspirations for a capability that has been dismissed for decades.[32]

Examining Strengths, Weaknesses, Opportunities, and Threats

Having provided an overview of some generic military applications for IL technology, it is useful to explore the implications of military employment of ILD using the "SWOT" market analysis framework. SWOT is a strategic business planning tool that examines the strengths, weaknesses, opportunities, and threats to a business or a market. It originates with a Stanford University research project that aimed to identify reasons for corporate failure.[33] Strengths and weaknesses are the positive and negative components that can be controlled or influenced. Opportunities and threats are the positive and negative components that cannot be controlled.

Individual lift device strengths. According to the SWOT framework, primary strengths of IL technology are its flexibility, low signature, and relatively low cost compared to existing aviation platforms. There are many factors that contribute to the flexibility of ILDs. More importantly, ILDs multiply maneuver options by the lowest divisible level: the individual. Additionally, the small size of many ILDs creates force deployment opportunities not feasible with other platforms. ILDs can be bulk transported by air, sea, and ground routes, or self-deploy in autonomous or manned modes. Small ILDs can be retained, air-dropped, or self-deployed as personal extraction devices. They can also be incorporated into protected mobility platforms, either as an aid to maneuver or as an extraction method comparable to a pilot's ejection platform.

ILDs can be used in foreign humanitarian assistance and disaster relief operations, either alone or in conjunction with unmanned logistics platforms. They can be employed from sea-based platforms as part of amphibious operations, from the ground, or, with further development, launched from airborne platforms as a controllable and maneuverable capability. And, the ability to rapidly maneuver and bypass obstacles make ILDs highly suitable for gap crossing operations, either as part of a security force or as the primary method for crossing gaps and obstacles. ILDs also have the advantage of small detection signatures.

The *Marine Corps Operating Concept* identifies the "battle of signatures" as one of five key drivers of change in the future operating environment of 2015–2025.[34] The signature of ILDs seems to fit the Marine Corps stipulation. There is no requirement for ILDs operating by a pilot control to emit electronic signals, they present a small heat signature, and manned platforms can be masked within a fleet of unmanned systems. Additionally, ILD operators can employ terrain masking tactics or disperse in complex terrain to avoid detection. As a result, they are less vulnerable to detection than existing major platforms and therefore create an advantage for militaries that adopt them as part of their capability mix.

ILDs appear to be a significantly more cost-effective capability than existing methods of aerial insertion and extraction. A 2011 proposal by Lt. Col. James Hammett of the Australian Army highlighted the starkness of this cost comparison: the price of one multirole helicopter equated to approximately five hundred Martin Aircraft Jetpacks.[35] This cost comparison would be starker once sustainment and training costs are included in the comparison. The WASP II prototypes developed by the U.S. STARS-V program relied on kinesthetic controls and required skill and extensive pilot training. By contrast, it is relatively inexpensive to teach a soldier to operate a modern ILD. For example, JPA recently trained USSOCOM members to operate their Jetpacks within a week, and one of their models can be operated with even less training.[36] Advances in simulated training will only reduce the costs of money and time. However, a purely numerical analysis does not account for the intangible benefits of rotary-wing aviation, and the most significant of these is reduced risk.

Airworthiness standards have lowered the risk to personnel but also restricted the flexibility of rotary-wing aviation. The often exorbitant and rising cost of air mobility platforms reduces the willingness of commanders to employ these high-value assets in a contested operational environment. Casualty evacuation is an example. The decision to employ casualty evacuation aircraft requires analysis of the risk to aircraft, aircrew, and medical personnel, all three of which are finite and expensive military assets. Casualty evacuation and movement of medical personnel by ILD reduces the risk equation and can enhance casualty evacuation rates. In short, ILDs enhanced with sufficient redundancy measures and protection are risk-worthy and can, therefore, be employed on the battlefield of the future.

Individual lift device weaknesses. That said, ILDs have weaknesses that must be mitigated. Flexible employment options and reduced signature incur a cost, but

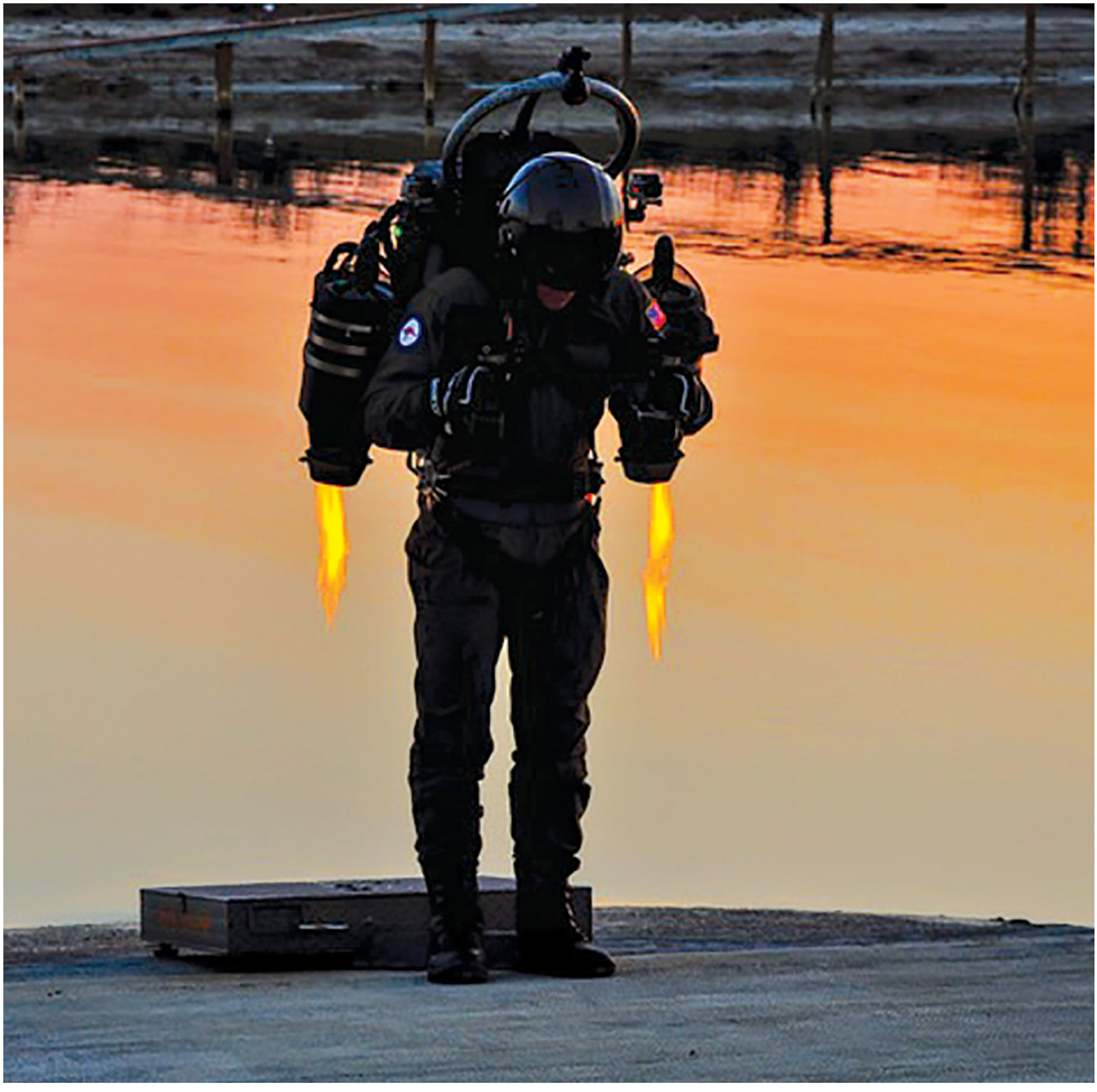
in the case of ILDs, that cost does not appear to be financial. The primary weaknesses of ILDs are reduced force protection, airspace deconfliction, and technical limitations of ILD such as noise levels. Despite the progress of IL technology, these weaknesses are significant and must be mitigated or accepted as risk. The most notable of these risks is force protection. Notably, a decision to adopt ILD could be perceived as contrary to the protected mobility approach. Protected mobility is the safeguarding of personnel en route to and on the battlefield. Commanders accept degraded situational awareness, route limitations, and the concentration of forces to reduce their forces' exposure to the physical dangers of battle. The lift capacity of current ILDs precludes the fitment of armor and other protection that is afforded to rotary-wing aircraft. As a result, ILDs are vulnerable to direct fire. This weakness may be mitigated but is unlikely to be overcome in the near term.

The cover of *Science and Mechanics*, March 1963 edition. (Photo courtesy of Davis Publications)

Yet force protection is more than the ability to withstand direct fire. In fact, a more effective approach to force protection would be to avoid detection where possible. It is in this area that ILD can mitigate their vulnerabilities. Forces inserted via ILD are smaller and less detectable; they are therefore harder to identify, track, and target. Also, ILDs can operate at altitudes beyond the accurate range of small-arms fire and yet able to maneuver in complex terrain, limiting the effectiveness of air-to-air weapons. Despite efforts to mitigate these risks, any ILD concept for employment will be challenged by force protection requirements and the associated trend toward autonomous technology. Although this trend is pervasive, the possibility of a battlefield devoid of humans within the next fifteen years is unlikely.

Another weakness of ILDs is airspace deconfliction. Airspace deconfliction is the coordination of aviation platforms with each other and with above-surface fires. The employment of ILDs will add to the challenges that the proliferation of manned and unmanned aircraft and the increased range of surface-generated fires has already created. Adding ILDs to the airspace will add challenges that are not currently present in the coordination of unmanned aircraft and ground-based fires. While it is true that a soldier or a marine can be trained to operate one of the current model ILDs within a week, it is unrealistic to expect the same competency in airspace awareness of a rated pilot, regardless of additional training time. Methods of airspace coordination must, therefore, be designed to meet this shortfall.

Technical methods may work to mitigate the problem. For example, ILDs could be limited to below a predetermined coordinating altitude or prevented from entering a restricted zone. An alternative method is the integration of a tracking system to control fires away from an ILD force. But, despite mitigation efforts and regardless of whether IL technology is realized, the problem of airspace deconfliction will remain a challenge for the future operational environment.



JetPack Aviation JB-10 jetpack during takeoff February 2017 in Southern California. This jetpack—a backpack style with two turbine engines on either side—has the ability to elevate up to one thousand feet per minute with an endurance level clocked at around five to ten minutes depending on the fuel levels. (Photo courtesy of JetPack Aviation)

Another continuing challenge for IL technology is noise, particularly in turbine-powered ILDs. For example, the Martin Industries Jetpack produces ninety decibels at full throttle.[37] Noise, therefore, becomes a force protection issue for operators and other personnel, including noncombatants, and may limit the flexibility of ILDs in some noncombat roles such as foreign humanitarian assistance/disaster relief. Thus, noise attenuation must be a priority for ILD developers. If further noise reduction is unachievable then noise must be countered, mitigated, or used to advantage. This includes the masking of sound by terrain or route selection, or by the use of noise to induce fear in an adversary. Having considered the weaknesses of IL technology, it is only appropriate to analyze the opportunities.

Individual lift device opportunities. The primary opportunities for ILDs are advances in alternative power technology and integration with surface and subsurface individual mobility platforms. Thrust, or more accurately the ratio between thrust and weight, is the most significant factor in developing IL technology. The examples outlined in this article have each advanced a particular method of power generation such as a turbojet or a turbofan. Some of these efforts have been industry leaders, for example, the Martin Aircraft motor that generates more efficient thrust than the Joint Strike Fighter.[38] Global improvements in battery storage and weight reduction have also created opportunities for electric-powered ILDs. Additionally, engine refinements have increased the lift capacity, flight duration, fuel efficiency, and more importantly, safety of flight. Further advancements will only increase this evolution. An example of this is the MyT (Massive Yet Tiny) engine, a nonreciprocating internal combustion engine that claims significantly higher power to weight output than conventional motors. The MyT offers an additional advantage in its suitability as a single-engine type for a variety of mobility platforms.[39] This level of integration leads to the second opportunity, that of integration with other surface or subsurface mobility platforms.

The opportunities for ILD cannot be considered in isolation. Instead, they should be considered as part of a broader approach to mobility. Current military mobility platforms are mainly restricted to a singular domain. Planes fly in the air, armored vehicles maneuver on land, and naval vessels navigate the world's waters. The USMC Landing Craft Air Cushion is an example of technology that has breached these barriers. The USMC MV-22 Osprey also extends the marines operational reach by combining the benefits of vertical lift and forward propulsion. Pioneering individual mobility solutions are not as revolutionary; however, Gibbs Sports Amphibians manufacture an exemplar product that could be employed to enable personal mobility on sea and land. The Quadski is a single platform with speeds capable of 45 mph on water and land.[40] An opportunity exists for ILD developers to integrate platforms that enable maneuver between and within these domains and therefore create a competitive advantage over adversaries. An example is the combination of the aerial insertion capability of an ILD with the ground maneuver capability of a tracked Segway-type vehicle.[41] A more ambitious aim would be the integration of exoskeletons.

Development of an exoskeleton with integrated lift capacity would revolutionize individual mobility on the battlefield. An exoskeleton is a physical structure that protects and enhances the capabilities of the soldier or marine. An exoskeleton could either contain IL technology or be capable or integrating with an ILD. By maintaining a separate, yet integrated ILD, the operator could maneuver on the surface and employ the ILD as organic aerial observation, fire support, and lift capability. Technology to realize this capability, including artificial intelligence, autonomous flight control, and as outlined, power generation technology, is progressing independently. For the last component, it is realistic to assume that advancements in power generation will increase the lift capacity of existing ILDs to a stage where they are capable of lifting an exoskeleton. Current developments in turbine technology with the potential to lift seven hundred pounds advances this science-fiction image toward reality.[42] Such improvements would not only be the realization of individual mobility but also of protected and enhanced individual mobility.

Threats to individual lift devices. Though the opportunities for military use of ILDs are momentous, the threats to military adoption of IL technology are significant and enduring. Threats to military adoption of IL technology include organizational and societal risk tolerance and the impact of adversary development of counter-ILD technology. Of these, the acceptance of risk is the most important. National and military leaders employ their limited military capabilities judiciously, and of these limited capabilities, it is the human resource that is the most valuable. Therefore, it would be unrealistic and unwise to expect leaders to employ their scarce resource in untested or high-risk technology; like the airplane before World War I.

The threat to military adoption of ILD is the entrenched political and military aversion to risking personnel as opposed to materiel. Consequently restricted by the paradigm of requiring protected mobility together with memories of IL technology failures in the past impede a fair assessment of ILD potential. If ILDs remain limited to private and commercial use, developers have little incentive to develop counter-technologies aside from meeting regulatory and public security requirements. The only credible counteraction to this

threat is the impartial demonstration and testing of ILD capability and potential, in which defense scientific organizations must play a crucial role. Defense scientists are well placed to test the claims of ILD developers and promote the significant industry achievements that have occurred since the days of dangerous and ineffective hydrogen peroxide jet belts.

An adversary's development of counter-ILD technology also poses a credible threat that may arise out of counter-drone or antiaircraft technology. Examples of counter-ILD technologies include directed-energy and direct-fire weapons, more sophisticated landing area denial measures, and electronic attack. Militaries that adopt ILDs must therefore concurrently develop methods to counter adversarial capabilities.

Keeping Up to Prevent Catching Up

As with other technology, the benefit of early adoption is often associated with an enduring competitive advantage. Global developers have advanced IL technology because the commercial potential is apparent. For example, Dubai's plans for emergency and passenger transport using "hoverbikes" and autonomous aviation platforms are enabled by Russian commercial developers. Additionally, the revolutionary achievements of New Zealand-based Martin Industries are now being jointly developed with a Chinese organization. Ominously, military competitors to the United States and its allies are pursuing these technologies including the development of a Russian "hoverbike."

The U.S. Army Research Laboratory's support for the Malloy Aeronautics JTARV and the USSOCOM agreements with JPA are positive steps toward recognizing the potential for ILDs, but the tempo and scope of these projects must be expanded if these technologies are to be fully realized.

The USMC STAMP program is a model for military planners and defense scientists to emulate. The Marines established a vision for military ILDs, engaged and funded a leading commercial firm to develop a prototype, and engaged with other services for collaborative research. The difference for today's IL champion is that the technology now matches the vision and the only way is up.

Conclusion

Significant advances in IL technology present an opportunity to integrate ILDs into future military capability. ILDs have the potential to enhance a military force's ability to conduct distributed maneuver, undermine adversary A2/AD defenses, augment autonomous systems, and defeat adversaries in complex terrain. These are significant potential benefits that must be considered impartially as military priorities are evaluated. With regard to the development of ILD, organizational barriers related to risk tolerance also must be overcome by reframing the potential of ILDs. The potential benefits resulting from ILD strengths and opportunities are sufficient to warrant further examination of their military potential and investment in their development. ■

Notes

1. Steve Lehto, *The Great American Jet Pack: The Quest for the Ultimate Individual Lift Device* (Chicago: Chicago Review Press, 2013), 176.

2. Ibid., 3, 156–63.

3. Bernard Lindenbaum, *V/STOL Concepts and Developed Aircraft: Vol. I, A Historical Report (1940-1986)* (Fort Belvoir, VA: Defense Technical Information Center, 1986), 2-1, accessed 12 July 2018, http://www.dtic.mil/dtic/tr/fulltext/u2/a175379.pdf.

4. Ibid., 2-12–2-28.

5. Lehto, *The Great American Jet Pack,* 75–92.

6. Lindenbaum, *V/STOL Concepts and Developed Aircraft*, 2-46–2-61. Although the noise of the Sud *Ludion* was considerable, it was significantly less than the Bell model concurrently under development.

7. Ibid., 3-31–3-38. The U.S. Marines' (USMC) concept for employment indicated it should fly "among the tree trunks, beneath the forest canopy, taking advantage of the cover and concealment afforded by the natural environment—actually pushing aside or penetrating frangible vegetation, landing and taking off in spaces too small to accommodate a helicopter even the in the absence of barriers to access." The USMC Small Tactical Air Mobility Platform (STAMP) program operated on a shoestring budget, allocated only $2.18 million from 1970–74 to design, develop, and deliver a tested prototype. Its notable difference from the subsequent U.S. Army Small Tactical Aerial Reconnaissance System-Visual (STARS-V) program was that it was required to lift two people.

8. Ibid., 3-14–3-30.

9. Ibid., 3-38.

10. Ibid., 3-38–3-40.

11. Ibid. The U.S. Army leveraged the Williams Aerial Systems Platform (WASP) research already conducted by Williams International under the STAMP program to conduct the STARS-V program with an equally small $2.54 million budget. The Army program requirement under STARS-V was articulated as "We

are not looking for a weapons carrier or a load carrying device. We are simply looking for a one-man conveyance, without rotor blades, which can move safely in constricted spaces, can communicate by means of FM radio and can be operated by essentially untrained or quickly trained, run-of-the-mill, unit personnel. If it requires a certified pilot or long training, we are not interested. We would see company executive officers, Battalion S-3, Battalion and Brigade Liaison Officers using these devices for coordination, liaison, battle position reconnaissance and troop leading."

12. Ibid., 3-39–3-58.

13. Ibid., 3-101–3-114.

14. Mark Prigg, "US Soldiers Could Soon Travel like Stormtroopers: Military Bosses Developing Star Wars 'Hoverbikes' for the Battlefield," *Daily Mail* (website), last modified 15 June 2015, accessed 8 June 2018, http://www.dailymail.co.uk/sciencetech/article-3125412/US-soldiers-soon-travel-like-storm-troopers-Military-bosses-developing-Star-Wars-hoverbikes-soldiers.html.

15. "Buzzcraft," *Army AL&T Magazine,* October-December 2015, 203–4.

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17. Douglas Ernst, "Army 'Hoverbike' Prototype with 300-Pound Payload Capacity Passes Key Test," *The Washington Times* (website), 18 January 2017, accessed 8 June 2018, http://www.washingtontimes.com/news/2017/jan/18/army-hoverbike-prototype-with-300-pound-payload-ca/.

18. David McNally, "Army Flies 'Hoverbike' Prototype," U.S. Army, 17 January 2017, accessed 8 June 2018, https://www.army.mil/article/180682.

19. "Specialists," Martin Jetpack, accessed 8 June 2018, http://www.martinjetpack.com/sales/manned-jetpack0.html. The flight time is limited by Federal Aviation Authority fuel capacity regulations.

20. Sarah Clemence, "Dubai Stages First Public Test of Drone Taxis," Bloomberg, 26 September 2017, accessed 12 June 2018, https://www.bloomberg.com/news/articles/2017-09-26/dubai-stages-first-public-test-of-volocoptor-drone-taxi.

21. "Dubai Police Announce Electric Star Wars-style Hoverbikes for Officers at Gitex Tech Conference," Australian Broadcasting Corporation, 14 October 2017, accessed 8 June 2018, http://mobile.abc.net.au/news/2017-10-14/dubai-police-announce-star-wars-style-hoverbikes-for-officers/9049860?pfmredir=sm. "The Hoversurf Scorpion … Russian-made craft can fly at a height of five meters and carry a police officer over congested traffic in emergency situations … 'The bike can also fly without a passenger and can go up to six kilometers ….' 'It can fly for 25 minutes and can carry up to 300kg of weight at a speed of 70kph.'"

22. Kyle Mizokami, "Kalashnikov Unveils Flying 'Hovercycle,'" *Popular Mechanics* (website), 26 September 2017, accessed 8 June 2018, http://www.popularmechanics.com/military/aviation/a28397/kalashnikov-hovercycle/?src=socialflowTW.

23. "How It Works," GoFly Competition, accessed 8 June 2018, http://goflyprize.com/how-it-works/. "VTOL" is vertical take-off and landing, a capability employed by rotary-wing and some fixed-wing aviation platforms.

24. David Mayman (chief executive officer, JetPack Aviation), interview by author, 11 December 2017; JetPack Aviation, accessed 8 June 2018, http://www.jetpackaviation.com/military/.

25. U.S. Marine Corps, *Marine Corps Operating Concept* (Washington, DC: Department of the Navy, September 2016), 16.

26. James Hammett (colonel, Australian Army), interview by author, 3 November 2017; Lt. Col. James Hammett, "Starship Troopers – A Reality?" (unpublished manuscript, 2012), Microsoft Word file.

27. Matthew Clapperton, "USMC Outlines 'Inside Force' Concept," Jane's 360, 26 October 2017, accessed 8 June 2018, http://www.janes.com/article/75228/usmc-outlines-inside-force-concept (subscription required).

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31. Mayman, interview.

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33. Mike Morrison, "SWOT Analysis (TOWS Matrix) Made Simple," RapidBI (blog), 20 April 2016, accessed 8 June 2018 https://rapidbi.com/swotanalysis/.

34. U.S. Marine Corps, *Marine Corps Operating Concept*, 5.

35. Hammett, "Starship Troopers – A Reality?" Hammett approximated the cost of one MRH-90 at AUD$51 million and the Martin Industries Jetpack was estimated at under AUD$100,000.

36. Mayman, interview.

37. Hammett, interview.

38. Ibid. The two thrust fans of the 2011 Martin Industries Jetpack achieved 92 percent efficiency, compared to the Joint Strike Fighter at 82 percent.

39. Lt. Col. Brett Laboo, "The Massive Yet-Tiny Engine: A Comparison of OEM Claims" (Australian Army Land Warfare Conference, Melbourne, Australia, October 2012), https://pesn.com/archive/2012/11/21/9602227_Australian_DOD_Comparative_Analysis_Places_MYT_Engine_in_Top_Position/report.htm (site unavailable).

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41. Segway, accessed 8 June 2018, http://www.segway.com/.

42. Mayman, interview.

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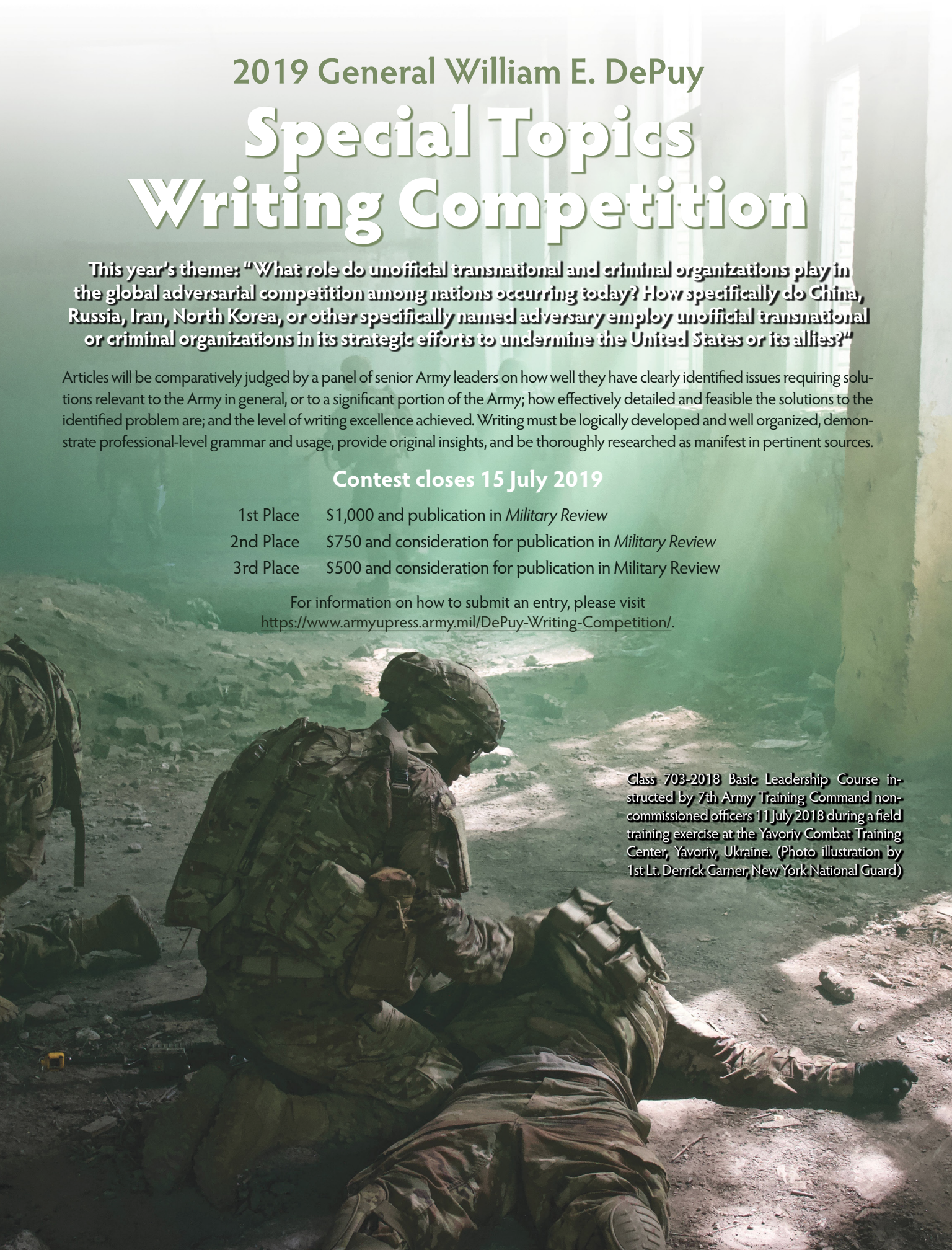
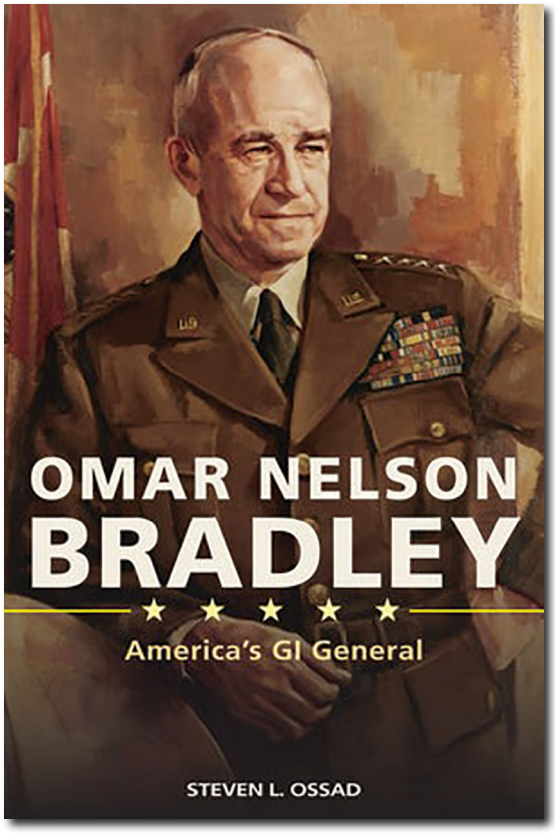


Class 703-2018 Basic Leadership Course instructed by 7th Army Training Command noncommissioned officers 11 July 2018 during a field training exercise at the Yavoriv Combat Training Center, Yavoriv, Ukraine. (Photo illustration by 1st Lt. Derrick Garner, New York National Guard)

REVIEW ESSAY

Omar Nelson Bradley

America's GI General, 1893–1981



Steven L. Ossad,
University of Missouri Press,
Columbia, Missouri, 2017, 492 pages

Lt. Col. Rick Baillergeon, U.S. Army, Retired

"Always examined in comparison to fascinating figures above and below him, Omar Bradley has rarely been seen as interesting, compelling, or inherently valuable for study. Those who have written about him have strained to find synonyms for *quiet, shy, modest, steady, humble,* and *soft-spoken,* without resorting to the use of the words *dull, colorless, or slow*."

The above passage is taken from Steven L. Ossad's superb biography *Omar Nelson Bradley: America's GI General, 1893–1981*. For many, Bradley is clearly known for his World War II leadership and service, although he has been overshadowed over the years by his contemporaries such as Dwight Eisenhower and George Patton. Ossad strives to bring Bradley back into the public consciousness with a book that readers will find highly readable and informative.

Before delving into the many virtues of Ossad's book, it is worthy to address why historians have generally strayed from Bradley as a biographical subject. First, as the review's initial quote highlights, historians do not view Bradley as a particularly intriguing or worthwhile subject to devote a book to. Consequently, many are more apt to put another Patton or Eisenhower biography on the market. Second, amongst most historians, there is a belief that Bradley's own personal memoirs (e.g., *A Soldier's Story* and *A General's Life*) have been more than sufficient to meet the public's interest over the years. Fortunately for readers, Ossad did not fall into any of the above categories.

Lt. Col Rick Baillergeon, U.S. Army, retired, is a faculty member in the Department of Army Tactics at the U.S. Army Command and General Staff College at Fort Leavenworth, Kansas.

In analyzing this book, it is appropriate to begin with what the biography is not. Earlier biographies or books focus almost entirely on his World War II years. Ossad's biography does not fit into this category. This is a book that seeks to provide a retrospective of Bradley's entire life.

Within this reflection, Ossad is detailed and comprehensive. He sets the conditions by allocating the first part of his book to a section titled, "Becoming a Commander." In this segment, he concisely addresses Bradley's childhood, his West Point years, and his military assignments that groomed him for the challenges he would later face. I found this section extremely beneficial, and it provided an enlightening perspective on how and why Bradley developed into the senior leader that he became.

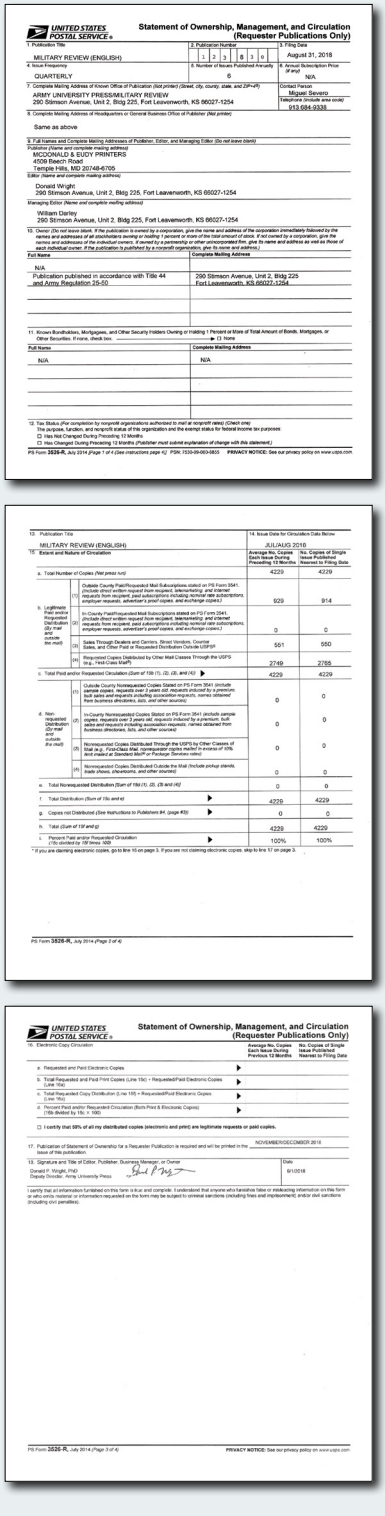
Ossad's treatment of Bradley's World War II years is outstanding. The only biography I find comparable is Jim DeFelice's outstanding book, *General at War,* which keyed specifically on this period. To achieve this quality, the author has conducted exhaustive research to provide a ground-truth perspective of the key events and decisions Bradley was part of. In seeking this fidelity, Ossad compares the reflections of Bradley, others involved, and those of other historians. This section is particularly useful to anyone interested in the strategic and operational aspects of World War II.

Ossad devotes the final section to Bradley's postwar years. This is unquestionably a portion of his life that is overlooked. Unfortunately, the author falls a bit short on his overall treatment of this period of Bradley's life. He dedicates the preponderance of this study on the Bradley years from the end of the war until his retirement from active duty in August 1953. In particular, he appropriately focuses on Bradley's tenures as head of the Veterans Administration and the chairman of the Joint Chiefs of Staff. However, the book addresses the last twenty-eight years of Bradley's life in only a few pages. It left me wanting a bit more on Bradley's waning years, but overall, it was a very informative section.

This is not a biography in which the author is overt in his praise or criticism of his subject, although it is clear that Ossad is an admirer of Bradley; he has crafted a balanced approach to his study. Throughout the book, he highlights the strengths of Bradley on and off the battlefield. Just as importantly, the author does not hesitate to discuss any personal shortcomings he believes Bradley possessed or mistakes Bradley made on the battlefield. Personally, it was refreshing to read a biography that sought objectivity.

There are several things that this biography is. To begin, this is a book that is one of the most readable volumes I've found in many years. Ossad achieves this readability principally through two factors. The first is that he writes in an incredibly conversant style that engages a reader throughout the biography. The second factor is the organization of the book. Ossad utilizes numerous subchapters within the biography that keep readers focused and aid in understanding.

This is a biography in which the author has made excellent choices in the "extras" he has included. These include a chronology of Bradley's life, and a glossary of terms and a list of abbreviations utilized in the book. Most importantly, he has inserted ten superbly crafted maps and thirty-two photos throughout the book. In total, these supplements greatly assist in clarity and work well in tandem with Ossad's words.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Ossad states in his introduction, "If it succeeds, this biography will help take Bradley from obscurity and expose him once more to critical light, where his considerable achievements—and his glaring shortcomings—can be recounted, examined, and evaluated on their own terms." I believe the author has clearly achieved this objective. He has crafted a biography that superbly reintroduces Omar Bradley to the public. They, in turn, will find that Bradley was indeed an interesting and compelling figure and is truly inherently valuable in study. ■

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75th Ranger Regiment

Pauline Conner of Clinton County, Kentucky, accepted the Medal of Honor from Pres. Donald Trump on behalf of her late husband, 1st Lt. Garlin Murl Conner, 26 June 2018 at a White House ceremony in Washington, D.C. Conner was awarded the medal for exceptional valor during combat on 24 January 1945 near the town of Houssen, France, while serving with 3rd Battalion, 7th Infantry Regiment, 3rd Infantry Division.

During the ceremony, the president said, "Today we pay tribute to this Kentucky farm boy who stared down evil with the strength of a warrior and the heart of a true hero." Trump said Conner "embodied the pure patriotic love that builds and sustains a nation."

Before the events of 24 January, Conner had already fought during the Battle of Anzio and the invasion of North Africa, where he had been wounded several times and earned a battlefield commission. He had been hospitalized with a bullet wound to his hip and could have been sent home. However, although still recovering, he left the hospital to rejoin his unit in eastern France as the battalion intelligence officer.

Shortly thereafter, his unit became engaged in battle with a significant German force of six hundred infantry troops supported by six Panzer VI Tiger heavy tanks and tank destroyers. Recognizing the critical danger to his unit of being overrun, he volunteered to leave the 3rd Battalion command post to find a position where he could direct artillery fire at the approaching enemy. He ran four hundred yards under fire, unreeling telephone wire as he went to communicate with his headquarters, to a position in a shallow ditch thirty yards in front of the defending U.S. forces. Although partially exposed, he directed U.S. artillery at the Germans from that position for three hours. At one point, the German infantry advanced to within five yards of Conner's position, but when they attempted to overrun the Americans, Conner heroically called artillery fire on his own position and thwarted the German attack. In the end, fifty Germans were killed, 150 were wounded, and all six of the German tanks were destroyed. Conner's actions prevented what might have been devastating casualties to his unit.

The day following the Medal of Honor presentation, Conner was inducted into the Pentagon's Hall of Heroes in a second ceremony hosted by Deputy Secretary of Defense Patrick M. Shanahan and Secretary of the Army Mark T. Esper at the Pentagon. The Hall of Heroes contains all the names of the nearly 3,500 Medal of Honor recipients.

Read more about 1st Lt. Garlin M. Conner on the Army's Medal of Honor website at https://www.army.mil/medalofhonor/conner/.

Graphic courtesy of the U.S. Army.