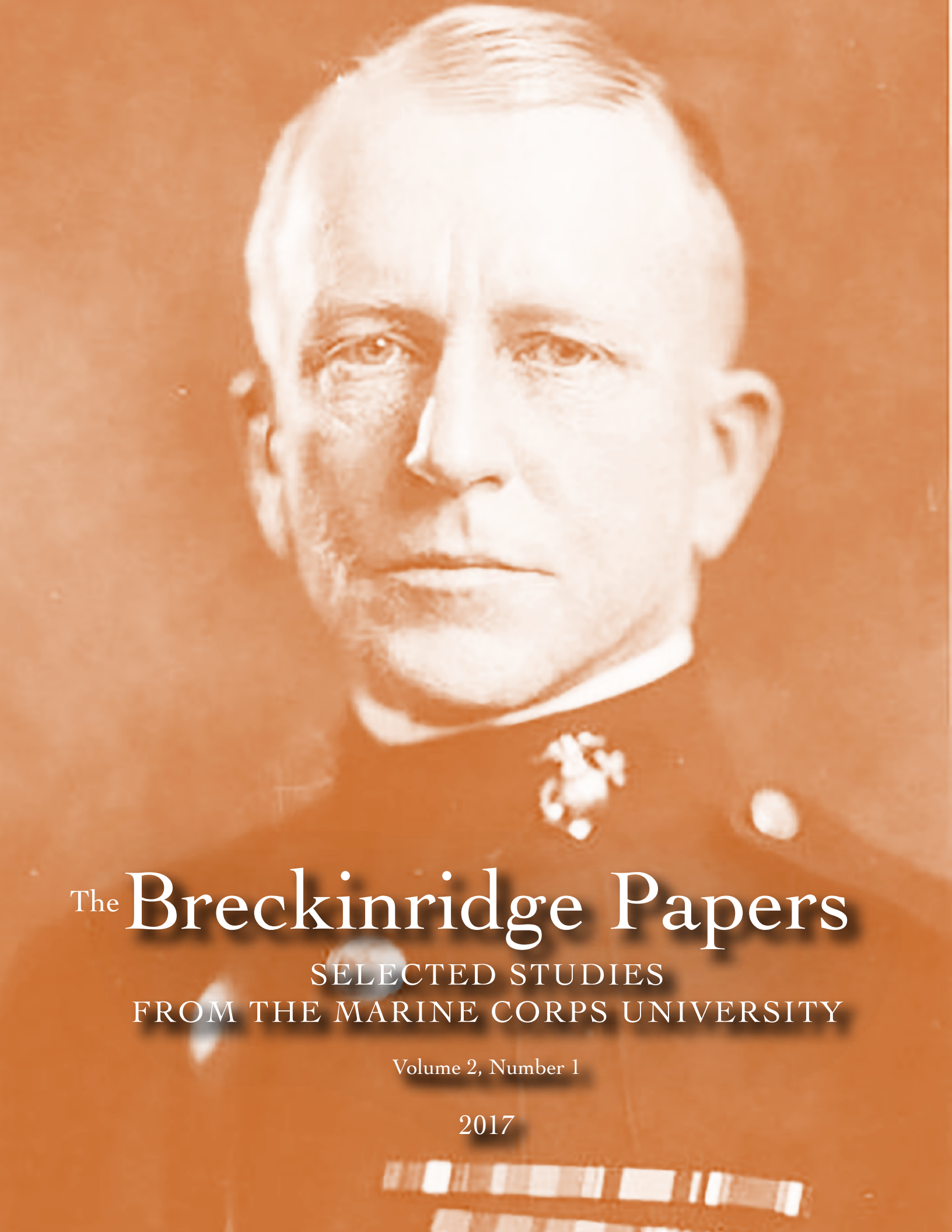

The Breckinridge Papers

SELECTED STUDIES
FROM THE MARINE CORPS UNIVERSITY

Volume 2, Number 1





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Contents

President's Foreword	v
Introduction: Embracing the Breckinridge Call <i>Jeb Nadaner, PhD</i>	1
STRATEGY, PLANNING, AND PARTNERS	
The New European Global Strategy: Process, Reasons, and Major Implications <i>Major Ivan Falasca, ITA Army, Marine Force</i>	7
Getting in the Game: Overcoming Cultural Biases in the Mission Partner Environment <i>Major Joshua N. Nunn, USMC</i>	21
Planning for War: Why the Australian Army Should Reenergize Mobilization Planning <i>Major Matthew P. Dirago, Australian Army</i>	31
Walking the Tightrope: An Evaluation of Civil-Military Relations Today <i>Major James W. Lucas, USA</i>	55
AIR, LAND, AND SEA	
Army Aviation Restructure Initiative: Driving Aviation Leaders to Expand Aircraft Roles and Responsibilities <i>Major Sean J. R. Stapler, USA</i>	76
Sustaining the Super Stallion: The Use of Performance-Based Logistics in the CH-53E Program <i>Major Matthew Dineen, USMC</i>	95
Marine Corps Field Artillery: A Path to Renewing Relevance in Twenty-First Century Warfare <i>Major Jonathan M. Secor, USMC</i>	112
Beyond Carriers: Tomorrow's Seapower Today—Expanding Presence, Increasing Capability, More Fully Integrating the Joint Naval Force, and Modernizing the Fleet Portfolio <i>Lieutenant Colonel Mark Thieme, USMC</i>	133

INNOVATIONS IN INTELLIGENCE	
Artificial Intelligence: Perspectives on Risks and Rewards for “AI” Technology Adoption <i>Major Scott A. Humr, USMC</i>	142
Fighting for Time: Military Intelligence and the Delivery of “Decision Advantage” <i>Major John Minear, USAF</i>	160
Gaining Actionable Human Intelligence: A Military and Law Enforcement Approach to Interrogations Utilizing a Rapport-based, Empathy-driven, and Noncoercive Method <i>Supervisory Special Agent Patrick J. Gallop Jr., Federal Bureau of Investigation</i>	181
ARCTIC POSSIBILITIES	
A Cold Hard Fight: The Marine Corps Can Be a Force Multiplier in Arctic Alaska <i>Major Daniel M. Murphy, USMC, and Major Kathryn E. Wagner, USMC</i>	196
Arctic Opening: U.S. Joint Force Capabilities in 2025 <i>Major Jonathan R. Martin, USA</i>	207
Arctic Readiness: Key Changes for Twenty-First Century Naval Expeditionary Warfare <i>Lieutenant Commander Nicholas J. Oldfield, USN</i>	219
CHALLENGES OF TODAY AND TOMORROW	
Brothers in Arms: The Role of Belongingness in Military Suicide Prevention <i>Major William R. Norcott, Royal Marines</i>	236
Irregular Warfare in Homeland Defense: Do the Small States Need Special Operations Forces Reserve? <i>Major Attila Krezinger, Hungarian Defence Forces</i>	259
Violent Video Games and the Marine Corps: Some Perspectives <i>Sergeant Major Christopher J. Lillie, USMC</i>	272

President's Foreword

It is with great pleasure that we bring before you this second volume of *The Breckinridge Papers: Selected Studies from the Marine Corps University*. The purpose of *The Breckinridge Papers* is to introduce new ideas into professional military and academic discourse. An essay by Jeffrey Nadaner, Marine Corps University's Donald L. Bren Chair of Creative Problem Solving and director of the Brute Krulak Center for Innovation and Creativity, introduces these papers written by soldiers, sailors, airmen, and Marines, as well as Australian, British, Hungarian, and Italian officers, and a supervisory special agent from the Federal Bureau of Investigation. Each of these studies, in its own way, embodies Carl von Clausewitz's well-known axiom: the nature of war is unchanging, but its character is in constant flux. The capacity to anticipate and deal with constant flux, often the test of victory or defeat in war, lies at the essence of the military art. And so, as our nation confronts a world of increasingly complex threats, enemies, and environments, Marine Corps University offers *The Breckinridge Papers* as a forum where students from the Marine Corps War College, the School of Advanced Warfighting, the Command and Staff College, the Expeditionary Warfare School, and the College of Enlisted Military Education can engage in professional dialogue across the nation's defense community and with friends and allies abroad. This annual publication builds upon the university's strong commitment—recognized in the Office of Professional Military Education's 2006 Study and Findings (a.k.a. Wilhelm Study), as well as in others more recently—to developing creativity and critical thinking in our students, and will serve to advance those traits for decades to come.

Lieutenant General James C. Breckinridge as the paper's namesake represents a distinct and fitting choice for the title. A product of the Marine Corps' growing commitment to professional military education, Breckinridge served as commanding general of Marine Corps Schools (predecessor to the president of Marine Corps University) twice in the 1930s. In this role, he presided over preparation and eventual publication of the Marine Corps' first-ever doctrinal statements, the most renowned of which are the *Tentative Manual for Landing Operations* (1935), the *Small Wars Manual* (1940), and the *Tentative Manual for Defense of Advanced Bases* (1936). The resulting doctrinal and organizational breakthroughs enabled the successful amphibious campaigns of the Pacific war. Midlevel officers participated in, thought about, and wrote on these innovations in warfighting, often while attending the schools that became the Expeditionary Warfare School and the Command and Staff College. Their writings filled the pages of the *Marine Corps Gazette* and *Naval Institute Proceedings*. Today, as then, sharing such critical thinking and creativity improves both the individual author and the Service as a whole.

This volume comprises offerings that received or were nominated for awards during the past two academic years. An editorial board of university faculty oversaw the process of selecting the

most outstanding selections for this publication in an organic continuation of the annual award process conducted by each individual school. Marine Corps University will continue this selection method in future academic years, assembling the most provocative, thoughtful, and relevant papers by university award recipients and nominees for the editorial board's consideration.

The Breckinridge Papers: Selected Studies from the Marine Corps University celebrates and continues the inquisitive spirit of such professional scholars as Lieutenant General Breckinridge.

Semper Fidelis,
Brigadier General William J. Bowers
President, Marine Corps University

Introduction

Embracing the Breckinridge Call

Jeb Nadaner, PhD¹

As our problems are as unique as they are unexpected their solutions cannot be inelastically anticipated,” wrote the commander of Marine Corps Schools, James Carson Breckinridge, in 1929 to shape the future education of military officers. “No matter what precedents there may be . . . we always need to apply original analysis to every situation.”² This volume contains essays of commissioned and noncommissioned officers not only from the Marine Corps but also the other military Services and those of our allies and partners who, while pursuing their education at Marine Corps University, embraced the Breckinridge call.³ They explore future warfighting needs, issues, and changes.

Air Force Major John Minear pierces the notion that expanding ubiquitous sensing capabilities will give us “God’s eye” of the world. In keeping with Carl von Clausewitz’s axiom that the character of war changes but its nature does not, Minear notes that war’s nature inherently involves enemies hiding their capabilities, stratagems, and intent. Whatever gifts of sight new technologies afford may be counterbalanced by the gifts of deception that those very same technologies give our enemies. Unimagined Trojan horses beckon to fool our generation and the next.

Marine Corps Major Jonathan M. Secor, focusing on field artillery, draws upon insights that so much of the action in twenty-first century “fires” will not be in the firing itself or even the target acquisition, but in the precursor: perceiving the target in the first place, especially in an atmosphere of deception and clutter. He conceives of information operations and *fires* as inextricably embrangled and, hence, unified if *fires* are to be intelligently pursued.

Marine Corps Major Matthew Dineen calls for the Corps to draw even more out of private-public sector *performance-based logistics* to sustain the Sikorsky CH-53 Super Stallion helicopter beyond its design life. Army Major Sean J. R. Stapler pushes for fresh concepts of operation to mitigate a long-term shortage of helicopters in U.S. Army aviation.

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² Col J. C. Breckinridge, USMC, “Some Thoughts on Service Schools,” *Marine Corps Gazette* 14, no. 4 (December 1929): 230–32. “Our work is such that we cannot get as deeply in the rut of habit as any who have less diversity in their daily and yearly activities. . . . We need to guard against the complaisant acceptance of theories.” “Clumsy originality,” like that of Russian Marshall Mikhail Kutusoff in 1812, beat Napoléon Bonaparte, who had “stopped thinking” anew.

³ See, for example, essays from Maj Attila Krezinger, Hungarian Defense Forces, *Irregular Warfare in Homeland Defense: Do the Small States Need Special Operations Forces Reserve?*, 258; Maj Ivan Falasca, *The New European Global Strategy: Process, Reasons, and Major Implications*, 7.

Heightening global temperatures and the Arctic opening create an additional area of operations for an already stretched U.S. military. In separate papers, Navy Lieutenant Commander Nicholas J. Oldfield, Marine Majors Daniel M. Murphy and Katlana E. Wagner, and Army Major Jonathan R. Martin range over the dilemma from the stakes to the possible solutions—from designing and practicing coalition operations to developing special purpose task-organized MAGTFs.

During the last hundred years, the United States rarely has fought alone against an enemy; rather, we fight with allies and partners. The benefits have been many, and the command and control challenges are often overwhelming. Marine Major Joshua N. Nunn calls for harnessing new and potentially cheaper technologies originating in the commercial sector to assemble rapid, combined command and control systems. The first step, nonetheless, is not to procure new technologies, but to overcome yesterday's concepts and tactics, techniques, and procedures (TTPs). New concepts and enterprise approaches should determine which technologies to buy and how to employ them. Such systems need to be, first, quickly deployable for multinational operations in which partners can be pulled in and out and, second, readily adaptable to mission shifts. In my view, they also need a third characteristic for survivability and utility in a future of incessant and ingenious information warfare—a form of preplanned obsolescence/built-in evolution—that is frequently changing to avoid enemy penetration and disruption, yet all the while maintaining continuous command and control over entire coalitions.

Tackling artificial intelligence (AI), Marine Major Scott A. Humr argues that it should, first, improve the military's ability to sift data, model game, predict, and cut personnel costs; second, further develop operational concepts; and that, third, it is alarmingly vulnerable to disruption and, even worse, deception whereby a soldier may think they are being served by AI, when enemy information operations are duping them. Fourth, Humr exceptionally spotlights that AI could threaten the character of the Corps and the other military Services. While harnessing AI, he maintains that we need to “guard against . . . cognitive complacency.”⁴

That insight would win accolades from Lieutenant General Victor “Brute” Krulak, the greatest serial technology pioneer in the Corps's history, playing oversized roles in the U.S. military adoption of the Higgins landing craft and the helicopter. Krulak stressed that before technology, concepts, and training comes the *ethos*—self-reliance, initiative, and integrity bound together—hence, his founding principle, as expressed in his remarkable 1957 letter to Commandant Randolph M. Pate, of the necessity of Marines being, first and foremost, “self-reliant stable citizens—citizens into whose hands the nations affairs may safely be entrusted.”⁵

Also tending to the Corps's ethos is Marine Sergeant Major Christopher J. Lillie, who insightfully contrasts the video games that the U.S. military uses for combat training with the commercially available violent video games that have become a staple of American civil society. Both types are considered video games, but with less in common than meets the eye. They stand worlds apart in ethics, purpose, and education. Civilian video games tend not only to give an entirely erroneous view of combat, but also one that violates the laws of armed conflict. If anything is sacred in the U.S. military, it is those laws to which all soldiers, sailors, and airmen and women are educated repeatedly, trained to repeatedly, and held accountable to repeatedly throughout their careers. Maintaining the ethos of the Corps and the other military Services requires disabusing recruits of false and unethical ideas about warfare that they may have imbibed through years of video game play.

⁴ Maj Scott A. Humr, USMC, *Artificial Intelligence: Perspectives on Risks and Rewards for “AI” Technology Adoption*, 141.

⁵ LtGen Victor H. Krulak, USMC (Ret), *First to Fight: An Inside View of the U.S. Marine Corps* (Annapolis: Naval Institute Press, 1999), xv.

Bringing another angle to the all-consequential ethos of the Corps, Royal Marine Major William R. Norcott attends to servicemember suicide. The very comradery, unity, and adherence to mutual obligation infusing the Corps comes with, as in all things noble, a potential unintended downside: should a Marine feel, rightly or wrongly, they have inadvertently let down brothers and sisters in arms, guilt, shame, or depression may follow and end in suicidal thoughts. Drawing on social science research, Major Norcott calls for training to heighten awareness of signs of withdrawal and remorse. In our educational curricula, we also might consider introducing Sophocles' short play *Ajax*. There, Sophocles, who knew battle, surpasses all other playwrights, psychologists, and psychiatrists who have come since to explain the embarrassment, rage, and destructiveness that war can stir in a soldier striving to be ethical and loyal.

These papers contain insights aplenty; a new academic year with new students is here. What subjects next need addressing by our military officers at the Marine Corps University? If a purpose of contemplating future warfare is to constrain the devil of surprise, how might we try to outfox that foe? In short, what subjects should we write about in the future? Indeed, are we writing about the right subjects?

An argument can be made that we spend too much of our military studies in our *comfort zones*—thinking about future war where indications are already heavily manifest as to where and how we might fight. There, we get entrapped in what social psychologists call *majority, exposure, and confirmation biases*. These, by definition, do not ready the mind for uncertainty, surprise, and adaptation.

Perhaps we might take our cue from Lieutenant General Victor Krulak and his son, the 31st Commandant, General Charles C. Krulak, each of whom relentlessly monitored what today is known as the Edward N. Lorenz *butterfly effect*: that something seemingly insignificant and distant may contribute, against the odds, to a chain of causality that later gives rise to a matter that is mammoth and close. The flap of a butterfly's wings sets in motion or contributes to a multitude of causes that results months later in a storm in another hemisphere. The world works not just according to our preferred combinations of linear causality, but more so to nonlinear complex causality conceptualized by Lorenz. The Krulaks understood the omnipresence of this deeper causality. For example, in their thinking, the personal misbehavior of a solitary Marine in Seoul, South Korea, may rupture the U.S. maritime Rim of the Pacific alliance, not to mention the bond between the American people and the Corps.⁶

That so many of us continue to find these chains of events far-fetched is all the more tragic in light of history. Consider how an odd collection of Muslim radicals in primitive parts of the world visited destruction on modern American cities and brought decades of war to the United States. The Krulaks tracked Clausewitz's insight that war originates not in the military sphere but in politics, society, and culture. Might not more of our future warfare papers start with imagining a implausible entanglement and its worldly consequences? Is that not a way to exercise mental muscles to get used to facing unknowns and seeing possible chains of complex causality?

In addition, the argument can be substantiated that our paper topics tend to be focused on ourselves—our needs, our equipment, and our concepts. Perhaps we might balance that focus with careful study of our adversaries—their concepts, their systems, and the glimmers of their innovations. Army General John P. Abizaid noted that one of our principal weaknesses is the *problem of seeing*; our enemies may be acting in front of us, yet we do not see them.⁷ His point was profound, extending far beyond insurgents in our midst. At that moment, he spoke the language well known to John R. Boyd and the 29th Commandant, Alfred M. Gray Jr. The logic of this

⁶ Author discussion with Gen Charles Krulak at Marine Corps University, 10 November 2016.

⁷ Gen John Abizaid, "Central Command Operations Update Briefing" (remarks, Pentagon, 30 April 2004).

vein of thought, in my view, is that we may not adequately understand the high-end combat threats we will face because our enemies' ways, reasoning, and advances do not comport with our timeworn views of what is important and how things are best done. At a minimum, what are the Chinese, Russian, and Iranian concepts of operation designed to attack our blind spots and weaknesses? We need much more studying and gaming of how adversaries might understand and exploit the weaknesses in our security strategies, operational concepts, and military systems. We need to spend more time on low probability, high impact technology developments and concepts of operation that our enemies could direct our way.

One of the enduring ironies of *classified* intelligence is that, so often, the coveted information is also in visible sight in the unclassified world—in overlooked public sources, observations, and articles. English language analyses and even translations are available in the unclassified realm on developing Chinese doctrine. The Indians, Taiwanese, Singaporeans, and Japanese have vantage points to study the Chinese; and given their fear of China, they have high motivation to identify what we, in our patterns, have difficulty seeing. Telling insights on Russian concepts and command and control are available in conversations with our allies, such as the Polish, who study the disposition and training of Russian forces in Eastern Europe with eagle eyes, and the Israelis who monitor Russian units daily in Syria. Marine Corps University, like the other professional educational institutions, always has students from allied and partner countries. Why not pair each with an American to translate, uncover, and examine doctrine, operational concepts, and technologies of a shared adversary?

The *problem of seeing* is further complicated by one of those traits that separates humans from other species: an infinite capacity to devise new ways to deceive one another. Deceit's centrality in conflict and warfare is expressed in our founding writings. Sun Tzu puts deception in the first tier of battle concepts. Odysseus infiltrates the impermeable Trojan defense line with his wooden horse. Pharaoh, in contemporary parlance, seeks to *psych out* the Hebrews; he agrees to their release only to cancel, and then tires them, induces despair, and undermines their faith in Moses and Aaron, their leadership. The ends and ways of information warfare are not new, just the proliferation of means; ever cheaper and newer forms of technology—social media, cyberbots, and electronic emitters and jammers—that raise the ability of relatively poor adversaries to camouflage their intentions and lethal capabilities wreak havoc not only with our command and control at every level but with our very minds, undermining both our moral and physical centers of gravity, and in some cases even win a battle or campaign without igniting a single ounce of cordite.

Countering too widespread a lethargy, Commandant of the Marine Corps General Robert B. Neller took the extraordinary step in 2017 of raising *information environment operations* to a major warfighting function equal to the others and creating no less than a Deputy Commandant accountable for it. Air Force Major John Minear brings light to the subject in his chapter *Fighting for Time*. Next year, heeding the Commandant's invitation, more Breckinridge papers should cover deception and information warfare. For us and our enemies, information warfare is, in itself, a potent form of *maneuver* and *fires*. And for *physical maneuver and fires*, information warfare is an ineluctable *sine qua non*.

If war it must be, we Americans always want it short and for good reason. Yet, short is a rarity. Long is the norm. The short ones tend to prove illusory when, as is so often the case, another war breaks out soon enough, raising the question of whether there have been two wars or, rather, two episodes in one longer war. Distinguished Cambridge historian, Zara Steiner, author of several volumes of the venerable series Oxford History of Modern Europe—*The Lights that Failed: European International History, 1919–1933* (2005) and *The Triumph of the Dark: European International History, 1933–1939* (2010)—has said that a century from now, historians are apt to see

World Wars I and II not as two wars, but as one.⁸ The Cold War might even join, turning three into one. Some thought the Trinity complicated.

If wars tend toward length, is the United States prepared? U.S. force structure for *high-intensity warfare*—capital ships and transports, fighter and bomber wings, rotary and armored platforms, short- and medium-range missiles, and uniformed and trained personnel—is small by Cold War standards, with the globe remaining the size it has long been and our responsibilities hardly diminished.⁹ While some of our platforms bring to the fight more precision and fire generation, sometimes several-fold, others do not. The time to produce new equipment stretches ever long. A lean inventory may have its virtues, but a prudent redundancy to cover losses and beget resiliency is not one of them. Though high-intensity warfare has sometimes occurred without heavy losses of equipment, as in the 1991 Gulf War, that is far from the norm. The U.S. military industrial base is a fraction of the size it was then. At least 30 years have passed since the nation could surge and scale military production. After the early rounds of war against a peer competitor, we are apt to be fighting not with the military with which we went to war, but with the military we have left.

The long-time American stratagem of using every mounting mass to *attrite* enemies seems unlikely to be available. It is best purged from our tacit assumptions. Indeed, it is the United States that risks being stretched and *attrited* by its enemies. It was just a few years ago when U.S. force structure was hard-pressed fighting in two relatively *permissive environments* in Iraq and Afghanistan. What might be the outcome if we were to have a lengthy war not with sandal-wearing guerrillas but top-of-the-line great power armies, navies, and air forces? While U.S. structure takes years to construct, high intensity combat can eliminate hefty parts of it in months, if not weeks.

So, the overarching warfighting challenges for our soldier-scholars to grapple with are twofold: first, how to delay and weaken our enemies so our nation gets the necessary time—perhaps years—to build mass; second, how to mobilize American and allied economies to produce needed material faster than is possible today.¹⁰ What are the concepts we need to develop, explore, and bring to life to solve each challenge? George C. Marshall and Dwight D. Eisenhower, Thomas Holcomb and Alexander A. Vandegrift, and William D. Leahy and Chester W. Nimitz faced these challenges and did not shy away from them during the 1930s and early 1940s.

Our future warfare papers might consider not just fighting with the military we have and integrating new technologies, but also concepts to gain protracted time to avoid defeat after losing much of the military we had.¹¹ The ability to continue the fight long enough to get needed new equipment, perhaps several years, for an ultimate win is more important than trying to inflict decisive defeat at the opening of hostilities. Military-economic mobilization was a problem that these officers and a few thousand others put as much time and thought into as they did into campaign planning, tactics, techniques, and procedures. How shall we move from prototype to mass production if quantities are needed? How shall we swell manufacturing when so much of a key capability—working with atoms not just bits—has thinned in the United States and moved abroad? Addressing these issues is central to the U.S. military being adaptable, survivable, and victorious. That is why Secretary of Defense Ashton B. Carter established the Defense Innovation Unit-Experimental (DIUx) and the Office of the Secretary of Defense Strategic

⁸ Conversation with author and Paul M. Kennedy, ca. 1996.

⁹ See also LtCol Mark Thieme, USMC, *Beyond Carriers: Tomorrow's Seapower Today—Expanding Presence, Increasing Capability, More Fully Integrating the Joint Naval Force, and Modernizing the Fleet Portfolio*, 132.

¹⁰ See also Maj Matthew P. Dirago, Australian Army, *Planning for War: Why the Australian Army Should Reenergize Mobilization Planning*, 31.

¹¹ See also Maj John Minear, USAF, *Fighting for Time: Military Intelligence and the Delivery of "Decision Advantage,"* 159.

Capabilities Office (OSD-SCO). These entities, the U.S. Department of Defense's acquisition corps, and congressional defense staff are stretched nevertheless and will benefit from the fresh consideration of these questions by mid-to-senior officers during their sojourn at the military universities.

In this regard, we should be inspired by Brute Krulak, who, as a captain during the interwar period and despite skepticism and opposition, took up and would not let go of the fanciful idea of creating new types of amphibious landing craft. He became the military father of the Higgins boat and several other innovations that made U.S. victory possible in both the Pacific and Europe during World War II. Much the same can be said about Krulak's postwar examination of what helicopter technologies could do for future warfighting, giving birth to rotary aviation and envelopment in the U.S. military. There is every reason to believe that today our war-tested officers, competitively chosen to attend such professional military education institutions as Marine Corps University, will embrace, not ignore, the hard problems and perplexities. These women and men of the Marine Corps, Navy, Coast Guard, Army, Air Force, and allied and partner military Services have the experience and intellectual capability to grapple with these challenges and the proven character to take chances raising uncomfortable questions and exploring solutions. In doing so, they will help create the new concepts, systems, and realities that allow the United States to triumph.

The New European Global Strategy

Process, Reasons, and Major Implications

by Major Ivan Falasca, ITA Army Marine

INTRODUCTION

In the light of the changed geopolitical context and the new challenges and opportunities that the European Union (EU) has been facing in recent years, the European Council (EC) on the defense of December 2013 gave a mandate to the high representative of the union for foreign affairs and security policy (HR) to work on updating the previous *European Security Strategy* (ESS) of 2003.¹ The HR promptly launched a working group with the task of addressing the process of adapting the ESS in a broader strategy document in support of the Common Foreign and Security Policy (CFSP). The objective has materialized with the presentation of the new strategy at the EC meeting held in Brussels on 28–29 June 2016. The innovative approach is already evident in the title of the document, *Shared Vision, Common Action: a Stronger Europe. A Global Strategy for the European Union's Foreign and Security Policy*.² The heads of state and government of the 28 member states welcomed the final text. In particular, Italy has strongly sustained the development of the new strategy, giving its own contribution to boost the Common Security and Defense Policy (CSDP). This paper develops its research answering the following questions: Why a new security strategy? What has been the process that led to the final document? Does the document fit in the present and future geopolitical and strategic environment? What are the challenges and opportunities for the EU in implementing the strategy? In the conclusion, it will state that the EU needed a new security strategy to face the current threats coming from the global environment and to affirm itself as a global actor. To achieve this ambitious aim, the EU has chosen a process that involves all member states contributing to the strategy. At present day, the EU will face both opportunities and challenges in implementing the content of the approved document that will be of utmost importance in its future posture facing either internal or external threats to EU security.

THE NEED FOR A NEW STRATEGY

The Path toward the European Strategy Review

Thirteen years have passed since the approval of the ESS in December 2003 after the appointment of Javier Solana as the first high representative.³ It was a very important milestone,

¹ *European Security Strategy (ESS): A Better Europe in a Better World* (Brussels, Belgium: EU, 2003).

² *Shared Vision, Common Action: A Stronger Europe—A Global Strategy for the European Union's Foreign and Security Policy* (Brussels, Belgium: EU, 2016).

³ *European Security Strategy*; and Treaty of Maastricht on European Union, European Community, 7 February 1992. The post of the high representative was originally created under the Amsterdam Treaty (1999). The Lisbon Treaty (2009) maintains this function as cited in Article 15 and following.

which completed a long process begun in Europe half a century earlier. A path that, since the signing of the Treaty of Brussels in 1948, laid the groundwork for some form of cooperation for European security. This introduced discussions among European countries and between them and the United States, always in the light of NATO's military umbrella provided to the Western European Union, especially after the failure of projects such as the European defense community.

The ESS was the first European strategy paper. It had become necessary after the establishment, a few years earlier, of the European Security and Defense Policy (ESDP) within the EU's second pillar, the CFSP.⁴ The result achieved was considered positive, so that the document has withstood the numerous changes that the fields of the common foreign, security, and defense policy have registered in recent years. The first attempt to revise the ESS dates back to 2008. The initial idea to rewrite it was soon shelved and the European policy makers agreed to compile a report on its state of implementation, which obviously focused on the new challenges and threats.

After the strategic silence during the four-year mandate of Britain's Catherine M. Ashton, the high representative of the union for foreign affairs and security policy, Federica Mogherini launched the European strategy review in June 2015. Mogherini acted under the mandate received from the European Council to direct a broad process of reflection and consultation that should have led to the development of a global strategy on foreign and security policy.⁵ Such a strategy should have calibrated itself on the changed international scenarios and the upheavals that have affected many countries placed along the borders of the EU in recent years. This process has reignited the debate among academics and policy makers, with a proliferation of essays written by the main European think tanks.

The Strategy Review as Seen in Brussels

No attempt of strategy review could begin without a thorough reading of the ESS.⁶ Far from being exceeded, the document remains the most effective synthesis underlying the objectives of the EU foreign policy, which have not changed much over the years. What has changed is the sense of urgency and the realization that, in the face of changing global scenarios, these objectives must be pursued, and not left on the level of slogans. The text sets out some principles that have become the cornerstones of EU external action:

- No European state can tackle them individually.⁷
- The biggest threats are increasingly transnational and global and affect all EU states.⁸
- Europe will be safer in so far as the rest of the world will be better.⁹
- Europe is inevitably a global player and as such can/must assume increasing responsibility for a positive transformation of its neighborhood and the international system as a whole.¹⁰

Starting from this premise, the paper argues for an approach more synergic between

⁴ The Maastricht Treaty created the EU based on three pillars: the European Community, the CFSP, and cooperation in the field of justice and home affairs.

⁵ "European Council: Conclusions" (meeting minutes, EUCO 217/13, Brussels, 20 December 2013), 4.

⁶ *European Security Strategy*.

⁷ *European Security Strategy*, 1.

⁸ *European Security Strategy*, 2–5.

⁹ *European Security Strategy*, 10.

¹⁰ *European Security Strategy*, 10–14.

European partners, which should develop a common strategic culture as a prerequisite for adopting measures more active (preventive, timely, multidimensional, vigorous), more capable (more resources for defense, routine use of common and shared tools), and more consistent (bring together different instruments and different capacities of member states and EU institutions) with a strong ability to work with international partners. In summary, it postulated an all-out preventive action through political, economic, and military instruments (the so-called comprehensive approach), strong partnerships, and building an effective multilateralism.

In her remarks made at the Annual Conference of the EU Institute for Security Studies in October 2015, Mogherini stated the same principles of ESS.¹¹ In particular, she mentioned engagement with all stakeholders in the international community (even nonstate actors), the EU's responsibility for global security, and the centrality (key concept) of win-win partnerships that are part of Europe's DNA. According to this speech, it was evident that the high representative already had in mind three main objectives for the future strategy review. First, they wanted to give a strong sense of direction to European foreign policy to focus resources on key strategic priorities and escape from the reactive and emotional approach that seemed to prevail at the moment. Second, they wanted to ensure a comprehensive approach (or "joined-up approach") after years of trying to implement it within a synergistic and coherent use of all EU external action instruments (e.g., enlargement, neighborhood, development cooperation, trade policy, etc.) was aimed at achieving the strategic objectives. Third, they wanted to enhance the engagement and buy-in of the member states and their respective public's opinion with respect to European foreign policy to increase the share of sovereignty and more ambitious common goals.

Finally, the document created, *The European Union in a Changing Global Environment*, was a preparatory text making the diagnosis on the basis of which the future strategy itself will be drawn up.¹² It is divided into three parts: the changes in the global context; key challenges/opportunities for the EU; and implications for the EU's foreign policy, particularly the external action instruments.

The Strategy Review as Seen by the Think Tanks

All major think tanks in Europe agreed on the need for a new European security strategy. The debate within the community of policy analysts that started in 2013 focused on the reasons for a new strategy and its content, which resulted in three papers: *Europe's Strategic Cacophony*, *Why Europe Needs a Global Strategy*, and *The Path to an Upgraded EU Foreign Policy*. The three reports analyze the policy from different perspectives that focus on the lack of direction, on the scale of global changes, and on the structural deficiencies of the external action of the EU, respectively.

Europe's Strategic Cacophony argues that, despite all the progress made in terms of European integration and coordination of foreign and defense policies, European states are far from having a shared approach to common threats.¹³ From a detailed examination of the national strategies of the 28 member states, the authors remark that countries still live under the illusion they can meet current challenges independently. As a result, the European dimension is absent or otherwise entirely secondary in their strategy papers. In addition, the report argues that there is a clear lack of strategic culture among European nations. Therefore, an EU global strategy

¹¹ Federica Mogherini, "Remarks by High Representative/Vice-President Federica Mogherini at the EUISS Annual Conference" (speech, EU Institute for Security Studies, Brussels, 10 September 2015).

¹² *Strategic Review: The European Union in a Changing Global Environment* (Brussels, Belgium: EU, 2015).

¹³ Olivier de France and Nick Witney, *Europe's Strategic Cacophony* (London: European Council on Foreign Affairs [ECFR], 2013).

pursues a twofold task: to induce states to think strategically and to put the EU at the center of national policy arguments.

Why Europe Needs a New Global Strategy supports the urgent need to develop a real European strategy paper in light of the extraordinary changes in the global scenario of the last decade and the inability of Europe to face them.¹⁴ The traditional soft power, an alleged advantage of the EU and its member states, appears less dazzling in a continent characterized by low growth, high unemployment, increasing inequality, and the crisis of the same model of integration until recently considered a regional model for all international organizations. The weakening of Europe is in contrast to the strengthening of authoritarian states' influence. These countries, such as China, Saudi Arabia, and the Gulf states, bring different development models based on substantial financial resources, which have opened up important spaces. The EU's hard power, which has always been very limited because of fragmentation of the armed forces into 28 independent organizations and limited defense budget, is likely to slip even further into irrelevance. This is a consequence of the growing American reluctance to shoulder the burden of being the armed wing of the Europeans, and the parallel increase in military spending by China and the emerging powers who have already surpassed Europe in terms of total volume of defense expenditure.

In *The Path to an Upgraded EU Foreign Policy*, former secretary general of the European External Action Service (EEAS) highlights a third reason why it is essential to develop a genuine European strategy: the structural limits of the modus operandi of European foreign policy.¹⁵ In particular, he argues about three limits. First, despite progress in the CFSP and with the European Security and Defense Policy (ESDP), the creation of the EEAS and the major powers of the high representative as provided in the Lisbon Treaty, the member states have transferred little sovereignty to EU foreign and defense policy. Unanimity remains the rule, whereas the states retain their national representation in international organizations and the EEAS in the absence of a strong input cannot carry out actions. Second, major powers in terms of external action belong to the European Commission, not the EEAS, and coordination is insufficient. This explains why the EU looks more like a soft power than a classic power acting through the instruments of realpolitik. Third, the EU has never developed a clear concept of its added value in foreign and defense policy, with the result that some interventions are implemented without objective reason, while others who might be more crucial for European security are left out. Therefore, it seems there is not a clear prioritization.

The European Global Strategy (EGS)

Given the limits of the ESS of 2003 and the apparent lack of interest of the High Representative Ashton and the member states for an update of the strategy, the foreign ministers of Italy, Spain, Poland, and Sweden commissioned in 2012 four think tanks from their respective countries to prepare a document entitled *European Global Strategy* (EGS). This document, presented in May 2013 in Rome, identifies common values and interests, the resulting strategic objectives, and the main tools to deal with them.¹⁶

The EGS assumes that the EU is first and foremost a community of values and shared interests: economic and social development; peace and security; a democratic neighborhood based on the rule of law and human rights law; certainty in access to natural resources and environmental sustainability; minimal restrictions on the movement of people, ideas, goods, and services; and

¹⁴ Susi Dennison et al., *Why Europe Needs a New Global Strategy* (London: ECFR, 2013).

¹⁵ Pierre Vimont, *The Path to an Upgraded EU Foreign Policy* (Brussels: Carnegie Europe, 2015).

¹⁶ Italy went with the International Affairs Institute. Alessandro Marrone et al., *Towards a European Global Strategy: Securing European Influence in a Changing World* (Rome: Real Instituto Elcano, 2013).

a fair and effective system of regional and global governance. These interests and values define three categories of strategic objectives that member states should pursue in perfect synergy. The first is economic growth, which has a dual and unavoidable external dimension considering that the EU is a trading power scarce in raw materials.¹⁷ It aims at the further development of a multilateral trading system through free trade agreements, protection of sea lanes and cyberspace, and a robust energy security policy with the creation of an internal energy market, diversification of sources, and expansion of renewable and nonconventional energy.

The second strategic objective is the transformation of the Eastern and Southern Neighborhoods as well as the strategic neighborhood—the “neighbors of our neighbors.”¹⁸ This geographic space encompasses many vital interests of the EU (e.g., Sahel, the Horn of Africa, the Middle East, Central Asia, and the Arctic). The EGS stresses the importance of completing the EU enlargement to the Western Balkans, Iceland, and Turkey to expand the domestic market, strengthen energy security, and give greater strategic depth to the union. As for the Eastern and Southern Neighborhoods, it suggests to move from the conditions-based approach in favor of a broad policy that should foster economic growth, good governance, and human rights, thus renouncing to its paternalistic logic of “more for more” for a coprosperity approach.¹⁹ The EU also should assume greater responsibility for security in its own strategic neighborhood with all civilian and military capabilities required for autonomous, fast, and effective actions at all stages of crisis prevention, humanitarian assistance, peacekeeping, post-conflict institution building, and development cooperation. The EGS intends, in a functional concept of the neighborhood and even the strategic relationship with the United States, to improve through the finalization of the Transatlantic Trade and Investment Partnership and deepening cooperation within the North Atlantic Treaty Organization (NATO) and with the other two key partners—Russia and China.

Finally, the third objective is to contribute to the construction of global governance by updating the existing liberal order considering the needs of new actors who aspire to more space.²⁰ In this process it is necessary to maintain the fundamental principles of international law, collective security, and the trinomial human rights/freedoms/democracy. Living as an example of effective multilateralism, the EU is by its nature particularly suitable for this purpose, with its constant commitment to institutionalized solutions to global problems ranging from climate change to arms control.

THE PROCESS FOR A GLOBAL STRATEGY

The issue of the ESS review has become increasingly important for EU institutions and the member states. As said previously, further impetus was impressed by the new high representative, Federica Mogherini, soon after her inauguration on 1 November 2014. During a breakfast meeting with the ambassadors of the Political and Security Committee (PSC), the high representative has provided some guidance on how she intended to proceed on the revision of the ESS. In particular, she envisioned two main phases in the review process: analysis, conducted by a joint working group between the European Commission, the presidency of the European Council, and the EEAS; and drafting step that, following the outcomes of the EC 2015, gave course to task of the development of the new ESS.

¹⁷ Marrone et al., *Towards a European Global Strategy*, 8–9.

¹⁸ Marrone et al., *Towards a European Global Strategy*, 10–14.

¹⁹ In 2004, the EU launched the European Neighborhood Policy in an attempt to improve security, prosperity, and stability in neighboring nations. The southern neighborhood includes: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, and Tunisia. The eastern neighborhood includes: Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova, and Ukraine.

²⁰ Marrone et al., *Towards a European Global Strategy*, 14–17.

The First Phase: Global Assessment

A global assessment has been prepared that will stand as a fundamental document for the preparation of the European Council in June 2015.²¹ Indeed, the high representative illustrated the major points of the document during the mentioned council after she received approval at the Council of Foreign Affairs (Defense) on 18 May 2015 in view of the revision of the ESS.²² The document is divided into three parts: a changing global environment; challenges and opportunities for the EU; and is the EU equipped for the tasks.

In the first part, a changing global environment, the document highlights the characteristics of the global environment, which is defined as a more connected world because of unprecedented flow of tourism, trade, migration, and information.²³ Furthermore, the actual environment is more challenged, as characterized by fragile states, which often are at the borderline of failure, population explosion, pressure on resources and environment, and growth of internal inequalities. Finally, the environment is even more complex, with an increase in the number of state and nonstate actors and the emergence of new non-Western powers, such as China, who are able to contest the current international order.

In the second part, the document identifies challenges and opportunities for the EU in the post-Cold War European order, in the light of Russian assertiveness in the Middle East, in the North African upheaval (with the serious risk of spillover of instability on the European continent), in the relationship with Africa, in the transatlantic partnership at a crossroads (also a reference to Latin America), and in the multilateral system upgrade.²⁴

In the third part, the document considers the various EU policies stating the necessity for their modification and adaptation to the new needs.²⁵ About the CSDP, in particular, it says that the EU should rethink the primary objectives and operational procedures in the light of the experience gained and considering the change in the character of conflicts. The reflection continues highlighting the issues related to the policies' implementation. With the CSDP, for example, the problems include the difficulty of finding men and financial resources for the missions and the reduction of capacity for both the member states and the EU. Finally, it stresses the importance of the comprehensive approach as a method to give priority in the use of the instruments at the EU's disposal.

In its conclusion the *Strategic Review* states that the ESS 2003—litmus of a Europe that approached the role as a global player—is no longer compatible with the current structure of the global environment, degraded and heavily mutated because of the deep economic crisis of 2007–8 and given the diversity of regional experiences arising from the EU enlargement policy.²⁶ In dealing with these changes, along with sources of disorder and opportunity, the EU needs to turn its security strategy after taking into account two fundamental aspects:

1. New global trends are neither linear nor preordained but only product of human choice.
2. The EU cannot go back but rather aim only to the future by continuing to promote its values in a more connected, disputed, and complex global environment.

The Second Phase: Contents of the New Strategy

On 22 September 2015, the high representative presented within the Committee of the Permanent

²¹ *European Security Strategy*.

²² Council of the European Union, "Council Conclusions on CSDP," press release, 18 May 2015, 2.

²³ *Strategic Review*, 4–11.

²⁴ *Strategic Review*, 11–13.

²⁵ *Strategic Review*, 13–19.

²⁶ *Strategic Review*, 19.

Representatives and then to the Political and Security Committee a *food for thought* paper that started the second phase of the process of elaboration of the EU global strategy (EUGS). It is worth noting that the second phase initiated theoretically after the European Council of June 2015, when the chiefs of states and governments had instructed the high representative to present the new strategy by the council of June 2016. In the view of the council, the strategy should be based on the global context assessment as per the document, where “the EU in a changing global environment: a more connected, contested and complex world,” presented by the same high representative.

In her presentation, the high representative stated to European policy makers that the new strategy must lay its foundations on the values and interests of the union with a global reach. As a consequence, the new strategy will have to define the interests to be protected and, therefore, the strategic objectives toward which converge the set of policies, both external and internal, and the instruments at the EU’s disposal. In particular, the high representative identified the policies as reviving multilateralism, rethinking partnerships, investing in regional architectures, pioneering hybrid peace, supporting state and societal resilience, and responding to the European choice. In the mind of the high representative, the new strategy would also point out how to achieve the goals. The new strategy will refer to a medium to long-term period (approximately six to eight years) for the implementation of which will be necessary to provide a method for review and update that will make it flexible and strong enough to respond to the evolution of international events.

As for the process, the high representative focused from the very beginning on the importance of involving all the stakeholders, member states, and institutions, but also national parliaments, civil society, and the general public. This involvement has not resulted in a drafting exercise for the EUGS involving many people, mainly because the elaboration of the strategy has always been a direct responsibility of the high representative. The involvement envisioned by the high representative has developed within a consultation period, which has seen several events scheduled from October 2015 to May 2016. In such view, the high representative stressed the importance of providing a contact point in each capital, so member states could better secure its contribution and a constant connection with the European External Action Service (EEAS) team set up to realize the project of the global strategy. These outreach activities had a threefold purpose: collect input for the new strategy; inform member states and public opinion on the process of preparing the document; and raise awareness among citizens about the importance of the role of the EU in the global context and its foreign and defense policy.

THE ITALIAN CONTRIBUTION²⁷

Italy has always been conducive to the development of a new European strategy that adapts to current needs and the current geostrategic context. The aim has been to stimulate a more mature awareness of the added value that the EU can offer in the world stage, especially compared to the need to adopt active policies (not just reactive). The strategy should have considered the different perceptions of member states in relation to threats and vulnerabilities by averaging their geopolitical interests and including events that, from processing the ESS, have significantly influenced the European security. For these reasons, Italy welcomed with great satisfaction the newly minted strategy more compatible and consistent with the current geostrategic and

²⁷ The content of this paragraph comes from the work of the author while he was serving with Italy’s Defense General Staff and it represents the official Italian contribution to the works for the EUGS. The Italian contact point, named by the minister of foreign affairs, presented to Brussels all Italian positions about the different topics examined in the paragraph during a meeting held during phase two. There are no published papers or articles as references.

unpredictable context that is able to elevate the holistic approach to incident response standard of CSDP, taking into consideration the interests and strategic objectives.

During the second phase of the work for the EUGS, Italy has promoted its own contribution through the national contact point that has focused in particular on diplomacy, prevention, and peacebuilding; EU-NATO cooperation; strengthening state and societal resilience; and the EU's internal resilience.

Diplomacy, Prevention, and Peacebuilding

Italy stressed the concept that diplomacy is key to crisis management and the EU should be strongly committed to solving the most virulent crises in the region by favoring a political transition in Syria, a national unity government in Libya, overcoming the current institutional deadlock in Lebanon, the restart of the Israeli-Palestinian political process, and the establishment of a *modus vivendi* in Yemen. In addition, the EU should invest more in conflict prevention and peacebuilding with a heightened situational awareness and early warning capacities. It needed to invest in understanding the context and spot early on potentially critical situations, such as human rights abuses, unequal distribution of power and wealth, and high levels of patronage and corruption. The government should empower the key players that can contribute to confidence building measure and reconciliation, including women, young adults, and religious leaders. Another crucial dimension of prevention/peacebuilding to which the EU should devote considerable attention is a multicultural and interreligious dialogue; it is key to foster understanding between communities and dissipate the harmful prejudices that can degenerate into radicalization and communal violence.

EU-NATO Cooperation

Italy focused on the issue of a stronger cooperation between the EU and NATO. A greater synergy between NATO and the EU should be pursued in peacebuilding/crisis management. NATO is the information dominance provider and is more capable of addressing programs of cooperative security, including defense capacity building, while the EU, taking advantage of deeper civilian-military cooperation, is a provider of conflict prevention and national/regional capacity-building activities. Strategic convergence is key to work together in third-world countries; both organizations need to share, at least approximately, the same geographic priorities centered on their immediate neighborhood, as well as a shared approach to crisis management. A strengthened cooperation should build on existing arrangements, such as Berlin Plus, and make use of joint NATO-EU exercises, with a special focus on hybrid scenarios.²⁸

A joint review of EU-NATO agreements also would support the respective strategies of both organizations. Cooperation between NATO and EU can be further developed in many areas: early warning, where NATO intelligence, surveillance, and reconnaissance capabilities could be used to support EU decision making; preventive diplomacy by making a coordinated use of the respective partnership networks and enhancing situational awareness; governance by providing integrated support to the capacity of the most appropriate level of authority conducive to political agreement in crisis and post-conflict situation.

Strengthening State and Societal Resilience

Italy determined that the EU's strategy toward the Middle East and North Africa (MENA)

²⁸ The Berlin Plus agreement refers to a comprehensive package of arrangements finalized in early 2003 between the EU and the NATO that allows the EU to make use of NATO assets and capabilities for EU-led crisis management operations.

region and toward the Eastern Partnership countries should be centered on the concept of resilience. The EU must strive to strengthen resilience in countries, such as Tunisia, Jordan, Lebanon, Algeria, Morocco, Egypt, Ukraine, Moldova, and Georgia without imposing ready-made development models. Resilience is the opposite of reluctance and conservatism. It implies a long-term commitment to foster reforms, good governance, strong institutions, and a level playing field for all citizens and an effective business environment. A crucial requirement for stability is inclusive development, which is not possible without addressing the socioeconomic root causes of disorder. Building up the resilience of countries in the neighborhood should be a priority for EU external action. It is a medium and long-term strategy to support stability and peace in these regions, contributing to a new pact for the future between institutions, citizens, and civil society.

EU's Internal Resilience: Security and Defence

In the Italian view, Europe cannot play a credible role as a global actor without the support of an effective military. The lack of an integrated European Defense Community entails deep weaknesses and very high costs not only financially, but also in political and strategic terms; a global actor cannot afford it. Hence, the urgent need to concretely work to strengthen capabilities and procedures to improve CSDP effectiveness. The EUGS should outline how to maximize civil-military synergy among structures responsible for CSDP planning and conducting activities in areas where today there is discontinuity between the political-strategic and the military-strategic levels. It is a matter of promoting a host of concrete initiatives to relaunch the stagnant European Defense Community's integration process by using effective forms of cooperation already provided in EU treaties, but also by reinforcing the European Defence Technological and Industrial Base (EDTIB) through targeted supporting policies, such as financial incentives and tax breaks. The EU-NATO capability group should also be reinforced with a special focus on high-end, technologically complex and financially demanding enabling capabilities. Other areas where a reinforced cooperation would lead to mutually beneficial empowerment would include logistic infrastructure—also deployable—satellites and global positioning systems. Organizing an EU-NATO capability group meeting at the minister of defense policy director's level would be a useful and agile way to reinforce coherence between the respective defense planning processes.

IMPLICATIONS OF THE EUGS IN THE FIELD OF SECURITY AND DEFENSE

The new strategy refers to a medium to long-term period (approximately six to eight years) for the implementation of which will be necessary to provide procedures for review and update that will make it flexible and strong enough to cope with to the evolution of international affairs. The high representative's special advisor for the EUGS, Nathalie Tocci, remarked how this meshes well around interests (e.g., security, prosperity, and resilience) that are internal but have strong external implications; principles of a more connected, disputed, and complex world characterized by the power shift from West to East and its spread among nonstate actors; and priority.

The document launched must be implemented now by the high representative and the Council of the EU. In this regard, considering the outcome of the referendum that has decreed the BREXIT, it is likely the discussion will become more constructive, failing the vexed and traditional British intransigence. Therefore, *a fortiori* the Italian goal to derive a substrategy in defense from the EUGS will now be more actionable. This substrategy in the form of an *Implementation Plan on Security and Defence* (IPSD) will need to be coherent with both the EUGS and the preparing *European Defence Action Plan* (EDAP) and to be able to define both the EU's

level of ambition and the necessary military capabilities in order to achieve it.²⁹ In drafting such implementation, they will have to take into account the following issues: EU-NATO cooperation; development of common capabilities; role played by the European Defence Agency (EDA) in supporting multinational cooperation, the EDAP and the EDTIB; the definition of civil-military level of ambition; link internal/external security; and the improvement of the CSDP not only on paper, but even in terms of resources.

Some of the major EU member states, such as Italy, France, Germany, and Spain, have already made contributions aimed at implementing the IPSD. In particular, in a joint report, those states have stated that the IPSD should take into consideration, in addition to the above mentioned points, the creation of a military-civilian mission directorate and an update of the concept of the European Union Battlegroups (EUBGs).

Along this line, based on the strong political *imprimatur* received and the desire to send a positive political signal in the aftermath of the shocking referendum on BREXIT, the high representative has recently presented to several EU forums her own idea on the implementation of the EUGS structured on five main building blocks: building resilience and an integrated approach to the management and prevention of crises and conflicts; IPSD; strengthen the link between internal and external dimensions with particular reference to migration policies and counterterrorism; update existing EU strategies and elaboration of new thematic or geographic strategies; and political and diplomatic activities.

The high representative has given particular emphasis to the block relative to the IPSD, highlighting the leading position of the member states, the full involvement of the EEAS and the European Defense Agency, and the need to enhance the EDAP and the outputs of the EU-NATO joint declaration signed in Warsaw.³⁰ She has even detailed the following key elements: definition of a civil-military level of ambition coherent with the EUGS; development and strengthening of civil and military capabilities of the EU through the review of the *Capability Development Plan* and the strengthening of the base of the EDTIB that should be consistent with the EDAP and texture; optimization of crisis-response institutional structures and procedures; and updating mechanisms for cooperation with such partners as NATO, other international organizations (e.g., UN, OSCE, and the African Union), and the United States.³¹

On 18 October 2016, in line with the initial road map, the EEAS released the first draft of the IPSD, collecting the contributions received by the member states. The document was then given back to member states for a further sharing and revising. The presentation of such IPSD at the end of this long review process was performed at the EU Foreign Affairs Council (Defense) on 14 November 2016. In its conclusions, the council highlighted the close link between the IPSD with the EDAP and the importance of complementary implementation of both the IPSD and the *Joint Declaration* signed in Warsaw by the leaders of the institutions of the EU and NATO.

OPPORTUNITIES AND CHALLENGES FOR IMPLEMENTATION

After the finalization of the EUGS and its presentation to the European Council, the attention suddenly shifted from its content to its implementation in a troubled international environment.

²⁹ Council of the European Union, “Council Conclusions on Implementing the EU Global Strategy in the Area of Security and Defence,” press release, 14 November 2016, 2; and *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions* (Brussels: EC, 2016).

³⁰ Donald Tusk, Jean-Claude Juncker, and Jens Stoltenberg, *Joint Declaration by the President of the European Council, the President of the European Commission, and the Secretary General of the North Atlantic Treaty Organization* (Warsaw, Poland: 2016).

³¹ *Capability Development Plan* (Belgium: European Defence Agency, 2008).

Discussions at both political and expert level have focused on the EU as a security actor, developing rules-based global governance in new areas, and capacity building as part of the joint approach in the case of pursuing the United Nations' Sustainable Development Goals (SDGs).³²

Strengthening the EU as a Security Actor

In the words of the global strategy, an “appropriate level of ambition and strategic autonomy is important for Europe’s ability to foster peace and safeguard security within and beyond its borders.”³³ The EU’s involvement in fragile and conflict-torn states has increased in recent years from troop training and security sector reform activities in the EUSEC RD Congo and countering antiterrorism and organized crime in EUCAP Sahel Niger to border management with a capacity-building mandate in EUBAM Libya.³⁴ Furthermore, adaptations to the EU’s common security capabilities and organizational frameworks are proposed in the EUGS, ranging from reinforced EDA benchmarking to further extending the mandates and ambition of EU military and civilian operations. This ambition is also reflected in the global strategy, with the first priority solely focusing on security of the union.³⁵ This first priority on “strengthening security and defense” was reiterated in the conclusions of the EU’s Foreign Affairs Council of 17 October 2016.³⁶ As already discussed, this ambition was developed further in the IPSD and presented by Mogherini during the council on 14 November 2016.³⁷

A first challenge is represented by the fact that the security architecture, built during the last 25 years, is not just deteriorating but falling apart. There are several current issues that need be addressed, particularly the U.S. presidential elections and the possible consequences for NATO, uncertainty about a resurgent Russia, the Syrian conflict, the Islamic State, the fear of terrorist attacks, and the political situation in Turkey and Libya. In addition, the EU as a project has lost its glamor and there is increasing uncertainty within the member states. Expectations about BREXIT and its implications are that the United Kingdom would continue to play a role in European defense and security as it is in its interest to stay close to Europe. Moreover, the United Kingdom is a NATO member; as such, the British departure from the union would have both negative and positive effects. The negative effect would be that the largest military spender would leave the EU—roughly 25 percent of the total EU defense expenditure.³⁸ Additionally, one of the more decisive and willing members on defense and security issues would leave the union. During the past few years, London has displayed great willingness to act in crisis situations. A British withdrawal from the EU raises questions of who will step up and take on this role. At the same time, BREXIT could result in opening the political space. However, further defense cooperation can also backfire with the European citizens. Overall, a pragmatic arrangement with London could be struck; for example, a sort of associate membership on defense issues, similar to arrangements in the former Western European Union.

A first opportunity for the EU comes from the fact that pragmatic solutions were put forward

³² “Sustainable Development Goals,” UN.org, 25 September 2015.

³³ European Council, *Shared Vision, Common Action*, 19.

³⁴ “Ongoing Missions and Operations,” European Union External Action Service, October 2015.

³⁵ EUSEC RD Congo stands for European Union Mission to Provide Advice and Assistance for Security Sector Reform in the Democratic Republic of Congo. EUCAP stands for European Conference on Antennas and Propagation. EUBAM stands for European Union Border Assistant Mission. See European Council, *Shared Vision, Common Action*, 44–46.

³⁶ Council of the European Union, “Council Conclusions on the Global Strategy on the European Union’s Foreign and Security Policy,” press release, 17 October 2016, 2.

³⁷ “Mogherini Presents Implementation Plan on Security and Defence to EU Ministers,” European External Action Service, 14 November 2016.

³⁸ “Defence Data Portal,” European Defense Agency, 2015.

as means to solve urgent crises and as a way to build credibility. The notion of “principled pragmatism” as stated in the EUGS has to be welcomed.³⁹ There are sufficient institutional mechanisms and policies, such as Article 42 of the Lisbon Treaty, together with the other provisions on the CFSP and CSDP. These mechanisms and policies would provide sufficient possibilities for cooperation within the EU framework. There is therefore no need for new institutional mechanisms. Moreover, there is no lack of capacity within the EU but rather a lack of political will. Political leadership in the capitals is needed if the goals in the strategy are ever to be achieved. Other opportunities will come from the concept of implementing EU-NATO and public-private defense cooperation.

Strengthening Rule-based Global Governance

The global strategy emphasizes the EU’s commitment “to a global order based on international law, including the principles of the UN Charter” and notes that this “commitment translates into an aspiration to transform rather than simply preserve the existing system.”⁴⁰ The EUGS thus puts a particular emphasis on the importance of strengthening international law and international institutions. The strategy mentions cyber, space, energy, and health as fields for developing further a rule-based international system.⁴¹

In particular, in terms of creating norms for cybergovernance, two main modes of norm creation can be distinguished. Each of them provides both challenges and opportunities for the EU as a shaper of global norms. First, there is the traditional mode of creating international law through international agreements and working through international organizations. The other novel mode is working through multistakeholder processes, such as informal, fluid settings involving such nonstate actors as the business sector, the technical community, and users.

In terms of challenges, at the moment neither mode of governance is able to forge a global consensus on an ambitious set of cyber norms. This means that many issues of policy, law, and ethics remain to be sorted out by corporations by default. This led to a description of the current state of affairs as the “privatization of justice.” In addition, current public opinion appears rather averse to new global rules, in general, heeding the experience the EU had with the ratification of the ill-fated Anti-Counterfeiting Trade Agreement (ACTA) and the lack of public support for new trade agreements, such as the Transatlantic Trade and Investment Partnership (T-TIP). Moreover, the creation of norms and their universalization would mean little if not backed up by a strong European digital industrial base and implementation and enforcement capabilities. Due to the interconnected nature of the internet, the weakest links can often be found in smaller states outside of the EU, making a secure internet also a matter of EU foreign policy.

In terms of opportunities, given the global strategy’s conception of the EU’s role as “an agenda-shaper, a connector, coordinator and facilitator within a networked web of players,” it is well-equipped to play a much more active role in multistakeholder settings than it currently does.⁴² This does not equate to replacing the member states. Rather, it entails the EU investing in multistakeholder governance, showing more high-profile leadership in this area, and playing a constructive role in coordinating the member states. Regarding the next steps for establishing policy-specific roadmaps for implementing the EUGS, the area of cyber can build on the 2013 *Cybersecurity Strategy of the European Union*.⁴³ As a first step, this document needs to be updated

³⁹ European Council, *Shared Vision, Common Action*, 8.

⁴⁰ European Council, *Shared Vision, Common Action*, 39.

⁴¹ European Council, *Shared Vision, Common Action*, 42–43.

⁴² European Council, *Shared Vision, Common Action*, 43.

⁴³ *Cybersecurity Strategy of the European Union: An Open, Safe and Secure Cyberspace* (Brussels: EC, 2013).

in light of the global strategy. Moreover, given the cross-cutting importance of cyber in today's governance, both internal and external, cyber aspects should be mainstreamed into other sectoral strategies to be adopted with a view to the implementation of the EUGS.

Strengthening the EU's Joint Approach to the Implementation of the SDGs

When assessing the place of the SDGs in the ambitions laid down in the EUGS as a whole, it could be affirmed that there is an apparent sense of friction between the support for the SDGs (and the civil society actors engaged in the pursuit of these goals) and the increased emphasis on the security sector. Even if it is only aimed at creating a degree of EU strategic autonomy from NATO, this nonetheless creates concerns that the CSDP will be prioritized in EU external action over development and other policies in pursuit of the SDGs. However, similarly to the SDGs, the EUGS is also the result of complex negotiations. One of the new elements, when compared to the 2003 ESS, is the EUGS's less Euro-centric nature, which was highly welcomed. While Eurocentrism is not bad per se it is not helpful for engaging global civil society and for promoting universal values, thus rendering EU foreign policy less effective. This could become a credibility challenge for the union.

In the end, all these issues translate into an uneasy marriage of values and interests in the EUGS. The principled pragmatism approach and the choice of such terms as *resilience* and *flexibility* is well founded in this regard and will hopefully prove useful when devising internal and external policies to overcome insecurity and uncertainty within Europe and beyond. A joint approach can facilitate joint actions at the sector level and incorporate development initiatives and objectives above all the SDGs in the first stages of EU programming.⁴⁴ In doing so, the joint approach can close gaps and avoid overlaps in development cooperation in support of the SDGs, as well as improving the EU's political visibility.

However, the priorities of the EUGS seem to be more aligned within the internal needs of the union and that the SDGs are not at the center of the EUGS. Therefore, there is an apparent discrepancy between internal and external approaches, and as a result, SDGs are not always strongly translated in the EUGS. Migration is a case in point, being regarded rather as a security concern. Unfortunately, the positive aspects of migration that could be used as a way of promoting sustainable development seem largely absent from the EUGS and the surrounding discourse. But experts agree that the EUGS is a balancing exercise of prioritizing objectives and challenges of the EU, as opposed to the SDGs, which are a global commitment.

CONCLUSIONS

The so-called global political awakening of recent years has not always produced democracy, but more often just freed weak states from the external influence, though it was not so marked a wish to adopt European standards. The idea of European soft power is no longer what it was at the time of the various enlargement processes. It seems weakened, partly due to the soft power competition in the neighborhood. The Middle East, in particular, has strong economic and military support provided by Saudi Arabia, Qatar, Turkey, and Iran; while in the Eastern Neighborhood, the presence of Russia has grown again and in other parts of the world the influence of China strengthens. In light of this, it is clear that Europe needed to rethink the way in which to better promote its values, particularly when an ideological, political, and economic

⁴⁴ European Council, *Shared Vision, Common Action*, 50. See also page 26, where the EUGS states that “[e]choing the Sustainable Development Goals, the EU will adopt a joined-up approach to its humanitarian, development, migration, trade, investment, infrastructure, education, health and research policies, as well as improve horizontal coherence between the EU and its Member States.”

competition raised both in the countries of the Southern and of the Eastern Neighborhoods. Fundamentally, these aspects were at the base of the need for the EU to have a global strategy capable of coping with the new challenges in the global environment.

The process that led to the new document came as a result of gradual discussions among European institutions in a first phase, while member states were more involved in the second phase. This allowed the EU to obtain a more comprehensive document from the point of view of possible contributions from all parties involved in shaping the new European strategy.

In this process, Italy has always given its own contributions, sometimes in strict collaboration with other member states, animated from the belief that the future strategy would have been the right opportunity to foster a stronger union among the European states. In particular, the development of a new EU global strategy on foreign and security policy also was the right opportunity to reinvigorate the union in the defense sector. To achieve this goal, it was fundamental to define, at the political-strategic level, more ambitious ways of collaboration and synergies between EU and NATO, untying the political knots that have been preventing the two organizations from stepping up their relationships. In this regard, the IPSD recognizes the importance of maximizing civil-military synergy among those structures responsible for the CSDP planning and conducting activities where, in the past, there was discontinuity between political-strategic and military-strategic levels.

As the EU's Foreign Affairs Council noted in its conclusions on 17 October 2016, the global strategy "will guide the EU's external action for the years to come."⁴⁵ First steps have already been taken by the council in November 2016 in one of the three focus areas of this report in the form of the cited IPSD. The calendars of the EU institutions and member state policy makers continue to fill up with further milestones for its implementation. Existing sector-specific strategies will be updated and new ones developed. In June 2017, the high representative will submit the first yearly implementation report of the EUGS to the council. This will be a crucial moment to gauge whether the words of the strategy have been followed by deeds. Implementing the global strategy is a momentous endeavor by any standard, both for the EU and its member states.

⁴⁵ Council of the European Union, "Council Conclusions on the Global Strategy on the European Union's Foreign and Security Policy," 1.

Getting in the Game

Overcoming Cultural Biases in the Mission Partner Environment

by Major Joshua N. Nunn, USMC¹

INTRODUCTION

In a speech at Fort Campbell, Kentucky, on 13 January 2016, Secretary of Defense Ashton B. Carter outlined his plan for defeating the Islamic State in Iraq and the Levant (ISIL), which depends on the strength of an American-led coalition of partner nations that share a common interest in countering this global threat. He applauded the Coalition's work to date, but emphasized that success requires increased contributions and cooperation among more than 40 partner nations across all instruments of national power, and that to ensure ISIL's defeat, "everybody has to be in the game."² For the Department of Defense (DOD), "getting in the game" of Coalition operations requires the implementation of interoperable command-and-control (C2) systems that facilitate secure and reliable Coalition communications and provide commanders with the information necessary to make battlefield decisions. Historically, while individual combatant commands (CCMDs) have implemented Coalition C2 systems to support their operations, these systems only supported specific operations with specific partners and have not been flexible enough to meet DOD's demand for global flexibility.

Fortunately, there is a solution, as *DOD Instruction (DODI) 8110.01* establishes the Mission Partner Environment (MPE) framework, which is DOD's definitive plan for developing and implementing Coalition C2 systems.³ However, the effort to implement the MPE has stalled because DOD leadership placed all responsibility for the framework's implementation on the Joint Chiefs of Staff (JCS) J6 Command, Control, Communications and Computers/Cyber; a staff element that has no operational tasking authority over the CCMDs or Services. This decision indicates that DOD leadership in the Office of the Secretary of Defense (OSD) and in the Joint Staff primarily views the MPE framework as a communications capability and not an operational capability. The purpose of this paper is to highlight the need for DOD leadership to support the MPE framework as a critical operational requirement through key approaches: addressing the military's strategic culture, leveraging lessons learned from previous implementations of Coalition C2 systems. Ultimately, the MPE is a valid framework for enabling global Coalition C2 interoperability, but it will only succeed if OSD and the Joint Staff prioritize it as an operational requirement and implement specific changes to overcome the cultural biases com-

¹ Maj Nunn is a graduate of MCU's Command and Staff College. This paper won the LtGen Edward W. Snedeker Award of the Armed Forces Communication and Electronics Association for academic year 2015–16.

² Cheryl Pellerin, "Carter: Lasting Defeat of ISIL Depends on Coalition Strength," Defense.gov, 13 January 2016.

³ *DODI 8110.01, Mission Partner Environment (MPE) Information Sharing Capability Implementation for the DOD* (Washington, DC: Department of Defense, 25 November 2014).

prising resistance to change, mistrust of diverse mission partners, and concerns over resource limitations, which limit the framework's effectiveness.

ORIGINS OF THE MISSION PARTNER ENVIRONMENT

In the post-9/11 era of warfare via coalitions, during which the United States has consistently sought to rally its international partner nations to support its operations, it has become increasingly important for partner nation military forces, interagency partners, and nongovernmental organizations (NGOs) to leverage secure, reliable, and redundant communications. With partner nation forces operating in coordination and in close proximity, as in the recent examples of Coalition operations in Iraq and Afghanistan, there are dire consequences for failing to effectively share C2 systems. The risks of ineffective communication are clear in the numerous friendly fire incidents, such as the December 2009 U.S. helicopter attack that killed a British servicemember in Sangin, Afghanistan. An investigation revealed that the helicopter crew mistakenly fired on a British infantry battalion after receiving incorrect targeting information from British generals.⁴ Although investigators partially attributed the incident to the British generals who passed incorrect targeting information to their U.S. partners, it highlighted critical gaps in the interoperability of Coalition C2 systems, including the lack of a shared common operating picture (COP). Accordingly, a shared COP might have prevented the incident by providing the U.S. helicopter crew with real-time positional information on the British battalion.

Through tragedies such as the Sangin incident, the CCMDs, including U.S. Central Command (USCENTCOM), recognized the problems associated with disparate Coalition C2 systems and were successful at implementing operationally tailored Joint interagency intergovernmental and multinational (JIIM) C2 networks to facilitate Coalition operations. Since 2010, JIIM C2 networks have been implemented, which successfully facilitated Coalition C2, including the Afghan Mission Network (AMN), Combined Enterprise Regional Information Exchange System, ISAF (CX-I), and Battlefield Information Collection and Exploitation System (BICES). While these networks met their intended purposes of facilitating basic Coalition C2, they did not meet the entire DOD's demand for global Coalition C2 interoperability. Accordingly, DOD leadership recognized the need for an enterprise-wide approach to manage critical Coalition operations, and in 2012, the Joint Staff developed the Mission Partner Environment (MPE) concept. Their intent in developing the MPE was to establish the framework for "moving the coalition fight off of national secret networks to a tailored mission network in which all coalition members share and operate as equals."⁵ Subsequently, the Joint Staff's concept for the MPE framework became DOD policy with the issuance of *DODI 8110.01* in November 2014.

THE MISSION PARTNER ENVIRONMENT DEFINED

Officially, the MPE is "an operating environment that enables C2 for operational support planning and execution on a network infrastructure at a single security level with a common language. An MPE capability provides the ability for Mission Partners (MPs) to share their information with all participants within a specific partnership or coalition beginning in Phase 0 and transitioning to execution of Phase 1, Day 1 operations."⁶ Essentially, the MPE provides a blueprint for the development and implementation of JIIM C2 networks to maximize the U.S.

⁴ Ian Drury, "Officers' Errors 'Killed Soldier in Friendly Fire Gunship Attack:' Coroner Condemns 'Unprofessional' Use of Grainy Images from Drone Aircraft," *DailyMail*, 7 September 2012.

⁵ Martin M. Westphal and Thomas C. Lang, "Conducting Operations in a Mission Partner Environment," *Joint Force Quarterly* 74 (3d Quarter, 2014).

⁶ *DODI 8110.01*.

military's ability to fight as part of a coalition. Further, *DODI 8110.01* mandates a common set of rules for communications systems to ensure interoperability, reliability, and security of communications within the DOD and with its domestic and international MPs.

The foundation of the MPE framework, as specified through *DODI 8110.01*, is the principle that all DOD data, information, and information technology “will adhere to a common set of standards, protocols, and interfaces.”⁷ This common guidance facilitates the reliable sharing of data and C2 systems integration between the DOD and MPs. Furthermore, the MPE framework adheres to the National Information Exchange Model (NIEM), which is a standards-based model for information exchange with rules applicable to both government and commercial industry, that “ensures that information is well-understood and carries the same consistent meaning across various communities, allowing interoperability to occur.”⁸ NIEM is especially relevant for the MPE framework and JIIM C2 systems design, as it is specifically designed to facilitate accurate communications between disparate systems by mitigating differences in language, including those experienced between Coalition partners, through standardized information exchange rules. Thus, through a standards-based approach, the MPE framework provides a sound path forward for resolving the challenges of Coalition C2. Unfortunately, the DOD's cultural biases are the most significant factors that limit the framework's effectiveness.

CULTURAL BIASES

Martin M. Westphal and Thomas C. Lang are senior DOD officials who are members of the Joint Staff team that developed the MPE framework. Westphal and Lang observe that the successful implementation of the MPE framework requires a cultural shift in the way in which the military executes C2 over its forces.⁹ Accordingly, this shift first requires commanders and their staffs to understand the military's strategic culture and then to overcome three significant challenges: resistance to change, mistrust of diverse mission partners, and concerns over resource limitations.

Implementation of the MPE necessitates an understanding of the military's *strategic culture*, which Thomas G. Mahnken defines as “that set of shared beliefs, assumptions, and modes of behavior, derived from common experiences and accepted narratives (both oral and written), that shape collective identity and relationships to other groups, and which determine appropriate ends and means for achieving security objectives.”¹⁰ Accordingly, the strong principles of discipline, determination, and selfless sacrifice in service to the nation shape the military's cultural identity including its beliefs, assumptions, and biases. Unfortunately, these cultural strengths, which provide the military a significant advantage on the battlefield, come at the cost of flexibility to adjust tactics, techniques, and procedures across the spectrum of military operations, including the adaptation of interoperable coalition C2 systems.

Resistance to Change

The first significant challenge—the military's resistance to change—is evident in the pervasive practice of operating on U.S.-only networks, such as the Secret Internet Protocol Router Network (SIPRNET), for the majority of training and deployments, while only using multinational networks on a temporary basis to support specific Coalition operations. Although the impact of this rigidity was relatively minor during pre-9/11 U.S.-led military operations, it had significant adverse consequences during Operation Enduring Freedom. The mission in Afghanistan was

⁷ *DODI 8110.01*, 1.

⁸ “About NIEM,” NIEM.gov, accessed 31 January 2016.

⁹ Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹⁰ Thomas G. Mahnken, *United States Strategic Culture* (Fort Belvoir, VA: Defense Threat Reduction Agency, 2006), 1.

unprecedented in the size and scope of the interoperability challenge, as more than 50 NATO and partner nations combined to form the International Security and Assistance Force (ISAF), which conducted operations from 2001 to 2014.¹¹ Specifically, the interoperability problem was so significant that, “in 2008, commanders noted that coalition forces in Afghanistan could not effectively communicate and share commander’s guidance, mission information, and critical intelligence.”¹² The crux of the problem was not only that each nation leveraged its own C2 systems and infrastructure, but also that the U.S. military, as the de facto leader of the Coalition in Afghanistan, refused to adapt its practice of using only the SIPRNET for operations.¹³ As a result, by 2008, the Coalition was clearly not functioning as a harmonious entity sharing a common C2 framework, but rather as a loosely connected affiliation of partner nations that operated relatively independent and only shared information in a disjointed fashion.

The U.S. military based its reliance on the SIPRNET as the primary mission system infrastructure on the pre-ISAF model of training and operations that “did not demand an open framework for greater information sharing.”¹⁴ Before participating in heavily combined ISAF operations like those in Afghanistan, the U.S. military routinely assumed the role as a leader of combined operations in which the United States was the overwhelming contributor of personnel, equipment, and combat power. Westphal and Lang provide a clear example, observing that “at the peak of the surge in Operation Iraqi Freedom during 2007, the mission partner contribution was only 6 percent of the total personnel strength, and except for one specific area, all battle space commanders were American.”¹⁵ Because of this model, there was little incentive for the military to implement costly and technically significant changes in the C2 systems framework. In cases where U.S. military and partner nations worked together, planners established ad hoc mission partner networks to facilitate communication, but not as a means to “fight a true coalition fight.”¹⁶ Thus, because of the military’s cultural resistance to change, Coalition C2 was sub-optimally efficient and effective until senior CCMD and ISAF leadership prioritized interoperability.

Mistrust of Diverse Mission Partners

The second significant challenge that inhibits the implementation of the MPE framework is mistrust of diverse mission partners. Although the U.S. military had worked with partner nations before 9/11, commanders restricted true operational coordination to close historical allies, including the United Kingdom, Canada, Australia, and New Zealand. Along with the United States, these countries (a.k.a. “Five Eyes”) have enjoyed an exceptionally close relationship since the end of World War II, which has enabled unprecedented intelligence sharing and operational coordination among these nations.¹⁷ Because of the mutual trust, the Five Eyes share sensitive classified information, thus greatly increasing the intelligence collection, analysis, and dissemination capabilities of each nation. In the case of the Five Eyes, the existing relationships and IT infrastructures supporting intelligence sharing among the partner nations have enabled a relatively smooth transition to support operational communication as necessary without the creation of additional networks. However, as in the case of the current Resolute Support Mission

¹¹ “ISAF’s Mission in Afghanistan (2001–2014) (Archived),” NATO.int, 1 September 2015.

¹² Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹³ Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹⁴ Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹⁵ Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹⁶ Westphal and Lang, “Conducting Operations in a Mission Partner Environment,” 45.

¹⁷ Margaret Warner, “An Exclusive Club: The Five Countries that Don’t Spy on Each Other,” *PBS NewsHour*, 25 October 2013.

in Afghanistan, with more than 40 partner nations participating, mutual trust between all MPs is not always inherent, and security concerns inhibit the connection and interoperability of C2 systems between Coalition partners.¹⁸

Concerns over Resource Limitations

The third significant challenge—concerns over resource limitations—has made it increasingly difficult for the DOD to implement the MPE framework. As seen in the president’s 2015 budget, the proposal cut DOD IT spending by 3 percent from \$81.4 billion in fiscal year (FY) 14 to \$79 billion in FY15.¹⁹ Accordingly, since a DOD-driven effort to overhaul the military’s C2 systems framework for coalition warfare has failed to materialize, CENTCOM and Special Operations Command have taken matters into their own hands using Overseas Contingency Operations (OCO) funds, which are outside of the DOD congressionally approved base budget and are universally considered to be “at-risk” funds that face possible cuts every year.²⁰ These funds, which include \$50.9 billion in FY16 to directly support overseas operations, provide an alternate funding mechanism for CCMDs to procure equipment and infrastructure, such as that proposed by the MPE framework.²¹ Despite the overall cuts in DOD IT expenditures, CENTCOM has leveraged some of its OCO funding to implement significant improvements in its deployed network infrastructure to enable assigned forces to achieve efficiencies and fight as part of a coalition.

DOCTRINE, ORGANIZATION, TRAINING, MATERIEL, LEADERSHIP AND EDUCATION, PERSONNEL, FACILITIES, AND POLICY (DOTMLPF-P) ANALYSIS

While there is a small contingent of senior DOD, CCMD, and Service leadership who appreciate the cultural challenges to the MPE framework, they are primarily in the J6 staff sections and do not have sufficient authority to address the cultural biases that inhibit the framework’s implementation. Unless leadership from OSD and the Joint Staff takes decisive action to address these biases, the military will continue to rely on NOFORN networks (or not releasable to foreign nationals) including SIPRNET, which will limit the military’s ability to work with Coalition partners. The requirement for the MPE framework represents a DOD-wide capability gap that requires analysis through the Joint Capabilities Integration and Development System (JCIDS).²²

JCIDS defines the DOD’s capability integration and development process, and is especially applicable to the identification of a solution for identified capability gaps. Specifically, JCIDS uses the DOTmLPF-P analysis construct that examines the variables of “Doctrine, Organization, Training, Previously fielded materiel, Leadership and Education, Personnel, Facilities, and Policy.”²³ While analysis of each of these variables provides insight into how to address the capability gap, four variables are especially relevant to addressing cultural biases. Specifically, analysis of doctrine and training will reveal steps that OSD and the JCS must take to overcome

¹⁸ *Resolute Support Mission (RSM): Key Facts and Figures* (Brussels, Belgium: December 2015).

¹⁹ Yevgeniy Sverdlik, “Obama’s 2015 Budget Includes 3% Federal IT Spending Cut,” *Datacenter Dynamics*, 7 March 2014.

²⁰ Janine Davidson, “How the Overseas Contingency Operations Fund Works—and Why Congress Wants to Make It Bigger,” *Council on Foreign Relations* (blog), 16 June 2015.

²¹ *United States Department of Defense Fiscal Year 16 Budget Request: Overview* (Washington, DC: Office of the Under Secretary of Defense [Comptroller] Chief Financial Officer, 2015). 2016.

²² *JCS Instruction 3170.011, Joint Capabilities Integration and Development System (JCIDS)* (Washington, DC: JCS, 2015).

²³ *Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS)* (Washington, DC: JCS, 2015), D-H-1, hereafter *JCIDS Manual*.

the cultural biases that inhibit the MPE framework's success as a critical operational capability.²⁴

Doctrine

To successfully implement the MPE framework, OSD and the Joint Staff must address military doctrine. These leaders must determine whether existing doctrine enables the capability to be used to its full potential and in cases where the existing doctrine is insufficient, whether the construct mandates the identification of necessary changes to doctrine and the assignment of an Office of Primary Responsibility (OPR) for the implementation of the change.²⁵ Accordingly, Joint doctrine provides the “fundamental principles that guide the employment of US military forces in coordinated action toward a common objective [and] provides authoritative guidance from which joint operations are planned and executed.”²⁶ The Chairman of the Joint Chiefs of Staff (CJCS) disseminates this authoritative guidance to the DOD through Joint publications (JP), which “takes precedence over individual service doctrine, which must be consistent with joint doctrine.”²⁷ For this reason, it is critical that Joint doctrine is not only specific enough to provide overarching guidance for how the Services will operate in the MPE, but also flexible enough to allow Services to establish their own tactics, techniques, and procedures that maximize each Service's efficiency and effectiveness in coalitions. Although there are numerous relevant publications, three specific JPs significantly influence the military's approach to the MPE capability: *Department of Defense Dictionary of Military and Associated Terms*, JP 1-02; *Multinational Operations*, JP 3-16; and *Joint Communications System*, JP 6-0.

Department of Defense Dictionary of Military and Associated Terms, JP 1-02

JP 1-02 is the chairman's authoritative guidance for the lexicon of the DOD, as it “sets forth standard US military and associated terminology to encompass the joint activity of the Armed Forces of the United States [in order to] improve communication and mutual understanding within DoD, with other federal agencies, and among the United States and its allies.”²⁸ Thus, JP 1-02's primary function is to eliminate ambiguity of terms and facilitate clear and accurate communications. The authors wrote the publication in the format of an English language dictionary, and each entry contains a thorough definition and a reference to indicate where the term resides in relevant Joint doctrine. Although JP 1-02 is useful for clarifying the DOD's use of terminology, it is critically deficient in facilitating common understanding of the terminology that underpins the DOD's way forward for Coalition communications.

Surprisingly, the JCS recently amended JP 1-02 in a publication dated 15 November 2015, yet the updated publication fails to mention two terms that DOD policy guidance has referenced since at least 2014: *mission partner* or *mission partner environment*.²⁹ The omission of these terms is significant for two reasons: first, it indicates that DOD did not conduct a holistic analysis of applicable doctrine before introducing the MPE concept; and second, it indicates that OSD and the JCS do not prioritize a unified approach to working and communicating with mission partners. To address the deficiencies, OSD and the Joint Staff should mandate that JP 1-02 includes these terms, and that future revisions of the publication should include any new significant terminology that is critically important to ensuring the success of the MPE. These concerns surface again through analysis of JP 3-16.

²⁴ *Joint Operational Planning*, JP 5-0 (Washington, DC: JCS, 2011), IV-25.

²⁵ *JCIDS Manual*, D-H-1.

²⁶ *Doctrine for the Armed Forces of the United States*, JP 1 (Washington, DC: JCS, 2013), VI-3.

²⁷ *Doctrine for the Armed Forces of the United States*, VI-3.

²⁸ *Doctrine for the Armed Forces of the United States*, 3.

²⁹ *DODI 8110.01*, 1.

Multinational Operations, JP 3-16

JP 3-16 “provides doctrine for the Armed Forces of the United States when they operate as part of a multinational force,” and as in the case of JP 1-02, this critical publication is woefully silent on discussion of the MPE.³⁰ Specifically, while the publication states “coalition members should share all relevant and pertinent intelligence,” the JCS leaves the extent of sharing to the reader’s interpretation as “information about intelligence sources and methods should not be shared with coalition members unless approved by the appropriate authority.”³¹ While this may seem to be a practical safeguard to protect sensitive information about the capabilities of U.S. military intelligence, it is ambiguous enough to potentially inhibit the timely passage of sensitive intelligence and operational information as a foreign disclosure officer (FDO) would need to review any dissemination prior to release to Coalition partners.³²

Another contradiction in JP 3-16 is the requirement “that a system be devised for and by the multinational force (MNF) members that is capable of transmitting the most important intelligence rapidly to units.”³³ Immediately following this, the publication states, “several nations maintain separate classified Internet and communications systems. For US forces the SIPRNET is the primary classified architecture.”³⁴ Thus, the publication directs the implementation of measures to ensure the timely sharing of classified information, while simultaneously stating that the primary classified network for the U.S. military will remain SIPRNET, which is a NOFORN network. This means that, regardless of the actual classification level of information, JP 3-16 mandates a review—either human or automated—to screen information before transfers of information from the SIPRNET to a Coalition network. In addition to potentially introducing delays in Coalition information sharing, this guidance exacerbates the cultural biases that challenge the MPE framework, as it encourages commanders to continue using the SIPRNET as the primary C2 system.

As in the case of JP 1-02, the JCS should revise JP 3-16 to include a focus on working with MPs, and on moving mission systems from SIPRNET to a SECRET-REL network (or secret releasable) to facilitate direct and timely communication, intelligence sharing, and C2 system integration with Coalition members. Concurrently, with the revisions to JP 1-02 and JP 3-16, the JCS must provide general technical guidance for implementing the MPE through a revision to JP 6-0.

Joint Communications System, JP 6-0

JP 6-0 “provides the doctrinal foundation for communications system support to joint operations.”³⁵ This guidance addresses the requirement to share information with mission partners, stating that “multinational information sharing should be facilitated by establishing a shared architecture using existing and emerging multinational mission capabilities, including Internet protocol networks.”³⁶ It further mandates the establishment of standards and the need for “mission partner communications networks [to be] capable of securely integrating mission partners’ systems.” Although this guidance is loosely in accordance with the MPE concept, it falls short of being authoritative and remains ambiguous enough to allow for the interpretation that mission partner networks may be of secondary importance to the SIPRNET as the primary U.S. mission

³⁰ *Multinational Operations, JP 3-16* (Washington, DC: JCS, 2013).

³¹ *Multinational Operations*, III–15.

³² *Multinational Operations*, III–15.

³³ *Multinational Operations*, III–19.

³⁴ *Multinational Operations*, III–19.

³⁵ *Joint Communications System, JP 6-0* (Washington, DC: JCS, 2015).

³⁶ *Joint Communications System*, IV–3.

system network. Further, without clarification, JP 3-16 will supersede the guidance in JP 6-0, as it states that the SIPRNET will remain the U.S. military's primary classified network. Thus, as in the cases of JP 1-02 and JP 3-16, OSD and the JCS should leverage a revision of JP 6-0 to explicitly designate MPE as the way forward for Coalition C2 systems, with the mandate that primary mission systems networks must be interoperable with MPE to allow for flexible integration into coalitions.

Training

Training identifies whether the implementation of the capability requires specialized training and if so what the purpose, scope, and cost of the training will be. For the implementation of the MPE, relevant training will include both technical training for planners, installers, and maintainers, and operational training for end users, including commanders and their staffs. While classroom and virtual training will provide a foundation for familiarity with the MPE, the most effective way to ensure proficiency is through realistic live training. Accordingly, the Joint Staff's Network Integration Evaluation/Bold Quest (NIE/BQ) Mission Network (MN) informal MPE assessment provides a relevant case study for the successful training and evaluation of technical and operational MPE proficiency.

The planners designed the NIE/BQ event, which occurred from 21 September to 8 October 2015, to facilitate "the pursuit of modernization, interoperability and training objectives, while leveraging the significant power of collective resources," with participants including the Army's 1st Armored Division headquarters and representatives from 13 partner nations.³⁷ Notably, in addition to U.S. participants, five of the participating MPs (Norway, France, Denmark, Italy, and Great Britain) agreed to "federate their networks, core services and Mission Command systems as Network Contributing Mission Partners (NCMPs)."³⁸ The remaining eight participating MPs did not connect their own networks, and instead participated in the BQMN as hosted mission partners, "connecting their Mission Command systems to NCMP networks."³⁹ Thus, throughout the exercise, the Coalition's C2 systems resided on an integrated connection of networks that allowed MPs to continue to utilize their familiar mission command systems, while retaining connectivity to all other Coalition members. The Joint Staff J6 assessed the BQMN and made three observations that indicate significant potential for the MPE.

First, the J6 determined the NIE/BQMN to be operationally effective and "a stable and technically robust environment that supported mission partner objectives."⁴⁰ The BQMN successfully facilitated both internal MP C2 with organic mission command systems and collaboration through the federated network connectivity. However, the J6 also observed some challenges to the Coalition's unity of effort among mission partners due to "separate command structures, processes and varying mission objectives supported by a single network . . . [and challenges to] Speed of Command and Situational Awareness due to 'machine to machine' interoperability issues between US and coalition Mission Command systems."⁴¹ While these challenges inhibited C2 during the exercise, the J6 observed that they could be mitigated through increased collaboration and familiarity between MPs, adherence to data exchange standards, and multilateral developmental efforts to ensure mission system compatibility.⁴²

³⁷ *Network Integration Evaluation/Bold Quest Mission Network (BQMN), Informal Mission Partner Environment (MPE) Assessment, Quick Look Report* (Washington, DC: JCS, 2015), hereafter *NIE/BQMN Quick Look Report*.

³⁸ *NIE/BQMN Quick Look Report*, 1.

³⁹ *NIE/BQMN Quick Look Report*, 1.

⁴⁰ *NIE/BQMN Quick Look Report*, 2.

⁴¹ *NIE/BQMN Quick Look Report*, 2.

⁴² *NIE/BQMN Quick Look Report*, 5.

Second, the MPs heavily leveraged BQMN's core services, including email with global access list, voice over internet protocol, multiple chat rooms, and shared file directory, whereby these services significantly improved collaboration within the Coalition.⁴⁵ J6 observers noted that the use of these services, which were available independent of the MPs mission command systems, mitigated some of the interoperability issues that inhibited operational effectiveness. Thus, the assessment indicated that core services would be a critical requirement for future implementations of the MPE.

Third, NIE/BQMN leveraged collaboratively developed Joining, Membership, and Exit Instructions (JMEI), which involved participation of all MPs, and significantly increased participants' overall familiarity with the BQMN. These instructions were based on the DOD Joining Instructions for an Episodic MPE, and were further refined with input from MPs in preparation for the NIE/BQ exercise. While users experienced some challenges with operating on the BQMN, evaluators determined the majority of these issues were the result of failure to read and adhere to the JMEI. Thus, a collaborative JMEI proved to be critically important and should remain a vital component of all future implementations of the MPE.

The insights gained from the NIE/BQMN assessment and utility of the J6's observations demonstrate the utility of a well-structured training plan at multiple levels. Not only did the J6 observe the implementation of MPE in a multinational training exercise, the end user participants gained critical experience in working as part of a coalition. The NIE/BQMN assessment is a viable model for training to operate in the MPE, and OSD and the JCS should mandate that commands that may function as part of a coalition participate in these exercises on a recurring basis. Ultimately, the greatest value from these exercises will be in the external assessment and subsequent incorporation of lessons-learned into the evolution of the MPE.

PERSPECTIVES FROM THE JOINT STAFF

An analysis of doctrine, organization, training, leadership, and education provides a starting point for addressing the cultural biases that inhibit the implementation of the MPE framework, but the framework's success depends on the direct involvement of OSD and the Joint Staff. In separate interviews, Martin Westphal and Tom Lang confirmed the requirement for direct involvement, and they provided valuable insight gained from their experiences on the JCS during the inception of the MPE framework. Drawing on these experiences, they each provided candid assessments of the status of the MPE implementation from the Joint Staff's perspective, and recommendations for addressing the cultural biases.

First, Lang observed that the MPE framework implementation has stalled because of a disconnect between the SECDEF's guidance, as established in *DODI 8110.01*, and the assignment of the Joint Staff J6 as the OPR. Additionally, Lang noted that the JCS incorrectly identified the MPE framework as a "network" capability and a responsibility of the J6. He stressed that in actuality it is an operational capability that requires a thorough DOTmLPPF-P gap analysis that extends beyond the scope of the J6. While the J6 has the technical expertise to ensure the proper development and employment of the MPE framework, as a nonoperational staff section, it does not have the authority to enforce policy throughout the DOD. Thus, without the direct involvement of DOD's operational leadership including the OSD, the J6 is only able to make recommendations to the CCMDs and Services to implement changes that will facilitate the implementation of the MPE framework. Accordingly, the J3 Operations, with regular reporting to the CJCS and OSD, should take over as the MPE framework OPR.

⁴⁵ *NIE/BQMN Quick Look Report, 2.*

Second, Westphal, in addition to agreeing with Lang's concerns about the J6 as the MPE framework OPR, emphasized the need for a unified approach towards developing and deploying JIIM C2 networks. He specifically rejected the approach that many Service and CCMD components have taken by working with contractors to create proprietary network solutions to meet immediate mission requirements, but that do not facilitate interoperability with MPs. According to Westphal, the current fiscally constrained environment has exacerbated this problem, as the Services inevitably prioritize expenditures on Service-specific requirements over Joint capabilities. To address the issue, he recommends that OSD establishes and enforces policy that divests the DOD from proprietary C2 systems and mandates an open-standard development approach such as the NIEM. Ultimately, both Westphal and Lang are optimistic about the potential for the MPE framework, but emphasize the need for direct and consistent involvement by OSD and the JCS to address cultural biases.

CONCLUSION: GETTING IN THE GAME

Despite technical challenges to implementing the MPE, it is a valid framework that will enable global Coalition C2 interoperability if OSD and the JCS implement specific changes in doctrine, organization, training, leadership, and education to overcome the framework's cultural biases. The MPE framework leverages lessons learned from 15 years of Coalition operations and industry best practices and addresses the DOD's enduring requirement for interoperable Coalition C2 systems. This analysis has demonstrated that the necessity to share information with our Coalition partners will drive innovation, and the military will continue to accomplish its missions despite C2 challenges. However, without direct involvement by OSD and the JCS, cultural biases including resistance to change, mistrust of diverse mission partners, and concerns over resource limitations will continue to inhibit the abilities of individual components of the DOD to function harmoniously in coalitions.

To mitigate these cultural biases and guarantee the success of the MPE framework, OSD and the JCS must retask the responsibility for the framework's implementation from the J6 to the J3 to ensure that its prioritization as an operational capability. Next, SECDEF must provide definitive guidance requiring that all Service and CCMD communications systems be compatible with MPE framework specifications and interoperable with Coalition C2 systems. Subsequently, the secretary of defense, through the JCS, Service chiefs, and combatant commanders, must direct implementation of specific changes, as identified in this paper, to doctrine, organization, training, leadership, and education. Ultimately, it is incumbent upon the secretary of defense to require all senior DOD leaders to "get in the game" by mitigating the military's cultural biases and driving the transformation of the military into a force optimized for success in Coalition operations.

Planning for War

Why the Australian Army Should Reenergize Mobilization Planning

by Major Matthew P. Dirago, Australian Army¹

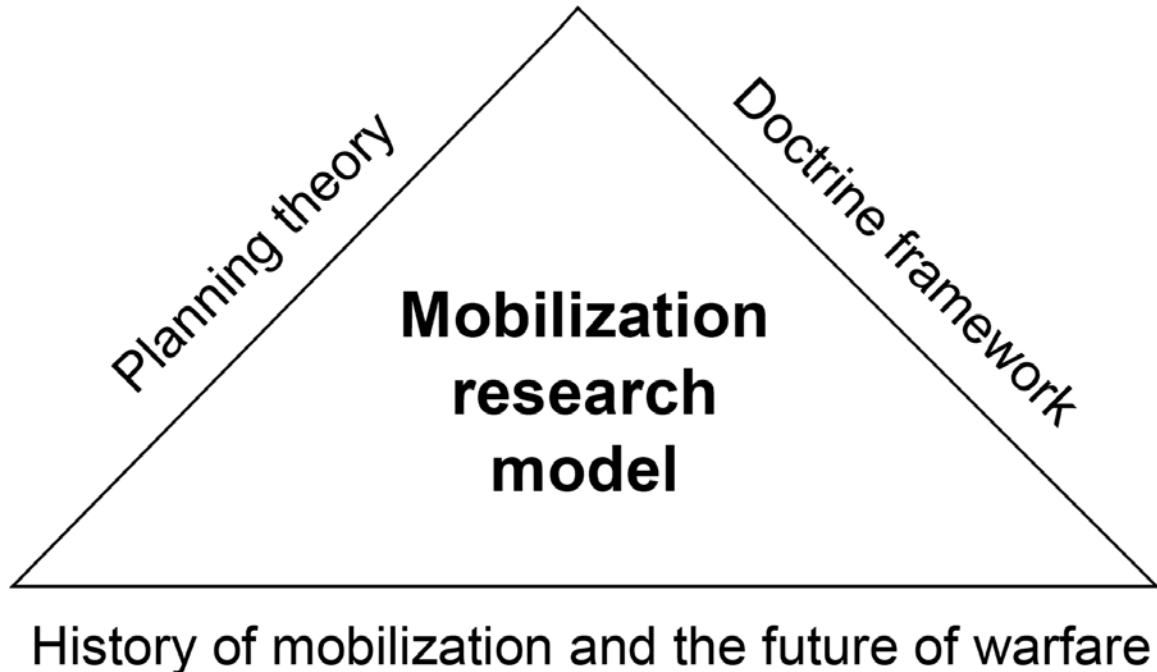
The aim of this paper is to improve the Australian Army's capability to prepare for an uncertain future. Its origins lie in a paradox: Australia must prepare for mobilization during an era of unparalleled peace and prosperity. Resource limitations of both the nation and the military further amplify this challenge, as do the continuing development of technology and the concomitant demands upon skill and expertise. Nevertheless, the preparation for war in peacetime mandates development of doctrine open to critique, rehearsal, and improvement. An integrated system of mobilization planning and doctrine at both conceptual and practical levels does not currently exist. Its development will improve Australia's deterrence and offensive defense capability.

Within this overarching goal, several specific objectives stand out. First, integrated mobilization planning requires adoption of a multilevel planning system—conceptual, functional, and detailed—much like that set forth in *Planning*, Marine Corps Doctrinal Publication (MCDP) 5, of the United States Marine Corps. Second, review and critique of any doctrine also presuppose its formal codification; in ADF terms, integrated doctrine requires codification not merely at the theoretical level, but also at the application and procedural levels. Third, the Army must consider the role of mobilization planning within the larger framework of the Army and the Australian Defence Force (ADF) preparedness system. Finally, in identifying the necessary elements of application and procedural mobilization doctrine, the Army must review the civilian-military mix of its workforce, capitalize on the Total Workforce Model (TWM), and develop training systems and methods that take into account the mobilization requirements of modern and future warfighting.

Paradox notwithstanding, current reforms within the ADF provide a rare peacetime opportunity for just such a holistic reexamination of the methodology and doctrine of mobilization planning. By building on the history of mobilization in Australia and elsewhere, exploiting the current era of reform, incorporating some theory and methodology of planning and doctrine, and anticipating the future of warfare, we can assemble a frame of reference for a fresh look at mobilization planning and doctrine in the Australian Army (figure 1).

¹ Maj Dirago is a distinguished graduate of MCU's Command and Staff College. This paper was nominated for the Brig A. W. Hammett Award for academic year 2016–17. For the purposes of this publication, U.S. English spelling conventions were used unless when applied to the proper name of a person, place, or thing.

Figure 1. Research model for reenergizing mobilization within the Australian Army



ANALYTICAL FRAMEWORK

Planning Theory

An emphasis on mobilization planning may indeed seem unwarranted in an era of relative peace and plenty, but as Lieutenant Colonel Andrew Stevens and Dr. Haroro Ingram argued in a 2013 *ADF Journal* article, strategic military preparedness should take its cue from Nassim N. Taleb's concept of "Black Swans." Such occurrences are "low probability events with catastrophic consequences that are largely disregarded in risk management planning due to their improbability but which, with the benefit of hindsight, are seen to have been predictable."² While one might debate whether Australia's Black Swan will be, as Stevens and Ingram believe, "a defence of Australia campaign against conventional military forces," aligning preparations with a Black Swan event of some kind makes good planning sense.³

The Australian Army conducts planning through two primary methods: the Military Appreciation Process (MAP) and the Fundamental Inputs to Capability (FIC) analysis. MAP is a universal planning tool employed throughout the Army. FIC analysis is a tool used to examine organizational change, ensuring a comprehensive and holistic approach to development by considering the following factors:⁴

- Organization
- Command and management
- Personnel
- Collective training
- Major systems

² LtCol Andrew Stevens and Haroro J. Ingram, "Reframing the Defence Discourse: Australia's 'Black Swan' and Its Implications for Preparedness and Mobilisation," *ADF Journal*, no. 190 (2013).

³ As defined by Taleb, the term *black swan* refers to random events that deviate from the norm and are difficult to predict. Stevens and Ingram, "Reframing the Defence Discourse," 30.

⁴ *Preparedness and Mobilisation*, ADDP 00.2 (Canberra, Australia (AU): Headquarters Australian Defence Force, 2013), 3-4-3-6.

- Facilities and training areas
- Supplies
- Support

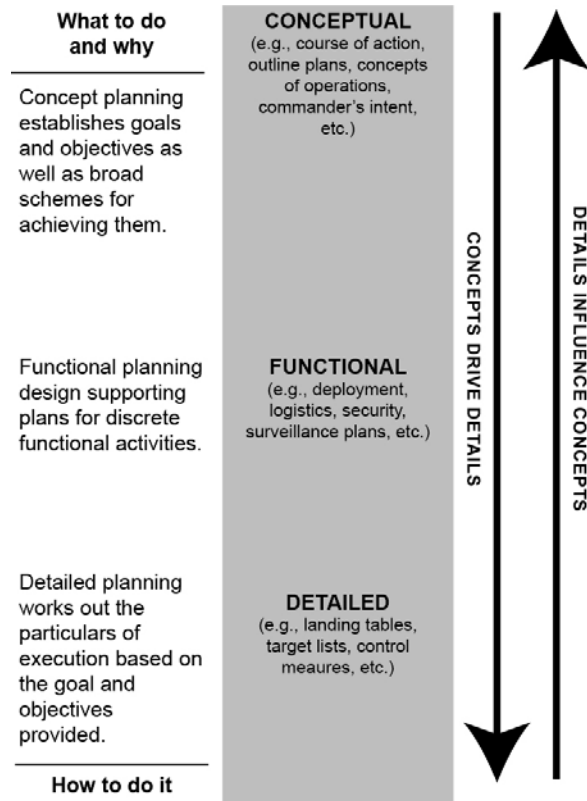
Aside from these effective analysis and decision-making tools, the ADF does not direct or articulate a planning methodology that pervades the organization, restricting ADF joint doctrine to operational-level planning procedures.⁵ *Planning*, MCDP 5, provides an exemplar doctrine that defines, describes, and frames the nature of planning.

MCDP 5 defines the *planning process* as an “ongoing, iterative, and interdependent activity” involving “the art and science of envisioning a desired future and laying out effective ways of bringing it about.” It highlights the value of planning in situations of uncertainty to decrease the time taken to respond, and warns of dangers related to excessive planning horizons, detail, and inflexible or prescriptive planning methods. MCDP 5 articulates the composition and interaction between levels of planning in a planning hierarchy. This dynamic model identifies the interaction between conceptual, functional, and detailed levels of planning. It identifies the general alignment between the conceptual level and the art of war, on the one hand, and the detailed level and the science of war, on the other.⁶ While not articulated in MCDP 5, the functional level is comparable to the operational level of war, in that it comprises both the art and science in varying degrees. Figure 2 graphically depicts these levels.

Expanding the description of planning theory, MCDP 5 defines planning modes ranging from *commitment*, *contingency*, and *orientation* modes, dependent upon the level of certainty and planning time horizon available. It differentiates between *decision* and *execution* planning, as the planning that occurs before and after a decision, and *deliberate* and *rapid* planning as complementary methods used in differing timeframes. Articulating a plan as *tightly* or *loosely coupled* delineates plans requiring more or less synchronization or integration.⁷ The breadth of mobilization planning requires action and therefore plans at each of the levels outlined in MCDP 5.

The complexity, uncertainty, and time-horizon of mobilization planning require consideration of elements of all three modes: commitment, contingency, and orientation. Specifically, mobilization planning bridges the gap between deliberate, peacetime planning and rapid, execution planning. This requirement compels simplicity in planning and clear understanding. Participatory planning including the “open sharing of information throughout the organization” provides the benefits of review and rehearsal at all levels and enhances the fluid transition between

Figure 2. Proposed planning hierarchy



Source: *Planning*, MCDP 5.

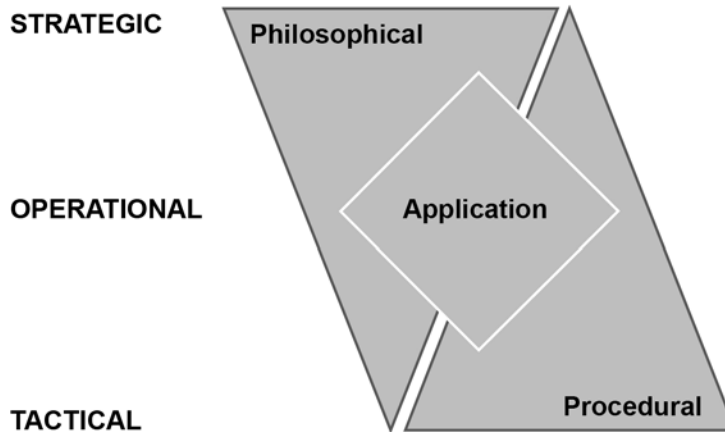
⁵ *Joint Planning (Provisional)*, ADDP 5.01 (Canberra, AU: Headquarters Australian Defence Force, 2002).

⁶ *Planning*, MCDP 5 (Washington, DC: Headquarters Marine Corps, 1997), 3, 7, 19, 23–27, 35–38.

⁷ *Planning*, 38–52.

decision and execution planning. Mobilization planning requires not only detailed planning related to the physical requirements of mobilization, but also substantial and “tightly coupled” input to capability development plans, demonstrating the interwoven nature of mobilization and preparedness.⁸ Adopting a conceptual explanation of planning, such as in MCDP 5, would complement the existing MAP and FIC analysis and improve Australian Army planning doctrine. It would also equip the Army with the necessary tools to cope with the adaptations required to anticipate future warfare. Making this recommendation obliges a review of the ADF doctrinal framework.

Figure 3. Interaction between Levels of War and Doctrine



Source: ADF ADDP-D.

Australian Defence Force Doctrinal Framework

Doctrine lives in a delicately balanced domain between conservative adaption and preservation of bloodied and battle proven knowledge. It “reflects the judgments . . . about what is and is not militarily possible and necessary.”⁹ Although authoritative, the application of doctrine is challengeable and requires judgment.¹⁰ To be effective, doctrine must cover all aspects of military operations at the relevant level of the target audience. To achieve this, the Army classifies doctrine as either philosophical, application, or procedural (figure 3).

Broadly, the Australian Army has clear philosophical-level doctrine, but can improve the content and connections between application and procedural levels. Philosophical doctrine explains fundamental principles for the employment of the military. It aims to “shape the trained mind.” Considerations, concepts, and theory are the elements of this doctrine. Application doctrine operationalizes the philosophical doctrine and aims to “train the mind.” Processes and tools to enable individual and collective training are the realm of this doctrine. Lastly, procedural doctrine, akin to tactics, techniques, and procedures (TTPs,) is definitive by nature to ensure interoperability and to meet its aim of “train[ing] the body.”¹¹ Completeness and integration between these tiers ensures relevance to the target audience.

The relevance of procedural doctrine is determined by its feasibility and by its relationship to application and philosophical doctrine. Procedural doctrine should therefore be the most adaptable, and is the area where Australian doctrine is most lacking or is inconsistently connected. The development of extensive standard operating procedures (SOPs) attempts to fill the gap presented by this doctrine, but is inconsistently applied across the force. Ideal models for

⁸ *Planning*, 83–85.

⁹ Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars* (Ithaca, NY: Cornell University Press, 1984), 14.

¹⁰ *Foundations of Australian Military Doctrine*, ADDP-D (Canberra, AU: Headquarters Australian Defence Force, 2012), 3-1–3-6.

¹¹ *Doctrine and Training*, ADDP 7.0 (Canberra, AU: Headquarters Australian Defence Force, 2006), 2-4–2-5.

detailed-level doctrine are provided in legacy Army doctrine, and in U.S. and UK doctrine that outline considerations, but also includes recommended, consistent methods.¹² A specific example of shortfalls in Australian Army procedural doctrine is the removal of this documented approach from infantry doctrine. While encouraging flair and creativity, the absence of procedural doctrine does not enhance training or combined arms coordination. Mobilization doctrine reveals a similar shortfall where the conceptual doctrine is not supported at the application or procedural level. These doctrinal weaknesses can be mitigated in a small, standing, professional military, but will be magnified where the Army is required to mobilize by expansion.

Australian Defence Force Mobilization Doctrine

The Australian Army doctrine for mobilization is a singular and purely philosophical document, *Preparedness and Mobilisation* (ADDP 00.2) This doctrine articulates the process for connecting national and military strategic direction, culminating in ADF Preparedness Directives.¹³ It is important to acknowledge that the subordinate levels of mobilization planning and doctrine may exist within the Defence Preparedness Management System (DPMS), but this system is inaccessible for critique or review by the majority of the Army.

Mobilization receives scant attention in ADDP 00.2, which simply outlines the stages of mobilization and the distinction between *surge* and *expansion*. Surge is defined as the immediate response to a short-notice requirement, likely to be achieved from within existing ADF resources. Expansion is the increase of defense capability by scale or scope. ADDP 00.2 identifies four stages of mobilization, where surge is relevant for the first two stages, and expansion is an anticipated requirement for the last two:¹⁴

Stage one: selective defense mobilization

Stage two: partial defense mobilization

Stage three: defense mobilization

Stage four: national mobilization

Stage one mobilization is simply the transition of prepared forces for operations. The Army's operational record of the last decade indicates that this stage presents no significant challenges. Stage two is the first area of friction for the Army's ability to mobilize, where significant elements of the reserve force and the employment of contract support are both likely. Stage three mobilization requires the indefinite sustainment of the entire ADF at an operation level of capability, for which the last example of the Vietnam conflict triggered the requirement for conscription. This level of mobilization requires prior consideration and actions to enable the force to be mobilized, while retaining sufficient capability to train and develop follow-on forces. Stage four involves the priority commitment of national resources. Military mobilization in stage four includes the potential for compulsory service and indefinite expansion.

Except for the philosophical doctrine, the ADF mobilization framework is one of classified policy, procedure, and direction, with no application or procedural level doctrine to codify strategic direction. MCDP 5 articulates that, "as a rule, any commander affected by a plan should have the opportunity to contribute to it."¹⁵ In the Australian Army, this opportunity is denied by the absence of supporting doctrine and the classified nature of mobilization planning. The

¹² *Manual of Land Warfare*, part 2, *Infantry Training*, vol. 1 (Canberra, AU: Headquarters Australian Army, 1983); and *Infantry Tactical Doctrine*, vol. 1, *The Infantry Company Group*, no. 3 *Infantry Platoon Tactics* (Andover, UK: Army Headquarters, 1999).

¹³ *Preparedness and Mobilisation*, 1-2, 2-1-2-3.

¹⁴ *Preparedness and Mobilization*, chapter 5.

¹⁵ *Planning*, 84.

inaccessibility of supporting mobilization doctrine and plans ensures operational security but impedes familiarization and rehearsal. It prevents critique and continual updating of these plans, therefore allowing mobilization planning to become ossified, a relic of the era of quantitative expansion, rather than serving as a blueprint for qualitative expansion. The as yet unreleased *Defence Preparedness Manual* could fill this doctrinal gap and enable the conduct of functional and detailed level mobilization planning.

History of Australian Military Mobilization

The absence of an overt military culture or credible threat restricts Australia's inclination to prepare for mobilization. With the exception of Japanese offensive actions during World War II (WWII), Australia has never faced a strategic threat to its sovereign borders. The security that stems from this isolation pervades Australian culture and influences Australia's enduring strategic deterrence posture.¹⁶ The popular aversion to a historical image of mobilization and general disinclination toward conflict has shaped the Australian approach to mobilization. Recent experience in limited warfare, characterized by relatively low casualty rates and impacts on society, further separates the Australian populace from military affairs. The consequences of this limited approach to peacetime preparation are revealed at the outset of war:

The Army commenced both World Wars fundamentally unprepared. In neither case was the Army adequately prepared for the nature of the conflict or the scale of its commitment. It therefore commenced each war deficient in doctrine, equipment and trained manpower. . . . The cost paid for this inadequate preparation was paid for in Australian lives and reduced national security. It included the defeat and capture of the 8th Division, the loss of Singapore, the bombing of Darwin and the epic struggle of Kokoda [Trail].¹⁷

The history of mobilizing Australian military forces can be distinguished in three phases, a comprehensive description of which is provided later in this paper. Prior to WWII, mobilization relied upon expansion of the regular force by volunteers, with training either conducted domestically, during lengthy sea travel, or in overseas staging areas. Universal service was also approved, but only for domestic service. Although technological developments throughout the interwar period increased the training burden for the expanded force, WWII largely reflected the same approach, except legislation was amended to allow universal service in the Pacific region. The enduring employment of the Australian Regular Army since WWII has been in dual roles of high readiness expeditionary forces and as an expansion base cadre. Major combat operations in Korea and Vietnam exemplified the challenges of mobilizing forces beyond the standing capability of the Army, a task that the ADF has not had to undertake since Vietnam.

The lead-up to the Korean War was Australia's most significant post-war attempt at national mobilization. However, it was in response to the growing threat of global war posed by the spread of Communism, rather than the Korean War itself that Australia's longest-serving Prime Minister Sir Robert G. Menzies issued a "call for the nation to prepare for war within three years."¹⁸ Concurrent mobilization of national servicemen while the Regular Army maintained operational commitments in Korea was the first example of the challenges of contemporary military mod-

¹⁶ Australia's deterrence defense posture is outlined in *2016 Defence White Paper* (Canberra, AU: Department of Defence, 2016), 71–77; and *Foundations of Australian Military Doctrine*, 5–5–5–6.

¹⁷ *From Phantom to Force: Towards a More Efficient and Effective Army* (Canberra, AU: House of Representatives, Joint Standing Committee on Foreign Affairs, Defence and Trade, 2000), chapter 2, 16.

¹⁸ David Lowe, *Menzies and the "Great World Struggle": Australia's Cold War, 1948–1954* (Sydney, AU: UNSW Press, 1999), 14.

ernization in periods of reduced strategic warning time. The period encompassing the Cold War threat and the Korean War reality of 1950–53 saw the Australian military population triple, defense expenditures quadruple, including investment in naval and air capital resources, and significant resource stockpiling occur. This drastic escalation did not result in increased military capability and was deemed excessive for the economic capability of the nation.¹⁹

During the last decade, the ADF has focused on readiness, rather than surge or expansion requirements of mobilization. Readiness shortfalls identified in Operation Morris Dance, a non-combatant evacuation operation in Fiji in 1987, were magnified during the 1999 Australian-led International Force for East Timor (INTERFET) operation and led to a renewed strategic focus on readiness.²⁰ This strategic focus complemented existing operational and tactical readiness capabilities that had enabled the conduct of deliberate and contingency operations since the Vietnam conflict.²¹ This approach has met the challenges of limited conflict commitments; however, it is insufficient to generate a force of credible scale and caliber for winning in major conflict. The base force is defined more by resource limitations than by the requirement to expand capability.

The fiscal burden of maintaining military capability at or above the realistic expectation of its employment is prohibitive and therefore unrealistic. While Australia's enduring social, political, and economic conditions do not support a larger or conscripted Army, strategic direction necessitates a strong, responsive, and agile Army.²² A component to solving this impasse is mobilization planning for surge and expansion. Such planning must be codified in doctrine, and integrated to the organizational mindset and operational concept. Specifically what such planning would entail, however, requires careful analysis, both historical and contemporary.

Historical Mobilization Lessons and Contemporary Research

The ADF can learn from other nations' historical experiences and contemporary research to develop an understanding of twenty-first century mobilization requirements, cautiously avoiding replication or imitation. The majority of mobilization research falls into three categories: industrial and economic preparation for major conflicts, such as WWI and II; post-Vietnam research on mobilizing all-volunteer forces; and current research into social, economic, industrial, and cyber mobilization. The ADF must consider each of these to fill the striking literature gap pertaining to planning for a modern, twenty-first century volunteer force that can keep pace with the latest technological considerations, including, but not limited to, cyber.

The ADF can learn from the detailed mobilization preparations of the U.S. Army prior to WWII, despite the vast disparity in the scale of industrial and personnel capacity. The U.S. War Department study, *The Army and Economic Mobilization*, articulates the challenges of creating unified control systems for industrial capability, along with the planning methods for facility construction and transfer of civilian capacity towards a war effort.²³ A recent Leavenworth study by Brian C. North reviews the 1944 U.S. Army in Europe, including the role of domestic education facilities in the mobilization effort.²⁴ Likewise, the U.S. Marine Corps mobilization for WWII and Korea demonstrates that "the nation's ability to wage war is directly related to the strength,

¹⁹ Lowe, *Menzies and the "Great World Struggle,"* 142–44.

²⁰ Jeffrey Grey, *A Military History of Australia* (Cambridge, UK: Cambridge University Press, 1999), 264.

²¹ *Preparedness and Mobilisation*, 1-1.

²² *2016 Defence White Paper*, 140–41.

²³ R. Elberton Smith, *The Army and Economic Mobilization*, United States Army in World War II, CMH Pub 1-7 (Washington, DC: Center of Military History, U.S. Army, 1959), 83–85, 437–45.

²⁴ Brian C. North, *Making the Difficult Routine: U.S. Army Task Organization at the Army and Corps Level in Europe, 1944* (Fort Leavenworth, KS: Combat Studies Institute Press, U.S. Army Combined Arms Center, 2016).

character, and flexibility of its mobilization base.”²⁵ The ADF will benefit from these considerations, along with continued research into the role of the all-volunteer force.

The enduring forms of expansion-based mobilization for most militaries is through the development of reserve forces and by conscription. In reviewing the role of selective service in the U.S. all-volunteer force, Bryan Rozman determines that the value of conscription is nebulous due to “evolved standards of performance” beyond the capacity of a conscripted force to learn in “strategically relevant time.” He further contends that the qualitative skills of modern service invalidate the traditional conscription of “relatively unskilled labor.” Rozman reviews U.S. twentieth-century mobilization to conclude that “reliance on the reserve components to quickly mobilize was just as efficient as expanding the active force through conscription.”²⁶

The Australian Army Reserve is an essential component of the mobilized all-volunteer force. The decision to integrate the Australian Army Reserve for operational deployments in 2000 was a substantial policy shift from its previous role as the Australian Army’s strategic reserve. Although Australia does not employ a National Guard equivalent, a study by Major Franklin L. Jones depicts enduring challenges after the 9/11 attacks, when the National Guard moved from a strategic reserve force to an “operationalized,” integrated force. These challenges include maintaining capability with degraded equipment holdings, integrating with the operational force in the absence of a defined operation or cause, and avoiding potential relegation “out of America’s operational force composition.”²⁷ Regardless of an enhanced role or capability, the Australian Army cannot wholly rely on the Army Reserve as the panacea to the challenges of mobilization.

The ADF must engage with current research into social, economic, industrial, and cyber mobilization, balanced with the historical lessons of major conflict. A more significant deviation from a traditional mobilization concept is outlined in a Modern War Institute paper that considers mass mobilization through social media platforms, equipping through additive printing technology, and online training methods.²⁸ These emerging and diverse elements do not provide a holistic solution to the challenges of mobilization, but can contribute to relevant and robust planning.

Contemporary research and developments should be considered alongside historical experiences of mobilization. The first historical section later in this paper outlines the Australian mobilization experience, demonstrating the social, financial, political and military influence on the ADF’s approach to mobilization. Two further historical examples are provided: one outlines the German interwar development of the *Reichswehr* (or realm defense), and the other illustrates French mobilization plans for WWII. While these examples do not provide solutions to mobilization challenges, they highlight the importance of relevant training, doctrine, and personnel policies to enable mobilization for future conflict.

The effectiveness of *Reichswehr* planning and doctrine in a military constrained by the Treaty of Versailles provides insight to the importance of flexibility, leadership, and the development of effective doctrine. The German system acknowledged its economic limitations and sought innovative education and training methods within an all-volunteer force. The hallmarks of a demanding education and decentralized command are essential components of the *Reichswehr* that

²⁵ Harold J. Clem, *Mobilization Preparedness* (Washington DC: National Defence University, 1983), 63.

²⁶ Bryan Rozman, “Reversibility in the Army: More than Industrial Age Conscription,” *Strategy Bridge*, 9 December 2014.

²⁷ Franklin L. Jones, “Domestic and Expeditionary Readiness in the Twenty-First Century: Maintaining an Operationalized Army National Guard” (masters thesis, School of Advanced Military Studies, U.S. Army Command and General Staff College, 2012), 13, 18, 29.

²⁸ Nate Finney, “A High-Tech Call to Arms: Mobilizing the Masses in the Twenty-First Century,” *Modern War Institute*, 3 February 2017.

are relevant to ADF mobilization for future war. The French Army similarly benefitted from a planned mobilization system, but suffered from inappropriate strategic and tactical doctrine and a reliance on an ill-trained expansion force.

French methodical battle doctrine and manpower policy proved deleterious to readiness. As Robert A. Doughty notes, “Highly trained and cohesive units ready to fight immediately simply did not exist when the French Army mobilized for war.”²⁹ This is likely to be the situation if the ADF is required to expand in a timeframe dictated by external threats, rather than political choice. The gradual reduction of the standing army to a “skeleton” reflects the enduring challenges faced by the ADF and most militaries.³⁰ The ADF can learn from the French example by ensuring that its doctrine is not only robust, but also derived from perceived threats, rather than from economic feasibility.

The historical examples and contemporary research outlined above highlight the complexity of planning and preparing for mobilization; however, rather than providing ready-made solutions, they serve to encourage debate and generate inquiry. The most important insight to be derived from this approach is not the method, but the purpose or intent behind mobilization. The Germans were economically and legally restrained, but benefitted from having a known enemy. They used mobilization to generate overwhelming tempo against the French in WWII. The purpose of mobilization was to concentrate effort and avoid protracted conflict. The French similarly benefitted from a known enemy, however, they failed to link their concept of warfare with both their society and the tempo of future warfare. The U.S. experience in WWII demonstrated the importance of planning, but not necessarily the plan itself. The “Mobilization Day” concept was never enacted as planned in the *Industrial Mobilization Plan* or the *Protective Mobilization Plan*.³¹ The planning effort did deliver a flexible baseline understanding between government, military, and industry that enabled the war production effort for the purpose of the Lend-Lease Act, and later for the American military.³² These examples broaden Australia’s limited mobilization experience, as does examining why conflict that warrants expansionary mobilization could occur.

The emergence of cyberwarfare, the increased globalization of the world economy, climate change, poverty, refugee movement, and the reduction of traditional manufacturing capacity in the developed world all contribute to an understanding of why conflict could occur. They should therefore be considered in the development of mobilization plans. Australia’s isolation and the absence of a direct or enduring threat require an ardent approach to understanding and communicating why the ADF, and possibly wider Australian society, could need to mobilize. Integral to this vision is understanding Australia’s role as an independent nation, but also as an enduring partner to the United States and other allies. Planning for war is not identical to desiring it, but it remains the responsibility of the ADF to engage the Australian government in preparation for black swan events. Understanding, or at least envisaging, the possibility of future warfare is essential prior to engaging industry, and other government departments in furthering a comprehensive approach to mobilization.

²⁹ Robert A. Doughty, “The French Armed Forces, 1918–1940,” in *Military Effectiveness*, vol. 3, *The Second World War*, ed. Allan R. Millett and Williamson Murray (Boston, MA: Unwin Hyman, 1988), 64.

³⁰ Robert A. Doughty, *The Seeds of Disaster: The Development of French Army Doctrine* (Mechanicsburg, PA: Stackpole Books, 1985), 22, 24.

³¹ LtCol Marvin A. Kreidberg and 1stLt Merton G. Henry, *History of Military Mobilization in The United States Army, 1775–1945*, 1st ed. (Washington, DC: Department of the Army, 1955), 596–614, 689–93.

³² Michael Fullilove, *Rendezvous with Destiny: How Franklin D. Roosevelt and Five Extraordinary Men Took America into the War and into the World*, 1st ed. (New York: Penguin, 2013), 236–37.

Relevance of Mobilization in Preparation for Future Warfare

Visualization and preparation in times of peace affect the military's ability to mobilize for future warfare. Future war theory, tempered by the realities of current and historical experience, enables an image of future war. This idea of future war should then design the mobilization concept, which in turn drives functional and detailed planning. This neat formula nevertheless presents a central problem; for example, as Colin Gray attests, there is no "foreseeable future."³³ Inaction is not a sufficient response to ambiguity. Militaries need to act cautiously and responsibly to mitigate the uncertainty of future conflict. The first step toward refining the mobilization capacity of the Australian Army is a credible, adaptable concept of future warfare.

The Australian Army's 2014 *Future Land Warfare Report* conceptualizes the character of future conflict as crowded, connected, lethal, collective, and constrained, and within these terms, the report explains the themes of future conflict to 2035. The key theme is that integrated, joint effects, informed by decision superiority tools, combine to provide "rapid overmatching power at decisive points." While not directly referring to mobilization, the report explores societal expectations of the military, demographic and skills challenges to recruitment, and the effects of hollowness on capability maintenance and mobilization.³⁴

Colin Gray describes the inevitable recurrence of warfare, the likelihood of irregular warfare between state and nonstate actors, and the enduring nature of warfare as political, cultural, and social. He deduces that "warfare reflects the communities that wage it" and that "the history of war is not primarily the history of weaponry; rather, it is the history of the person who wields the weapon." These deductions are relevant to mobilization as they reinforce the permanent linkage of society and warfare in an era of primarily volunteer militaries. For a society to wage war, offensively or defensively, the society must have the will and capacity to do so. As society changes, so must the tools of war. Gray contends that technology is not the panacea to improving these tools of war and that "training, morale, organisation, doctrine and quality of leadership" are more important.³⁵

Jim Storr describes the role of history in informing, not predicting, future conflict and warns of the tendency for militaries to commence a conflict in the same manner or using the same techniques with which they fought the last.³⁶ He cites a study of 158 land campaigns conducted from 1914 onward to contend that successful ground combat forces "can conduct aggressive ground reconnaissance, and exploit the opportunities that creates." Storr expands:

They should be organised and trained around tactics of shock and surprise.

They should be able to apply fire flexibly and transiently in order to enable penetration, manoeuvre and disruption. They should be very flexible and responsive: that is, they should be able to decide and act very quickly. They should be especially responsive to low-level opportunities, require only a minimum of orders and hold internal reserves of combat power.³⁷

Here, Storr predicts crucial characteristics of a future force based upon historical evidence. These characteristics, in turn, inform the capability, equipment, personnel, and training requirements. Relevant to mobilization is the ability to recruit, train, and maintain a force with these characteristics in peacetime, during a surge, or during an expansion period.

³³ Colin S. Gray, *Another Bloody Century: Future Warfare*, 1st ed. (London: Phoenix, 2006), 37.

³⁴ *Future Land Warfare Report, 2014* (Canberra, AU: Commonwealth of Australia, 2014), 4, 23.

³⁵ Gray, *Another Bloody Century*, 24–25, 61–98.

³⁶ Jim Storr, *The Human Face of War*, Birmingham War Studies Series (London: Continuum International Publishing, 2009), 26, 40.

³⁷ Storr, *The Human Face of War*, 106.

Russian military operations in Ukraine are a rare contemporary example of state-on-state conflict that can provide an insight into war in the near future. The Russian campaign demonstrates the dual employment of technology and information operations alongside conventional means of conflict. In observations from the Russo-Ukrainian War, Dr. Phillip A. Karber outlines lessons of relevance to modern conflict. Karber observes the conduct of major central battles and the employment of proxy or irregular forces. He contrasts the declining survivability of light infantry vehicles amidst the resurgence of armor and increased lethality of fires. His identification of the “ubiquitous presence of UAV” is testimony to the emergence of this capability, but not necessarily its enduring supremacy. Although the capabilities and conduct of warfare are relevant to mobilization, Karber also observes the deterrent effect of Ukraine’s rapid mobilization of the entirety of its 15 brigades to the Russian border. He concludes that the pace, rather than the extent of the mobilization, was a credible deterrent to Russia enacting an invasion plan.³⁸

While the character and frequency of future warfare are unknown, the imperative to prepare for it remains. To prepare for the conduct of warfare beyond the near term, militaries are best to understand the conduct of previous conflict and remain abreast of global technological and social changes, taking steps to incorporate these into preparations for mobilization. Future conflict will share characteristics with past conflict as war is essentially a human activity. Future war will be discernable by its decentralized nature, and the increased skills and knowledge required of soldiers and officers as a result of advances in technology and maneuver warfare. Skill requirements and limited or negligible growth in the size of the regular army will each influence mobilization for future war. The demand for the Australian Army to surge or expand is enduring, possible, and even probable. The Army must seize the moment to modernize its planning and doctrine for mobilization in an era that emphasizes technological skill rather than demographic mass.

SPECIFIC RECOMMENDATIONS TO ENHANCE MOBILIZATION

Increasing the integration of mobilization planning in the Australian Army has a broad remit. While not ignoring other areas of capability, a focus on doctrine, personnel policy, and training provides a refined view of the proposed adaptations to the mobilization methodology. More importantly, these human elements of the system demonstrate the importance of the qualitative characteristics of future warfighters.

Personnel

Mobilization is more than manpower, but the mobilization of people remains pivotal. Future warfare will remain a human activity regardless of any increase or dominance in technology. Combined with the anticipation of mobilization through expansion at some future stage, there is an imperative for mobilization to be a central tenet in the design of personnel policy. Examples of how this influence might be realized include community engagement, recruitment and retention in an increasingly technical domain, and in determining the balance between regular and reserve military, public service, and contracted employees.

Developing and maintaining links with the society from which the army is drawn is pivotal. It ensures popular support and encourages the societal inclination to serve. In his analysis of German mobilization for WWI, Richard Bessel writes, “Mobilization implies sacrifice, and government attempts to mobilize the population is as much to generate support for future sacri-

³⁸ Dr. Phillip A. Karber, “Lessons Learned from the Russo-Ukrainian War” (unpublished manuscript, Potomac Foundation, 2015), 10–27, 28–33, 43–48.

face.”³⁹ The Australian Army community engagement efforts utilize social media, public affairs, and locally derived and delivered activities in areas of major military installations to achieve this support base. To increase these efforts, the Army should look to reenergizing the Australian Army Cadets (AAC) national youth development program. The AAC program can be bolstered by increasing funding and governance support and by establishing partnership bonds between regular, reserve, and cadet units. In particular, by providing technical expertise in adventure training, the Australian Army can assist the AAC with developing resilience in the program participants, either as a baseline for future service in case of mobilization or simply for the benefit of an ever-changing society.

Demographic trends must be considered for their impact on mobilization by expansion. Relevant workforce and demographic changes include an ageing population, decreased education standards, and a competitive employment market. Australia’s age demographic forecasts an increased ratio of “older to younger people” but also consistency in the size of the target recruitment age of 18–25 until 2050.⁴⁰ Defence Force Recruiting (DFR) strategic planning acknowledges increased competition in the established recruiting demographic, leading to increasing the representation of women and indigenous people. It observes the increased competition for science, technology, engineering, and mathematics (STEM) skills in candidates, a challenge in light of expectations for the “consistent but subtle increase in technological complexity of future (military) capabilities.”⁴¹

The increased technological requirements for soldiering and demographic predictions present challenges for stage three and four mobilization. Functional level workforce planning should consider Army-sponsored STEM development programs and modifying service requirements for specialist trades. A STEM development program, in partnership with the Defence Science and Technology Organization (DSTO), Defence Force Recruiting (DFR), and a future Australian Army cybercapability would provide the basis for capability development and recruitment. If established, it could also provide a professional link between cyberpractitioners and the military that could be leveraged for mobilization. Recruiting and retaining these specialized personnel may challenge conventional models of military service.

If the Australian Army is to maximize its human capital, then it is imperative to define the essential characteristics and traits for military service in cyber roles. Defining the requirements of soldiers whose roles can be conducted away from the battlefield is a crucial step that may result in significant deviations from the traditional requirements of service. Tailored conditions of service are currently provided for critical and specialist trades such as specialist health personnel. As cybercapabilities progress at a faster rate than the Army’s ability to acquire them, a similar approach is needed. Health of service personnel is essential, however, if the Service wants to attract qualified and capable people to these new roles, fitness standards may need to vary. The Army Physical Employment Specifications Assessment (PESA) framework caters to this by defining fitness requirements according to employment category. The development of an auxiliary command would enable growth of the ADF’s organic cybercapabilities as well as their potential for expansion during mobilization. Models for this can be seen in the British Royal Fleet Auxiliary (RFA), who supports the Royal Navy, and the U.S. Navy’s Military Sealift Command (MSC), where specialized naval capabilities

³⁹ Richard Bessel, “Mobilization and Demobilization in Germany, 1916–1919,” *State, Society, and Mobilization in Europe during the First World War*, ed. John Horne (Cambridge, UK: Cambridge University Press, 1997), 219, <https://doi.org/10.1017/CBO9780511562891.014>.

⁴⁰ Mark Thomson, “Will Australia Have the Economic, Industrial and Workforce Skill Base to Support the ADF in 2020 and Beyond?,” *Australian Defence Force Journal* 173 (2007): 103.

⁴¹ *DFR Strategic Plan, 2016–2025* (Canberra, AU: DFR, 2016), 5–6.

are employed in support of military operations, but without military conditions of service.

The mobilization of the Army Reserve is a credible mobilization option that can be further improved. While the ADF redefined the role of the Army Reserve from an expansion base to a source of “fully trained personnel to support all the Army’s operational tasks,” this is only generated by the active Reserve.⁴² Colonel Chris Smith and Dr. Albert Palazzo contend that “the Army Reserve is therefore critical for the future force generation . . . either reinforcing regular ground combat forces or providing a substantive part of the combat and general-purpose forces for subsequent force rotations.”⁴³ A credible option is to review the ability to recall previous serving, active or inactive reservists to the regular force during the surge phase of mobilization. The ADF can capitalize on the development of the total workforce model (TWM) to access this manpower resource.

The TWM softens the stark delineation between Regular and Reserve service by creating a continuum of service categories. This model supports surge and expansion methods of mobilization by retaining trained personnel and providing flexible service options for recruitment. It provides a “pool [to] continue to support Defence needs for trained manpower as required during expansions.”⁴⁴ Further refinements to the model could include the reintroduction of special conditions units. These Army Reserve units aim to retain members who are unable to commit to regular attendance, instead committing to two block periods of service per year. This example of refinement to the TWM provides an opportunity to maintain greater forces in the active Reserve, and therefore the ability to mobilize a larger, more capable force in a shorter period.

The Australian Defence Organisation (ADO) encompasses uniformed members of the ADF and civilian members of the Australian Public Service (APS.) APS staff are primarily employed in governance, support, and administrative roles. The Army should reconsider the use of contractor and APS staff based on what positions *should* be done, rather than what jobs *can* be done by civilians.⁴⁵ Accepting that the initial waves of military commitments will need to be generated from within the Service, and that the Service is resource constrained, alternative and rapid forms of expansion mobilization are required. While “civilianization” has been blamed for the hollowness of the existing force, the selective employment of APS staff within line units can enhance mobilization. An example is the corporate governance of and administrative demands on battalion executive officers (XO), which detract from the traditional employment as the unit’s second in command. Creation of an APS governance manager position in units would enhance mobilization by reestablishing unit XOs as readily deployable positions. Similarly, contractor support can enhance mobilization.

ADF training institutions are primarily staffed by military instructors. During mobilization of a limited size army, it is probable that these military personnel will be required for the conduct of initial waves of deployments. As a functional planning example, the U.S. Army closed its staff and war colleges in 1940, returning students to the operating forces and allocating staff to expansion tasks, such as doctrine development and short course instruction.⁴⁶ While not appropriate for all fields of training and education, the employment of contracted instructors in some military fields can enable the surge of regular military personnel. During the past decade the

⁴² *Army Reserve Forces: Department of Defence*, Audit Report no. 31 2008-2009 (Barton, AU: Australian National Audit Office, 2009), 11.

⁴³ Col Chris Smith and Dr. Al Palazzo, *Coming to Terms with the Modern Way of War: Precision Missiles and the Land Component of Australia’s Joint Force*, vol. 1 (Canberra, AU: Australian Army, 2016), 23.

⁴⁴ Rozman, “Reversibility in the Army.”

⁴⁵ Richard V. L. Cooper, *Military Manpower and the All-Volunteer Force* (Santa Monica, CA: Rand, Defense Advanced Research Projects Agency, 1977), 291–302.

⁴⁶ North, *Making the Difficult Routine*, 24.

United States has employed military contractor instructors in this role, both domestically and at forward staging bases. This presents another outcome of functional and detailed planning that can occur before conflict, enabling rapid enactment of surge and later expansion by mobilization.

Training and Education

Training and education is the second area to be examined in light of mobilization planning. Continuing the theme of contributing to the qualitative requirements of mobilization, the following recommendations outline both functional- and detailed-level planning considerations. These include contingency planning of training requirements, force protection of mobilization facilities, and training methods that enable rapid acquisition of skills.

Training for modern and future combat is increasingly time consuming, but can be partly mitigated by deliberate contingency planning prior to surge and expansion mobilization. Surge and expansion have different requirements, and each must be considered in creating a progressive training system. Critical path analysis is a tool that can assist planners to define the minimum requirements at each stage of training and therefore enable the rapid increase in personnel that is essential for expansion. Functional-level planners should develop mobilization training plans that document the differences between steady-state, surge, and expansion training. Implicit here is acceptance of reduced capability from a Reserve-based surge or civilian-based expansion force; soldiers “cannot be mass-produced in a few weeks of basic training. . . . Good soldiers, like good wine, take time to mature.”⁴⁷

Good soldiers are the result of good training, and although registered training organization (RTO) compliance has been an integral component of the current model, the Army should reconsider its role during mobilization. A study on the Army training and education framework, *The Ryan Review*, identified the need for change in Army’s training, education, and doctrine toward a more comprehensive system. It specifically challenges RTO compliance. Perceived individual and collective skill degradation has been attributed to a focus on competency and proficiency standards at the expense of professional mastery. This common claim undervalues the quality control, procedural, and retention benefits of RTO compliance. Nevertheless, there is merit in considering the impact of complying with these requirements during an expansion mobilization. *The Ryan Review* also challenges the role of the all corps officer and soldier training continuums, demonstrating a willingness to review content and delivery methods.⁴⁸

Proposed changes to the content and delivery method of all corps training courses can enable expansion-based mobilization. These courses are designed to train personnel one and two levels higher than their current positions, as in the German Army *Führerbeerb* (or leader’s army) concept. The U.S. mobilization for WWII exemplifies the importance of this approach. As Brian C. North notes, “None of the United States Army’s senior leaders had any experience leading large units before mobilization—the vast majority of future division commanders were captains, majors, and lieutenant colonels in 1939.”⁴⁹ It is imperative to retain this approach to training. Creation of a modular and reduced duration course for training during expansion must accept risk in administrative knowledge, instead emphasizing leadership and planning skills. *The Ryan Review* also considered the balance between in-residence and distance education. While increas-

⁴⁷ MajGen Bob Scales, USA (Ret), *Scales on War: The Future of America’s Military at Risk* (Annapolis: Naval Institute Press, 2016), 80, 202.

⁴⁸ Mick Ryan, *The Ryan Review: A Study of Army’s Education, Training and Doctrine Needs for the Future* (Canberra, AU: Australian Army, 2016), 7, 28, 51.

⁴⁹ North, *Making the Difficult Routine*, 43.

ing distance education can benefit the standing army, it also provides a low signature training system to mobilize forces without alerting an adversary.

Functional mobilization planning should consider the possible force protection implications of the current disposition of Army bases predominantly in coastal regions near large population centers. Australia's mobilization of personnel for previous conflicts has required the establishment of temporary and often remote facilities in regions deemed outside of enemy interference. The reach of precision-guided missiles and the pervasiveness of cyberwarfare negates the ability to mass training forces in the same manner. Although the colossal U.S. facility construction program for WWII had a "crucial, if not decisive impact on the outcome of the war," a comprehensive facility construction program to enable mobilization is unrealistic for a nation enjoying enduring peace.⁵⁰ However, innovative functional mobilization planning can identify opportunities for acquisitions, facilities expansion plans, and dual or contingency use facilities, such as abandoned industrial facilities.

Approaching training design from a mobilization perspective can enhance current training in addition to enhancing expansion or surge capability. Improving technological aids to training is an example. The Army has invested in simulation training primarily as a cost-saving measure and has remained behind the trend of commercial capabilities and emerging technology. The benefits of current and future simulation technology to mobilization are evident in the ability to train remotely, with minimal signature and expense. Existing technology, such as virtual reality, enhance capability in a force that does not enjoy years of progressive training prior to major conflict. The rapid acquisition of skills, regardless of its technological prowess is also relevant for mobilization. Examples include training with airsoft weapons, or simunition (nonlethal training) ammunition. These methods are economical in time and effective in training quality.

Doctrine

The exploration of planning theory, doctrine, and the ADF mobilization framework at the outset of this paper included general developmental recommendations. These recommendations included the incorporation of a holistic planning methodology and the generic improvement of application and procedural level doctrine. This final section outlines specific recommendations for improvements to doctrine that will enhance mobilization. These recommendations include improvements to the completeness of mobilization doctrine and, more broadly, improving the accessibility of doctrine and the resourcing of doctrine development.

Restricting mobilization doctrine to the philosophical level weakens its relevance, influence, and feasibility. While philosophical doctrine provides guidance, there is no practical or relevant accessible guide to application. This shortfall should be remediated with classified but accessible doctrine. At the application level, the finalization of the *Defence Preparedness Manual* meets this need. The *Defence Preparedness Manual* would enable the development of procedural doctrine to articulate the mobilization roles, tasks, and purposes within each major command. This procedural doctrine would provide the guidance necessary to delineate the roles of a combat brigade from that of a training command formation at each stage of the force generation cycle.

Inadequate access to Army doctrine is a restriction that will influence the proposed development of mobilization and all doctrine. There is an institutionalized gap in the understanding and application of doctrine between the period of initial training and the time that a soldier assumes an instructional role. This gap is repeatedly identified during externally observed exercises by a failure to first identify the doctrine before knowingly deviating from it. While there are many as-

⁵⁰ Smith, *The Army and Economic Mobilization*, 437.

pects to ensuring the dissemination and understanding of doctrine, an essential feature is accessibility. Replicating a societal trend, the Army has transitioned toward paperless environments, which has reduced the accessibility of doctrine to junior members whose workplace is rarely defined by an office or ease of access to information technology (IT). Ominously, this knowledge gap is at the core of future disaggregated, dispersed, small team leadership. The discontinuity at this level diminishes the application of doctrine, regardless of its quality or relevance.

To mitigate this trend, novel approaches to the availability of doctrine should acknowledge the importance of accessibility and the classified nature of some doctrine. IT projects that have provided mobile devices to instructors and assessors should be enhanced. This will ensure that doctrine is accessible, whether the workplace is a remote airstrip, a trench, or a command post. To prove effective, this would require a substantial IT investment, which could also remedy personnel administration shortfalls. A second recommendation is investing in a security infrastructure that permits the use of personal devices for classified material, such as those utilized within the U.S. military, in particular Google Apps for Government (GAFG), where with the addition of basic software, personal devices can store certain levels of classified documentation. This system could be leveraged for the same dual benefits of doctrine accessibility and personnel administration.

Technology can also enhance the accessibility of doctrine by enriching the presentation of doctrine. Conventional doctrine, restricted by the printing press, relies upon text and images to convey intent. This method can provide clarity, but can also be verbose and miss the context of the concept being described. This is particularly relevant in detailed doctrine. Technology that has been utilized to enhance training such as video, interactive, or virtual reality technology can also enhance doctrine.

Last, the resourcing of doctrine development is a challenge that requires enduring investment. This challenge has increased during the heightened operational tempo period and an urgent investment of relevant experience in the Land Doctrine Centre at the Army Knowledge Group is needed. The primary criteria for this human investment is the capability to generate doctrine, a skill which is not widespread throughout the organization. To capture and codify Army doctrine at the three identified levels, it is recommended that doctrine development become a cradle-to-grave tasking for selected personnel rather than a secondary role. This will likely require an increase to contractor support or reserve personnel on extended contracts.

The trade-off for removing doctrine development from the direct input of the operating forces is the chance of irrelevance. Training institutions and operating forces are the primary users of Army doctrine. The cumbersome Army lessons learned process is weighted toward operational experiences and the annual brigade certifying exercise. The training institutions, unit, and sub-unit level have repeated exposure and experience, but have limited capacity for capturing these lessons. To alleviate this, it is recommended that an increased development function be established at unit level. This development (S8) role, established at unit (battalion equivalent) level can form a conduit to existing under-resourced doctrine development, capability development, and modernization programs at Army and ADF Command Headquarters. The development of the TWM within the Army provides human resource options for the development of these positions without exceeding the personnel restrictions of the approved force structure (AFS.).⁵¹

⁵¹ The ADF has responded to demographic and civilian workforce changes that demand greater flexibility by implementing the total workforce model (TWM.) TWM provides a framework for personnel management that allows for a simplified transition between deployable service, full and part-time employment, and Regular and Reserve status. The implementation of this system provides an opportunity for the Army to capitalize on the capabilities of the Reserve, and to provide flexible opportunities to regular personnel. It also provides a catalyst to review functional and detailed mobilization plans to capitalize on these advancements.

CONCLUSION

The responsibility for maintaining Australia's defense capability in peacetime will continue to be borne by a small proportion of the population, and as with previous conflicts, this nucleus group will form the expansion base for major war. Australia's lack of military culture, aversion to conscription, and the increased professional requirements of the military will mandate that both groups be formed by volunteers. The challenges of future warfare will not change warfare, but it will change the tools, skills, and techniques involved, influencing the conventional quantitative mobilization models.

To adapt to the requirements of mobilization for future warfare, Army senior leaders must reenergize mobilization planning efforts. Integrated planning is essential, for which the U.S. Marine Corps model of conceptual, functional, and detailed planning is recommended. In addition to the classified components, the outcomes of this planning should be recorded in accessible doctrine at the application and procedural levels to complement the existing philosophical doctrine. Most important, the publication of such doctrine and planning allows critique, rehearsal, and improvement.

Second, the Army should provide more emphasis on mobilization as a criterion when developing personnel policies. This includes such activities as community engagement and supporting youth groups, such as the AAC. Established policies must evolve to develop a workforce that can capitalize on skills such as cyber and STEM. Mobilization planning should exploit the integration of Reserves through the TWM, and should also consider the role of civilian contractors within military training institutions.

Last, when developing training systems and methods, the Army should remain cognizant of the mobilization requirements of modern and future warfighting. These systems must define the requirements and acceptance of risk when training an expansion force and must consider the implications of RTO compliance during mobilization. The standing army can also benefit from mobilization planning, with the identification of alternative training facilities and training systems designed for rapid skills acquisition.

The Army must seize the moment to modernize its planning and doctrine for mobilization in an era of emphasis on technological skill rather than demographic mass. Essential to maximizing this opportunity is the articulation of functional and detailed plans to fulfill the Army's dual role as the nation's response force, and as an expansion base for sustained operations. A failure to consider mobilization at this time could lead to repetition of the "hollowness" of the 1980 and '90s, where the Army was incapable of sustained operations.⁵² The recommendations made in this paper, adopted individually, may improve specific areas of military capability. If adopted holistically and conceptually, they can improve Australian defense capability, and thus deterrence, by facilitating deliberate mobilization planning for a black swan event.

INFORMATIONAL APPENDIX

Australian Army Mobilization from World War One Onward

Australia's history of mobilization for conflict can be bracketed in three phases. The first phase included campaigns in the Boer republic (now the Republic of Natal), New Zealand, and WWI. In the case of WWI, the citizens' military forces (CMF) comprised land and maritime services. While universal service in the CMF was legislated from 1911 to 1929 for all males aged 18–60, there was no obligation for overseas service.⁵³ Two referenda proposing conscription failed

⁵² *From Phantom to Force*, chapter 6, 105.

⁵³ "Universal Military Training in Australia, 1911–29," National Archives of Australia, fact sheet 160.

during WWI.⁵⁴ The legislative barriers that restricted the CMF to domestic service created the requirement for the expeditionary First Australian Imperial Forces (AIF). Although many of the AIF were simply transfers from the CMF, these newly formed forces required comprehensive training as part of mobilization. Fortunately, Australia's geographic separation, the duration of sea transport, and the Middle East training camps provided the opportunity to remedy training shortfalls of newly enlisted personnel. This period also established the relationship of the Australian Army and the society from which it was drawn:

It was and remains an ambiguous relationship. The Army is an institution of which Australians are openly proud but in which most would not aspire to serve. In peace, unlike Britain, it has not attracted into its ranks the nation's elites. Unlike the United States Army, it has never held significant economic and political power or influence.⁵⁵

Following the demobilization of the AIF, Australia's military was largely disestablished, with a minimal regular cadre and a greatly reduced CMF.

The second phase was WWII, where mobilization repeated much of the pattern of WWI, with the forming of the second AIF, again from volunteers and with the reintroduction of universal service. While no conscription referenda occurred, the service obligation of CMF soldiers 21 years or older was amended in 1943 to include service in the Southwestern Pacific zone, effectively including the conflict zones of Australia's archipelago defense.⁵⁶ Recognizing the shortfalls of the minimal defense force of the interwar period, following the demobilization of the AIF, the Army was maintained by a small, professional Regular and Reserve cadre of approximately 70,000, who were to form the nucleus of an expanded capability as required.⁵⁷ At the conclusion of WWII, with the Army demobilizing, volunteers were called for service as part of the British Commonwealth Occupation Force (BCOF) in Japan. These WWII veterans formed the basis of the current Australian Regular Army infantry as the three original battalions of the Royal Australian Regiment. They also constituted 1,000 of the 4,470 strong Regular brigade of the permanent military force. The critically short strategic warning time for the Korean War, and the paucity of regular forces, required the Australian government to end one conflict to commence another.

The third phase includes the campaigns from 1946 to present. While this period includes a variety of operational commitments, including Malaya, Borneo, Somalia, Timor-Leste, Afghanistan, and Iraq, only Korea and Vietnam required expansion during mobilization. In 1949, the Australian Army consisted of 19,000 Regular and 50,000 Reserve or citizens' forces. In support of a British, Australian, and New Zealand defense contingency plan in Malaya and the Middle East, the defense committee committed to provide a ground force of three infantry divisions (approximately 30,000) and an armored brigade (1,500–3,500). Maritime and air components were equally large by comparison to the standing military size. In 1950, when called upon to support United Nations (UN) operations in Korea, Australia struggled to deploy a single capable infantry battalion, ultimately deploying the 3d Battalion, Royal Australian Regiment, directly from Japan to service during the breakout from the Pusan perimeter in Korea.⁵⁸

The situation as revealed by the Chiefs of Staff Committee on 26 July (1950)

⁵⁴ "Conscription Referendums, 1916 and 1917," National Archives of Australia, fact sheet 161.

⁵⁵ *From Phantom to Force*, chapter 2, 13.

⁵⁶ "National Service and War, 1939–45," National Archives of Australia, fact sheet 162.

⁵⁷ Robert J. O'Neill, *Australia in the Korean War, 1950–53*, vol. 1, *Strategy and Diplomacy* (Canberra, AU: Australian War Memorial and Australian Government Publishing Service, 1981), 22.

⁵⁸ O'Neill, *Australia in the Korean War*, 26–35.

was lamentable. Not five years previously the Australian Army had been able to provide a force of over five divisions for active operations. In 1950, it experienced difficulty in providing a single Battalion for operations. Neither of the two battalions in Australia, 1 RAR [Royal Australian Regiment] and 2 RAR, was even as ready for mobilisation as 3 RAR. Admittedly, the crisis had come suddenly—more suddenly than any direct threat to Australian territory could have arisen.⁵⁹

The lead-up to the Korean War was Australia's most significant post-war attempt at national mobilization. However, it was in response to the growing threat of global war posed by the spread of Communism, rather than the Korean War itself that caused Australia's longest-serving Prime Minister Robert Menzies to "call for the nation to prepare for war within three years."⁶⁰ Having committed the Australian military for service in Europe in WWII, Menzies, now in his second period of office, continued the legacy response of providing military capability in support of allied campaigns.⁶¹

Replicating President Harry S. Truman's call for American unity against a common threat, Menzies paired his political aims of Australian economic development with plans for war.⁶² Australian economic development had been and remained contingent upon resources since federation. However, the National Security Act's establishment of the National Security Resources Board (NSRB) in 1950 was the first time in Australian peacetime history that national resources were coordinated through a centralized government body charged with national security.⁶³ Menzies contended that this level of control was required as mobilization for a Third World War would not involve the "breathing space" for mobilization that the two previous world wars had enjoyed.⁶⁴

The NSRB operated within the Office of the Prime Minister and enjoyed a wide-ranging agenda. Involved in food production, economic, manufacturing, defense, and integration with Allied war plans, the board held a preeminent role in mobilization planning. For example, acknowledging the lack of scientific and specialist capabilities within Australia, the NSRB created a committee to establish a register of scientific specialists within Australia, including a plan for their unique capabilities that could be called upon for "defence purposes."⁶⁵ The parallels to contemporary shortages of STEM or cyber-qualified expertise is stark.

The provision of manpower was a key element in the Cold War mobilization plans. Fearing Communist interruption to economic development, and therefore war readiness, the Australian government created a committee to establish a labor reserve in case of striking workers in critical industries like the waterfront. Comprised of military and public service members, the committee was led by a military officer and the desire for the military to constitute this "reservoir of manpower" was clear.⁶⁶

Australia's first response to the outbreak of war on the Korean peninsula occurred one day following the notification. To the same region for which mobilization plans had committed more than five Australian infantry divisions, Australia immediately deployed an air force capability

⁵⁹ O'Neill, *Australia in the Korean War*, 74.

⁶⁰ Lowe, *Menzies and the "Great World Struggle"*, 14; and "Robert Menzies," National Archives of Australia.

⁶¹ Lowe, *Menzies and the "Great World Struggle"*, 7.

⁶² Lowe, *Menzies and the "Great World Struggle"*, 129.

⁶³ Lowe, *Menzies and the "Great World Struggle"*, 10, 131.

⁶⁴ Lowe, *Menzies and the "Great World Struggle"*, 9.

⁶⁵ Lowe, *Menzies and the "Great World Struggle"*, 139.

⁶⁶ Lowe, *Menzies and the "Great World Struggle"*, 147.

that had been long-requested. This contribution to a neighboring theater would alleviate other Allied contributions and provide extended deterrence and defense of the Australian mainland.⁶⁷ A month later, and after a direct U.S. request, Australia released the understrength infantry battalion from BCOF for service in Korea on a volunteer only basis.

Concurrent mobilization of national servicemembers while the Regular Army maintained operational commitments in Korea was the first example of the challenges of contemporary military modernization in periods of reduced strategic warning time. The national service scheme was introduced in 1951 and continued until 1959. The scheme registered more than 500,000 and trained 227,000 young adult males, requiring an initial period of approximately six months, followed by five years of Reserve service.⁶⁸ National servicemembers could not be compelled for overseas service and were designed to fulfill domestic defense responsibilities, enabling the small professional army to serve overseas, such as was occurring with first one, then two infantry battalions deployed to Korea. Concurrently, the Regular Army was required to train the CMF, although the concurrent challenges the Korean War precluded them from doing so adequately.⁶⁹

Further mobilization constraints were demonstrated in 1951, when the United States requested Australia deploy a complete brigade to Korea, with the intention of continued presence after any cease-fire. The Korean War was, and remains, the “only large-scale, conventional war” fought by the Royal Australian Regiment. It represented “significant growth for the Australian Army . . . [and for] a generation of young officers.”⁷⁰ Although the Australian population had a wealth of WWII military experience, the character of the Korean War only six years later presented insurmountable challenges to mobilizing platoon and company commanders trained in what was viewed as a “new type of war.”⁷¹ The Australian commitment was therefore raised to only two infantry battalions from 1952, and even this mobilization burden continued to retard the growth of the Australian Army for the following decade.⁷² The period of Cold War threat and Korean War reality of 1950–53 saw the Australian military population triple, defense expenditures quadruple, including investment in naval and air capital resources, and significant resource stockpiling. This drastic escalation did not result in increased military capability, and was deemed excessive for the economic capability of the nation.⁷³

The most contentious period of mobilization, and the last period of national service in Australia, was in preparation for the Vietnam War, again to bolster the minimal standing army. Australia’s strategic warning time for this conflict, as evidenced by the progressive mobilization through national service, was counted in years rather than the weeks as presented by the Korean War. In 1964, national service was amended to include overseas service, and in 1965, the first of 15,381 national servicemembers deployed to Vietnam. Widespread social opposition to conscription and the Vietnam War led to the disbanding of national service in 1972.⁷⁴

Following Vietnam, the Defence of Australia (DOA) policy fiscally and operationally constrained the ADF throughout the 1980s and 90s. This policy restricted the Australian Army to “territorial defence in the north of Australia,” consigning the land force to a subordinate and limited role behind air and maritime forces responsible for the “air-sea gap.”⁷⁵ The Australian Ar-

⁶⁷ O’Neill, *Australia in the Korean War*, 47–49.

⁶⁸ “National Service, 1951–59,” National Archives of Australia, fact sheet 163.

⁶⁹ O’Neill, *Australia in the Korean War*, 35.

⁷⁰ David Horner and Jean Bou, eds., *Duty First: A History of the Royal Australian Regiment*, 1st ed. (Crows Nest, AU: Allen & Unwin, 2008), 57–80.

⁷¹ O’Neill, *Australia in the Korean War*, 250–52.

⁷² O’Neill, *Australia in the Korean War*, 251.

⁷³ Lowe, *Menzies and the “Great World Struggle,”* 142–44.

⁷⁴ Leslie C. Jauncey, *The Story of Conscription in Australia* (Crows Nest, AU: Allen & Unwin, 1935).

⁷⁵ Grey, *A Military History of Australia*, 275–76.

my's ability to respond to expeditionary tasks was degraded, lacking operational opportunities, and reduced both in scale and capability. Operational reach and sustainability vulnerabilities during Operation Morris Dance and the 1999 ADF-led operation in East Timor (INTERFET) exposed the extent of this degradation. A parliamentary report in 2000 found the Army force generation capability to be an "inefficient model for expansion" and "fictional" due to the lack of "credible mobilisation plans."⁷⁶ This strategic influence provided the impetus for change, including relevant funding. It was during this period that the ADF generated the current preparedness and mobilization doctrine and system that is the basis for this research. Mobilization for subsequent operations in Timor-Leste, the Solomon Islands, Iraq, and Afghanistan are examples of stage one mobilization, involving the selective and voluntary mobilization of reserves but not the challenges of expansion as examined in this paper.

The Army developed Plan Beersheba during this period to maintain credible, enduring, and relevant military capability. This organizational plan significantly restructured the Army into three primary brigade groups, each rotated through three 12-month periods of escalating readiness. This recognizes the limited capacity of the Army and prioritizes and allocates resources to elements at each stage in the cycle. Plan Beersheba met the strategic requirements of government, provided a relevant role for the Army Reserve, enabled progressive and rapid modernization, and provided a force capable of meeting known and unknown operational commitments by emphasizing foundation warfighting training. In addition, this period saw adaptive approaches to personnel management and a holistic review of Army doctrine. Plan Beersheba met preparedness requirements and enabled positive organizational development, but there is no evidence of advances in mobilization either because of it or during the period of its establishment as the Army's framework.

Mobilization remains an enduring national and military strategic requirement. The chief of the ADF mandated that "defence establish a baseline preparedness requirement whereby our forces have the knowledge and skills to engage in high-end warfighting activities for the self-reliant defence of Australia within a strategic warning time. . . . This represents the expansion base from which Defence mobilises."⁷⁷ Strategic guidance in the *2016 Defence White Paper* mandates "an increase in the ADF's preparedness level, based on raising its overall capability and improving its sustainability on operations."⁷⁸ The absence of thorough mobilization doctrine is evidence that the challenges of mobilization have not been adequately met.

The Reichswehr: German Expansion Capability during the Interwar Period

Following defeat in WWI and under economic, political, and international treaty limitations, the German Army designed and built a force for future war. The *Reichswehr* materialized from a detailed study of the lessons of WWI and preparations for a future conflict that would necessitate the conduct of rapid, mobile warfare. The outcomes of this study were articulated in *Army Regulation 487, Leadership and Battle with Combined Arms* in 1921 and 1925 and adapted in 1933 to the advent of armor and aviation in *Army Regulation 500, Troop Leadership*.⁷⁹

The *Reichswehr* was designed to achieve dual requirements of an "elite military strike force" and an expansion base for a "high-quality professional army" of 21 divisions. This necessitated a change in the role and conduct of mobilization:⁸⁰

⁷⁶ *From Phantom to Force*, chapter 6, 124.

⁷⁷ LtCol Andrew Stevens, "Preparing Defence," *Defence Magazine*, 2012.

⁷⁸ *2016 Defence White Paper*, 140.

⁷⁹ James S. Corum, *The Roots of Blitzkrieg* (Lawrence: University Press of Kansas, 1992), 37, 49, 199–200.

⁸⁰ Corum, *The Roots of Blitzkrieg*, 69.

[Field Marshal Alfred] Von Schlieffen relied upon a detailed mobilization plan to bring a large conscript/reservist army to the front faster than the enemy. [Johannes F.] Von Seeckt preferred to start the war without prior mobilization and to gain surprise by using the highly mobile regulars for a first strike.⁸¹

Von Seeckt understood mobilization to be a contemporary military requirement but, more importantly, he and von Schlieffen used mobilization as a weapon of warfare.

The German concept of mobilization was to involve four “waves,” each constituted from a distinct element of the army and with tasks relevant to its capability. The first wave was the regular armored and motorized regular army tasked to conduct the mobile warfare outlined in the revised German doctrine. The second consisted of reserve units with embedded regular cadre staff that would act as reinforcements or reserve pools for the first wave. The third wave consisted of “older reservists” with limited equipment and these *Landesschutz* (or land protection) divisions were used for domestic defense. The final wave was the “replacement army training divisions,” which would support further mobilization after the army had commenced the war.⁸²

That the German Army was able to expand from 100,000 in 1933 to more than 3.7 million men by 1939 is testament to the mobilization tools embedded within the *Reichswehr*. These building block tools of mobilization can be observed in doctrine, personnel, and training. German doctrine, including *Leadership and Battle* and *Troop Leadership*, emphasized maneuver, an offensive mind-set, decentralized command, initiative and battlefield judgment of commissioned and noncommissioned officers. These desired characteristics ensured that the mobilized force was suitable for the conduct of contemporary and future warfare as envisaged by von Seeckt. It enabled the German concept of secondary mobilization by ensuring that the first wave force had sufficient capacity for tactical victory in independent operations, during which time mobilization would be occurring.⁸³

The *Reichswehr* was limited in the source, quantity, and employment of personnel. The Treaty of Versailles banned conscription, requiring a cultural shift toward an all-volunteer force. Capacity was checked at 100,000 men, and the officer component was likewise limited at 4,000 men. Finally, the nature of employment was limited, with no armor, heavy artillery, or aviation capabilities allowed. These limitations required changes to the *Reichswehr* personnel policies and the division of tasks between commissioned and noncommissioned officers.

Pivotal to achieving the dual tasking requirement within these constraints was establishing leadership throughout the army, which was articulated in creation of the *Führerbeerb* (or leaders army). This stressed the importance of leaders at all levels and increased the scope of NCO responsibility into command positions previously the domain of officers. *Führerbeerb* prioritized the NCO over the private soldier, in effect creating an “up or out” personnel policy. It further highlighted the importance of first appointment NCOs through the establishment of selection examinations that, again, were previously the domain of officers. The education requirements and standards for officers, however, did not decrease; rather, they expanded to include the technical aspect of modern warfare, specifically to understand the effects of modern weapons. Lastly, the requirement to maintain a healthy mobilization base required all members of the *Reichswehr* to train to two levels of command higher than their current position.⁸⁴

Training was the final component of maintaining a force capable of meeting the dual re-

⁸¹ Corum, *The Roots of Blitzkrieg*, 52.

⁸² Corum, *The Roots of Blitzkrieg*, 200.

⁸³ Corum, *The Roots of Blitzkrieg*, 37–38.

⁸⁴ Corum, *The Roots of Blitzkrieg*, 33, 69, 201.

quirements of a credible fighting force and an expansion base. The *Reichswehr* trained without the physical armor and aviation capabilities they knew were required for future warfare, instead improvising mock-ups or, in later phases, using covert means to build foundation armor and aviation capabilities in Russia. The conduct of annual progressive field maneuvers furthered these development programs and informed the development of doctrine, which was published before the military possessed the capability to which the doctrine referred.⁸⁵

French Preparation and Mobilization for World War II

In May 1940, the French doctrine of the previous two decades proved ineffective against the German offensive. By June of the same year, the destruction of French defenses and the surrender of Paris outlined a strategic failure, to which military doctrine, organization, and equipment were central contributors. France's primary objective was to undermine German mobilization preparations, and while initial postwar inclinations were toward an offensive doctrine, the French Army developed a defensive doctrine that was reliant upon mobilization. Contrary to Robert Doughty, who emphasized the French political leaders influence upon army doctrine, Elizabeth Kier contends that civilian leadership viewed military doctrine as "above their purview" and that the primary reason for this defensive approach was a cultural reaction within the military:⁸⁶

The French Army could not imagine short-term conscripts executing an offensive doctrine. For the French Officer, one-year conscripts were good for only one thing—implementing a defensive war plan. In the army's view, "young troops" could only be engaged methodically: they could not handle sophisticated technology, new methods of warfare, or demonstrate the *élan* necessary for offensive actions.⁸⁷

This cultural mindset was driven by domestic unrest, rather than an international or external threat-oriented focus. In 1928, the French government reduced the conscription term to one year in response to the "fear of the latent domestic force of a professional army"; although, it later reverted to a two-year period in 1935. French Army officers viewed this decision as a fait accompli that restricted their offensive capability, as they believed that a short-term conscription army was only capable of defensive, centrally controlled operations. This belief was founded in the technical demands of contemporary warfare and the requirement for collective spirit, determined to be solely achievable by a professional standing army. The implications of the French Army response to this political decision would manifest in *Bataille Conduite* (literally battle by guidance), "the methodical battle," the Maginot Line in northeast France, and ultimately defeat.⁸⁸

The French Army's cultural attitude to the capabilities of a conscript army was enshrined into doctrine and training in the 1930s. Training manuals and directives emphasized the requirement for simplicity and centralized control, referring to the restrictions of recently mobilized troops. The French development of mechanized and motorized forces further restricted the offensive capabilities, dividing rather than massing these elements and restricting the rate of mobility to the conscript infantry forces. The deciding factor, however, was the development

⁸⁵ Corum, *The Roots of Blitzkrieg*, ix, 69, 97–99, 133, 160, 183, 191–95.

⁸⁶ Elizabeth Kier, *Imagining War: French and British Military Doctrine between the Wars* (Princeton, NJ: Princeton University Press, 1999), 39, 53–55, 72–73; and Doughty, *The Seeds of Disaster*, 1–5, 14.

⁸⁷ Kier, *Imagining War*, 73.

⁸⁸ Kier, *Imagining War*, 15, 56, 60, 70–71, 86; and Doughty, *The Seeds of Disaster*, 22.

of a protective and dogmatic approach to doctrine, which deemphasized flexibility or adaptation, instead mandating strict obedience of “interchangeable units” to procedures that “systematically compel every detail of execution.”⁸⁹

The French decision to restructure the duration of service, including the structure of its Army, created immediate and enduring capability implications. The reduction of full-time personnel reduced their ability to commit to autonomous action in Europe, degraded if not removed their ability to generate offensive strategic capabilities, and reduced their peacetime army to “a skeleton around which the wartime army mobilized.” The level of reserve training was limited by policy and further degraded by the economic impact of the depression. The progression had a reserve soldier move through tiers of training, which included as little as six weeks in 16 years, then seven days in 8 years following their active duty service. The concept for mobilization was, with strategic warning time, to divide each active division that reinforced with reservists to form three divisions. The result of this concept was greater quantity of lesser quality, which was relevant to the expectation of a long duration, large-scale war, but not to the reality of a frontier battle.⁹⁰

France understood and planned for the enormity of the economic, physical, and military requirements of mobilization. Intending to employ the military shield of a portion of the standing army, sustained by stockpiled resources relevant to defense, the French designed a mobilization system intended to create time. This conceptual plan was in response to a growing French appreciation of the German capability to conduct *attaque brusque* (or pounce), or *blitzkrieg* from the German perspective.⁹¹

Readiness was an essential component of the French mobilization concept. Historically, active units had maintained dual responsibility for peacetime training and for wartime mobilization. However, the organizational shift toward a reservist, rather than active, army mandated change. The imperative for rapid mobilization of the reserves, the anticipation that the active army would already have deployed, and the recognition of reduced capability within the reserve led to the creation of mobilization centers. These centers were operated primarily by civilians with training delivered by active personnel, not necessarily of the units with which the reserves would mobilize. The centers would administer and mobilize reserve units, providing detailed manuals and plans to ensure an efficient process. The French Army was not derelict in either identifying or attempting to rectify shortfalls in the readiness of reservists, conducting mobilization exercises as early as 1934. The results of these exercises, while damning on the caliber of reserves, did not result in changed training policies and only served to reinforce the French Army mandate for a defensive doctrine. As a result, the French mobilization process could not provide the “highly trained and cohesive reserve units” that were required for war.⁹²

⁸⁹ Kier, *Imagining War*, 76–77; and French Gen Marie-Eugène Debeney, quoted in Doughty, *The Seeds of Disaster*, 11.

⁹⁰ Doughty, *The Seeds of Disaster*, 22–24.

⁹¹ Doughty, *The Seeds of Disaster*, 25–27.

⁹² Doughty, *The Seeds of Disaster*, 29–31.

Walking the Tightrope

An Evaluation of Civil-Military Relations Today

by Major James W. Lucas, USA¹

Military theorist Carl von Clausewitz was one of the first to identify that war is not “the exclusive province of soldiers.”² He recognized that the rise of ideologically driven mass armies during the French Revolution fundamentally changed how governments fought wars. War was no longer just “a matter for the army and the army alone” because governments “now had to appeal to the citizenry.”³ This shift in the conduct of war also reverberated through civil-military relationships, coupling the military’s objectives of a conflict with a larger political purpose. For Clausewitz, war was an extension of politics through other means; the political goals determined “both the military objective to be reached and the amount of effort it requires.”⁴ Clausewitz highlights the natural tension at play between the soldier and the statesman; whereby, the statesman determines the political objective of the war, and the soldier determines if the political objective is consistent with the use of military force. The soldier establishes the military objective and military means to execute the conflict; both the soldier and the statesman ensure the military strategy achieves the political purpose. Feedback from the strategy helps reframe the political objective, ultimately leaving the statesman to decide when to end the conflict.⁵

This tension remains a critical component of civil-military relationships in the United States today. Members of the military hold the subordinate nature of their institution to civilian authorities as a core principle of their profession. Deference to civilian officials legitimizes military efforts to protect the interests of the United States domestically and internationally. Civilian control of the military provides government representatives with a powerful bargaining chip during negotiations. Unfortunately, the relationship between senior military officials and civilian authorities is not always amenable. President Harry S. Truman relieved Army General Douglas MacArthur after he challenged the policies of his administration in Korea. General Stanley A. McChrystal resigned after making controversial comments on the policies of President Barack H. Obama’s administration in Afghanistan. More recently, remarks to the national media from

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² Dale R. Herspring, *The Pentagon and the Presidency: Civil-Military Relations from FDR to George W. Bush* (Lawrence: University Press of Kansas, 2005), 3.

³ Herspring, *The Pentagon and the Presidency*.

⁴ Carl von Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 87, 81.

⁵ Michael J. Morgan, “Clausewitz on Civil-Military Relations: What Hitler Should Have Known” (working paper, National War College, 2002), 2–4.

retired military officers during the presidential election reignited a conversation on the status of civil-military relationships in the United States. This new dialogue accentuates the idea that understanding the complex dynamics at play is an obligation for every military officer.

The tension between government authorities and senior military leaders that exists today is not new. However, not understanding or acknowledging this tension poses a problem for modern civil-military relations. The concerned parties fail to appreciate the dynamics of the relationship and the prevailing sense of distrust between the parties that has existed since the Continental Army. Even though the civil-military divide is not new, the relationship is aggravated by five factors: a blurring of the roles and responsibilities of the executive and legislative branches in exercising civilian control, a distancing of senior military officials from the seat of power, a rise of the American military in the shaping of foreign policy, increasing public confidence in the military, and use of the media to sway public opinion. Members of the military can address the current sentiments of distrust within civil-military relations by embracing its complex symbiotic nature, reforming professional military education, and improving accountability for behavior within the ranks.

A REVIEW OF CIVIL-MILITARY RELATIONS

Before proceeding to the analysis of modern civil-military relations, it is important to provide context on four areas: a definition of civil-military relations; an identification of the parties involved in the relationship; a brief historical review of the tension between civilian authorities and senior military leaders inherent in the relationship; and an appreciation for the evolving roles and responsibilities for the parties in the civil-military relationship.

In a lecture at the United States Air Force Academy in 2013, Dr. Mackubin T. Owens defined *civil-military relations* as the interaction between the institution of the military, the government, and “the other sectors of the society in which the armed force is embedded.”⁶ Central to this relationship is an understanding between the citizens, their representatives of government, and the military on the apportionment of roles and responsibilities in defense of the interests of the United States. Dr. Owens compares civil-military relationships to two hands wielding a sword. One hand—the representatives of government—is responsible for determining when and why to pull the sword from its scabbard. The other hand—the military—maintains the blade and applies it to achieve the objectives identified by the government.⁷ The term *gap* frequently refers to the distance between a society and the military charged to protect it. Although that link is critical, that discussion is outside the scope of this paper and reserved for another time. For the sake of brevity, this paper focuses solely on the relationship between representatives of government and senior military leaders. The terms *divide* or *tension* are used interchangeably to discuss that relationship.

The delicate balance, or tension, that defines the civil-military relationship has always existed. In the twilight of the American Revolution, as the threat from Great Britain dissipated, feelings of malcontent amongst the soldiers of the Continental Army reached a tipping point. Facing limited supplies, no pay, and frozen promotions, factions of the Army called for a more aggressive approach to the Continental Congress.⁸ General of the Armies George Washington successfully quelled the revolt, asking the angry parties to place “the army’s confidence in the

⁶ Mackubin Thomas Owens, “What Military Officers Need to Know about Civil-Military Relations” (lecture, U.S. Air Force Academy, Colorado Springs, CO, May 2013).

⁷ Owens, “What Military Officers Need to Know about Civil-Military Relations.”

⁸ C. Edward Skeen and Richard H. Kohn, “The Newburgh Conspiracy Reconsidered,” *William and Mary Quarterly* 31, no. 2 (April 1974): 274–75, <https://doi.org/10.2307/1920913>.

Congress and the commander in chief.”⁹ During the American Civil War, President Abraham Lincoln and Major General George B. McClellan disagreed on an appropriate strategy to conduct the war. Lincoln felt McClellan moved too slowly; conversely, McClellan felt he lacked sufficient forces to achieve Lincoln’s objectives. Unable to come to an agreement, Lincoln replaced McClellan with Major General Ambrose E. Burnside in November 1862. President Franklin D. Roosevelt and Army General George C. Marshall clashed over the lend-lease program with Great Britain, the Allied invasion of North Africa, and the timing of the invasion of Western Europe.¹⁰ Despite their differences in opinion on these issues, Roosevelt and Marshall upheld an “image of civil-military comity” throughout World War II.¹¹ In all three examples, civilian control of the military reigned supreme.

The balance of roles and responsibilities between participating parties in the civil-military relationship evolved over time as well. Prior to World War II, the military was “too peripheral to policymaking and society” to assume a strong position in the relationship.¹² Dr. Owens identifies four redistributions of power since the end of World War II. The first one occurred coming out of the war, as the United States military moved from the periphery into the limelight as a central government organization. During the Cold War, the strategy of deterrence “marginalized the military’s contribution to strategy making.”¹³ The fall of the Berlin Wall and the end of the Cold War marked a third renegotiation of the roles and responsibilities as politicians and military leaders attempted to map a course through uncharted waters. Finally, Dr. Owens suggests the state of continuous conflict during the last 15 years has potentially brought civil-military relations to a point where the U.S. military exercises excessive sway over the government.¹⁴

CIVIL-MILITARY RELATIONSHIP THEORIES

Clausewitz’s identification of the tension between military leaders and civilian authorities and his theory on civil-military relations is only a starting point. Scholars criticize him for oversimplifying the relationship and failing to “understand the dynamics of civilian interactions with the military.”¹⁵ Since the end of World War II, five more-recent civil-military theorists have explored these dynamics in greater detail. Early theorists like Samuel P. Huntington and Morris Janowitz provide a foundation for the study of civil-military relations. More contemporary theorists like Eliot A. Cohen, Peter D. Feaver, and Rebecca L. Schiff expand the research in the field. Although understanding all of the theories is important to appreciate that contribute to the tension between government authorities and senior military leaders, ultimately Schiff’s theory is the best representation of the ideal civil-military relationship.

Samuel P. Huntington, a political scientist, first started to explore civil-military relations in the early years of the Cold War as the United States flexed its global military power. In his book *The Soldier and the State*, Huntington lays out what many consider the foundation of modern civil-military theory. He argues that the military, specifically officers, comprise a profession. A *profession* is defined as “a peculiar type of functional group with highly specialized characteris-

⁹ Skeen and Kohn, “The Newburgh Conspiracy Reconsidered,” 288.

¹⁰ Owens, “What Military Officers Need to Know about Civil-Military Relations.”

¹¹ Owens, “What Military Officers Need to Know about Civil-Military Relations.”

¹² Russell F. Weigley, “The American Civil-Military Cultural Gap: A Historical Perspective, Colonial Times to the Present,” in *Soldiers and Civilians: The Civil-Military Gap and American National Security*, ed. Peter D. Feaver and Richard H. Kohn (Cambridge, MA: MIT Press, 2001), 217.

¹³ Weigley, “The American Civil-Military Cultural Gap.”

¹⁴ Weigley, “The American Civil-Military Cultural Gap.”

¹⁵ Herspring, *The Pentagon and the Presidency*, 4.

tics,” including expertise, responsibility, and corporateness.¹⁶ The officer corps of the military meets Huntington’s general characteristics of a profession in three ways. First, members of the officer corps are experts in the application of violence, developed through specialized training and consisting of its own occupational language. As experts in the use of force, members of the officer corps are responsible to society for only using that skill in appropriate situations. Finally, the ability to exercise this skill is limited to a small number, who are “publicly symbolized by uniforms and insignia of rank,” as members of the military bureaucracy.¹⁷ For Huntington, it is important to differentiate between the terms *professional soldier*, or *professional army*, and *military profession*. The first two terms describe individuals who work for pay, while the latter refers to those pursuing something greater than themselves “in the service of society.”¹⁸ Admittedly, historians criticize Huntington for resting his theory on the rise of the military profession on limited sources about the U.S. Army during the nineteenth century. In an article from 1991, Edward M. Coffman said, “We now know that the isolated situation of the officer corps which Huntington considered so important in the molding of the professional ethic did not exist for many.”¹⁹ However, Huntington remains a good starting point for exploring the civil-military relationship.

Huntington believes in the subordinate nature of the military to civilian authorities, claiming obedience is “the supreme military virtue.”²⁰ He envisions two approaches to the civilian control of the military: subjective control and objective control. High levels of political and social involvement and low levels of military professionalism characterize subjective civilian control. Government officials use strict control measures to minimize conflict and maintain power over the military. For Huntington, “the denial of an independent military sphere,” is at the heart of subjective control.²¹ Conversely, low levels of political and social involvement and high levels of military professionalism mark objective civilian control. Senior politicians leave military matters to military professionals, and senior military leaders leave political matters to politicians. There is a distinct distribution of power between the military and civilians leading to “the emergence of professional attitudes and behavior,” in the officer corps.²² For these reasons, Huntington firmly believed objective civilian control was the ideal method of civil-military relations. Increased autonomy contributed to a higher sense of professionalism, resulting in an apolitical military securely under civilian control.

Another contemporary civil-military theorist writing at roughly the same time as Huntington was sociologist Morris Janowitz. He did not share Huntington’s faith in the two distinct institutions of military leaders and civilian authorities. Instead, Janowitz argues that evolving responsibilities of the military gradually distort the lines between the two domains. To accomplish their new missions, professional officers need “skills and orientations common to civilian administrators and civilian leaders.”²³ He envisioned the military transitioning to what he calls the *constabulary concept*. Under this new organizational design, the military no longer differentiates between “peacetime” and “wartime,” remaining “continuously prepared to act” across the range of military operations.²⁴ To achieve this constabulary concept, Janowitz saw a conver-

¹⁶ Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, MA: Harvard University Press, 1957), 7–10.

¹⁷ Huntington, *The Soldier and the State*, 11–16.

¹⁸ Huntington, *The Soldier and the State*, 8.

¹⁹ Edward M. Coffman, “The Long Shadow of *The Soldier and the State*,” *Journal of Military History* 55, no. 1 (January 1991): 81.

²⁰ Huntington, *The Soldier and the State*, 74.

²¹ Huntington, *The Soldier and the State*, 83.

²² Huntington, *The Soldier and the State*, 83.

²³ Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (New York: Free Press, 1960), 9.

²⁴ Janowitz, *The Professional Soldier*, 418–19.

gence of the civilian and military sectors. The civilian elites would work to evolve the military profession. In return, the military elites would remain “amenable to civilian political control,” because they recognized that the civilian authorities respected “the tasks of the constabulary force.”²⁵ Although Janowitz disagreed with Huntington on the force structure and utilization of military, both theorists appreciated the value of an apolitical military service.

Despite the best attempts of Huntington and Janowitz to explain the ideal civil-military relationship, theories continued to evolve. In his attempt to understand the complexities of civil-military relations, Eliot A. Cohen proposes the idea of the *unequal dialogue*. Cohen, a political scientist, recognizes the foundation Huntington’s objective control model provides, but believes it fails to deliver “a description of either what does occur, or what should,” in civil-military relations especially in times of war.²⁶ He critiques Huntington’s idea that military officers are truly experts in the application of violence, arguing many spend entire careers without partaking in a conflict. Because “war is too varied an activity for a single set of professional norms,” senior military leaders find themselves advising on issues for which they have no frame of reference.²⁷ This does not detract from the quality of their advice, but demonstrates that their counsel is not infallible. In Cohen’s unequal dialogue, government officials and senior military leaders repeatedly express “their views bluntly, indeed, sometimes offensively.”²⁸ However, in the end the authority of the civilian leader reigns supreme.

The next civil-military theorist, Peter D. Feaver, attempts to clarify civil-military relations using the business concept of agency theory. For Feaver, the “relations between civilians and military are . . . a strategic interaction carried out within a hierarchical setting.”²⁹ Civil-military relations are strategic because the decisions either side makes depend on what they believe the other is likely to do. The relations occur within a hierarchical setting because “civilians have legitimate control over the military.”³⁰ According to agency theory, government authorities, or principals, enter into a contract with the military institution, or agent, to build a force capable of defending the principal’s interests. Once both sides agree to the contract, the principal ensures the agent adheres to it by establishing appropriate mechanisms to minimize the risks associated with the delegation of power. Feaver argues the ideal blend of “monitoring mechanisms” minimizes the chance for the military to ignore the wishes of the government, “at the least cost to the principal and while preserving the efficiencies of specialization that come with delegation.”³¹ Inherent in this explanation of civil-military relations is the idea that, at times, the military has the ability and motivation to avoid doing what civilian authorities want. The military will violate the contract if there is a negative perception of what the civilians are asking for, and it is unlikely the principal will punish them for the violation.³² The areas of agreement and disagreement between the principal and agent will shift over time. For Feaver, civilians can “shape military behavior,” by promoting military leaders “who hold preferences more similar to those of civilian principals.”³³ Unfortunately, even that action is of limited utility because the unique nature of military culture lends itself to the development of diverging viewpoints.

The final contemporary civil-military relations theory worth mentioning is political scientist

²⁵ Janowitz, *The Professional Soldier*, 439–40.

²⁶ Eliot A. Cohen, *Supreme Command: Soldiers, Statesmen, and Leadership in Wartime* (New York: Free Press, 2002), 229.

²⁷ Cohen, *Supreme Command*, 246–47.

²⁸ Cohen, *Supreme Command*, 209.

²⁹ Peter D. Feaver, *Armed Servants: Agency, Oversight, and Civil-Military Relations* (Cambridge, MA: Harvard University Press, 2003), 54.

³⁰ Feaver, *Armed Servants*, 54.

³¹ Feaver, *Armed Servants*, 57.

³² Feaver, *Armed Servants*, 57–58.

³³ Feaver, *Armed Servants*, 59.

Rebecca L. Schiff's concept of concordance theory. Writing after the end of the Cold War, Schiff challenged the standing belief that civil-military relations consist of a "dichotomous power relationship between civil and military spheres."³⁴ Schiff's concordance theory contains strong undertones of Plato's three parts of the *polis* (idea city) and Clausewitz's "remarkable trinity."³⁵ She identifies three partners within civil-military relationships: the military, the political elites, and the citizenry. Concordance theory's three partners try to achieve concordance, or agreement, on four indicators: the composition of the officer corps, political decision-making process, recruitment method, and military style. Unlike other civil-military theories that stress the separation of military and civil institutions, concordance theory "highlights dialogue, accommodation," and similarities between the concerned parties.³⁶ Concordance theory is not a dualistic ordered approach to civil-military relations. Instead, the military, the political elites, and society should aim for a cooperative relationship. This relationship "may or may not involve separation, but does not require it."³⁷ Using the countries of Israel and India as case studies, Schiff argues that concordance theory achieves two conditions that previous civil-military relations theories do not. First, it identifies the organizational and societal conditions that encourage or disrupt domestic military intervention. The theory also forecasts domestic military intervention is unlikely if the partners reach an agreement.³⁸

Since the end of World War II, civil-military theorists have repeatedly tried to capture the complex nature of the civil-military relationship. In their theories, Huntington and Janowitz articulate a very linear approach to the relationship, ultimately with the military subservient to civilian authority. Huntington's foundational concept of objective control is the theory perhaps most preferred by members of the military. More recent theorists like Feaver, Cohen, and Schiff adopt a nonlinear description by accounting for the variables that can enhance or degrade the overall quality of the relationship. Although it is important to recognize the contributions of all the theorists to the study of civil-military relations, Schiff's concordance theory captures the ideal civil-military relationship.

FACTORS CONTRIBUTING TO CIVIL-MILITARY TENSIONS

Five factors further aggravate the relationship and contribute to increasing the civil-military divide. First, there are questions about the roles or responsibilities the president and Congress have in exercising civilian control over the military. Next, the continued growth in size of the National Security Council distances senior military leaders from the seats of power. Third, because the Department of Defense is the largest institution in the federal government, civilian leadership over utilizes the military in support of the foreign policy of the United States. Fourth, despite a downward trend following the Vietnam War, societal trust in the military is extremely high, while trust in government officials is at an all-time low. Finally, both senior government officials and military leaders are able to wage anonymous wars through the media. Ultimately, no single party is to blame for the growing divide in the civil-military relationship; instead, it results from the complex combination of all of these factors. By understanding the variables con-

³⁴ Rebecca L. Schiff, "Civil-Military Relations Reconsidered: A Theory of Concordance," *Armed Forces & Society* 22, no. 1 (Fall 1995): 22, <https://doi.org/10.1177/0095327X9502200101>.

³⁵ In his work *Republic*, Plato identifies three parts of the human soul: reason, courage, and appetite. The three parts of the soul coincide with the three parts of Plato's ideal city, or polis: rulers, guardians, and craftsmen. The rulers govern with reason, attempting to balance the courage of the guardians with the appetites of the craftsman. Similarly, Clausewitz's remarkable trinity consists of the government, the military, and the people. For both Plato and Clausewitz, the elements of their respective trilogies are indispensable.

³⁶ Schiff, "Civil-Military Relations Reconsidered," 12.

³⁷ Schiff, "Civil-Military Relations Reconsidered," 7.

³⁸ Schiff, "Civil-Military Relations Reconsidered," 12.

tributing to the tension, concerned parties can better navigate the choppy waters of civil-military relations.

The Founding Fathers established dual civilian control of the military in the Constitution of the United States. Article I grants Congress the authority “to declare war,” and provide funds for the support of the armed forces.³⁹ Article II outlines the president’s role as commander in chief of the military.⁴⁰ Scholars recognize that effective civilian control is “enhanced by maintenance of two controls—both presidential and congressional—in their respective fields.”⁴¹ Unfortunately, since the end of World War II, the dynamics of this dual control have been in flux. Coming out of the Vietnam War, Congress passed the War Powers Act of 1973 in an attempt to further clarify the roles of the executive and legislative branches of government. This joint resolution was largely in response to President Lyndon B. Johnson’s gradual build-up of men and equipment in Vietnam without a formal declaration of war from Congress. It limited the president’s ability to commit military force to up to 90 days without a declaration of war or specific authorization from Congress.⁴² However, instead of limiting the president’s authority, the War Powers Act of 1973 had the opposite effect. It increased the president’s control over the military, allowing the commitment of military forces in situations that represent “unavoidable military necessity.”⁴³ The president effectively took the power to go to war, leaving Congress with the power of the purse. At times, this dynamic places military officials in a difficult position. The military culture of the Services recognizes the significance of the president’s role as commander in chief. Yet, Congress controls the flow of critical funds necessary to keep the military running. When the executive and legislative branches of government disagree on the direction of the country, senior military leaders remain stuck in the middle.

Every president handles the military in slightly different ways. For example, President Franklin Roosevelt valued personal relationships over structured organization to help him run the country. This provided Service chiefs with a direct line to the president.⁴⁴ The close proximity to the president had other benefits. Inter-Service rivalries took a back seat, allowing national interests to take priority.⁴⁵ The passing of the National Security Act of 1947 started the process of distancing senior military leaders from the president. Intended to aid the president in making decisions on foreign policy strategy, it reorganized the Services, unifying them under a single secretary of defense. It also established a small council consisting of seven permanent members and chaired by the president.⁴⁶ The size of the council has ebbed and flowed over time. President Harry S. Truman’s council was relatively small, while President Dwight D. Eisenhower had a larger council because of his “predilection for the military staff system.”⁴⁷ Under Presidents John F. Kennedy and Lyndon B. Johnson, the size of the National Security Council shrank as both individuals relied more heavily on a close group of advisors. Although an exact number is unknown, the current National Security Council consists of approximately 400 people.⁴⁸ In principle, the idea was sound; consolidate key foreign policy advisors from across the government in one location to streamline the flow of information to the executive branch. What the

³⁹ U.S. Const. art. I, § 8.

⁴⁰ U.S. Const. art. II, § 2.

⁴¹ Paul H. Appleby, “Civilian Control of a Department of National Defense,” in *Civil-Military Relationships in American Life*, ed. Jerome G. Kerwin (Chicago, IL: University of Chicago Press, 1948), 68.

⁴² War Powers Act of 1973, H. J. Res 542, 93d Cong. (1973).

⁴³ War Powers Act of 1973.

⁴⁴ Herspring, *The Pentagon and the Presidency*, 23.

⁴⁵ Herspring, *The Pentagon and the Presidency*, 26.

⁴⁶ *History of the National Security Council, 1947–1997* (Washington, DC: Department of State, 1997).

⁴⁷ *History of the National Security Council*.

⁴⁸ Karen DeYoung, “White House Tries for a Leaner National Security Council,” *Washington Post*, 22 June 2015.

concept failed to take into consideration was the different levels of comfort each president would have with the organization. No matter the size or structure of the National Security Council, it contributed to the slow movement of the Service chiefs “to a peripheral position in the policy-making process.”⁴⁹ The current distance from the seat of power decreases trust between the executive branch and the military, fuels inter-Service rivalries, and contributes to the current civil-military divide.

United States military involvement around the world has increased dramatically since the end of the Cold War. In his book *The New American Militarism: How Americans Are Seduced by War*, Andrew J. Bacevich identifies only six “large-scale U.S. military actions abroad,” for the entire Cold War.⁵⁰ From 1989 until the start of Operation Iraqi Freedom in 2003, the United States participated in as many as nine military actions, not including a number of small-scale events. The American people have grown accustomed to seeing “the latest reports of U.S. soldiers responding to some crisis.”⁵¹ This rise in “American militarism,” is an unforeseen byproduct of institutional reforms the Services went through following the Vietnam War. Disillusioned with their experiences in Vietnam, the officer corps looked for ways to rebuild. With the implementation of General Creighton W. Abrams’ “Total Force Policy,” and Secretary of Defense Caspar W. Weinberger’s “Weinberger Doctrine,” the Services took steps to ensure “another Vietnam-like disaster” would never happen again.⁵² The success of the military in the Persian Gulf War validated most, if not all, of the institutional reforms made after Vietnam. However, despite the best efforts of senior military leaders to tie the hands of civilian leaders to conflicts where overwhelming force could ensure a decisive victory and quick exit, something else happened. Built to defeat the forces of the Warsaw Pact, the Persian Gulf War proved the military had “a capacity for global power projection.”⁵³ Following shortly after the end of the Gulf War, Operation Provide Comfort demonstrated something else to civilian leaders. Not only could the United States deploy forces overseas, it could also deploy to “sensitive areas on or near former Eastern Bloc territory.”⁵⁴ These lessons contributed to an increase in policy makers putting a military face on problems. With politicians from both parties “nourishing an increasingly hearty appetite for intervention,” senior military leaders acquiesced to demands to utilize the American military in situations other than “large-scale conventional wars.”⁵⁵ Failing to do so would have equated to acknowledging the military’s inability to handle the post-Cold War security environment. Unfortunately, this mentality shift also marked a blending of the political and military spheres General Abrams and others had worked so hard to avoid.⁵⁶ Bacevich uses the analogy of driving a bus. As the bus driver, senior military leaders may want a larger role in determining the commitment and use of military forces. Tension arises when civilian authorities choose the destination and identify the route.⁵⁷

The rise in American militarism coincided with increased levels of societal trust and confidence in the American military. At the end of the Vietnam War, this faith between the people and the armed forces was precariously low. Society viewed the military as “a duplicitous,

⁴⁹ H. R. McMaster, *Dereliction of Duty: Lyndon Johnson, Robert McNamara, The Joint Chiefs of Staff, and the Lies that Led to Vietnam* (New York: HarperPerennial, 1998), 329.

⁵⁰ Andrew J. Bacevich, *The New American Militarism: How Americans Are Seduced by War* (New York: Oxford University Press, 2005) 19.

⁵¹ Bacevich, *The New American Militarism*.

⁵² Bacevich, *The New American Militarism*, 47–48.

⁵³ Bacevich, *The New American Militarism*, 54, 56.

⁵⁴ Thomas E. Ricks, *Fiasco: The American Military Adventure in Iraq* (New York: Penguin Press, 2006), 8.

⁵⁵ Bacevich, *The New American Militarism*, 54, 58.

⁵⁶ Bacevich, *The New American Militarism*, 55.

⁵⁷ Bacevich, *The New American Militarism*, 68.

ineffective, and inefficient organization,” plagued by widespread racial and drug problems.⁵⁸ Only 32 percent of participants in a National Opinion Research Center survey from 1973 expressed faith in senior military leaders.⁵⁹ Thanks in part to a series of internal Service reforms, including the transition to the all-volunteer force and the structural reorganization under the Goldwater-Nichols Department of Defense Reorganization Act of 1986, the public’s perception of military professionalism slowly improved. Coupled with successful operations in Grenada, Panama, and the Persian Gulf, public confidence in the military increased to almost 90 percent.⁶⁰ Although incidents like the Tailhook scandal and the misconduct of servicemembers at the U.S. Army’s Aberdeen Proving Ground in Maryland adversely affected public perception of the military during the mid-90s, in general, society appreciated the dedication of the military to “addressing issues of drug abuse, race, and gender integration.”⁶¹ Despite 15 years of conflict, in a Gallup survey from 2016, approximately 73 percent of respondents expressed “a great deal” of confidence in the military. From the same survey, only 36 percent of respondents expressed confidence in the president, and 9 percent expressed confidence in Congress.⁶² With a favored position in the minds of the American people, the military is postured to use its status with the people to attempt to influence civilian authorities.

Senior military officials talking to members of the media is not a new phenomenon. The media historically served as a venue for civilian officials and military leaders to battle for the approval of the people. Lieutenant General George S. Patton upset members of Congress in April 1944 after comments he made about the postwar world at a ceremony in Knutsford, England, circulated through the press.⁶³ When McArthur placed himself “into an all-or-nothing position against his superiors in Washington,” Truman was forced to relieve him.⁶⁴ With the rise of the 24-hour news cycle, it is possible to overemphasize the civil-military divide. Not only do news agencies rush to break stories first; but once a story is published, it has a more immediate and lasting impact. During his time as secretary of defense, Robert M. Gates observed that public statements by senior officers to members of the media “added to the inherent tension with both [George W.] Bush and Obama.”⁶⁵ Gates attributes the rise of unwarranted comments to the media, in part, to the increasing belief amongst senior military officials of their responsibility to message. These “strategic communicators” looked at opportunities to engage with the media in all forums as a responsibility of command.⁶⁶ Unfortunately, these interactions with the media, and indirectly with the public, have consequences. First, Gates points to the emerging use of social media (e.g., Facebook, Twitter, etc.) by senior officers as something that erodes “their aura of rank and authority.”⁶⁷ Perhaps the greatest impact is the negative one on the foreign policy of the United States. By speaking out of place, senior military officials generate “unwanted (and sometimes unnecessary) political problems at home,” limit options overseas, and limit the president’s freedom of action.⁶⁸ Civilian authorities can and do use the media to direct the actions of

⁵⁸ David C. King and Zachary Karabell, *The Generation of Trust: How the U.S. Military Has Regained the Public’s Confidence Since Vietnam* (Washington, DC: American Enterprise Institute Press, 2003), 6.

⁵⁹ King and Karabell, *The Generation of Trust*, 21.

⁶⁰ King and Karabell, *The Generation of Trust*, 24–29.

⁶¹ King and Karabell, *The Generation of Trust*, 58–59, 61.

⁶² Jim Norman, “Americans’ Confidence in Institutions Stays Low,” Gallup News, 13 June 2016.

⁶³ Martin Blumenson, *The Patton Papers, 1940–1945* (Boston, MA: Houghton Mifflin, 1974), 442.

⁶⁴ Thomas E. Ricks, *The Generals: American Military Command from World War II to Today* (New York: Penguin Press, 2012), 192.

⁶⁵ Robert M. Gates, *Duty: Memoirs of a Secretary at War* (New York: Alfred A. Knopf, 2014), 574.

⁶⁶ Gates, *Duty*, 575.

⁶⁷ Gates, *Duty*, 576.

⁶⁸ Gates, *Duty*, 574.

the military. In 2006, when Gates took over from Secretary of Defense Donald H. Rumsfeld, the Services resisted purchasing the mine-resistant ambush-protected (MRAP) vehicle. The primary concern was that the cost for the vehicles would come out of preexisting programs. Gates publically “asserted it was a national priority to buy the ballistic steel used in making MRAPs,” and ordered the Pentagon to start purchasing the steel.⁶⁹ As long as there is a media outlet for senior government and military officials to vent, it will contribute to the rift between civilian and military leaders.

As easy as it would be to point to one institution or the other as the primary source of conflict, the reality is that no single entity is to blame. In a complex relationship where tension exists at the very core, five factors continue to exacerbate the situation. Confusion over the roles and responsibilities of the president and Congress in exercising civilian control of the military, the growth of the National Security Council, the increased militarism of the United States, high levels of societal trust in the military, and the immediate and lasting impact of the media continue to place a strain on the relationship. Strategic miscalculations by both parties continue to erode the professional trust that should exist between civilian authorities and a subordinate military. This loss of trust manifests itself in different ways. The loss of trust by the military in civilian leadership looks like a number of Army generals suddenly retiring, “speaking out against the secretary of defense,” and “calling for a Democratic takeover of Congress.”⁷⁰ The lack of trust from civilian leaders in military officials is evident when former Vice President Joe Biden counsels then President Barack Obama that the military “will screw you every time.”⁷¹ Appreciating the variables contributing to the tension between senior military leaders and government officials helps place examples of the divide into perspective.

CONTEMPORARY AND FUTURE EXAMPLES OF THE CIVIL-MILITARY DIVIDE

Disagreements between government and military officials come in a variety of forms. Perhaps the largest two examples of the civil-military divide are the disagreements over policies in Afghanistan and Iraq. Additionally, arguments over the Air Force’s attempts to retire the Fairchild Republic A-10 Thunderbolt II (or Warthog) and gender integration within the Services highlight the breadth of issues senior military leaders and civilian authorities find themselves at odds over. These contemporary examples of friction in the civil-military relationship illuminate future issues of conflict like defense acquisitions and military led efforts to reduce base infrastructure.

With the war in Afghanistan, it is easy to see where the trouble began. Despite initial early success during the invasion in the fall of 2001, setbacks in December 2001 and March 2002 made American strategy in Afghanistan appear disjointed. Despite the efforts of senior leaders to understand the dynamics at play in Afghanistan, by August 2002, the central focus of the Joint Staff “was on planning for potential operations” in Iraq.⁷² For the next several years, the conflict in Afghanistan took the back seat to the conflict in Iraq. While both government and military officials applauded hollow victories, the media started referring to Afghanistan as “the forgotten war.”⁷³ By 2008, even the false narrative spun by senior officials could not mask reality. Military and civilian casualties were a daily occurrence, and the Taliban “had regained control

⁶⁹ Bob Woodward, *Obama’s Wars* (New York: Simon & Schuster, 2010), 21–22.

⁷⁰ Jason K. Dempsey, *Our Army: Soldiers, Politics, and American Civil-Military Relations* (Princeton, NJ: Princeton University Press, 2010) 192.

⁷¹ Gates, *Duty*, 563.

⁷² Gen Stanley McChrystal, USA (Ret), *My Share of the Task: A Memoir* (New York: Penguin, 2013), 76–79.

⁷³ Michael Hastings, *The Operators: The Wild and Terrifying Inside Story of America’s War in Afghanistan* (New York: Plume, 2012), 9.

over key provinces.”⁷⁴ The commander of the International Security Assistance Force at the time, Army General David D. McKiernan, acknowledged the bleak prediction but remained confident additional troops would bolster his counterinsurgency strategy. Contributing to his positive outlook was his belief that Barack Obama would win the election for president. Obama had already taken steps to build a relationship with McKiernan, and following a visit to Kabul, he publically announced his intent to deliver the necessary troops.⁷⁵

The disconnect between civilian officials and military leaders on Afghanistan continued after President Obama took office. The administration asked McKiernan to submit a recommendation for a new ambassador to replace William B. Wood; he advised against the administration’s preferred candidate, Karl W. Eikenberry. Shortly after submitting his opinion, McKiernan realized he had lost favor. The administration leaked Eikenberry’s name to the *New York Times* as the new ambassador to Afghanistan. They also started an Afghan policy review with Obama only consulting McKiernan twice; by May 2009, McKiernan had been fired.⁷⁶ Members of the military criticized Gates and the administration for not showing McKiernan the proper respect. Additionally, some senior military officials believed Gates orchestrated the whole situation to enable the Pentagon to request additional troops on top of those already requested by McKiernan. McKiernan had been fired to allow the Pentagon “a chance to reset” under new military leadership.⁷⁷

General Stanley McChrystal replaced McKiernan in Afghanistan. Within five months of taking command, cracks in McChrystal’s relationship with the administration started to appear. In late September 2009, the *Washington Post* published a copy of McChrystal’s confidential assessment on the war. Although the source of the leak was unknown, tensions between McChrystal and the administration increased. After the leak, McChrystal attempted to apply pressure on the president through the media, asserting in an interview with *60 Minutes* that President Obama had only spoken with him once in five months. Following the *60 Minutes* interview, McChrystal publicly disagreed with Vice President Biden while giving a talk to a group from the International Institute for Strategic Studies.⁷⁸ Biden advocated for a policy “to draw down U.S. troops,” in Afghanistan while McChrystal wanted to surge.⁷⁹ By late fall 2009, there were effectively two policy camps for Afghanistan: Team Biden and Team Pentagon.⁸⁰ Leaks to the media continued to plague the relationship between the administration and McChrystal. In November 2009, a series of telegrams sent by Ambassador Eikenberry expressing concerns about the way ahead in Afghanistan appeared in the *New York Times*. Despite the release of the telegrams, President Obama informed McChrystal in late November that he had elected to surge 30,000 troops to Afghanistan. This decision was effectively a compromise between the two camps, as the surge forces were on a timeline to withdraw by July 2011.⁸¹ The frictions between the Obama administration and McChrystal came to a head with the release of an article in *Rolling Stone Magazine* in June 2010. The article included quotes from McChrystal and members of his staff that were openly critical of the administration.⁸² President Obama had no choice but to accept McChrystal’s resignation.

⁷⁴ Hastings, *The Operators*, 10.

⁷⁵ Hastings, *The Operators*, 10–11.

⁷⁶ Hastings, *The Operators*, 33–36.

⁷⁷ Hastings, *The Operators*, 39.

⁷⁸ Hastings, *The Operators*, 130–32.

⁷⁹ Hastings, *The Operators*, 131.

⁸⁰ Hastings, *The Operators*, 132.

⁸¹ McChrystal, *My Share of the Task*, 356–57.

⁸² Gates, *Duty*, 487.

The divide between civilian and military leaders over the war in Iraq was evident from the very beginning. A number of senior military officials expressed concerns that an invasion of Iraq would detract vital resources away from the fight against al-Qaeda in Afghanistan. There was also the belief that war in Iraq would mire the U.S. military in a resource-intensive occupation.⁸³ Another major point of contention during the early stages of planning for the Iraq invasion was the number of troops the government would authorize to support the attack. Both sides framed the problem differently. Civilian officials, such as then Secretary of Defense Donald Rumsfeld, valued minimizing the number of ground forces while maximizing the use of precision-guided munitions. Conversely, military planners abided by the “maxim of fighting as you train, especially fighting alongside those with whom you train.”⁸⁴ The military’s concern stemmed from the “force cap” imposed on the invasion of Afghanistan, which some felt contributed to initial setbacks. Yet, despite anxieties about the pending invasion of Iraq, senior military leaders initially avoided opposition with civilian leaders.⁸⁵

Two factors influenced the initial lack of formal confrontation between civilian and military leaders over Iraq. First was the manner in which members of President Bush’s administration handled disagreement. When questioned about rumors of discourse within the walls of the Pentagon, Secretary of Defense Rumsfeld attributed it to “the result of ignorance.”⁸⁶ Rumsfeld essentially wrote off those who disagreed. This approach continued to plague the Bush administration. Even after the invasion, government officials chalked criticism of administration policies up to “Monday morning quarterbacks.”⁸⁷ The second factor was the general unwillingness of senior military officials to challenge civilian leaders resulting from a failure to accurately read the situation. The Bush administration ran on a national security platform counter to that of President William J. “Bill” Clinton. Instead of an indiscriminate commitment of forces, Bush “vowed to use the military more wisely.”⁸⁸ The incoming administration would be a friend to the armed forces. Unlike the Clinton administration, which cut capabilities, the new administration “would restore military trust in political leaders.”⁸⁹ This did not necessarily prove to be the case. The “new crowd wielded sharper elbows” than senior military officials had experienced during the Clinton administration and pushed through any obstacles in their way.⁹⁰ For example, Rumsfeld killed the Crusader program, not telling the Army until it was too late to mount serious opposition to the decision.⁹¹ Under the Bush administration, decisions were final.⁹²

Army Chief of Staff General Eric K. Shinseki was the first senior military leader to publicly disagree with the Iraq War plan. His breaking from the ranks was, in part, the byproduct of an ongoing feud with Rumsfeld and Deputy Secretary for Defense Paul D. Wolfowitz, who leaked the name of his replacement 15 months ahead of schedule. This unorthodox approach made Shinseki “a lame duck” and “undercut his ambitious transformation agenda” for the Army.⁹³ Addressing members of Congress on 25 February 2003, Shinseki conceded that the Army required several thousand soldiers to successfully occupy Iraq. Although he did not know it at the time, his comments that day are “the most remembered public moment” of his time as chief

⁸³ Ricks, *Fiasco*, 40.

⁸⁴ Ricks, *Fiasco*, 41.

⁸⁵ Ricks, *Fiasco*, 42.

⁸⁶ Ricks, *Fiasco*.

⁸⁷ Ricks, *Fiasco*, 96.

⁸⁸ Ricks, *Fiasco*, 25.

⁸⁹ Ricks, *Fiasco*.

⁹⁰ Ricks, *Fiasco*, 69.

⁹¹ The Crusader was a next-generation artillery system. Ricks, *Fiasco*.

⁹² Ricks, *Fiasco*, 60.

⁹³ Ricks, *Fiasco*, 69.

of staff.⁹⁴ Wolfowitz immediately went on the counteroffensive, calling into question Shinseki's statements. Nonetheless, Shinseki stood by his remarks, repeating them to members of Congress roughly a month later.⁹⁵ The strife between Shinseki and the civilian leaders of the Pentagon continued through his retirement ceremony in the summer of 2003; neither Rumsfeld or Wolfowitz attended.⁹⁶

The Air Force's battle to retire the A-10 Warthog is a more contemporary example of the tension between government and military officials. Referred to as "the darling of the first Gulf War," the A-10 is a favorite of combat units in Afghanistan.⁹⁷ Looking to replace the A-10 with the Lockheed Martin F-35 Lightning II Joint Strike Fighter Program in 2013, the Air Force first announced a plan to deactivate five Warthog squadrons. Concerned with the long-term survivability of the airframe and its compatibility with emerging technologies, the Air Force argued that trimming the program "would save \$3.5 billion over five years."⁹⁸ Almost immediately, advocates of the airframe both in and out of Congress pushed back on the Air Force's plan. Citing the A-10's success in combat operations in Iraq and Afghanistan, proponents of the platform voiced concern about the F-35's ability to assume a similar role.⁹⁹ Still, senior leaders within the Air Force continued to try to cut the program from the Service's budget, finally conceding the issue with the fiscal year 2017 budget.¹⁰⁰

Another more contemporary example of the civil-military divide is the issue of gender integration of combat units. This is an especially contentious matter for the Marine Corps, a 93 percent male-dominated Service.¹⁰¹ Facing a deadline from the Obama administration to open all combat jobs to women by 2016 or ask for exemptions, senior Marine Corps leaders and civilian officials squared off "in an unusually public dispute over whether integrating women" would undermine unit effectiveness.¹⁰² In September 2015, the Marine Corps released results of a \$36 million study demonstrating integrated units were less effective. As a result, the Commandant of the Marine Corps at the time, General Joseph F. Dunford Jr., requested an exemption to policy "for some front-line combat units."¹⁰³ Then Secretary of the Navy Raymond E. Mabus Jr., disagreed with the published results. He repeatedly claimed in public statements that "the summary findings were . . . biased toward keeping women out of combat roles."¹⁰⁴ Despite the request of General Dunford, Secretary Mabus proceeded with a recommendation to integrate all formations. Mabus argued that concerns over the effectiveness of combat units were the same excuse used to defend segregation and the ban on homosexuality in the Services.¹⁰⁵

The defense budget is one area where a civil-military divide may occur in the future, particularly as it relates to the acquisition of new systems and base closures. The Army is already the first Service to come forward and request greater autonomy in the acquisitions process. Specifically, the Service wants the ability "to develop and build weapons without detailed oversight

⁹⁴ Ricks, *Fiasco*, 97.

⁹⁵ Ricks, *Fiasco*, 97–99.

⁹⁶ Ricks, *Fiasco*, 156.

⁹⁷ Stew Magnuson, "Fight to Keep A-10 Warthog in Air Force Inventory Reaches End Game," *National Defense*, September 2013, 41.

⁹⁸ Brian Everstine, "Air Force Will Try to Cut A-10 Again," *Air Force Times*, 2 February 2015.

⁹⁹ Magnuson, "Fight to Keep A-10 Warthog in Air Force Inventory Reaches End Game," 41.

¹⁰⁰ Richard Sisk, "US Air Force Shelves Plan to Retire A-10 Warthogs," *Military.com*, 16 January 2016.

¹⁰¹ Dave Philipps, "Gender Integration of Marines Brings Out Unusually Public Discord," *New York Times*, 18 September 2015.

¹⁰² Philipps, "Gender Integration of Marines Brings Out Unusually Public Discord."

¹⁰³ Philipps, "Gender Integration of Marines Brings Out Unusually Public Discord."

¹⁰⁴ Philipps, "Gender Integration of Marines Brings Out Unusually Public Discord."

¹⁰⁵ Philipps, "Gender Integration of Marines Brings Out Unusually Public Discord."

from the Office of Secretary of Defense (OSD).¹⁰⁶ Senior Army leaders believe the Service is more than capable of developing and testing weapons systems. Lieutenant General Michael E. Williamson, the current principle military deputy to the assistant secretary of the Army for acquisition, contends the Army deserves the chance. In an interview from March 2016, he said the Army has never “put a system or a capability in a soldier’s hand” without doing its due diligence.¹⁰⁷ The impetus for the request is the Army’s most recent attempts to field an acceptable replacement for the standard issue 9mm pistol. Under the current acquisitions process, which has been criticized for being inefficient and ineffective, the last major ends items fielded by the Army were the “Big 5” in the 1980s.¹⁰⁸ This issue represents a potential source of conflict because the oversight of the Services by the OSD and the director of Operational Test and Evaluation (DOT&E) is congressionally mandated. Civilian leaders did not have faith that “the military did a good enough job at testing.”¹⁰⁹

The issue of closing bases is another area that will strain future civil-military relations. The Pentagon currently believes it has far more infrastructure than it needs. By going through another Base Realignment and Closure (BRAC) process, military officials believe they can eliminate excess structure, save money, “and put about \$2 billion back into the operating force by 2025.”¹¹⁰ Senior military leaders claim the need for a BRAC is critical and threatened to “explore any and all authorities that Congress has provided to eliminate wasteful infrastructure.”¹¹¹ The last round of BRAC occurred in 2005; however, members of Congress criticized the results, claiming the process delivered “lower savings and higher costs than advertised.”¹¹² The real reason members of Congress do not want to approve a new round of BRAC is the second- and third-order effects it has on their constituents. What congressional leaders fail to recognize is that “inaction and uncertainty is actually worse than the potential for bad news” in most communities.¹¹³ In an attempt to force Congress’ hand, military leaders want to tie budgetary shortfalls to BRAC. In other words, if a funding concern arises about weapons, maintenance, or personnel actions, military officials can look at Congress for failing to cut costs where possible.¹¹⁴

From battles on policy in the execution of the conflicts in Afghanistan and Iraq, to disagreements about retiring equipment and gender integration the civil-military divide manifests itself in a number of ways. In the future, efforts by the Services to modernize equipment and reduce the increasing cost of infrastructure will continue to place a strain on the relationship. At the end of his book, *The New American Militarism*, Andrew Bacevich says, “There can be no recovery without first acknowledging the disease . . . denial merely postpones the inevitable day of reckoning.”¹¹⁵ To move forward, certain changes must be made.

¹⁰⁶ Colin Clark and Sydney J. Freeberg Jr., “Army Wants Out from under OSD Oversight,” *Breaking Defense*, 10 March 2016.

¹⁰⁷ Clark and Freeberg, “Army Wants Out from under OSD Oversight.”

¹⁰⁸ The term *major ends* refers to Class VII items of supply; the U.S. Army has 10 classes of supply; class VII includes items such as weapons, tanks, helicopters, trucks, and generators. For the purposes of this discussion, the Big 5 were: a new tank, a new infantry combat vehicle, a new attack helicopter, a new transport helicopter, and a new anti-aircraft missile. Thomas E. Ricks, “Why Hasn’t the Army’s Regular Acquisition Process Produced Anything in Decades?,” *Foreign Policy*, 2 March 2015.

¹⁰⁹ Clark and Freeberg, “Army Wants Out from under OSD Oversight.”

¹¹⁰ Tamar Hallerman, “Congress Expected to Dismiss Obama’s Military Base Closure Proposal,” *Atlanta Journal Constitution*, 17 February 2016.

¹¹¹ Hallerman, “Congress Expected to Dismiss Obama’s Military Base Closure Proposal.”

¹¹² James Durso, “Constituents to Congress: Let’s Get BRAC Over With,” *Defense News*, 6 June 2016.

¹¹³ Mackenzie Eaglen, “All the Misleading Reasons Not to Do BRAC,” *Forbes*, 17 March 2016.

¹¹⁴ Durso, “Constituents to Congress.”

¹¹⁵ Bacevich, *The New American Militarism*, 226.

RECOMMENDATIONS

History demonstrates there is rarely one way to resolve complex problems, and civil-military relations are infinitely complicated. Scholars have studied the relationship between government officials and senior military leaders for years with varying thoughts on how to modify or adjust the relationship. The system in which civil-military relations exists is not set up for an equitable distribution of power. Ultimately, civil-military relations will be messy; the complexity exists because of the checks and balances the Founding Fathers built. As Eliot Cohen identified in an article from 1997, any “remedies will take time to have effect.”¹¹⁶ Concerned parties cannot expect significant change to take place overnight; however, incremental change is possible. Simply having a conversation or studying the issue helps provide clarity and prevents the relationship from deteriorating to an unrecoverable level. The proposed recommendations in this paper focus specifically on actions the military can take to gradually improve the sentiments of distrust within current civil-military relationships.

Developing a better understanding of civil-military relations continues to remain relevant for field grade officers across the Services. The two potential areas identified for the civil-military divide to occur in the future are defense acquisitions and BRAC, indicating the relationship transcends many different levels of command. A field grade officer may find themselves on a staff responsible for writing a point paper to shape how the commander justifies an equipment purchase to Congress. That same officer may serve on a staff responsible for assisting a local community in dealing with the positive or negative ramifications of a base realignment. Field grade officers at all echelons must demonstrate high levels of awareness of the civil-military relationship because it is their responsibility to explain the “why” to subordinates. A field grade officer must understand the subtleties of the relationship that impact national security strategy and policy making. Perhaps most importantly, field grade officers should appreciate the dynamics of the civil-military relationship, because one day they may find themselves in a position to provide advice to civilian officials.

The first recommendation for bridging the civil-military divide is perhaps the most tangential: members of the military should embrace the complex symbiotic nature of the relationship. This is not to say an appreciation for the intricacy of the relationship does not already exist, but rather that servicemembers should accept the complexity and move past it. If Clausewitz’s idea of warfare being an extension of politics is correct, then it is abundantly clear that civilian authorities and military leaders must work together. There are two steps to embracing the reciprocal nature of civil-military relationships. First, the Services need to stop pointing to civilian authorities as the root cause of the problem and accept their own culpability in creating distrust between the parties. A large part of this step is developing a better understanding of the various civil-military relationship theories and ultimately adhering to one. Next, the Services need to appreciate the distinct culture of the other side, but value the similarities that do exist.

The civil-military relationship theory that permeates the earlier examples of the civil-military divide is Feaver’s agency theory. Feaver recognizes it is in the best interest of the civilian authorities to place in positions of responsibility military leaders who share similar ideals. However, his model also accepts that military leaders will attempt to avoid doing everything they are told; they will “shirk” their responsibilities. Ultimately, the behaviors condoned by Feaver’s agency theory when the military does not get what it wants are detrimental to fostering trust with civilian authorities. To truly take accountability for their role in fostering distrust within the civil-military relationship, military leaders should reject agency theory.

¹¹⁶ Eliot A. Cohen, “Civil-Military Relations,” *Orbis* 41, no. 2 (Spring 1997): 177–86, [https://doi.org/10.1016/S0030-4387\(97\)90061-2](https://doi.org/10.1016/S0030-4387(97)90061-2).

Huntington's model of objective control is frequently trumpeted as the preferred framework for civil-military relations because he establishes two separate spheres: one for politics and one for military action. Both politicians and senior military officials retain authority in their respective area of expertise. What gets overlooked, or conveniently forgotten, is that even in Huntington's model the military remains subordinate to civilian authorities. Military leaders can disagree with civilian officials, but in the end must execute the orders they receive. Huntington would argue it is contrary to the idea of the military professional for senior military leaders to remain bitter about a decision they disagree with. Huntington's emphasis on the military professional make his model important for military leaders to know and learn, but other theories better capture the dynamics of the civil-military relationship.

Cohen's idea of an unequal dialogue is, in essence, just an expansion of Huntington's ideas. Military leaders remain obligated to provide candid advice to government officials on the use of military force, but the notion of civilian authority is reinforced. Disagreement occurs before the decision is made. After the decision is made public, dissent is then considered disobedience, which would undermine the trust. The difference between Cohen and Huntington lies in how they each handle the inherent friction of civil-military relations. Where Huntington passively dismisses it, Cohen implies the friction is acceptable.

The ideal model for civil-military relations is Schiff's concordance theory. She recognizes that the most functional relationship is achieved when all three concerned parties come to the table and work together. External variables that undermine the civil-military relationship are negated by the identification of similarities between participating parties. The concept of principled negotiations is one technique military leaders can use to exercise Schiff's model. First postulated by Roger Fisher, William Ury, and Bruce Patton in *Getting to Yes: Negotiating Agreement without Giving In*, it postulated that principled negotiations are an alternative to the more traditional positional approach. *Principled negotiation* is a strategy where the goal is to decide issues on "their merit rather than through a haggling process focused on what each side says it will and won't do."¹¹⁷ The trouble with competitive win-lose positional bargains is they are inefficient and typically do more harm to the relationship between involved parties. Schiff's concordance theory, executed through principled negotiations, enable military leaders to build trust with civilian officials by finding common ground and appreciating the position of the other side.

Finally, part of embracing the complexity and symbiotic nature of the relationship is appreciating the distinct culture of the other side, but also valuing similarities where they exist. The most obvious similarity between civilian officials and senior military leaders is the oath each takes before entering office. Both parties swear to "protect and defend the constitution of the United States."¹¹⁸ Although a simplistic example, it demonstrates an existing foundation from which to build trust.

The second recommendation to address the civil-military divide is a reform of professional military education. These reforms should be approached under the guise of improving military members' ability to speak a similar "language" to their civilian authorities. These efforts include adjustments to traditional blocks of military education and increased opportunities to participate in intergovernment exchange programs or fellowships and the pursuit of advanced degrees from leading *civilian* institutions.

In an essay published in 1948, Paul H. Appleby argues that "there is a general shortage of persons even fairly well qualified to administer organizations so large, complicated, and socially

¹¹⁷ Roger Fisher, William Ury, and Bruce Patton, *Getting to Yes: Negotiating Agreement without Giving In* (New York: Penguin Books, 2011), XXVIII.

¹¹⁸ Government Organization and Employees, 5 U.S.C. § 3331 (2006).

significant as our military establishment,” and that the “whole educational effort is designed to produce specialists and individualists rather than to produce generalists who understand and can act and support action in intricate organized efforts.”¹¹⁹ Sixty-nine years later, formal professional military education still focuses on producing leaders comfortable with and capable of performing at the operational and tactical levels of conflict, but less comfortable communicating with civilian authorities. When two parties involved in the inevitable negotiations of civil-military relationships do not understand one another, it is very easy to cultivate distrust. One way to tackle this issue is to add additional blocks of instruction on “the legislative and philosophical underpinnings of the U.S. military establishment,” specifically as they relate to civil-military relations.¹²⁰ This recommendation is not intended to downplay the value in servicemembers’ study of military history, tactics, or strategy. Rather, it is an argument that a more refined understanding of civil-military relations improves an individual’s ability to communicate their knowledge from the other areas to government officials. As Williamson Murray argues “officers who know only the tactical and operational framework . . . might offer faulty advice.”¹²¹ Over time, the increased emphasis on civil-military relations creates an officer corps with a greater appreciation of the military’s role in the relationship and the prerequisite skills to successfully navigate it.

Educational reforms should also include an increase in opportunities for military officers to participate in exchange programs with other federal agencies. In their article “Young Person’s Game: Connecting with Millennials,” Matthew Colford and Alec J. Sugarman propose allowing “a select group of newly commissioned officers from each military academy to fulfill a portion of their initial service obligation through a rotation at a civilian institution.”¹²² The premise of this idea has merit, although newly commissioned officers are, perhaps, the wrong audience. Because junior company grade officers are still refining an understanding of the foundations of their profession, a better target audience is captains and majors who have completed their key developmental (KD) billets. Currently, the Army already offers select majors and lieutenant colonels an opportunity to participate in the Command and General Staff College (CGSC) Interagency Fellowship. The program is designed to expose participants to a federal department or agency and help them “develop a more thorough understanding of the agency’s mission, culture, capabilities, and procedures . . . while developing comprehensive solutions for our nation’s most difficult national security challenges.”¹²³ Unfortunately, the program is only for one year; the officer has a very limited time in the position before they return to military service. It is also a very selective and small program, providing an opportunity to only a few officers. By opening up the opportunity to captains, increasing the time spent working for the agency, and opening up more slots for the program, the Army would prepare more officers to effectively interact with government officials later in their careers.

The Army also offers officers with future service potential the opportunity to compete for three other government fellowships: the Congressional Fellowship; the Joint Chiefs Staff/Office of the Secretary of Defense/Army Staff (JCS/OSD/ARSTAF) Internship; and the White House Fellowship. Although tremendous opportunities, similar to the CGSC Interagency Fellowship,

¹¹⁹ Appleby, “Civilian Control of a Department of National Defense,” 76–77.

¹²⁰ Cohen, “Civil-Military Relations.”

¹²¹ Williamson Murray, “Professionalism and Professional Military Education in the Twenty-first Century,” in Suzanne C. Nielsen and Don M. Snider, *American Civil-Military Relations: The Soldier and the State in a New Era* (Baltimore, MD: Johns Hopkins University Press, 2009), 134.

¹²² Matthew Colford and Alec J. Sugarman, “Young Person’s Game: Connecting with Millennials,” in *Warriors and Citizens: American Views of Our Military*, ed. Kori Schake and Jim Mattis (Stanford, CA: Hoover Institution Press, 2016), 257.

¹²³ *Broadening Opportunities Program Catalog* (Fort Knox, KY: U.S. Army Human Resources Command, Officer Personnel Management Directorate, 2016).

the programs are limited either by time in position or available slots. Currently, a White House Fellow is in position for one year, a JCS/OSD/ARSTAF for two years, and a Congressional Fellow for 44 months.¹²⁴ Similar to the CGSC Interagency Fellowship, additional slots make these programs more effective in the scope of their reach into the Army and how its senior leaders communicate with civilian officials.

The military has made significant strides in recent years in providing opportunities for servicemembers to pursue advanced civil schooling. In the Army alone, approximately 1,400 students participate annually in the Advanced Education Program (AEP), pursuing advanced degrees at institutions across the United States.¹²⁵ However, there is room for improvement. Initiatives like the Mellon Foundation Project on Civilian-Military Educational Cooperation are another way to expose servicemembers to civilian institutions. Initially started with a grant from the Andrew W. Mellon Foundation, the program is “designed to assist thirteen of the U.S.’s leading civilian and military education institutions in the development of new forms of academic and social interaction.”¹²⁶ Although the target audience is undergraduate institutions, graduate-level institutions like the U.S. Naval War College participate as well. The primary goal of the project is to bridge the civil-military divide “by providing academic and social opportunities for positive interaction between communities.”¹²⁷ The Army attempted to start a similar program with the Headquarters Department of the Army (HQDA) Strategic Broadening Seminars. Available to officers, warrant officers, senior noncommissioned officers, and Department of the Army civilians, the courses average about a month long, and “are designed to prepare soldiers and civilians for future leadership roles with Army, joint, interagency, and multinational task forces and teams.”¹²⁸ Programs like the strategic broadening seminar and the Mellon Project are beneficial because they expose more servicemembers to the language and communication skills needed to be successful in future civil-military relations.

The long-term goal of the reforms to the current system of professional military education is to create three and four-star general officers who are more capable of interacting with government officials. With the increasing trend of political leaders with little to no military experience, it is imperative that senior officers “are deeply educated in the issues surrounding the use of military force.”¹²⁹ To achieve the appropriate blend of intelligence, critical thinking, and tactical and technical competency necessary to provide sound counsel at higher ranks, the Services must invest in their subordinate leaders. Increasing fellowship and advanced civil schooling opportunities for captains, majors, and lieutenant colonels complete with their key developmental assignments achieves three effects. Initially, it enables those officers to fully develop the necessary skill sets to serve at higher ranks. Next, it increases the pool of qualified candidates for O-6 level command opportunities, the final gateway to selection as a general officer. Finally, it creates a bench stock of officers capable of serving in influential positions on senior military staffs even if not selected to command at the O-6 level.

Currently there are at least two barriers to implementing these educational reforms. To start, a military culture exists that values the completion of certain assignments over others. An unorthodox career path often goes unrewarded, providing little incentive for individuals to stray

¹²⁴ *Broadening Opportunities Program Catalog*.

¹²⁵ *Fully Funded Graduate Programs Policy and Procedures, Fiscal Year 2017* (Fort Knox, KY: U.S. Army Human Resources Command, Officer Personnel Management Division, 2017).

¹²⁶ Douglas Stuart, “Civil-Military Relations in the U.S.: What Needs to Be Done?,” *E-International Relations*, 13 September 2013.

¹²⁷ Stuart, “Civil-Military Relations in the U.S.”

¹²⁸ Jim Tice, “NCO, Officer Broadening Seminars Available for this Summer,” *Army Times*, 23 February 2015.

¹²⁹ Murray, “Professionalism and Professional Military Education in the Twenty-first Century,” 148.

far from the established path. The second barrier is the pervasive idea that units cannot afford to give up the most qualified individuals to pursue unique educational opportunities outside traditionally accepted intuitional military venues. In an article from 2009, Williamson Murray argues that even institutional professional military education is barely tolerated by the Services despite its utility as “a portion of a larger framework” for preparing officers for future challenges.¹³⁰

Overcoming these barriers requires a cultural shift within the Department of Defense. The military Services will need to recalibrate what they look for in their senior officers. The criteria should be individuals who are both tactically proficient and equally mindful of the civil-military relationship. The impetus for this shift is found in the ideas of Huntington, who believed “serious education and intellectual preparation must lie at the heart” of the military professional.¹³¹ A simple change like tying promotion and eventual selection for O-6 level command opportunities would go a long way to achieving the desired objective of general officers fully prepared to walk the tightrope of civil-military relations.

The final recommendation is to reinstill a culture of accountability into the military. This recommendation is less about holding senior officers liable for below average or poor performance, and more about acknowledging the responsibility servicemembers have to police their own for poor behavior. The underlying goal in the proposed idea is making senior military leaders as worthy of equality in the already unequal dialogue. If the goal is to limit distrust between government officials and military leaders, behavioral accountability is a critical step toward developing “energetic, determined, cooperative, and trustworthy” military leaders.¹³²

There are other tangible benefits to instilling an ethos of behavioral accountability. It provides the military an opportunity to identify, build on, and then reward certain characteristics vital to improving civil-military relationships. The first is moderation. While describing the qualities of former great statesmen, Cohen emphasizes moderation, or a leader’s ability “to discipline his passions, and an understanding of when and how to counteract a trend.”¹³³ Cohen offers Abraham Lincoln as one example of a statesman displaying moderation. His core principles drove him to fight a war to restore the Union, yet he demonstrated “flexibility and self-restraint in the pursuit of [the] ultimate objectives.”¹³⁴ Despite criticism from northern politicians, he willingly extended more agreeable terms to the South to achieve that restoration.¹³⁵ The nation needs military leaders driven by the core principle of providing the highest quality military advice to civilian authorities, but who can discern when advocating too strongly for a course of action would be detrimental to the achievement of the long-term objective.

The other important quality a culture of accountability creates is an appreciation for the difference between dissent and disobedience. As a member of a profession, the military leader can disagree with a policy decision of a civilian leader. However, that “dissent should take place during the debate leading up to the final decision.”¹³⁶ After the decision is made, the professional is obligated to carry it out. Anything less is an act of disobedience and undermines the “trust relationship between civilians and the uniformed military.”¹³⁷

Developing a culture of accountability within the military is not an easy task. Services will

¹³⁰ Murray, “Professionalism and Professional Military Education in the Twenty-first Century,” 143.

¹³¹ Murray, “Professionalism and Professional Military Education in the Twenty-first Century,” 146.

¹³² Ricks, *The Generals*, 449.

¹³³ Cohen, *Supreme Command*, 220.

¹³⁴ Cohen, *Supreme Command*, 221.

¹³⁵ Cohen, *Supreme Command*.

¹³⁶ Mackubin Thomas Owens, “Is Civilian Control of the Military Still an Issue?,” in *Warriors and Citizens: American Views of Our Military*, ed. Kori Schake and Jim Mattis (Stanford, CA: Hoover Institution Press, 2016), 80.

¹³⁷ Owens, “Is Civilian Control of the Military Still an Issue?,” 79.

inevitably point to their values and ethos as examples of how they already hold themselves accountable. While those foundations are valuable, Drs. Leonard Wong and Stephen Gerras started a debate about their effectiveness in preventing a say-do gap amongst members of the military. In their book, *Lying to Ourselves: Dishonesty in the Army Profession*, they demonstrate how the professional values of honesty and integrity have not necessarily stopped dishonest action, especially with regard to certain reporting requirements.¹³⁸ Instead of dwelling on the negative, military members should view the creation of a culture of accountability as the driving force behind innovation, an especially important characteristic in dynamic times. If members of the military truly want to call themselves “professionals,” the military needs to do a better job of policing its own ranks.

CONCLUSION

General Washington called a meeting of the Newburgh conspirators on 15 March 1783, in a building appropriately nicknamed the Temple of Virtue. Although he approved the meeting, those in attendance did not expect him to show; Washington did not make a practice of openly confronting his own officers. When he slipped into the building visibly agitated, the atmosphere in the room changed. Moving to the front of the room, Washington addressed the assembled officers, chastising them “for improper conduct in calling an irregular meeting,” and disputing Congress’s indifference to their situation.¹³⁹ Almost as soon as the reprimand started, Washington’s tone changed. He fluidly transitioned from admonishing the actions of the officers standing in front of him to appealing to their sense of patriotism. With his words, Washington “lifted them to a higher plane, re-awakening a sense of their exalted role in the Revolution and reminding them that illegal action would tarnish that grand legacy.”¹⁴⁰ Finishing his prepared address, and hoping to further reassure the officers of Congress’s good will, he pulled out a letter from a member of the Continental Congress. Stumbling over the first few words, he paused and pulled out glasses. Starting over, he excused himself and said, “I have grown gray in your service and now find myself growing blind.”¹⁴¹ The uncharacteristic gesture of vulnerability forced those in the room to reflect on Washington’s lasting sacrifice for the new country, effectively subduing any remaining resistance in the room. More importantly, Washington’s words and behaviors that day laid the groundwork for civil-military relations in the United States, a foundation that still exists 234 years later.

The tension in civil-military relations is not new; it is the embodiment of a complex relationship, laden with distrust since the days of the Continental Army. Confusion over the roles and responsibilities of the executive and legislative branches of government in exercising civilian control, the growing distance of senior military leaders from those civilian leaders they advise, the rise of the military in shaping foreign policy, increasing public confidence in the military, and the lasting and immediate impact of the media to sway public opinion all exacerbate that distrust. Members of the military can address the current sentiments of distress within civil-military relations in three ways. First, they must embrace the symbiotic nature of the relationship, recognizing that Schiff’s concordance theory provides the most effective framework. Second, reforms to professional military education will bridge the language barrier between government officials

¹³⁸ Leonard Wong and Stephen J. Gerras, *Lying to Ourselves: Dishonesty in the Army Profession* (Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College Press, 2015), 2.

¹³⁹ Ron Chernow, *Washington: A Life* (New York: Penguin, 2010), 434.

¹⁴⁰ Chernow, *Washington*, 435.

¹⁴¹ Douglas Southall Freeman, *George Washington: A Biography*, vol. 5, *Victory with the Help of France* (New York: Scribner, 1952), 435.

and senior military leaders. Finally, by holding members of the profession of arms accountable for their behavior, the military will foster a culture where leaders display both moderation and an appreciation for dissent. In the end, as Washington identified at Newburgh, for both civilian leaders and military professionals, service to the nation should be the primary focus, not the concerns of the individual.

Army Aviation Restructure Initiative

Driving Aviation Leaders to Expand Aircraft Roles and Responsibilities

by Major Sean J. R. Stapler, USA¹

Army Aviation integrates into unified land operations by conducting air-ground operations as the aviation maneuver force of the combined arms team. Air Ground operations (AGO) are the simultaneous or synchronized employment of ground forces with aviation maneuver and fires to seize, retain, and exploit the initiative.²

U.S. Army Aviation is currently undergoing its most comprehensive restructuring initiative since the transition of the Army Air Forces into the U.S. Air Force in 1947.³ This transformation is an effort to streamline Army Aviation into an organization capable of providing U.S. and coalition ground warfighters the premier support they have come to expect while working within the confines of current budgetary constraints. In an effort to accomplish this task, Army Aviation leaders have taken a comprehensive approach to examining Army Aviation to determine the most appropriate method to provide cost savings while working to improve its ability to accomplish current mission sets and to prepare for future combat roles. Determining where to implement cuts while improving an aging fleet and minimizing risk to aviators and the ground forces they support is an immense challenge. Army Aviation leadership has struggled with determining the best method to implement cost saving procedures since the Budget Control Act (BCA) of 2011, the driving force behind the necessity for the Army's Aviation Restructure Initiative (ARI).⁴ The 2011 BCA cut Army Aviation's budget significantly, with a 40 percent reduction to training and sustainment funds and a \$3 billion decrease in annual procurement and modernization money through 2019.⁵

The tough decisions required to enhance Army Aviation, while working within budgetary constraints, have undergone scrutiny from within both the aviation community, particularly the National Guard (NG), and from external opponents attempting to fight ARI for personal or fiscal interests. ARI implementation began in fiscal year 2014 with a scheduled completion in 2019. With ARI's conclusion, the Reserve Component (RC), including all National Guard and

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² *Army Aviation*, FM 3-04 (Washington, DC: Department of the Army, 2015), 1-1.

³ Scott R. Gourley, "Aviation Restructuring Initiative Proceeds Amid Concerns," *Army Magazine*, July 2015.

⁴ Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015, HR 3979, Public Law 113-291, 113th Cong. (2014), 248.

⁵ Matt Wessmiller, "Aviation Restructuring Initiative Information Paper: Summary and Frequently Asked Questions" (unpublished paper, Office of Research and Statistical Analysis, 30 March 2015), 1.

U.S. Army Reserves (USAR), will transfer their entire Boeing AH-64 Apache fleet to the Active Component (AC). This will significantly disrupt the RC in more than 20 states, reducing jobs, funding, and units across the community.⁶ Arguments regarding these planned reductions have gained traction within Congress, where lawmakers are attempting to help their individual states rather than focusing on what is best for the total Army force. The Bell helicopter manufacturer also will feel the effects of ARI through the divestment of the TH-67 Creek training helicopter, OH-58A/C Kiowa, and OH-58D Kiowa Warrior.⁷ Despite arguments against ARI, aviation leaders have remained focused on the end state—cost efficiency—while modernizing capabilities within the Army Aviation community. Many of these arguments have garnered undue attention and have distracted away from the true shortcoming within the ARI plan, the overall reduction in attack capacity and reconnaissance capability across Army Aviation.

Four fundamental principles led to the development of the current ARI plan. The first principle included the need to provide a modernized, capable force while divesting all legacy aircraft. The second principle addressed a need to improve training for modern day twenty-first century aviation leaders. This training would include the use of a multiengine training aircraft, glass cockpits, and interactive maps to ease the transition into primary aircraft, introducing advanced technologies early into training pipelines. The third principle adapted and standardized the aviation force structure to ensure it remains capable of providing effective support, despite downsizing. This principle drove the necessity to move all of the low-density, high demand AH-64 Apaches into the AC, where they could maintain the highest level of readiness, while remaining capable of deploying for extended periods if necessary, without having to work within RC deployment constraints, particularly the 1:5 desired deployment ratio. The last principle focused on enhancing efficiency in the sustainment arena by reducing the community from seven total rotary-wing fleets into four, streamlining maintenance procedures and reducing training requirements.⁸ All of these efforts attempted to save resources while refocusing aviation support efficiency. The Army Aviation restructuring initiative is a necessary reallocation of combat power and capabilities that will require a mindset shift by aviation leaders regarding the roles and responsibilities of the remaining aircraft to continue providing premier aviation support to the ground warfighter, while remaining fiscally responsible.

To understand ARI and to continue to grow as an aviation community, leaders must understand the implications involved in the retirement of the OH-58D Kiowa scout reconnaissance platform. With the decision made to reduce this mission design series (MDS) from the Army inventory, aviation leaders must explore new and innovative ideas to replicate the OH-58's previous capability. The retirement of the OH-58 drives many of the decisions inside of ARI. While the inclusion of unmanned aircraft systems (UAS) into aviation brigades will help replace some reconnaissance capabilities, UAS platforms remain unable to provide the ground warfighter the same situational awareness or feeling of security once provided by an OH-58D Kiowa Warrior flying low overhead. Another method of replicating the scout reconnaissance capability should include the increased involvement of Sikorsky UH-60 Blackhawks partnered with AH-64s to provide close air support, maneuverability, and flexibility to ground commanders. While this technique may not remain a viable option in all operating environments, it would help to spread a low-density asset, AH-64s in this case, across an area of operations. This partnership is in-

⁶ *Force Structure: Army's Analyses of Aviation Alternatives*, GAO-15-430R (Washington, DC: Government Accountability Office, 2015), 6.

⁷ Pat Host, "Bell Helicopter Focusing on V-280 in Light of Army Aviation Restructuring," *Defense Daily*, 3 March 2015.

⁸ Maren Leed, "Restructuring Army Aviation," Center for Strategic and International Studies, video, 1:10:26, 8 April 2014.

creasingly important in low threat or counterinsurgency (COIN) operations, where the teaming of dissimilar abilities can enhance the inherent capabilities in each platform.

This paper attempts to arm future U.S. Army Aviation leadership with an understanding of ARI, the implications ARI will impose, and mitigation measures they may use to continue providing the best possible support to ground warfighters. To provide this understanding, leaders must examine the current mission sets tasked to Army Aviation, the components of ARI, and the implications ARI has on the future success of these missions. Lastly, leaders should explore the required development of new (and in some cases old) tactics, techniques, and procedures (TTPs) to efficiently employ reduced aviation assets while still accomplishing all assigned missions.

THE ROLE OF ARMY AVIATION IN THE COMBINED ARMS TEAM

Current Army Aviation doctrine establishes seven core competencies that aviation units must provide. These core competencies support the unified land operations and maximize Army Aviation's "inherent mobility, flexibility, and persistent reconnaissance capabilities," helping to provide the combined arms team with multiple options to "seize, retain, and exploit the initiative" across the operating environment.⁹ The core competencies include: provide accurate and timely information collection; provide reaction time and maneuver space; destroy, defeat, disrupt, or delay enemy forces; provide air assault maneuver forces; position personnel, supplies, and equipment; evacuate casualties and conduct personnel recovery; and enable mission command in support of the combined arms team.¹⁰ Army Aviation utilizes these seven core competencies to execute its 10 tactical, enabling, and sustaining tasks, reduced from 16 mission sets previously outlined in *Army Aviation Operations*, Field Manual (FM) 1-100.¹¹ These 10 consolidated missions include movement to contact, attack, reconnaissance, security, air assault, mission command support, personnel recovery, air movement, and aeromedical evacuation.¹²

To simplify, the Army relies on four general aviation mission types: attack, reconnaissance, assault, and general support. Previously, combat aviation brigades (CAB) included four operational battalions aligned with each of these four mission types. With the implementation of ARI, the aviation community is attempting to replace its reconnaissance capabilities through the expanded utilization of attack and UAS assets. Working within ARI will require new technologies and expanded mission roles to fill the reconnaissance void in the Army inventory. Army Aviation utilizes the seven fundamentals of reconnaissance to accomplish its four assigned reconnaissance missions, which include gain and maintain enemy contact, orient on the reconnaissance objective, report all information rapidly and accurately, retain freedom to maneuver, develop the situation rapidly, ensure maximum reconnaissance force forward, and ensure continuous reconnaissance.¹³ Although all seven reconnaissance fundamentals are achievable with both helicopters and UAS, some are certainly more suited to manned platforms that can provide a detailed and processed analysis to commanders, increasing their situational awareness. Aviation leaders must weigh inherent UAS limitations when determining future employment of manned versus unmanned platforms to accomplish reconnaissance tasks.

Combined arms leaders require an understanding of the capabilities Army Aviation brings

⁹ *Army Aviation*, 1-1.

¹⁰ *Army Aviation*, 2-1.

¹¹ *Army Aviation Operations*, FM 1-100 (Washington, DC: Department of the Army, 1997), 3-21.

¹² *Army Aviation*, 3-1.

¹³ *Attack Reconnaissance Helicopter Operations*, FM 3-04.126 (Washington, DC: Department of the Army, 2007), ii, 3-21.

to an operation and proper implementation techniques to maximize the effectiveness of the entire force. Similarly, those leaders who are determining the future of Army Aviation through the design and implementation of ARI must ensure that the Army Aviation community remains poised and ready to accomplish these assigned and necessary tasks. Providing these capabilities despite budget reductions, divestments, and force structure adjustments must remain a top priority while implementing ARI.

ARI BACKGROUND

ARI is the Army's plan to continue executing all of the aviation communities' assigned missions while reducing its budget and the size of aviation's force structure in response to the congressionally mandated spending reductions set forth in the 2011 BCA.¹⁴ Aviation and Army leaders have developed ARI in an effort to comply with budgetary constraints while continuing to modernize the force. Prior to the 2011 BCA, Army Aviation planned to maintain the AC at 13 CABs, while modernizing the AH-64 Apache, UH-60 Blackhawk, and Boeing CH-47 Chinook fleets.¹⁵ Additionally, the community planned to upgrade the OH-58 Kiowa Warrior with a cockpit and sensor upgrade program (CASUP), at a cost of more than \$3.3 billion, and complete a service life extension program (SLEP) on the OH-58 that would have maintained the aging aircraft in the fleet for the next 10–20 years, at a cost of \$6.96 billion.¹⁶ An additional SLEP scheduled for the TH-67 Creek training helicopter, as well as the development of a new training helicopter, involved an additional \$1.6 billion in costs.¹⁷ Under the 2011 BCA reductions, the Army was unable to continue with these planned improvements, driving the development of multiple alternative plans regarding the future of Army Aviation. The other primary course of action (COA) proposed by the Army involved the deactivation of five Active and Reserve Component CABs with their associated aircraft, reducing approximately 460 airframes from the Army fleet, while maintaining the OH-58D, and dramatically slowing the modernization plan for the other three primary MDS aircraft: the UH-60 Black Hawk, AH-64 Apache, and the CH-47 Chinook.¹⁸

This alternate COA would have delayed the fielding of the Boeing AH-64E Apache Guardian, the UH-60M, and CH-47F model upgrades by up to 10 years, significantly reducing the U.S. military's ability to remain one step ahead of competitors in the realm of technology.¹⁹ The alternate COA also resulted in a substantial reduction in aviation's total capacity with the reduction of five CABs. This alternate COA, involving a delay to modernization efforts and the significant reduction in total CABs, was unacceptable to Army Chief of Staff General Raymond T. Odierno. In 2012, he provided aviation leaders guidance to "determine the best force structure and modernization balance to retain the most capabilities and capacity that is in the highest demand by our Combatant Commanders and recurring civil and homeland defense requirements."²⁰ With this in mind, aviation leaders set out to develop a comprehensive plan that would continue modernizing the three primary MDS platforms, while attempting to provide the most widely demanded support to the ground commanders.

¹⁴ Dakota Wood, "U.S. Army Aviation Restructure Initiative: A Win-Win for National Guard and Active Duty?," Heritage Foundation, video, 1:01:35, 23 April 2014.

¹⁵ Wood, "U.S. Army Aviation Restructure Initiative."

¹⁶ Wessmiller, "Aviation Restructuring Initiative Information Paper," 13.

¹⁷ Wood, "U.S. Army Aviation Restructure Initiative."

¹⁸ Wessmiller, "Aviation Restructuring Initiative Information Paper," 2.

¹⁹ Leed, "Restructuring Army Aviation."

²⁰ Wessmiller, "Aviation Restructuring Initiative Information Paper," 1.

ARI COMPONENTS

To accomplish assigned cost-cutting tasks, aviation leaders developed a comprehensive plan that included four significant lines of effort (LOE), in addition to the numerous smaller components, which comprise ARI. Most of these LOEs have caused initial controversy throughout the Army and aviation community, leading some aviation leaders to question the validity of ARI. However, these LOEs remain necessary to ensure ARI's success and, with minor modifications, should facilitate accomplishment of all of Army Aviation's assigned mission sets. The four significant ARI LOEs include phasing out the TH-67 training aircraft and introducing the Eurocopter UH-72 Lakota as the future training platform; reducing from 13 to 10 AC CABs with the standardization of AC brigades, and the use of regionally aligned forces (RAF) to handle the reduction by establishing a rotational pool of CABs aligned with overseas tours in Asia and Europe; moving all attack aviation assets from the RC to the AC and standardizing 10 of the 12 RC aviation brigades; and retiring the OH-58D Kiowa Warrior and using UAS and manned and unmanned teaming (MUM-T) within aviation brigades to fill Army Aviation's scout reconnaissance capability.²¹ Army Lieutenant General Michael D. Lundy, the commander of U.S. Army Aviation Center of Excellence (USAACE) in Fort Rucker, Alabama, said "ARI is designed to provide the Nation with the most modernized fleet in aviation history while providing the most available combat power given fiscal constraints," speaking at a worldwide CAB commanders conference to all of the available CAB commanders in 2014.²² General Lundy and his staff have remained adamant on the necessity of ARI, while highlighting the importance of getting ARI right for the future of the Army.

The first LOE involves phasing out of the TH-67 training aircraft. In so doing, Army Aviation saves significant money on the maintenance of an aging TH-67 fleet and on development of a new training helicopter. Instead, the ARI plan uses a combination of current AC UH-72 Lakotas and the procurement of 100 additional UH-72s to provide a new training fleet to Fort Rucker, while allowing the National Guard community to maintain all 212 UH-72s in its fleet for various homeland security missions. The upgraded training fleet will be fully operational in 2018.²³ The Lakota provides students an advanced airframe, including a glass cockpit system and twin engines, greatly enhancing the training experience at flight school and reducing transition time to advanced airframes, all while reducing costs and divesting approximately 182 aging TH-67 airframes.²⁴ Some arguments against this plan stem from the acquisitions and manufacturing community, who worry that the United States will continue to reduce its already weak helicopter manufacturing capability by not continuing to stress the industry for new products.²⁵ When the government does not place bids within a manufacturing sector, it tends to reduce its capability to produce new technologies and to diminish the manufacturing industries' capacity to surge production in the event of a crisis. Despite this criticism, aviation leaders have assumed risk in manufacturing to reduce cost and redirect funds into other sectors.

The second LOE, the reduction from 13 to 10 AC CABs, involves the addition of UASs into AC CABs and the standardization all 10 of these units (figure 4).²⁶ The reduction and restructuring will ensure that each AC division has one AC CAB assigned to it for future resourcing.

²¹ Leed, "Restructuring Army Aviation."

²² Michael D. Lundy, "World Wide Cab Commanders Video Tele Conference" (unpublished paper, USAACE, 23 October 2014), PowerPoint, slide 8.

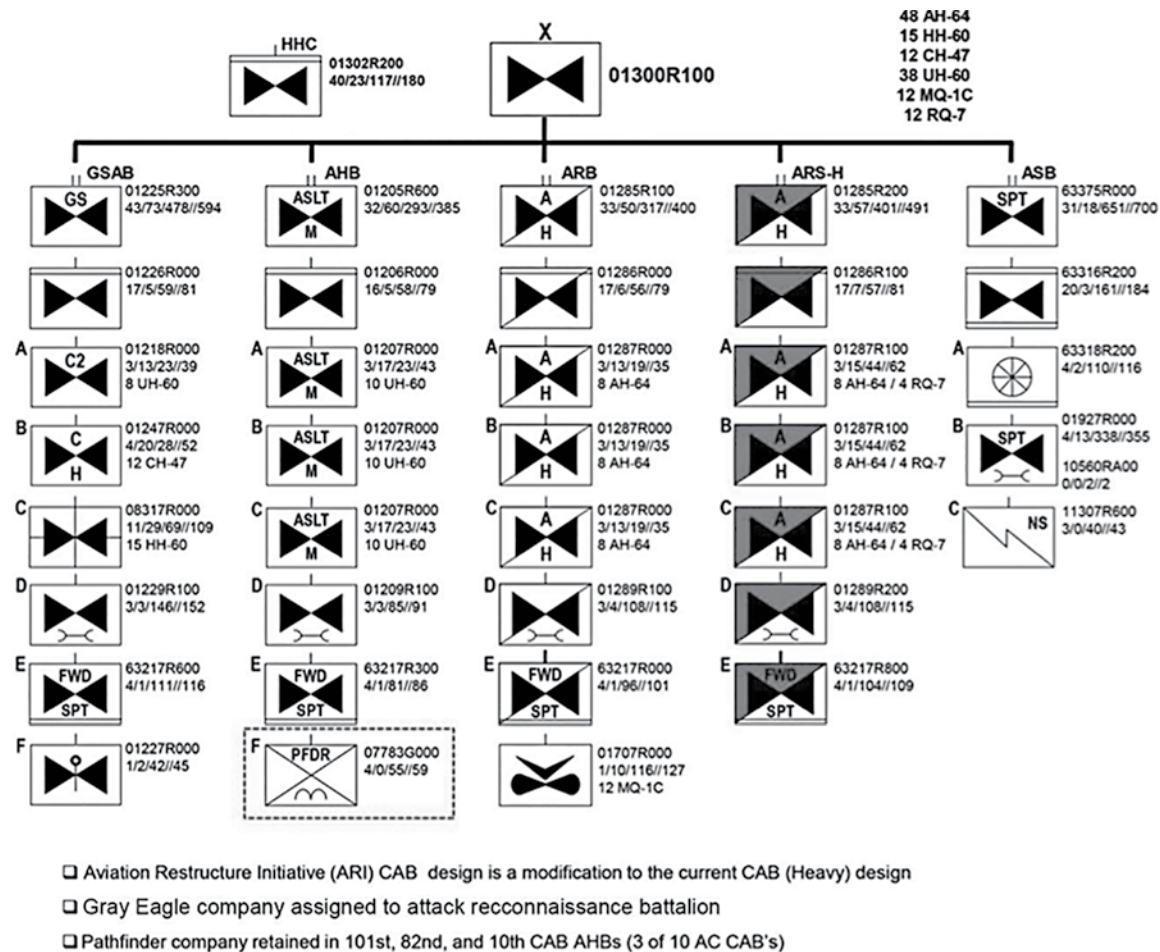
²³ Wessmiller, "Aviation Restructuring Initiative Information Paper," 16.

²⁴ "House Appropriators Support Army Aviation Restructure—To a Point," *Helicopter News*, no. 39, 1 July 2014.

²⁵ "Comanche's Wi'ane: No New Armed Scout Helicopter," *Defense Industry Daily*, 15 January 2014.

²⁶ "The 2016 Aviation Force Structure Book" (unpublished paper, Organization & Personnel Force Development Directorate, Army Aviation Center of Excellence, 16 October 2015).

Figure 4. Standardized active component CAB structure for the future AC CAB



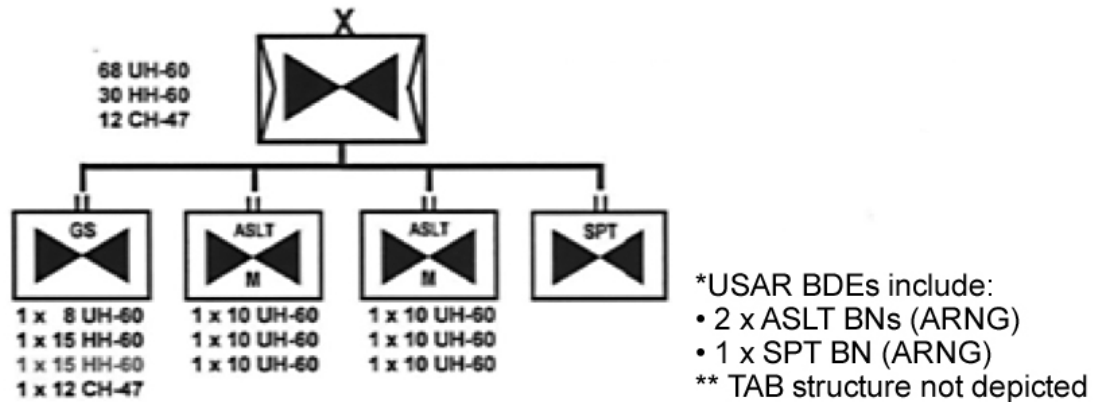
Source: Adapted by MCUP.

This will help the Army achieve its regionally aligned forces initiative, aligning divisions and CABs to specific regions in the world to provide familiarity for individuals and units assigned to provide coverage to these regions. With the reduction to 10 AC CABs, the AC will reduce its manpower requirements by approximately 3,482 personnel, also helping the Army reach its diminishing manpower objective end strength.²⁷ The reduction in CABs also creates a demand to provide rotational forces to deploy in support of both the European and the Pacific theaters of operation. These rotational units are one of the main concerns active duty aviators have expressed regarding ARI due to a unit's ability to deploy into foreign locations for relatively short durations and to become familiar with the region's particular flight requirements and specific procedures. Units are attempting to alleviate local familiarity shortfalls through subject matter experts (SMEs) and classes prior to deployments in an effort to ensure personnel are prepared to fly upon arrival into theater. In Europe, the deactivation of the 12th CAB now requires stateside units to deploy for nine-month rotations to provide coverage to European Command (EUCOM) and European allies. In Korea, the planned deactivation of two ID CAB in 2018 will require a similar rotational requirement from stateside units to maintain previously agreed

²⁷ Force Structure, 42.

Figure 5. Standardized Reserve Component CAB structure for a future RC CAB

12 x Reserve Component Aviation Brigades
8 x ARNG, 2 x USAR*, 2 x TABs**



Source: Adapted by MCUP.

upon protection requirements to the Republic of Korea and the necessary support to forward stationed forces in that region.²⁸ Rotational units pull resources from strategic surge capabilities and limit the total number of units available in case of another extended conflict. Recent arguments against this reduction have focused on maintaining two ID CAB in Korea to reduce these possible shortfalls.²⁹ Unfortunately, this reduction in CABs is a necessary component within ARI and helps to save more than \$1.1 billion in annual operations and support costs each year.³⁰ These cost savings allow for the continued modernization of the Army fleet.

The third LOE, involving the movement of all attack aviation platforms from the RC to the AC, is by far the most controversial.³¹ The LOE attempts to cut costs by reducing attack aviation from 37 to 20 “shooting” battalions across the total Army force.³² To alleviate this reduction risk, ARI reallocates all of the remaining shooting battalions into the AC where they can be kept at the highest state of readiness, deployed on extended schedules with reduced notification requirements and with less dwell time restrictions than what is necessary in the RC.³³ By transferring the AH-64s from the RC and redistributing the airframes from deactivating AC CABs, Army Aviation will provide every AC CAB with one heavy attack reconnaissance squadron (HARS) consisting of 24 AH-64s, 12 AAI RQ-7 Shadow UASs, and one attack reconnaissance battalion (ARB) comprised of 24 AH-64s and 12 General Atomics MQ-1C Gray Eagle UASs.³⁴ The redistribution allows the Army to maintain these low-density, high demand battalions available on an AC surge timeline for maximum availability and responsiveness.³⁵ Simultaneously, the RC will standardize 10 of its 12 aviation brigades and add 159 UH-60 airframes that are more suitable to a stateside defense support of civil authorities (DSCA) mission (figure 5).³⁶ Additionally,

²⁸ Lundy, “World Wide Cab Commanders Video Tele Conference,” slide 12.

²⁹ *Apache Transfers and Related Issues* (Arlington, VA: National Commission on the Future of the Army, 2016), 93.

³⁰ Wessmiller, “Aviation Restructuring Initiative Information Paper,” 12.

³¹ *Force Structure*, 2.

³² *Force Structure*, 34.

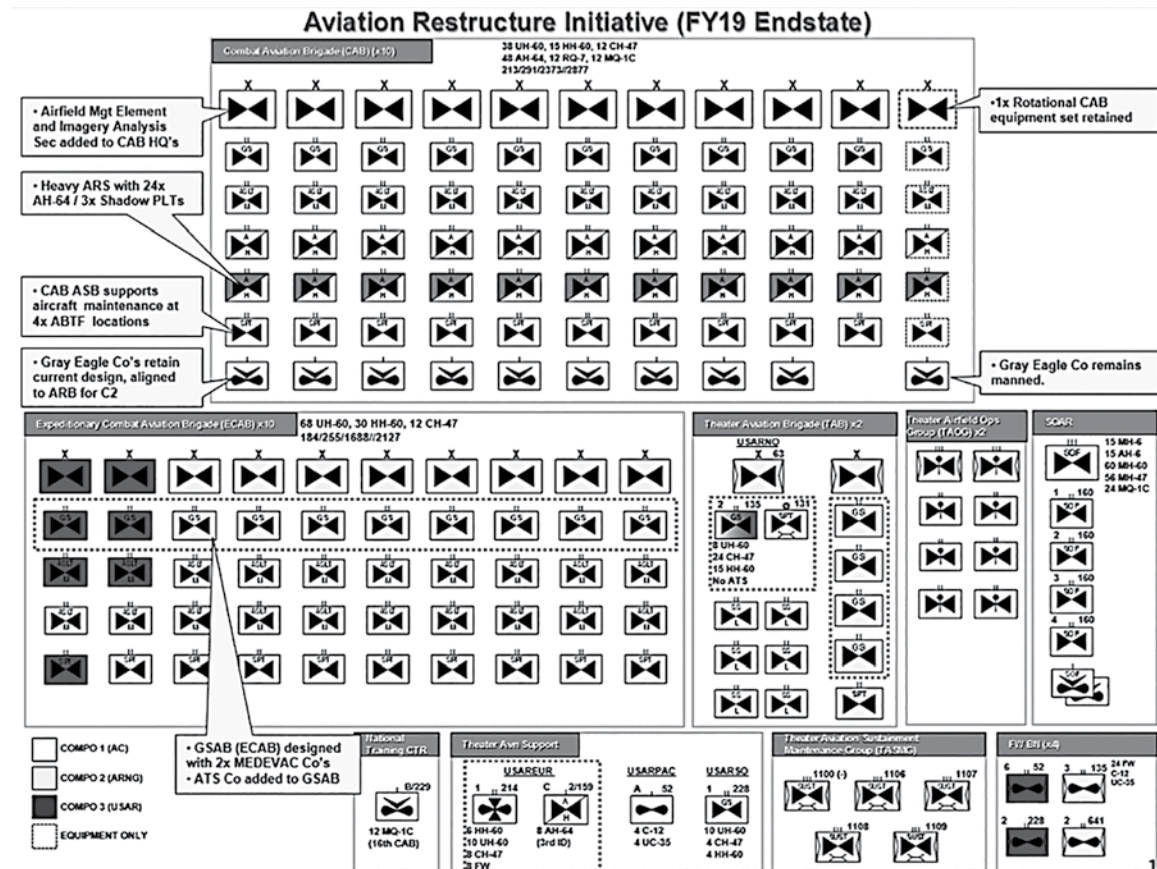
³³ *Apache Transfers and Related Issues*, 84.

³⁴ *Aviation*, 2-7.

³⁵ Lundy, “World Wide Cab Commanders Video Tele Conference,” slide 6.

³⁶ “The 2016 Aviation Force Structure Book.”

Figure 6. Army Aviation planned end state, FY 2019



Source: Adapted by MCUP.

these 20 attack battalions also will now attempt to fulfill the reconnaissance role previously accomplished by the OH-58D community. The two Apache battalions in each AC CAB will work to fill the scout reconnaissance mission sets using a variety of MUM-T techniques. This plan is still in an infancy status and requires further exploration to ensure there is no degradation in the AC CAB's ability to conduct attack or reconnaissance missions in future conflicts.

The final LOE includes the retirement of 280 OH-58A/C and 336 OH-58Ds.³⁷ OH-58Ds previously served as the primary scout reconnaissance platform for the Army. With the OH-58 divestment, an ongoing project scheduled for completion in the third quarter of FY 2016, Army Aviation is working to develop a means to replicate this critical mission set. Current plans focus on the above-mentioned integration of UASs into aviation brigades and the development of MUM-T TTPs. Currently, three AC CABs have undergone the MUM-T transition and the remaining seven AC CABs will complete the UAS procurement and realignment in the first quarter of FY 2019 (figure 6).³⁸ Unfortunately, these UAS cannot provide the same reconnaissance or close combat attack capability of an OH-58 Kiowa, and their fielding completion is two and a half years behind the divestment of the OH-58s.³⁹ Aviation leaders are attempting to mitigate

³⁷ Sofia Bledsoe, "PEO Aviation Has More Milestones on Horizon," Army.mil, 12 December 2014.

³⁸ Lundy, "World Wide Cab Commanders Video Tele Conference," slide 12; and "The 2016 Aviation Force Structure Book."

³⁹ Lundy, "World Wide Cab Commanders Video Tele Conference," slide 12.

these reductions through the increased use of AH-64 Apaches in a reconnaissance role, despite the platform's original design, which was to deliver heavy munitions onto targets. By refocusing on reconnaissance, AH-64s reduce capacity to execute their primary mission of delivering munitions in support of the ground commander's objectives. The degradation in reconnaissance capability requires a close examination to ensure aviation leaders are properly preparing for the next conflict.

NEW AVIATION TTPS IN SUPPORT OF ARI

In an ideal world, the defense budget would have money to maintain, upgrade, or develop new airframes, allowing the OH-58D or an airframe similar to it to remain in the inventory, fulfilling a single purpose reconnaissance role. Unfortunately, this is not reality and leaders must improvise to accomplish assigned missions with the tools at hand. To do so, aviation leaders must rethink how to use the remaining aircraft available to accomplish multiple and overlapping mission sets. No longer will the Kiowa Warrior remain available to accomplish the majority of Army Aviation's reconnaissance tasks, leaving the Apache to conduct attack-centric missions, while Blackhawks conduct troop transport. Aviation leaders must develop new TTPs to maximize assets across the battlefield, while attempting to provide ground force commanders the persistent aviation support (PAS) and 24/7 aircraft coverage they deserve.⁴⁰ The mere presence of aircraft overhead serves as a deterrent to enemy forces, reducing an enemy's freedom of maneuver and enabling friendly forces to seize the initiative. Combining this with aviation's ability to see and understand the battlefield and relay these findings to the ground force commander has proven invaluable across both Iraq and Afghanistan.⁴¹ To achieve effective aviation support and potentially PAS, aviation leaders must reevaluate how they employ the current fleet, remaining open to the use of lift assets in a reconnaissance capacity.

Dr. William Lewis from the Army's Aviation Development Directorate identified the "CAB recon and security gap as the number one critical capability gap in the Army" while briefing General Lundy, the commanding general of the USAACE on 29 September 2015.⁴² Current Army plans to solve this gap include the integration of Shadows and Grey Eagles into CABs, working in a MUM-T capacity. The Army defines MUM-T as the "synchronized employment of Soldiers, manned and unmanned air and ground vehicles, robotics, and sensors to achieve enhanced situational understanding, greater lethality, and improved survivability."⁴³ MUM-T is a relatively new technology and tactic that allows AH-64s to receive real-time full motion video (FMV) and imagery into the cockpit, enhancing a pilot's situational awareness with the goal of improving target acquisition times.⁴⁴ MUM-T is an evolving technology and TTP that will expand with ARI's inclusion of UASs directly into the Army's CABs. By making Army Aviation the proponent for Army UASs, Army leadership has significantly increased the standardization and training in the UAS community, an area that had previously been weak, resulting in accidents and the degraded integration of UAS capabilities into ongoing operations in the emerging years of UAS operations.⁴⁵ The inclusion of UASs directly into aviation brigades allows for

⁴⁰ Capt Robert I. Sickler, "Army Aviation and the Megacity: Winning in a Complex Urban Environment" (master's thesis, Marine Corps University, 2015), 11.

⁴¹ Craig Hoyle, "Royal Air Force Showcases Tornado's Afghan Versatility," *FlightGlobal*, 28 January 2010.

⁴² William Lewis, "S&T Enablers to Support Future Family of UAS Brief" (unpublished paper, Aviation Development Directorate, U.S. Army Aviation and Missile Research, Development, and Engineering Center, 29 September 2015) PowerPoint, slide 2.

⁴³ *Army Aviation Information Bulletin 1-2015, Aviation Restructure Initiative* (Fort Rucker, AL: U.S. Army Aviation, 2015): 2-5, hereafter *Aviation Restructure Initiative*.

⁴⁴ *Army Unmanned Aircraft System Operations*, FM 3-04.155 (Washington, DC: Department of the Army, 2009), 2-8.

⁴⁵ Kelly P. Pate, "UAS Shifts Focus to Building Capability," *RuckerArmy.mil*, 27 March 2015.

improved mutual understanding of capabilities and limitations of all the platforms involved and the development of new TTPs as units build habitual working relationships through increased training opportunities.

MANNED-UNMANNED TEAMING ADVANTAGES

An important component of ARI involves the converting more than 320 former OH-58 pilots into UAS operators, adding a reconnaissance, security mindset and an inherent knowledge of aviation operations into the UAS community that was previously missing.⁴⁶ In another move to further develop the MUM-T expertise and fill the reconnaissance gap, aviation leaders established a two-week Aviation Reconnaissance Course at Fort Rucker to build synergy between manned and unmanned systems and to improve Army Aviation's reconnaissance expertise.⁴⁷ All of these MUM-T initiatives within ARI focus on bringing the manned and unmanned communities together as they determine how to enhance individual capabilities while supporting the ground community. MUM-T provides a cost-effective solution to the use of the AH-64 as a scout platform and allows an aviation commander to become closer to achieving the desired PAS solution for the ground force commanders. Colonel Thomas von Eschenbach, Army Training, and Doctrine Command's capability manager for UAS, says, "I think one plus one—a Shadow plus an Apache—equals three," indicating that the use of mutually supporting capabilities will help aviation leaders achieve asymmetric advantages in future operations.⁴⁸

Although the AH-64 certainly has the capability to conduct the scout mission, its original design was for the Cold War era, built as a tank destroyer for decisive operations in a force-on-force scenario. The average flight hour for an AH-64D is more than double that of the previously utilized OH-58D at a cost of \$6,560 versus \$2,931 an hour to operate.⁴⁹ These costs include anticipated maintenance expenses, parts requirements, and fuel. By utilizing Shadow and Grey Eagle assets in a partnered capacity with an AH-64, aviation leaders can reduce AH-64 flight hours to conduct basic reconnaissance, saving precious manned flight hours for missions that require a manned airframe. By utilizing a UAS's attributes, with its slow airspeeds, extended station times, high altitudes, and persistent observation capabilities, a UAS can provide effective reconnaissance without increased risk to personnel. The use of MUM-T also helps to achieve PAS, a goal an aviation leader should strive to achieve whenever requested by a ground commander. Although the presence of a drone does not provide the same level of intimidation to the enemy or full situational awareness that an aircrew can provide, it does help fill a piece of the reconnaissance gap.

MANNED-UNMANNED TEAMING DISADVANTAGES

Despite the advantages MUM-T brings to the combined arms team, Army Aviation needs to remain aware of the disadvantages involved in the current generation of UASs while developing bridging strategies to fill the reconnaissance gap left by the divestment of the OH-58D. Downsides to the use of MUM-T primarily involve the lack of situational awareness attained from a UAS versus a manned helicopter, particularly during a dynamic situation. Lieutenant Colonel Pat Davis, the battalion commander for 1st Battalion, 229th ARB, highlighted this point in an

⁴⁶ CW4 Dave Stock, "Aviation Restructure Initiative: OH-58D Personnel Transition Plan under Way," Army.mil, 10 October 2014.

⁴⁷ Gary Sheftick, "Course to Train Pilots with Unmanned Aerial System Operators," Military.com, 3 February 2015.

⁴⁸ Kelly P. Pate, "Aviation Restructure Initiative Allows UAS Workhorses to Remain Aloft," Army.mil, 6 October 2014.

⁴⁹ John P. Roth, memo, "Fiscal Year (FY) 2015 Department of Defense (DOD) Fixed Wing and Rotary Wing Reimbursement Rates," 23 December 2014, hereafter Roth memo.

interview just after his return from a deployment in Afghanistan in early 2015 in which his unit used both the AH-64Es in a MUM-T capacity with MQ-1Cs and OH-58Ds attached to his task force.⁵⁰ When asked which he preferred, manned or unmanned aircraft, he said that “a lot depends on what your mission set is. A helicopter with a human being inside can provide better situational awareness by actually being on the mission and seeing it, smelling it, hearing it,” highlighting a lack of situational awareness encountered in the current generation of UASs.⁵¹ In a helicopter, pilots can literally see the expression on people’s faces when conducting low-level reconnaissance missions.⁵² This level of fidelity greatly enhances the situational awareness of both the crew and the commander the crew is reporting to. The technology in drones still limits their image clarity and their ability to capture a full understanding of complex situations. When a UAS focuses in on a target or objective area, the system’s field of vision (FOV) reduces dramatically, similar to looking through a straw. FOV can have significant impacts on success and requires consideration when assigning UASs to a mission. While operating at a wide FOV, a UAS has significantly less visual clarity particularly once operators account for altitude, atmospheric conditions, sensor type, and target description. With a narrower FOV, the UAS can increase clarity but will only be able to focus on that one target area.⁵³ This significantly inhibits the operator’s ability to maintain full situational awareness of a scenario and can lead to potential misinterpretations of a situation. Unfortunately, these misinterpretations have evidenced themselves in a number of misguided drone strikes throughout the wars in Iraq and Afghanistan, leading to scenarios involving unintended collateral damage and civilian casualties.⁵⁴

There are other emerging threats that may inhibit the future use of UAS. These include anti-radiation weapon systems focused on jamming UAS’s communications, rendering the systems useless; attacks degrading global positioning systems crucial to the operation of UASs; or the use of cyber technology to attack a UAS’s software, hardware, mission planning, or aviation support systems.⁵⁵ Technological vulnerabilities are not unique to UAS, but they are accentuated in unmanned systems and could easily render them useless, leaving a ground commander relatively blind if the aviation community relies too heavily on this burgeoning technology. Additionally, UAS require a prepared runway to operate from of no less than 2,000 feet for the MQ-1C Grey Eagle and 710 feet for the RQ-7 Shadow.⁵⁶ Runway requirements significantly reduce the locations UASs can deploy to, particularly under expeditionary conditions. UAS also are more susceptible to weather and terrain phenomenon than their manned counterparts based on their reduced weight, frailty, and necessity for favorable atmospheric conditions while flying at altitude to provide a clear picture to the operators. UAS encounter degraded capabilities when operating in mountainous terrain or encountering other natural or manmade obstructions, which can lead to limited line of sight (LOS); reduce a UASs range, laser, and weapon capabilities; or require the employment of a second UAS using a data relay capability to provide information back to operators.⁵⁷ Commanders must continue to understand UAS limitations while not overestimating a UASs reconnaissance capacity when compared to a manned platform. Although UAS may remain cheaper to fly, \$2,300 per flight hour for Grey Eagles, they lack the ability to

⁵⁰ Richard Whittle, “MUM-T Is the Word for AH-64E: Helos Fly, Use Drones,” *Breaking Defense*, 28 January 2015.

⁵¹ Whittle, “MUM-T Is the Word for AH-64E.”

⁵² Hugh L. Mills Jr. and Robert A. Anderson, *Low Level Hell: A Scout Pilot in the Big Red One* (Novato, CA: Presidio Press, 1992), 43.

⁵³ *Army Unmanned Aircraft System Operations*, 3-23.

⁵⁴ Medea Benjamin, *Drone Warfare: Killing by Remote Control* (New York: OR Books, 2012), 48.

⁵⁵ *Aviation Restructure Initiative*, 2-2.

⁵⁶ *Army Unmanned Aircraft System Operations*, C-3.

⁵⁷ *Aviation Restructure Initiative*, 2-3.

provide the same reliability and level of fidelity while developing situations when compared to their manned aircraft brethren.⁵⁸

Another significant downside to the MUM-T concept involves “pilot task saturation,” a scenario in which crewmembers become overloaded with too many competing requirements leading to degraded performance, or worse, an accident.⁵⁹ With the additional technology upgraded AH-64s bring to the fight, aviation leadership must minimize the possibility of overloading crewmembers with tasks that do not involve the basics of piloting a low flying aircraft. The Tactical Common Data Link (TCDL) allows an AH-64 to receive FMV from various UAS platforms and, in the case of the Grey Eagle, control the UAS’s flight path and targeting sensors, while both airframes are flying.⁶⁰ Although these capabilities may provide some advantages, they can also overload pilots, inundating them with multiple tasks at one time. These tasks can include talking on multiple radios to numerous agencies, conducting their own reconnaissance mission, working with the friendly forces on the ground to positively identify their location and the location of enemy forces, and reacting to possible enemy contact, all while maintaining control of the aircraft.

Additionally, AH-64 pilots often serve as Air Mission commanders responsible for the management of all flying assets in the airspace, another competing priority for the limited crew inside of an AH-64. Task saturation scenarios are situations aviation leaders will have to mitigate as the levels of interoperability (LOI) between AH-64s and Grey Eagles grow. LOI 4, the highest useable LOI at this time, includes the actual control of a MQ-1C’s flight path, sensors, and munitions from within the AH-64.⁶¹ Chief Warrant Officer 4 Philip Learn, an experienced AH-64 standardization pilot and aviation mission survivability officer, explains that “there is much refining to still complete regarding MUM-T. . . . In the future under the correct command and control we could far exceed what the OH-58’s provided. We are unfortunately years away from doing this.”⁶² Learn highlighted both the lack of full situational awareness that is derivable from a UAS’s FMV alone and the current complexity involved in controlling UASs from another flying airframe. It is this period of transition gap, as technology and TTPs are refined in the MUM-T community, which aviation leaders must focus on filling in order to remain successful in upcoming conflicts.

REEXAMINING UH-60 BLACKHAWKS

The most significant downside to the use of AH-64s in a reconnaissance capacity is that it degrades their ability to conduct their primary attack mission, the ability to put rounds on target in support of a ground commander’s scheme of maneuver. When AH-64s conduct reconnaissance missions, they are not executing attacks or security missions for commanders on the ground. This role as a reconnaissance platform further reduces Army Aviation’s attack capacity, a capability that is already extremely understrength. Instead, leaders must reexamine UH-60s as a platform to accomplish more of the reconnaissance mission for the ground commanders, leaving the attack missions to the AH-64s. This will require a shift in aviation leaders’ mindsets to drive the UH-60 community to further train and develop internal reconnaissance capabilities while

⁵⁸ Roth memo, 10.

⁵⁹ Jeremy B. Noel, Kenneth W. Bauer Jr., Jeffrey W. Lanning, *Improving Pilot Mental Workload Classification through Feature Exploitation and Combination: A Feasibility Study* (Washington, DC: U.S. Air Force Research, DOD, 2005), 2.

⁶⁰ *Aviation Restructure Initiative*, 2-5.

⁶¹ Currently, there are five LOIs: level 1 is the indirect receipt/transmission of UAS payload data; level 2 is the direct receipt/transmission of UAS payload data; level 3 is control of the UAS payload, not the flight unit; level 4 is control of the UAS without takeoff and landing; and level 5 is control of the UAS with takeoff and landing.

⁶² CW4 Philip Learn, 1st Cavalry Division, interview with author, 4 January 2016.

maximizing diminished assets. Yes, UH-60s are already heavily utilized in combat for a variety of other missions, but senior ground commanders will have to prioritize their desired effects. Having a trained and capable UH-60 community to draw from to execute reconnaissance missions will only increase a ground commander's flexibility.

To fill the reconnaissance gap and to develop redundant and complementary reconnaissance competencies, while preparing for possible scenarios in which UAS assets are unavailable, Army Aviation must examine lift platforms' roles in reconnaissance missions. Currently, the Army cannot afford to develop a new armed scout helicopter, so it must look at creative ways to perform these missions with the aircraft available. At an hourly flight rate of \$3,412, the UH-60M costs almost half the price to fly when compared to the AH-64D.⁶³ Although Blackhawks are not currently equipped with the same level of sensors or armament found in the AH-64s or OH-58s, UH-60s do have two crew chiefs to develop and maintain situational awareness in combat. Additionally, a Black Hawk has a higher power-to-weight ratio, improving maneuverability over an AH-64. The ability to dynamically retask a UH-60s to reposition ground forces or supplies also increases their versatility. UH-60s can carry up to 11 additional passengers with the seats in who can serve as SMEs and sensors themselves, an advantage not seen in the AH-64. The Army has the ability to enhance these capabilities with the addition of an upgraded armament system, something the Service has accomplished in its special operations aviation community with the addition of sensors and configurable weapons systems on its direct action penetrator (DAP) Sikorsky MH-60 Seahawks.⁶⁴

UH-60s already provide a reconnaissance capacity, serving in an intelligence, surveillance, and reconnaissance (ISR) role on every flight, no matter the directed primary mission. The ability of aircrews to garner information while flying over an operating area can prove invaluable to a commander's situational understanding. Often, how well these aircrews accomplish this secondary mission depends on the command climate, priorities, and the operating environment. FM 3-04.113, *Utility and Cargo Helicopter Operations*, already discusses the use of utility airframes, particularly UH-60s, in a reconnaissance role. The doctrine states that "commanders instill into crewmembers that they are reconnaissance Soldiers fighting for and confirming intelligence. Their sightings and reporting of any activity (or lack thereof) may make the difference between victory and defeat," an indication of the reconnaissance mentality already present in the utility community.⁶⁵ This line of thought and development of TTPs requires further expansion to fill the reconnaissance role previously executed by the Kiowa Warrior. Although Black Hawks do not have the same sensor packages in place on AH-64s, they have crew chiefs and other observers onboard that can fill this role. Human eyes often see and comprehend much more than what is distinguishable from a sensor system alone. Although not ideal for attack targeting, Blackhawks can provide comparable capabilities in a reconnaissance role to that of what the OH-58 provided, and should receive further examination as an additional reconnaissance asset in the army inventory.

RECONFIGURABLE UH-60 BLACK HAWKS

The conversion of Black Hawks into attack and scout platforms is not a new idea. As mentioned previously, DAPs, converted UH-60s, upgraded and equipped with weapon systems and sensors comparable to the AH-64, have played an integral role in the 160th Special Operations Avi-

⁶³ Roth memo, 10.

⁶⁴ "MH-60L DAP," Guncopter.com, accessed 5 January 2016.

⁶⁵ *Utility and Cargo Helicopter Operations*, FM 3-04.113 (Washington, DC: Department of the Army, 2007), 2-38.

ation Regiment (160th SOAR).⁶⁶ This type of armament on a Black Hawk also evidences itself in the U.S. Navy where the Seahawk is equipped with torpedoes in an antisubmarine role and in the U.S. Air Force where the Sikorsky HH-60 Pave Hawk replaces the standard M240H machine guns with miniguns. Paying to upgrade Black Hawks would pose a significant expense in both the initial purchase and the required follow-on proficiency training. However, this expense would be minimal when compared to the development and manning of a new armed scout reconnaissance platform. Utilizing the UH-60 also would streamline maintenance procedures and parts, reducing operational and support lifecycle costs. Restructuring CABs to include a company of armed reconnaissance, configurable Black Hawks, or the introduction of a platoon of these configurable Black Hawks into each company in the assault battalion would provide additional reconnaissance and attack depth, particularly in the RC. Increasing the RC's attack capacity by adding configurable armament systems to UH-60s may ease National Guard opposition to ARI and provide additional strategic depth previously lost with the movement of all rotary-wing attack platforms to the AC. This flexible approach also would allow the RC to remove weapons configurations when conducting stateside mission sets that do not require this capability.

Other nations around the world have already worked with Sikorsky, the producer of Black Hawks, to develop and procure conversion kits in an effort to save money. By using Black Hawks in both a utility role and as an attack asset, countries like the United Arab Emirates are streamlining their total number of required platforms, while remaining capable of executing all of the basic mission sets—assault, attack, reconnaissance, and general support with one airframe.⁶⁷ This technique could provide a cost-effective method and add additional attack capabilities to the total Army, supplementing the overall diminished attack community. In the RC, utilizing upgraded UH-60s capable of a configurable armament system would reintroduce an attack capability that ARI plans to reduce while providing states additional utility airframes more conducive to the defense support to civilian authorities' mission. The RC community should work with the AC to develop these new capabilities and TTPs. As RC ARB aircraft transfer into the AC, Reserve Apache aviators can utilize their detailed knowledge of the attack and reconnaissance mission to expand the Black Hawk's role. All of these changes require a joint effort to implement between the AC and RC. This concept would help grow partnerships between AC and RC aviation units, one of the underlying priorities in ARI. ARI has aligned AC and RC CABs to build relationships, force joint training, and alleviate the lack of attack assets in the RC CABs through a multicomponent solution. This plays into the Army's Total Force Policy, signed by Secretary of the Army John M. McHugh on 4 September 2012. The policy integrates the Army's Active and Reserve Components, driving an expansion of partnership and teaming between the compositions.⁶⁸

By focusing efforts on a reduced number of airframes and continuing to upgrade those platforms, Army Aviation can save money and streamline operations. While discussing the ARI and the Army's future vertical lift (FVL) concepts, General Lundy recently stressed the importance of "cockpit commonality to reduce the training base," and how similar platforms can "reduce the maintenance burden."⁶⁹ Acquiring maintenance parts routinely causes delays in aircraft availability and is a leading cost to ongoing operations. Utilizing fewer airframes, but accomplishing multiple mission sets with those airframes, is already an integral ARI concept and has ulti-

⁶⁶ Fred J. Pushies, *Night Stalkers: 160th Special Operations Aviation Regiment (Airborne)* (St. Paul, MN: Zenith Press, 2005), chapter 6.

⁶⁷ "Armed & Versatile: Sikorsky's 'Battlehawk' Helicopters," *Defense Industry Daily*, 18 October 2016.

⁶⁸ John M. McHugh, Army Directive 2012-08, "Army Total Force Policy," 4 September 2012.

⁶⁹ Sofia Bledsoe, "Lundy Emphasizes Importance of ARI," *Army Flier*, 16 April 2015.

mately led to the retirement of the OH-58D. The use of similar airframes with interchangeable parts and maintenance procedures while executing a variety of missions ultimately saves money. These cost-saving measures provide ample reason to reexamine how aviation leaders utilize the current airframe inventory when determining methods to fill capability gaps left from ARI.

PURPLE TEAMS

The expansion of UH-60 and AH-64 teaming has occurred dramatically over the past 14 years of conflict in Iraq and Afghanistan. The concept of partnering these two platforms, often referred to as creating a *purple team*, the pairing of a blue utility aircraft with a red attack platform, has enhanced each airframe's individual characteristics and capabilities. The firepower and sensors that an AH-64 can utilize are unquestionably useful when conducting attack missions, but the UH-60's capacity to carry additional "eyes," particularly ground commanders can all enhance a reconnaissance missions successfulness, building the full picture for commanders. Additionally, the use of crew chiefs as reconnaissance sensors provides additional eyes focused purely on acquiring targets and information that do not have the same competing requirements as pilots who can reach task saturation, becoming less effective sensors. These burdens only dramatically increase as AH-64 pilots increase their control over UASs in a MUM-T capacity.

Purple teams enable ground commanders to maneuver within their battlespace, supporting ground forces with both UH-60s and AH-64s for enhanced capabilities throughout an operating area. Examples of the benefits derived from pairing UH-60s loaded with specialized ground forces and AH-64s providing security were evident in Afghanistan in 2012 during Operation Shrimps Net, a 10-day retrograde operation from two remote bases in Regional Command-West, which includes Herat, Farah, Badghis, and Ghor Provinces in Afghanistan.⁷⁰ The pairing of an AH-64 with two UH-60s loaded with a ground element containing infantry soldiers, communications specialists, EOD, and interpreters allowed the team to recon and cover a large expanse of battle space, providing early warning and near continuous coverage of an over-stretched convoy (figure 7). These teams routinely paired with UASs, who identified targets for them to interdict, ranging from suspicious vehicles to possible IEDs. The mission set could not have been accomplished without the mutually supporting capabilities of the UH-60 with its full complement of passengers, the AH-64 with its armaments and sensors, and the UAS that provided target acquisition and identification. Overall, the mission provided the ground forces as much PAS as possible, and allowed for the execution of several mission sets, including the emplacement of reconnaissance teams into high ground along the route and the execution of numerous vehicle interdictions focused on stopping possible anti-Afghan forces as they fled the area or as they approached the convoy. The mission also focused on the use of Navy EOD personnel to identify IEDs while flying in UH-60s. Once identified, the EOD members and the infantry aerial reaction force (ARF) teams were able to land and disable these devices intended to target the convoy. During Operations Shrimps Net, these purple teams identified and disabled five IEDs and cleared numerous additional suspicious areas along the convoy's route that would have otherwise slowed the mission significantly, forcing organic assets from the convoy to stop and reconnoiter these possible IEDs.⁷¹

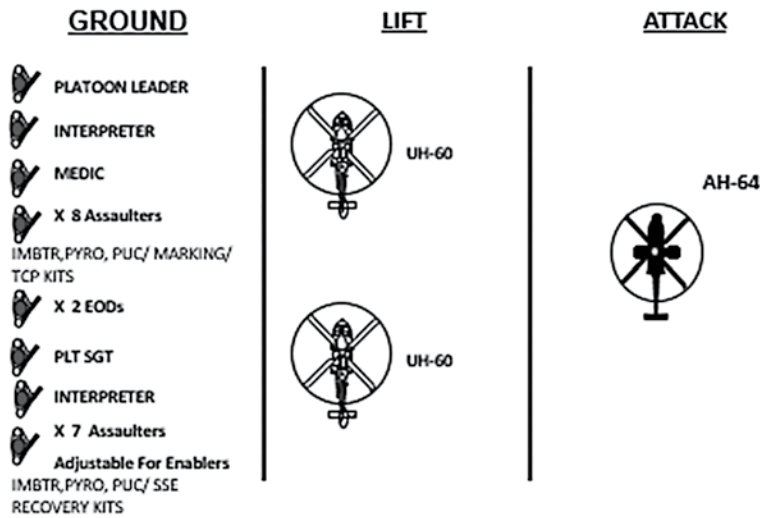
Additional pairings between the UH-60s and AH-64s spreads limited attack resources across the operating area. Pairing a UH-60 with similar station time to an AH-64 allows aviation leaders to spread attack assets in an attempt to provide the PAS that is so often desired by the ground

⁷⁰ Capt Mat Kilgore and Capt Sean Stapler, "The Purple Team: Aerial Counter-IED, Insurgent Interdiction," *Infantry Magazine*, May–June 2013, 11.

⁷¹ Kilgore and Stapler, "The Purple Team."

force commanders. The use of gyroscopic binoculars and the ability of the UH-60 to fly at low altitudes to further examine a situation provides a differing perspective in the conduct of reconnaissance from the AH-64's normal sensor capabilities.⁷² Further expanding this role and capability requires a change in the aviation community's current mindset. Although used occasionally while in combat, this pairing technique has seen little use at home stations. Aviation leaders should reexamine the expansion of purple teams as a new norm to help alleviate the reduction in attack assets across the force.

Figure 7. Typical Purple Team QRF/ARF package



Source: Adapted by MCUP.

PATHFINDERS

Another method of mitigating the implementation of ARI should come from the expansion of pathfinder companies into every CAB.⁷³ Currently only the 82d, 101st, and 10th Mountain Division CABs have organic pathfinder units assigned.⁷⁴ Pathfinder companies greatly enhance a CAB's capabilities and provide additional reconnaissance assets to a division commander.⁷⁵ A pathfinder company is relatively inexpensive compared to a helicopter company and can provide significant airborne, air assault, personnel recovery, and reconnaissance capabilities.⁷⁶ These companies develop habitual working relationships within their parent CABs and enhance training opportunities for both ground soldiers and aviators alike. The ability of the pathfinder to provide an organic, quick reaction force for the CAB has proved invaluable in Iraq and Afghanistan. Pathfinder units accomplish a wide variety of mission sets and provide a CAB and division commander another extremely useful tool for conducting reconnaissance missions. Army Aviation should reconsider the possible expansion of pathfinder units to every CAB, including the RC units.

ARI TODAY

Currently, ARI is on track for completion in 2019, but lawmakers have slowed the process of transferring AH-64s from the RC to the AC. The 2015 National Defense Authorization Act (NDAA) restricted the transfers of any AH-64s in FY 2015 and only allowed a maximum trans-

⁷² Author's personal experience.

⁷³ The term *pathfinder* refers to those who learn how to navigate while dismounted, establish and operate day or night helicopter landing zones, establish and operate day or night parachute drop zones, conduct sling load operations, provide air traffic control and navigational assistance to rotary-wing and fixed-wing airborne operations.

⁷⁴ *Army Aviation*, 2-8.

⁷⁵ Author's personal experience.

⁷⁶ *Utility and Cargo Helicopter Operations*, 1-9.

fer of 48 AH-64s before June 2016 to allow for further examination of the ARI plan.⁷⁷ The 2015 NDAA does allow the Army to continue retiring OH-58Ds and replacing TH-67s with UH-72A Lakotas.⁷⁸ The law also called for a National Commission on the Future of the Army to evaluate ARI and the overall balance between active, guard, and reserve force with a brief back required in early 2016.⁷⁹

ARI is a necessity for Army Aviation to maintain capabilities in an ever-tightening budget constrained environment. ARI saves the Army \$1.1 billion annually in operations and support costs and reallocates \$11.9 billion in service life extension programs from retiring aircraft and another \$14.8 billion in additional production rate costs for UH-60s and AH-64s.⁸⁰ These cost savings allow for the continued modernization of the Army fleet. Alternative COAs called for the reduction of five aviation brigades while maintaining older, underperforming aircraft and sacrificing some of the Army's most capable and modern airframes. Alternate COAs increased the strain on the entire Army Aviation community, worsening the dwell-to-deployed ratio, already one of the worst across the Army.⁸¹ Army Aviation often experienced less than the optimal 1:2 deployed-to-dwell ratio throughout the past 14 years of conflict.⁸²

The controversy stemming from ARI primarily involves the National Guard community. Their stance highlights the risk imposed upon the nation by reducing the RC's strategic depth capabilities by eliminating all attack aviation from the RC. The National Guard also wants to avoid a "slippery slope" in which the RC is relegated to service and support roles, again diminishing the nation's overall capacity to fight a protracted conflict. National Guard leadership highlights the disruption ARI will cause across 20 states' RC forces and the loss of a location for former AC Apache pilots to transition into once they are ready to depart active duty.⁸³ The thought process in reducing strategic depth, a known downside of ARI, revolves around reducing "shooting battalions" from 37 to 20 across Army Aviation and the requirement to maintain these remaining battalions at the highest possible state of readiness.⁸⁴ Although the Army Aviation RC community has performed admirably during the past 14 years of conflict, budgets are tightening; it will become harder to maintain a constant state of readiness, particularly in the RC community. RC readiness concerns and the extended timeline that it takes to mobilize, deploy, and redeploy RC units remain the salient reason for shifting of all attack battalions into the AC. Army planners fear that with only 20 attack battalions total, it would become unrealistic to maintain an optimal operational deployment ratio while incorporating RC units. The past 14 years in Iraq and Afghanistan proved that it was extremely difficult to maintain an optimal deployment ratio with 37 shooting battalions. The reduction will only increase deployment stress, requiring the flexibility that an active duty unit can provide without having to work within RC mobilization timeline limitations.⁸⁵

⁷⁷ Daniel Wasserbly, "Pentagon Budget 2016: Lawmakers Slow Army's Aviation Restructure Initiative," *Jane's Defense Weekly*, 16 December 2015.

⁷⁸ Wasserbly, "Pentagon Budget 2016."

⁷⁹ Joe Gould, "General: US Army Programs Hinge on Helo Swap," *Defense News*, 29 January 2015.

⁸⁰ Wessmiller, "Aviation Restructuring Initiative Information Paper," 13.

⁸¹ For our purposes, *dwell* ends when the unit or individual soldier departs on an operational *deployment*. A unit is either on operational deployment or in dwell. For the Reserve Component, dwell is defined as the period of time an individual is not mobilized.

⁸² C. Todd Lopez, "Army Seeks Additional CAB to Reach Dwell Goal," *Army.mil*, 6 January 2010.

⁸³ *Force Structure*, 13.

⁸⁴ Michelle Tan, "DOD Study: Army Aviation Plan Saves Money, Less Risky," *Army Times*, 13 February 2015.

⁸⁵ *Force Structure*, 17.

CONCLUSION

Although some may criticize ARI, it is an important initiative that builds readiness while operating within the fiscal constraints imposed by the government. ARI will disproportionately affect the AC over the RC, with active duty aviation reducing three combat aviation brigades, 23 percent of its total aircraft, and approximately 3,100 servicemembers while standardizing the AC CABs. This compares to the RC, which will maintain all 12 aviation brigades and only lose 8 percent of RC total aircraft.⁸⁶ The reduction of attack platforms from the RC will reduce the nation's strategic depth, but the addition of UH-60s to the National Guard provides states an airframe that is well suited to the DSCA mission. General Raymond Odierno stated that the UH-60 is the "center piece of Army Aviation while in a combat role" in a Senate Armed Service Committee hearing, discussing the role of UH-60s in combat and the future of Army Aviation in 2014.⁸⁷ The UH-60 has flown the most combat hours of all the platforms in Iraq and Afghanistan during the past 14 years, while providing ground warfighters flexibility and maneuver capabilities.⁸⁸ The transition of 159 UH-60s into the RC, replacing more than half of the transferring 192 AH-64s, is not in an effort to relegate the RC to the sidelines in future conflicts, but merely an effort to maintain the reduced attack community at the highest level of readiness possible.

Between ARI's shortcomings, the strategic depth question should not be at the forefront of leader's concerns. Instead, the aviation community must ensure that it can accomplish its assigned mission tasks. ARI has significant implications to the community's ability to accomplish both the attack and reconnaissance mission. By utilizing the expensive AH-64 to conduct reconnaissance, it naturally degrades from the community's ability to conduct attack missions. The retirement of the Fairchild Republic A-10 Thunderbolt II, or Warthog, from the U.S. Air Force and the ability for the military establishment to provide close combat attack and close air support for ground soldiers concerns Army planners.⁸⁹ Both the AH-64 and A-10 perform similar missions, and with the A-10's retirement it will become even more important to ensure AH-64s remain prepared to execute their primary attack mission. Army Aviation leaders must work to adapt their mindset to include UH-60s into the reconnaissance mix to help spread the limited resources as far as possible.

With the divestment of the Army's dedicated scout platform the Kiowa Warrior, both the AH-64 and the UH-60 community should explore efficient means for their airframes to fill the recon void to include purple teams, MUM-T, and reconfigurable Black Hawks. Aviation leaders must break previous misconceptions regarding the sole uses of each airframe to determine new and flexible roles and responsibilities for the current fleet to provide support to ground counterparts, Army Aviation's number one mission. Additionally, as funding becomes more prevalent, new technologies expanding MUM-T capabilities and the further expansion of the UH-60 Black Hawks sensor capacity, require examination to fill inherent gaps left by ARI. Based on the Army's new operating concept, General Lundy also believes the aviation community must examine "additional ways to increase speed, range, and payload to enable expeditionary ops; fly and fight in all environments, weather, and visibility conditions; develop agile survivability solutions that stay ahead of emerging threats."⁹⁰ These desires remain achievable under ARI through cost-saving initiatives and adaptive thinking by aviation leaders. ARI is good for Army Aviation, saving significant money, standardizing CABs to streamline operations and maintenance, and

⁸⁶ Leed, "Restructuring Army Aviation."

⁸⁷ Wood, "U.S. Army Aviation Restructure Initiative?"

⁸⁸ Wood, "U.S. Army Aviation Restructure Initiative?"

⁸⁹ Michael Hoffman, "Air Force Begins Hill Battle to Retire A-10, U-2," Military.com, 25 February 2014.

⁹⁰ Bledsoe, "Lundy Emphasizes Importance of ARI."

allowing for a rapid upgrade to the CH-47F, UH-60M, and AH64E. Opponents may not see ARI as ideal, and it does have its shortcomings, but it is a good solution to an extremely complex problem resulting from ongoing budgetary constraints. Any attempts to derail ARI now would require a thorough analysis to ensure the reasons are in the best interest of the total Army Force and not just an individual community or constituent.

Sustaining the Super Stallion

The Use of Performance-Based Logistics in the CH-53E Program

by Major Matthew Dineen, USMC¹

The U.S. Marine Corps and Department of Defense (DOD) are currently relying on a worn and aging fleet of Sikorsky CH-53E Super Stallions as their sole source of rotary-wing heavy lift. With a gross weight of 73,500 pounds, the CH-53E is the only rotorcraft that currently meets the criteria for heavy lift in the DOD per *Joint Shipboard Helicopter and Tiltrotor Aircraft Operations*, Joint Publication (JP) 3-04.² The CH-53E has met the call to perform in “any clime and place” since its delivery in 1981. After cutting its teeth in Operations Desert Shield and Desert Storm, conducting a historic rescue in Bosnia, and sustaining the Marine air-ground task force (MAGTF) throughout Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF), the fleet of CH-53Es is in need of something new.

In all of the aforementioned theaters, the Super Stallion has proven to have no equal in the rotary-wing assault support community, but it feels the burden. Having exhausted its backup aircraft inventory, today’s fleet is comprised of 147 CH-53Es with plans to increase that number after restoring 2 previously stricken aircraft. This leaves the Service 51 aircraft short of the Joint Requirements Oversight Council (JROC) requirement. These aircraft have already flown more than 53 percent of their allotted flight time, and the first CH-53E airframe will meet its 10,000-hour air frame limit in 2018, one year before the Sikorsky CH-53K King Stallion reaches initial operational capability (IOC).³ The Super Stallion community is one of the most stressed communities in Marine Corps aviation, and the Corps must find a way to sustain the CH-53E weapons system’s readiness. By maintaining adequate equipment readiness levels, the CH-53E community will be able to train current and future aircrew. Without the CH-53E to provide a stopgap until full operational capability (FOC) of the CH-53K is reached in 2029, the Marine Corps and the DOD will be exposed to a critical vulnerability in assault support.⁴

Looking only at a snap shot in time from May 2011 to March 2012, the CH-53 team flew more than 19,000 hours, carried more than 73,000 passengers, and transported more than 13 million pounds of cargo in support of the Marine expeditionary unit (MEU) and Combined

¹ Maj Dineen is a graduate of MCU’s Command and Staff College. This paper won the Col Bevan G. Cass Award for academic year 2015–16.

² *Joint Shipboard Helicopter and Tiltrotor Aircraft Operations*, JP 3-04 (Washington, DC: JCS, 2012), II-5.

³ For the purposes of this discussion, *initial operational capability* is defined as a point in time during the production and deployment phase, where a system can meet the minimum operational capabilities for a user’s stated need. The operational capability consists of support, training, logistics, and system interoperability within the DOD operational environment. IOC is a good gauging point to see if there are any refinements necessary before proceeding to full operational capability (FOC).

⁴ *CH-53K Heavy Lift Replacement Helicopter: As of FY 2017 President’s Budget* (Washington, DC: Defense Acquisition Management Information Retrieval, 2015), 18.

Joint Task Force-Horn of Africa during OEF.⁵ Though the community has stepped up to the task, this level of support comes at a cost. To meet these needs, the airframes have been flown at rates far above what was originally planned; upward of three times the utilization rate. This overflight, coupled with airframes approaching 30 years of age, has set the stage for the rapid decline in readiness since the end of combat operations in Afghanistan. A comprehensive performance-based logistics (PBL) plan is needed to sustain the CH-53E until the CH-53K reaches FOC. The CH-53E PBL plan must be holistic; thus, it must focus on supply response time, cost per flight hour, and ready basic aircraft status and their synergistic contribution to CH-53E readiness.⁶ The CH-53E's current performance-based agreements (PBA) cover 10 components.⁷ These PBAs have led to award-winning readiness levels and cost savings. By implementing a more comprehensive PBA, the Marine Corps and the nation stand to increase the readiness of their sole heavy-lift asset at current costs or better.

This research begins with a review of the integral part the Marine Corps has played in the development of heavy-lift helicopters. It will also discuss the rapidly changing environment that these aircraft operate in, often calling for them to perform beyond their intended design. Following this, the research will cover the current state of the CH-53E community as outlined in the classified report, *Super Stallion Independent Readiness Review* (SSIRR), and the recommendations that came from it. The research will then address Total Life Cycle Systems Management (TLCSM) and PBL and the impacts of implementation in the CH-53E logistics and sustainment plan. Finally, the research will cover the proposed approaches in implementing a robust PBL plan to ultimately increase and maintain the combat effectiveness of the CH-53E weapons system. The Super Stallion has been an indispensable asset to both the MAGTF and the combatant commander. Reduced readiness levels of the CH-53E create a critical vulnerability in defense of the nation when conducting ship-to-shore and expeditionary logistics support. If the Marine Corps does not adopt a robust PBL contract to cover the Super Stallion to sundown, the United States will find their Service without a key asset when the Corps and the nation need it the most.

LITERATURE REVIEW

The material reviewed for this report can be separated into three main groups. The foundational documents that form the first group come from the national level and focus on reducing costs while delivering performance to the warfighter through PBL. The second group of documents reviewed cover the problems directly affecting the CH-53E community and how PBL can be part of the solution. Last, the third group of documents contains information that supports the use of PBL in weapons systems to help improve readiness by incentivizing productivity and innovation in industry.

The concept of PBL to support life cycle logistics came about in the late 1990s and has steadily gained momentum through today. The 2001 *Quadrennial Defense Review* (QDR) addresses the need for improved force sustainment. In this document, the DOD laid the foundation for the transformation of logistics strategies from deployment processes to reducing the cost of logistics. As a cost-saving method and way to compress the supply chain, the QDR mandates the use of PBL to remove non-value-added steps in logistics processes. Following the release of the QDR,

⁵ *Hearing on National Defense Authorization Act for Fiscal Year 2016 and Oversight of Previously Authorized Programs before the Committee on Armed Services*, 114th Cong. (26 March 2015) (statement of LtGen Jon M. Davis, deputy commandant for Aviation), hereafter Davis statement.

⁶ For our purposes, *ready basic aircraft* refers to the number of fully mission capable aircraft a squadron is supposed to have for use.

⁷ In this instance, *performance-based agreements* document the negotiated and agreed upon level of support and associated funding required to meet performance requirements.

PBL was sporadically implemented across the DOD; this random implementation served as the catalyst for the next wave of guidance. In 2004 the deputy secretary of defense reiterated the QDR's guidance to implement PBL to streamline process the will buy system availability and readiness through the use of performance metrics. In the following years, the Services produced their own PBL procedures. Per the QDR, the one of the major stakeholders in this endeavor is the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD [AT&L]).⁸

The *DOD Directive 5000.01, The Defense Acquisition System*, was signed and it clearly assigned responsibility to system program managers the role of developing and implementing performance-based logistics strategies.⁹ Following the release of the *DOD 5000.01*, the OUSD (AT&L), Ashton Carter, published his *Better Buying Power (BBP) 1.0*.¹⁰ BBP 1.0 provided guidance to the acquisitions workforce that emphasized getting the product to the warfighter at a reasonable cost, incentivizing productivity and innovation through performance-based contracts. Following Mr. Carter, Frank Kendall III, took over as OUSD (AT&L) and released "Endorsement of Next-Generation Performance-Based Logistics Strategies" in 2012 that again emphasized the use of PBL to help manage the cost of operations and sustainment (O&S) of a system, thus meeting the intent of BBP.¹¹ Mr. Kendall has continued to emphasize the value of PBL across the DOD to improve readiness and availability through his BBP 2.0 and 3.0 initiatives. It is with this guidance in mind that the next group of documents are reviewed.

In 2015 the Commandant of the Marine Corps voiced concern about the overall readiness of the Marine Corps aviation assets and based on this, the deputy commandant for aviation ordered several type/model/series (T/M/S) to undergo an independent readiness review. Germane to this research, the *CH-53E Super Stallion Independent Readiness Review (SSIRR)* was conducted in the summer of 2015.¹² Completed by Booz Allen Hamilton during a period of five months, the SSIRR reviewed all applicable maintenance and training publications, conducted fleet-wide interviews across the CH-53E aviation enterprise, and met with the T/M/S sponsors and program managers. The SSIRR focused on six lines of analysis: 1) CH-53E to CH-53K transition plan, 2) nonmission capable supply (NMCS), 3) nonmission capable maintenance (NMCM), 4) mission capable nonready basic aircraft (RBA), 5) out of reporting aircraft (OOR), and 6) the CH-53E T&R manual.

Due to the classified restrictions placed on this research, this paper will focus on the lines one through three and six. Based on the review this data on the CH-53E community, Booz Allen Hamilton recommended two main lines of effort (LOE) to attack the problem. The first step would be to surge resources in an effort to restore the CH-53E community to a full mission capable (FMC) status, and the second would be to sustain the newly FMC aircraft. This paper will address how a properly executed PBL contract can meet the requirement of the second recommendation, thus sustaining the benefits of the reset. The next set of documents reviewed for this paper was independent literature and acquisitions reports concerning PBL and its benefit to DOD systems.

In 2004, the Center for the Management of Science and Technology (CMOST) at the Uni-

⁸ *Quadrennial Defense Review* (Washington, DC: DOD, 2001).

⁹ *DOD Directive 5000.1, The Defense Acquisition System* (Washington, DC: DOD, 2000).

¹⁰ Ashton B. Carter, OUSD (AT&L) memo, "Better Buying Power: Mandate for Restoring Affordability and Productivity in Defense Spending," June 2010.

¹¹ Frank Kendall III, OUSD (AT&L) memo, "Endorsement of Next-Generation Performance-Based Logistics Strategies," May 2012.

¹² U.S. Navy, Naval Air Systems Command, "Three-year Effort Will Repair All 147 Aging CH-53E Helicopters," press release, 10 August 2016.

versity of Alabama in Huntsville published a study identifying military and commercial initiatives and lessons learned for a weapons system to transition to performance-based logistics. This study was commissioned by the U.S. Army Aviation and Missile Command. The theme of the recommendations of this study was that a public-private partnership must be just that, a partnership. This requires organizational change and for both parties to focus on the result, not the process, which may be contrary to past procedures. Another key factor presented by the PBL research team was the need for an organization to implement an effective method of tracking performance. This tracking is critical in fixed-price performance-based systems, because without the ability to accurately track readiness and availability, by both the contractor and warfighter, a PBL system cannot thrive.

There is an abundance of literature available on the topic of PBL in support of DOD weapons systems. It would far exceed the length of this paper to cover them all, but the themes of this literature remain constant. Though PBL can be difficult to implement, it is well worth the time and energy spent on the front end to establish solid working relationships with vendors, to ensure the gaining organization accepts the cultural shift required, and to allow adequate trade space for the vendor to focus on continuous process improvement and innovation.

DEVELOPMENT AND USE OF HEAVY-LIFT HELICOPTERS

The U.S. Marine Corps has seen the utility, versatility, and functionality of rotary-wing aviation from its inception, and it would not be long before Marine Corps leadership saw the need for a heavy-lift helicopter. Beginning in the early 1930s, the Marine Corps began to experiment with vertical lift platforms in the form of autogyro aircraft that could barely function at their designed gross weight let alone with a usable payload of weapons or troops. During this initial phase of test and evaluation, Lieutenant Colonel Roy S. Geiger, one of the founders of Marine aviation, made it clear that the Corps would have no place for rotary-wing assets until they could carry a mission fuel load accompanied by appropriate military cargo while maintaining the ability to conduct vertical takeoffs and landings.¹³ This requirement would be made possible by the ingenuity of several innovative manufactures, but mainly Igor I. Sikorsky.

With Sikorsky's immigration from Russia in 1919 to the United States, the Marine Corps gained its most influential ally in the development of heavy-lift helicopters. Sikorsky pioneered the use of the single rotor system, which allowed him to procure an Army contract in 1941 to build the first practical helicopter.¹⁴ With the contract for the R-series helicopter, Sikorsky established himself as the key contactor in the Department of Defense acquisitions process. By the mid-1940s the R-5 had garnered the support of both the civilian and military sector, but it would not be until 1946 that the first initial action would be taken to institute an official Marine Corps helicopter program. This program would create the framework that would eventually produce the only heavy-lift helicopter in the Department of Defense—the CH-53E.

General Alexander A. Vandegrift, Commandant of the Marine Corps, established the Corps' helicopter program comprised of one officer and three enlisted Marines.¹⁵ In addition to this "aviation branch," General Vandegrift established a special board composed of three major generals after receiving a disturbing correspondence from now General Geiger concerning the use of atomic weapons and their impact on amphibious operations. Geiger realized that the ability to mass a large force on a beachhead, such as Normandy or Okinawa, was a

¹³ LtCol Eugene W. Rawlins, *Marines and Helicopter, 1946–1962*, ed. Maj William J. Sambito (Washington, DC: History and Museums Division, Headquarters Marine Corps, 1976), 1.

¹⁴ Rawlins, *Marines and Helicopter*, 2.

¹⁵ Rawlins, *Marines and Helicopter*, 11.

thing of the past because of these weapons, and the Marine Corps must adapt using new techniques in the future.¹⁶

Major Generals Lemuel C. Shepard Jr., Oliver P. Smith, and Field Harris led the special board directed by the Commandant and was staffed with a secretariat of three Marines—Colonels Merrill B. Twining and Edward C. Dyer and Lieutenant Colonel Samuel R. Shaw. After meeting with both Sikorsky and Frank N. Piasecki, the board was assured that both manufacturers could produce a helicopter capable of lifting a payload of 5,000 pounds.¹⁷ This was the answer the board was looking for. They drafted a recommendation to General Vandegrift that urged the utilization of sea-based helicopters to move the landing force ashore and for the continued training of pilots and mechanics. The Commandant then sent a letter to the Chief of Naval Operations (CNO) that outlined the Marine Corps' plan to incorporate heliborne assault, which would later become the vertical assault concept for amphibious operations.¹⁸

The following excerpt from General Vandegrift to the CNO set the foundation for the development of carrier-based assault support helicopter for the next 50 years:

[Helicopters] offer all the advantages of the conventional air-borne operation but few of the disadvantages. They can be operated from aircraft carriers now in existence with cover and preparatory fires on landing areas provided by their aircraft from the same force. With a relatively unlimited choice of landing area, troops can be landed in combat formations and under full control of the flanks or rear of a hostile position. The helicopter's speed makes transport dispersion at sea a matter of no disadvantage and introduces a time-space factor that will avoid presenting at any one time a remunerative atomic target. It should be noted also that transport helicopters offer a means for rapid evacuation of casualties, for the movement of supplies directly from ship to dump and for subsequent movement of troops and supplies in continuing operations ashore.¹⁹

The Commandant's vision set the Marine Corps on a path of innovation in ship-to-shore tactics through a paradigm shift driven by the advent of nuclear arms, but the vision for change did not stop there. Concurrently with Headquarters Marine Corps actions, Colonel Robert E. Hogaboom was hard at work at the Marine Corps Schools to develop helicopter tactics based on the Commandant's guidance.

The findings of Marine Corps Schools would become known as the "Hogaboom Report," but it was formally called the *Military Requirements of Helicopter for Ship-to-Shore Movement of Troops and Cargo* and it outlined the changes needed in Marine Corps tactics, techniques, and procedures (TTP) to enable successful amphibious operations using helicopters as the primary troop transport vehicle. Colonel Hogaboom not only understood the need for small troop carrying helicopters, but foresaw the utility of larger cargo helicopters to enable divisional logistics.²⁰ Though unfeasible at the time, the heavy-lift helicopter would soon become a critical connector in amphibious logistics.

By 1958, the reorganization of the Hogaboom board had started to settle and the Office of the Secretary of Defense (OSD) wanted to procure a pressure-jet convertiplane/compound helicopter that could facilitate the needs of all Services. This would not come to fruition due to

¹⁶ Rawlins, *Marines and Helicopter*, 13.

¹⁷ Frank Piasecki was an American mechanical engineer and pioneer in helicopter aviation. He was the first to develop a heavy-duty tandem-rotor helicopter.

¹⁸ Rawlins, *Marines and Helicopter*, 14.

¹⁹ Rawlins, *Marines and Helicopter*, 14.

²⁰ Rawlins, *Marines and Helicopter*, 15.

disagreements in the capabilities requirements between the Services. Specifically, in the Navy/Marine Corps, they found that the convertiplane/compound helicopter design to be ill-suited to their needs. Due to the relatively short time in which the new aircraft would be needed, it was decided that an off-the-shelf version or modification of an existing platform would have to suffice. Charles H. Kaman, Sikorsky, and the Boeing Vertol Company were viable stakeholders in the beginning, but it was Sikorsky's modified S-64 Flying Crane that would win the day and ultimately the next half of a century.²¹

The Sikorsky S-64 Skycrane provided a perfect base for the future development of heavy lift. The S-64 was a propriety design of the Sikorsky company being fielded for sale in West Germany. It featured a six-bladed main rotor system and four-bladed tail rotor capable of propelling the massive airframe of 88 feet to a speed of 172 nautical miles (nm) per hour at a gross weight of 32,000 pounds. Her massive cabin could hold 30 combat loaded troops or 8,000 pounds of cargo. The S-64 served as the baseline for the construction of the S-65 or CH-53A Sea Stallion. The CH-53A began development in 1962 and reached operational capability in 1966. It would boast a top speed of 172 nm per hour and a cabin capable of transporting 38 combat troops. Igor Sikorsky had invented the military's first heavy-lift helicopter and his company would continue to supply the Navy and Marine Corps with the DOD's premier heavy-lift asset through the rest of the twentieth century and beyond.²²

General Victor H. Krulak would again reinforce the importance of heavy rotorcraft to the Marine Corps in 1966 when he requested that the "Deuce," the predecessor the CH-53A, be replaced immediately with the Sea Stallion.²³ As the Sea Stallion entered the Vietnam War, it was intended to be a sky crane capable of lifting large external loads under the belly of the helicopter. This would be the niche that defined the CH-53 through Vietnam to the present day. A testament to its power, a four-craft CH-53A detachment lifted a total of 103 Marine Corps and Joint aircraft in a period of five months in 1967, and by the end of the year, Marine Heavy Helicopter Squadron 463 (HMH-463) had recovered 370 aircraft. Without the CH-53A, these assets would have been a total loss.²⁴ Though designed originally for ship-to-shore logistics support, Marine innovation shown through and helped shape future tactics. This unique capability filled a gap that would allow U.S. forces to recover both downed helicopters and airplanes in combat and initiated the development of tactical recovery of aircraft and personnel (TRAP) tactics still used today.

With the Sea Stallion having solidified its position as the workhorse of the MAGTF during Vietnam, the Corps eagerly awaited the delivery of the current model of the CH-53E Super Stallion. Beginning in 1981, with the delivery of the first CH-53E to HMH-464 at Marine Corps Air Station (MCAS) New River, North Carolina, this three-engine variant would not disappoint. The CH-53E had increased lift capability and the ability to conduct air-to-air refueling; thus, it allowed operators to conduct heavy-lift operations over distances previously thought impossible. From full operational capability (FOC) in 1981–2001, the Super Stallion conducted several key operations, such as the evacuation of U.S. and foreign nationals from Mogadishu, Somalia, during Operation Eastern Exit. The Super Stallion proved its worth in the TRAP mission that recovered downed Air Force pilot Captain Scott F. O'Grady.²⁵ Though these events were important in their own right, the events of 9/11 would commit the Super Stallion to more than

²¹ Rawlins, *Marines and Helicopter*, 84.

²² LtCol William R. Fails, *Marines and Helicopters, 1962–1975* (Washington, DC: History and Museums Division, Headquarters Marine Corps, 1978), 60.

²³ Fails, *Marines and Helicopters*, 98.

²⁴ Fails, *Marines and Helicopters*, 98.

²⁵ Steve Almasy, "How Six Days Behind Enemy Lines Transformed Scott O'Grady," CNN, 18 December 2015.

11 years of sustained combat operations across multiple continents and geographic combatant commands (GCC). History has shown that the need for heavy-lift helicopter support in combat operations provides a critical capability for the commander, and this need is only going to increase as equipment becomes heavier.

From 2001 to 2014, the fleet of Marine Corps CH-53E Super Stallions supported the Global War on Terrorism (GWOT) in multiple venues. Following the events of 9/11, the Marine Corps committed to combat actions in Afghanistan during Operation Enduring Freedom, and the Super Stallion fulfilled its role as a critical asset for ship-to-shore movement at the end of 2001. The demand for the Super Stallion continued as the United States invaded Iraq during Operation Iraqi Freedom (OIF) in 2003, where the CH-53 community would find itself engulfed in one of the harshest environments on the planet—the deserts of Iraq. Also in 2003, the CH-53E community committed itself to support the antiterrorism fight on the Horn of Africa. The Super Stallion would continue to support the GWOT in Djibouti, Africa, continuously for 10 years. Not only did the HMMs of the Marine Corps support OEF directly in the theaters mentioned above, they supported continuous Marine expeditionary unit (MEU) deployments during the same time period. The CH-53 performed admirably in the face of a determined enemy and the difficult transition between the Boeing Vertol CH-46 Sea Knight and the Bell Boeing MV-22 Osprey.

Based on 10,000-hours per airframe, the original plan to begin replacing the CH-53E by 2015 has, thus far, shifted by four years to 2019.²⁶ In 2012, the CH-53D Sea Stallion was retired after almost a half a century, leaving the CH-53E Super Stallion to bear the burden of assault support and heavy lift in the MAGTF and DOD. The average life of the CH-53E fleet is more than 15 years old and has flown more than 3,000 hours in harsh desert environments. With this use, the aircraft has become more cumbersome to maintain at a rate of 44:1 maintenance man-hours to flight-hour ratio.²⁷ This increase in maintenance continues to drive up the cost per flight hour. At approximately \$20,000 per flight hour, something must be done to curb this inflation while the Corps waits for the CH-53K. As with any major acquisitions program, the timeline forecast for the CH-53K King Stallion may not hold true, making it even more important to efficiently maintain the current fleet of Super Stallions.²⁸ Though the CH-53E has performed beyond its original expectations, it cannot meet the needs of future heavy lift. As the needs of the warfighter increase, so does the weight they bring to the battlefield, and it is due to this factor that the DOD has pursued the heavy lift replacement program.

HEAVY-LIFT REPLACEMENT PROGRAM

The journey to find a replacement for the MAGTF heavy hauler began in November 2003, when the Marine Corps approved the development of what was originally the CH-53X program to relieve the CH-53E.²⁹ Due to the airframe limitations of the CH-53E (10,000 hours), the Marine Corps would need to begin replacing its CH-53E fleet in the 2020s. Already operating on an extension of 4,000 hours, the CH-53E needed a replacement.³⁰ This replacement will come in the form of the CH-53K King Stallion and will bring the MAGTF commander significantly increased capability while maintaining the same footprint of the CH-53E, since space is always premium on aboard amphibious shipping, this aspect of the CH-53K is key.³¹ Below is an excerpt

²⁶ “CH-53K: The US Marines’ HLR Helicopter Program,” *Defense Industry Daily*, 4 September 2017.

²⁷ “CH-53K.”

²⁸ “CH-53K.”

²⁹ Michael J. Gething, “USMC Takes Up CH-53K Proposal,” *Jane’s International Defense Review* 39 (March 2006): 21.

³⁰ Joel P. Kane, “The CH-53E Slep: Too Little, Too Late, Too Expensive!—The Case for New Heavy Lift Production,” *Marine Corps Gazette* 87, no. 5 (May 2003): 46–50.

³¹ Robert E. Schmidle Jr., “Winning Tomorrow’s Fight,” *Naval Aviation News*, 22 June 2013, 4–5.

from the “Marine Aviation Plan 2016” outlining the significant capabilities that the King Stallion will bring to the fight:

The CH-53K is a critical airborne connector which will enable ship to objective maneuver and seabasing. The CH-53K will be capable of externally transporting 27,000 pounds to a range of 110 NM under high/hot conditions. This provides nearly three times the capability of the CH-53E under similar environmental conditions. Major system improvements of this new build helicopter include: fly-by-wire flight controls; a composite airframe housing more capable and fuel efficient engines and a split torque main gearbox to enable increased gross weight; advanced fourth-generation composite main rotor blades; modern interoperable glass cockpit; internal cargo handling systems compatible with USAF [U.S. Air Force] 463L pallets; triple hook external cargo system; and fourth-generation aircraft survivability equipment. Additionally, the CH-53K will be supported by the fleet common operating environment (FCOE) which will facilitate condition based maintenance. The CH-53K helicopter provides JTF [Joint task force] and MAGTF commanders with a vertical heavy lift capability to project, sustain and reconstitute combat forces. The CH-53K operates at distances, airspeeds, and gross weights sufficient to support the full range of military operations, expeditionary maneuver warfare, operational maneuver from the sea and seabasing concepts. The aircraft’s affordably optimizes performance, survivability, maintainability and supportability in a “best value” solution to provide an effective heavy lift assault support platform.³²

On 3 January 2006, a sole source contract was awarded to Sikorsky for the development of the new heavy-lift helicopter, now designated the CH-53K.³³ Since 2006, the development of the CH-53K has seen several setbacks to its progress, inciting scrutiny from the Office of the Inspector General and Congress, but even with slips in schedule and cost, the performance of the new system continues to meet the mark. With an ever-evolving complement of equipment, the MAGTF needs this new system.³⁴

The slip in the initial system development and demonstration created ripples in the entire process. With the preliminary design review and critical design review both slipping by several months, it ultimately pushed the first flight to 27 October 2015. This progress has solidified the timeline. A Milestone C decision, which will give the go-ahead for low-rate initial production, is scheduled to be given this year (FY16) with a follow on full-rate production decision in FY19. These determinations will be critical in meeting future timelines.³⁵

Based on the current timeline, the CH-53E can expect relief in 2019 with IOC of a four-craft detachment being established at HMH-366. But, even with this relief, the CH-53E community must maintain an ability to support the fleet for an additional 10 years.³⁶ The CH-53K acquisitions plan spans a decade from IOC to FOC. The fact that the CH-53E will have to continue to

³² Deputy Commandant for Aviation, USMC, “Marine Aviation Plan 2016” (presentation, Washington, DC: Headquarters Marine Corps, 27 January 2016).

³³ Gething, “USMC Takes Up CH-53K Proposal,” 21.

³⁴ “Sikorsky CH-53K Super Stallion,” in *Jane’s All the World’s Aircraft, 2009–2010* (New York: McGraw-Hill, 2009), 894.

³⁵ A Milestone C decision comes with the review at the end of the engineering and manufacturing development phase. “Sikorsky CH-53K King Stallion.”

³⁶ “USMC Aviation Plan Identifies 10-year Gap between CH-53K IOC and FOC,” *Jane’s Defense Weekly*, 2 January 2016.

perform its duties through 2029 is a key factor in investing the requisite time and money into addressing the current issues in the CH-53E community.³⁷ Based on comparison of the Bell AH-1Z Viper, Bell UH-1Y Venom, and MV-22 Osprey programs, the average time from IOC to FOC is 11 years.³⁸ Given this data, and the successful transition of the aforementioned aircraft, it is reasonable to assume that the current acquisitions schedule for the Marine Corps is sufficient. The issue facing the CH-53E is in fact germane to the specific system. In the case of the Super Stallion, the decade between IOC and FOC, coupled with overuse and decreased inventory, has negatively affected CH-53E readiness.

READINESS OVERVIEW

Per *MCO 5000.13*, *readiness* is defined as the ability of U.S. military forces to fight and meet the demands of national military strategy, and is based on both unit and Joint readiness metrics.³⁹ Unit readiness is primarily based on four areas: personnel; equipment; training; and chemical, biological, radiological, and nuclear preparedness. The CH-53E community's deficiency is training and equipment. The Headquarters Marine Corps readiness goal is training 2.0 (T-2.0).⁴⁰ Training goals in Marine aviation are based on the mission essential tasks that support the six functions of Marine aviation: offensive air support, assault support, antiair warfare, electronic warfare, control of aircraft and missiles, and aerial reconnaissance. Each T/M/S then derives a mission statement based on what functions of aviation it supports.

The mission of the CH-53E is to support the MAGTF commander by providing assault support transport of heavy equipment, combat troops, and supplies day or night under all weather conditions during expeditionary, Joint, or combined operations and conducting intelligence, surveillance and reconnaissance missions and MAGTF electronic warfare missions.⁴¹ For the CH-53E community to meet its T-2.0 readiness goal, it must be able to generate sufficient sortie rates to conduct the requisite training. In 2012, it was identified that the training requirements imposed by the CH-53E T&R manual were too easy to achieve. The average T-rating across the fleet was 1.6. After a change to the CH-53E T&R manual in 2013, the CH-53E communities T-rating dropped from 1.6 to 3.6, which was a dramatic over correction.⁴² This over correction, coupled with the continual decline of equipment readiness, resulted in the large shift in T-level. Not only was the metrics for training too high, the squadrons could not supply the requisite aircraft to meet the flight hour requirement of 16.5 hours/pilot/month.

Figure 8 depicts the Marine Corps ready basic aircraft (RBA) model, which outlines the foundational approach to achieving the commander's end state of a 2.0 level of training readiness. It is based on the layout of eight active duty Marine heavy helicopter (HMH) squadrons and one Reserve squadron. The next level depicts the number of RBA aircraft to achieve T-2.0 per squadron and the requisite number of aircraft required to be RBA in the fleet. When with model was developed, each CH-53E squadron rated 16 aircraft; therefore, half of the squadron aircraft needed to be RBA at any given time to facilitate the next level. To achieve the peak of T-2.0, each pilot in the squadron is required to fly 16.5 hours per month. This is not the case

³⁷ "USMC Aviation Plan Identifies 10-year Gap between CH-53K IOC and FOC."

³⁸ "Aircraft and Weapons: Rotorcraft," Naval Air Systems Command, accessed 18 February 2016.

³⁹ *MCO 5000.13, Marine Corps Readiness Reporting Standard Operating Procedures* (Washington, DC: Headquarters Marine Corps, 30 July 2010).

⁴⁰ This standard equates to a squadron equipped with aircraft and aircrew trained to fly them in any clime and place.

⁴¹ *NAVMC 5500.47C, CH-53 Training and Readiness Manual* (Washington, DC: Headquarters Marine Corps, 11 April 2014), 1–3.

⁴² *CH-53E Super Stallion Independent Readiness Review* (Washington, DC: Booz Allen Hamilton, 2015), 58, hereafter SSIRR.

in the CH-53E community, and it has invited attention all the way up the chain of command to the Commandant of the Marine Corps.

During an interview with the House Armed Services Committee, the deputy commandant for aviation (DCA), Lieutenant General Jon M. Davis, was questioned regarding the overall state of Marine aviation readiness; he painted a bleak picture.

Because of the last decade

plus of sustained operations, a majority of Marine squadrons lack the number of aircraft needed to conduct training. The Corps is down by 150 aircraft, or 20 percent of its wartime inventory.⁴³ With these losses, the overall Marine aviation T-rating dropped from 2.0 in 2003 to 2.7 today.⁴⁴ Though the DCA addressed Marine aviation as a whole, he stressed the need for heavy lift in the Marine Corps, and described the dire situation:

We have seen a sustained and unprecedented operational demand for our legacy heavy lift assault CH-53E fleet, which has prematurely aged an airframe that is on average 26.8 years old, making it ever more challenging to maintain. There are currently 149 CH-53Es in the USMC inventory, 47 aircraft short of the requirement to sustain the fleet until 2030, directly decreasing our readiness. The atrophy of the CH-53E's heavy lift capability and readiness, the limited CH-53E inventory and the rising cost of CH-53E flight hours clearly underscores the importance of its replacement, the CH-53K King Stallion.⁴⁵

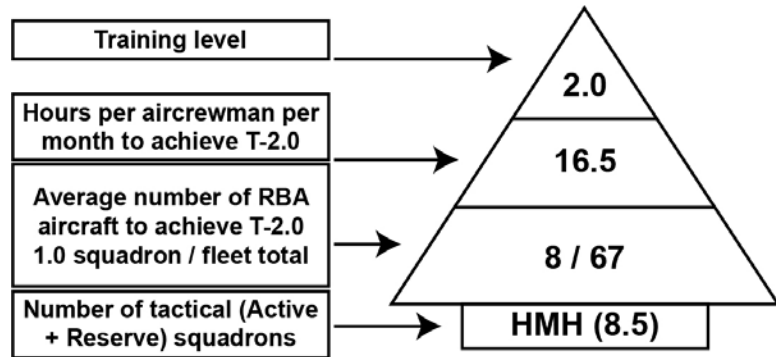
Shortly after this testimony, a Commandant-directed study was completed by Booz Allen Hamilton that did a deep dive into the CH-53E readiness issue. In June 2015, the SSIRR investigated all CH-53E metrics that contribute to readiness, such as inventory, maintenance, management, supply, and culture. In addition to a critical review of the CH-53E community, the report covers best practices from other military agencies, specifically the Army and the Air Force. It was determined that, in its current state, the CH-53E community is unable to meet its training readiness goal of T-2.0 due to a lack of available aircraft to use for training.

SUPER STALLION INDEPENDENT READINESS REVIEW

The Joint Requirements Oversight Council (JROC) revalidated the heavy-lift helicopter requirement for the Marine Corps in 2007 at 200 helicopters comprised of 168 primary mission aircraft and 32 airframes in the backup aircraft inventory to cover pipeline and attrition aircraft.⁴⁶ Due to the current status of the CH-53E fleet, the Marine Corps cannot meet this requirement.

The SSIRR outlined the deplorable status of the CH-53E fleet:

Figure 8. Headquarters Marine Corps ready basic aircraft model



Source: Adapted by MCUP

⁴³ Davis statement.

⁴⁴ Davis statement.

⁴⁵ Davis statement.

⁴⁶ SSIRR, 1.

If called to “fight tonight,” the Marine Corps could only meet the number of airframes for its operational requirement by deploying *every single aircraft regardless if it is “up” or “down” to include pulling aircraft out of depot level maintenance and 75% of the aircraft away from the training squadron.* As of May 22, 2015 only 35 of the Marine Corps’ 149 CH-E’s were available for operational or training mission — only 23% of the existing fleet and fully 91 aircraft short of the JROC-implied readiness requirement. The combination of a severely depleted inventory of aircraft and the low readiness of those aircraft that are on hand means that operational commanders cannot currently meet Marine Corps heavy lift helicopter requirements.⁴⁷

At the time of this report, there were 149 Super Stallion airframes in service with plans on restoring 2 aircraft from storage; however, even with the addition of 2 aircraft back into the inventory, the fleet has a zero gain due to losing 2 aircraft in FY 16 to class A mishaps.⁴⁸ According to OPNAV N98, the planned attrition rate for the CH-53E is 0.2 percent per annum and based on the past 10 years that number is closer to 0.9 percent.⁴⁹ With airframe availability being reduced at a higher than planned rate, it is imperative that the Marine Corps take whatever steps necessary to preserve the health and readiness of the existing CH-53E fleet through 2029. Also contributing to decreased readiness is inefficient maintenance at the squadron level. This deficiency can be attributed to a culture of “always making the next launch.” With this in mind, Marines have been conditioned to do whatever is necessary to make takeoff times. By often bypassing troubleshooting and resorting immediately to cannibalization of parts; Marines often degrade the long-term readiness of the unit by creating excess supply demand.⁵⁰ This culture has developed during the last 14 years as the CH-53E has borne the burden of the Marine Corps assault support responsibility.

MAINTENANCE

According to the data derived from the SSIRR, nonmission-capable maintenance (NMCM) is a greater driver of poor readiness than nonmission-capable supply (NMCS). NMCM is the term used to identify when an aircraft is not RBA due to a lack of maintenance that could be performed at the squadron level, while NMCS is the term used to identify when an aircraft is not RBA due parts unavailability. This data is reported in two separate and distinct reports. The Aviation Maintenance Supply and Readiness Reporting (AMSRR) and the Aircraft Inventory and Readiness Reporting System (AIRRS). The AMSRR is a “snapshot” of a certain point in the day and has the ability to be shaped by the reporting unit; therefore, commands have the ability to report data that is advantageous to the unit by avoiding times when aircraft are NMCM vice NMCS. Conversely, the AIRRS data is refreshed at a near instantaneous rate throughout the day; thus, it offers a much more realistic picture of a unit’s equipment readiness. As seen in the figure below based on AIRRS data, NMCS rates have remained fairly steady during the last 13 years around 12 percent, while NMCM have risen from 20 percent to 35 percent seeing an almost two fold increase.⁵¹ It is obvious based on this data that the maintenance practices in the squadrons need to change.

⁴⁷ SSIRR, 1.

⁴⁸ SSIRR, 12.

⁴⁹ SSIRR, 12.

⁵⁰ Heavy-Lift Helicopters Program (PMA-261), PBL Integrated Product Team (PBL team for program manager), interview with author, 23 February 2016, hereafter PMA-261 interview.

⁵¹ PMA-261 interview.

Though CH-53E materiel condition has been declining since before 9/11, it has declined at a much higher rate in the last 11 years. The average full mission-capable (FMC) rate prior to 2001 was 50 percent, while the FMC rate in 2014 was approximately 20 percent.⁵² FMC rates can be contributed to two factors: NMCM and NMCS. The data shows NMCM rates to be the predominant contributor to nonmission-capable rates. Why is this? The explanation of the rise in NMCM rates from 20 to 35 percent between 2001 and 2014 is rooted in poor maintenance practices and decreased school house training.⁵³

From 2011 to 2014, the CH-53E community had the worst cannibalization rates in rotary-wing Marine Aviation. Squadrons often use cannibalization to replace high time components with known availability issues, while other reasons may be to swap an easily replaceable part while aircraft are spinning on the line to facilitate making a takeoff time. There is good and bad in both of these examples. The good side of this problem is that it produces one FMC aircraft by taking the part from an aircraft being inducted into either modification or depot-level maintenance vice being down two aircraft. The bad is the increase in consumption and addition of more NMCM time. Often Marines will “break” several parts in the attempt to do a “quick fix” because they have not properly evaluated the problem.⁵⁴ This causes the supply system to work overtime and can cause people to look at it as a supply issue when, in fact, the root cause is poor maintenance action. Though a majority of the blame can be placed on individual or squadron actions, supply is sometimes at fault as well.

A specific example of this was found in Marine Aircraft Group 16 in a single engine temperature sensor that had been installed on eight different engines in 14 months.⁵⁵ Another prime example of wasted man-hours caused by supply is the General Electric T64-GE-419 turboshaft engine upgrade. The upgrade is intended to improve performance and power of the current T64-GE-416A engine, and it does. The drawback to the upgrade is the frequency with which squadrons are cannibalizing from the reclaimed (reclamation in lieu of procurement, RILOP) engines to install working fuel controls when facing a lack of appropriate parts.⁵⁶ This shortsighted approach is great for immediate results, but it causes a skew in the reporting by doubling the reported maintenance man-hours and pushing the problem downstream to the FRC. These problems stem not just from the availability of parts, but from a decline in maintenance proficiency and fleet support at the squadron level.

Once a figure that was readily accessible on the flight line, the field service representative (FSR) has become someone used as a last resort vice someone who is seen during the day-to-day conduct of maintenance. Originally intended to be a “feet” standardization tool, moving from unit to unit helping with training and maintaining best practices, the “tech reps” have been constrained through bureaucratic red tape to only helping put out the hottest fire on the flight line after a lengthy approval process.⁵⁷ This must change. It is time the FSR returned to their position of teacher and facilitator on the line, and this change would aid in the on the job training that now occurs in lieu of hands-on school house training.

As sequestration rattled the DOD in 2011, the Navy sought to reduce its cost by cutting the time for training in its aviation maintenance schools. Naval Education and Training Command (NETC) schools have moved to a heavily computer-based training (CBT) approach.⁵⁸ This CBT

⁵² SSIRR, 12.

⁵³ SSIRR, 14; and PMA-261 interview.

⁵⁴ PMA-261 interview.

⁵⁵ SSIRR, 14.

⁵⁶ SSIRR, 15.

⁵⁷ SSIRR, 17.

⁵⁸ PMA-261 interview.

approach is proving inadequate to meet the needs of the operating forces. Marines show up to the squadron incapable of fulfilling even the most basic role as a worker on the flight line. This creates an immense burden for the already taxed squadron. It causes the collateral duty inspectors (CDI) to perform and teach remedial tasks that should have been grasped at the training command, and by doing so, detracts from the CDIs primary task of supervising and inspecting the work being conducted on the flight line. If NETC continues to avoid hands-on training, something must be incorporated at the squadron level to supplement this deficiency while maintaining standardization across the fleet. The lack of standardized training is not only present in junior Marines.

Once a Marine leaves aviation ordnance C school, they are not required to attend any formalized maintenance training. All training occurs at the squadron level and is, therefore, subject to normalized deviations. According to Diane Vaughan, author of *The Challenger Launch Decision*, normalization of deviance in an organization is defined as, and occurs in the following way:

Social normalization of deviance means that people within the organization become so much accustomed to a deviant behavior that they don't consider it as deviant, despite the fact that they far exceed their own rules for the elementary safety. But it is a complex process with some kind of organizational acceptance. The people outside see the situation as deviant whereas the people inside get accustomed to it and do not. The more they do it, the more they get accustomed.⁵⁹

By placing so much stock in on-the-job training, the Marine Corps is leaving the CH-53E community extremely vulnerable to normalization of deviance at the operational and intermediate levels. The deputy commandant for aviation is currently completing a program intended to be completed in conjunction with Marine Aviation Weapons and Tactics Squadron 1. Project 21 will establish a Maintenance Training Instructor (MTI) Course that will complement the Weapons and Tactics Instructor (WTI) Course.⁶⁰ Though this program will not focus on the actual T/M/S requirements for each of the maintenance shops, it will standardize administrative procedures and training programs. This standardization will, in turn, facilitate proper adherence to published manuals and troubleshooting procedures, increasing productivity, and ultimately, readiness at the squadron level. MTI in concert with the FSR will establish a standardized training program to decrease NMCM time, but this is only one part of the equation. Marines must have the parts they need in a timely fashion to perform the maintenance.

SUPPLY

Supply rates are directly related to aircraft readiness and FMC status. The CH-53E NMCS supply rate, though stable from 2001 to 2014, has never been in single digits.⁶¹ The CH-53E NMCS rate is 10.2 percent and, when compared to the Services as a whole, it underperforms by 3.6 percent when compared to the Navy as a whole, and 6.3 percent worse than the Army.⁶² These statics take on a more meaningful metric when CH-53E readiness rates are directly compared to the Army's Boeing CH-47D Chinook. The CH-47D is a comparable airframe in both life cycle stage and mission type. Looking at a period from 2012 to 2015, the CH-47D boasted a 71 percent FMC rate, while the CH-53E reported 27 percent FMC.⁶³ Though supply is not the

⁵⁹ "Interview: Diane Vaughan," Consulting News Line, May 2008.

⁶⁰ PMA-261 interview.

⁶¹ SSIRR, 24.

⁶² SSIRR, 24.

⁶³ SSIRR, 13.

sole contributing factor in the comparison, it cannot be put aside as a contributor. Supply responsibility in Marine Corps Aviation falls on two different agencies: Defense Logistics Agency (DLA) and Naval Supply Systems Command (NAVSUP).

DLA is America's combat logistics support agency responsible for providing the DOD with full spectrum logistics support, acquisitions, and technical services. In this role, DLA provides almost 90 percent of the military's spare parts.⁶⁴ Given this role, it is not surprising that DLA holds the majority of culpability regarding the CH-53E supply issues. DLA provides parts at both the squadron and depot level, which are both experiencing long wait times for DLA-managed and supplied parts. Approximately 70 percent of NMCS orders back logged at the squadron level belong to DLA and 93 percent of those parts in a long-term wait status are provided by DLA.⁶⁵ Though DLA clearly is responsible for a piece of the CH-53E readiness issue, the agency is merely a third-party facilitator that purchases and stocks parts based on reported needs. The part needs are outlined in the bill of materials (BOM), and the CH-53E BOM has not been updated in years.⁶⁶ It is important to note that DLA is designed to procure vast quantities of parts per order. For example, if a high-mobility multipurpose wheeled vehicle (HMMWV or humvee) is showing a shortage of oil filters or brakes, it is easy for DLA to fulfill this order in bulk to supply the tens of thousands of HMMWVs in the DOD inventory, but this is not the case for niche aviation parts.⁶⁷ Even when parts requirements are correctly identified, it is difficult to match the need to a qualified vendor.

Due to the lengthy acquisitions approval process for new vendors, the supply chain cannot function smoothly even when the need for a part is identified. There is a lack of preapproved vendors in the CH-53E acquisitions world, and this is due to a lack of adequate forecasting regarding parts needs. Much of this can be attributed to the aged BOM that sources parts acquisition. There is little incentive for vendors to provide the manufacturing capability for parts in the CH-53E due to the lack of long-term contracts and commitment by the government.⁶⁸ The most reasonable and reliable fix to this issue is the establishment of a performance-based logistics (PBL) contract.

PERFORMANCE BASED LOGISTICS

According to the DOD publication *Performance Based Logistics: A Program Manager's Product Support Guide*:

PBL is the purchase of support as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapons system through long-term support arrangements with clear lines of authority and responsibility. Simply put, performance based strategies buy outcomes, not products or services.⁶⁹

The outcome for the CH-53E is readiness; and this increase in readiness is attained by enhancing the supply chain through long-term contracts with vendors. This gives vendors the confidence in the duration of the contract incentivizing them to procure the necessary resources to manufacture and deliver parts in a timely fashion throughout the life cycle of the system.

⁶⁴ "DLA at a Glance," DLA.mil, accessed 25 February 2016.

⁶⁵ SSIRR, 24.

⁶⁶ SSIRR, 25.

⁶⁷ PMA-261 interview.

⁶⁸ SSIRR, 25.

⁶⁹ *Performance Based Logistics: A Program Manager's Product Support Guide* (Fort Belvoir, VA: Defense Acquisition University, 2005), 1-1.

PBL is implemented through a PBA that creates a public-private-partnership (PPP). The PPP brings together the DOD and corporate entities to maximize productivity and readiness. PBL consolidates the supply system under a single vendor that eliminates the current cumbersome third-party managed process, thus, reducing total cost through process improvement and training.⁷⁰ Based on the information provided, it is reasonable to proceed down a path to establish a robust PBL contract for the CH-53E. This new contract should include metrics to measure the contractor's direct or indirect contribution to readiness. These metrics should not solely focus on supply response time (SRT).⁷¹ Though critical, SRT is only one small piece of the framework that enable good readiness.

As outlined above, RBA is a collaborative effort between the maintenance force and the supply system. These efforts are mutually supporting and failure in either area will result in training degradation. In performance-based life cycle support product support outcomes—RBA in the CH-53E's case—are acquired through performance-based arrangements that provide the warfighter with mission essential equipment and services.⁷² This is PBL, and PBL has been mandated for the use in major weapons systems since 2001 as directed by the *Quadrennial Defense Review* (QDR).⁷³ Although first mandated in 2001, PBL has been in use since the late 1990s.

As early as 1995, the DOD began to see the value in PBL contracts. When the Lockheed F-117 Nighthawk was faced with the closing of its logistics center, Lockheed Martin Aeronautics in Palmdale, California proposed a new way of doing business. The Total System Support Partnership (TSSP) contract was awarded in FY99.⁷⁴ Lockheed Martin was able to consolidate from 180 prime contractors down to 1, allowing for a streamlined approach to systems sustainment. Although this was a sole source contract to Lockheed Martin, it encouraged competition among the subcontractors that they managed.⁷⁵ This initial contract spanned eight years and resulted in both high operational readiness and cost savings. Prior to the TSSP, response time was 90 hours for mission capable deliveries and 190 hours for engineering dispositions. Under the TSSP, these metrics fell to 23.4 hours and 2.1 hours, respectively.⁷⁶ Through this revolutionary PBL contract, the Air Force saved more than \$217.5 million and allowed the warfighter to achieve mission success.⁷⁷ Another key aspect of the PBL is the ability to address obsolescence issues before they arise. As mentioned above, DLA has difficulty supplying small-scale quantities of niche aviation parts. With the PBL construct, the contractor (Lockheed Martin in this case) is able to identify these issues before they become a problem and impact the weapons system.⁷⁸ Though the Air Force was the pioneer in the PBL concept, it did not take long for the Navy-Marine Corps team to follow suit.

The CH-53E currently benefits from three award-winning PBL programs. Hamilton Sundstrand Power Systems (HSPS) has been supplying auxiliary power units (APU) to both the CH-46 Sea Knight and CH-53 since 2003.⁷⁹ Michelin is under a PBL contract to provide 16

⁷⁰ SSIRR, 26.

⁷¹ PMA-261 interview.

⁷² *PBL Guidebook: A Guide to Developing Performance-Based Arrangements* (Washington, DC: DOD, 2014), 8.

⁷³ *Quadrennial Defense Review, 2001* (Washington, DC: DOD, 2001).

⁷⁴ *Awards Program for Excellence in Performance Based Logistics: Summary of Accomplishments* (Washington, DC: Defense Acquisitions University, 2005), section 2.

⁷⁵ *Awards Program for Excellence*.

⁷⁶ *Awards Program for Excellence*.

⁷⁷ *Awards Program for Excellence*.

⁷⁸ *Awards Program for Excellence*.

⁷⁹ *The Secretary of Defense Performance-Based Logistics Awards Program for Excellence in Performance-Based Logistics in Life Cycle Product Support* (Washington, DC: Defense Acquisitions University, 2010), section 2 on H-46/H-53 Auxiliary Power Unit.

different airframes with tires, including the CH-53E.⁸⁰ Sikorsky is currently responsible for providing 10 key components to the CH-53E under its current PBL contract.⁸¹ Every one of these contracts has met or exceeded expectations and improved readiness at reduced costs. Based on this data, it makes sense to proceed down a path toward a more robust PBL plan for the CH-53E. PMA-261 is currently working toward a PBL contract through Sikorsky to cover 147 weapons replaceable assemblies.⁸²

RECOMMENDATIONS

Based on the critical capability the CH-53E provides to the MAGTF and the DOD, coupled with the data provided in the SSIRR regarding the communities' poor materiel condition, it is imperative that an aggressive and innovative approach be taken to right the readiness problem. The use of a robust PBL will help solve this problem and maintain the fleet after being reset. For the synergistic PBL to be most effective, the fleet must be reset to FMC condition. CH-53E reset is currently being accomplished following the Army's CH-47 Chinook mode and will be accomplished at the organizational or squadron level. The contract must contain provisions to maintain or increase current supply response time, place the onus on the contractor to improve processes, and focus on the contract's direct contribution to RBA. It is imperative that all parties involved remember the reason for the change—readiness.

The public-private partnership that is formed in this contract must facilitate streamlined continuous process improvement and standardization across the fleet common operating environment of the CH-53E. The FSRs need to be given sufficient trade space, allowing them make improvements. The squadron commander's must be receptive of this new program and embrace standardization across the fleet and get out of the mindset of always making the next launch. Instead, the community needs to focus on the overall health of the fleet that, in turn, will improve readiness and allow them to achieve the goal of T-2.0.

All of these processes are required to maintain the CH-53E for the next 10 years. Though it would be ideal to have a new helicopter today, this is not feasible. With the protracted timeline required to develop a major weapons system, the warfighter must adapt to make the most out of what they have before the new system reaches maturity. A new PBL strategy helps this happen in the CH-53E community. With the implementation of BBP initiatives and the mandated use of PBL, these issues should become a thing of the past as our future aircraft sundown. If the DOD does not get it right in the future, the U.S. warfighter will find themselves in an even tighter spot. For example, the CH-53E was extended from 6,520 hours of life to 10,000 hours with minimal input, but the CH-53K will not have that luxury.⁸³ With the current knowledge of metallurgy and material strength, what the DOD buys is what the get, making it ever more critical that the correct processes are established now to carry over into the future.

CONCLUSION

Marine Corps aviation as a whole is recovering from more than a decade of combat operations in harsh and unforgiving environments. The CH-53E community is not the only T/M/S suffering from reduced aircraft inventory and poor readiness, but it is the worst off. The SSIRR uncovered numerous areas for improvement from culture to technical procedures. Several of these areas can be addressed by developing a dynamic PBA with Sikorsky to manage not only the

⁸⁰ *The Secretary of Defense Performance-Based Logistics Awards Program*, section 2 on Tire PBL Team.

⁸¹ *The Secretary of Defense Performance-Based Logistics Awards Program*, section 2 on H-53E.

⁸² PMA-261 interview.

⁸³ Kane, "The CH-53E Slep," 46–50.

supply of parts but the improvement of processes in the fleet. A PBA that provides consistent supply response time, reduced cost per flight hour, and improved processes across the CH-53E aviation enterprise will help prevent the Marine Corps and the nation from developing a capability gap as the CH-53K is brought on line.

Marine Corps Field Artillery

A Path to Renewing Relevance in Twenty-First Century Warfare

by Major Jonathan M. Secor, USMC¹

During Operation Iraqi Freedom I (OIF I) in 2003, the U.S. Marine Corps artillery community proved its worth by massing battalion and regimental fires on conventional enemy forces in all weather conditions in support of an advancing maneuver force. However, during the following eight years of counterinsurgency (COIN) operations, artillery battalions replaced the regiment and underemployed batteries eventually replaced the battalions, often with only one or two fire-capable weapons. With an aversion to collateral damage and the fielding of 155mm precision Excalibur and guided high-mobility artillery rocket system (HIMARS) rockets, high-level fire supporters meticulously integrated each mission. In spite of these advanced capabilities, the Marine artillery community is no longer meeting the needs of the Marine air-ground task force (MAGTF) in the current operating environment (COE). In the post-Operation Enduring Freedom (OEF)/OIF drawdown, the artillery community experienced disproportionately high losses. Meanwhile, artillery commanders, who were no longer supporting unit rotations to combat, eagerly get “back to basics” to focus on the capabilities only needed in the opening weeks of years-long campaigns. The community’s senior leadership contemplates the size, mobility, and range requirements of the next howitzer in an attempt to find a “sweet spot” that will reignite a demand for artillery support.² The methodical evolutionary process that has made an area fire weapon remarkably accurate will not keep the artillery relevant through the twenty-first century. The Marine artillery community is experiencing an identity crisis. Their failure to fully leverage the capabilities of the information age and acknowledge the current operating environment will keep it on the path to irrelevance unless they are willing to make drastic changes to their community.

AN IDENTITY CRISIS

In World War I, artillery support was synonymous with fire support and effects. Artillery provided long-range, all-weather massed fires on enemy concentrations and enabled maneuver elements to penetrate enemy lines at the decisive point. Commanders were not concerned with collateral damage, and the demand for direct support artillery capability could be calculated by the width of the infantry’s frontage and the capabilities of the weapons systems. Precision fires applied only to bolt-action rifles, and offensive air support was in its infancy.

¹ Maj Secor is a graduate of MCU’s Command and Staff College. This paper won the Col Bevan G. Cass Award for academic year 2015–16.

² *U.S. Marine Corps Ground Combat Element Fire Support Campaign Plan* (Quantico, VA: Artillery Operational Advisory Group, 2014), 11, hereafter *Campaign Plan*.

Nearly 100 years later, artillery has lost its monopoly on fire support and effects to the infantry, aviation, information operations (IO), and other information-related communities. Infantry officers have replaced artillery officers as the fire support experts within the infantry battalion.³ Air officers (AirOs) assigned to infantry battalions and regiments and the Marine division have made their primary fire support training synonymous with tactical air control party (TACP) exercises.⁴ The air-naval gunfire liaison companies (ANGLICOs) focus on terminal controls at the expense of overall fire support integration and planning. Artillery officers do not have any formal presence, let alone leadership positions, in the communities that drive the nonlethal effects on the battlefield.⁵

In the course of 13 years of war from 2001 through 2014, the ground combat element (GCE) employed massed artillery for the 44 days of liberation phase of OIF I.⁶ Outside of this period, the GCE employed individual batteries widely dispersed on the battlefield, often seldom-used, with only two weapon systems fire capable at each location. Meanwhile, artillery units continued to maintain a high operational tempo, supporting missions ranging from provisional civil affairs to military police to fixed-site security forces. Artillery units hollowed out officer leadership at the battalion and regiment level, sourcing individual augments in military transition teams, police transition teams, and in regimental combat team (RCT)/MAGTF fire support/targeting cells.⁷

The lessons of the Global War on Terrorism (GWOT) and the post-GWOT interwar period (so far) tells the artillery community that the character of warfare has changed. Although artillery must stand ready for the conventional threat, the United States will achieve victory in future conflicts with its actions throughout the campaign, including the stability and transition phases.⁸ America's enemies have learned from the example of Iraqi insurgents, Taliban fighters, and al-Qaeda terrorists to fight the United States in the gray area between war and peace where cutting edge technology and overwhelming destructive power are not decisive—phase IV operations.⁹ Marine General James N. Mattis famously told Iraqi tribal leaders in 2003 following OIF I, “I come in peace. I didn’t bring artillery. But I’m pleading with you, with tears in my eyes. If you f— —k with me, I’ll kill you all.”¹⁰ This quote clearly illustrates that the presence of artillery has a chilling effect on stability operations. If the artillery community desires to contribute to the full range of military operations (ROMO), it must leverage all effects capabilities or continue to slip into obscurity.

The artillery community responded with precision munitions, capable of striking the irregular threat without wonton destruction. The precision and accuracy of Excalibur and global positioning system (GPS)-guided HIMARS rounds provided the means to provide strikes previously only provided by aviation-delivered ordnance, but artillery could do it at any time in any

³ *Marine Infantry Battalion*, FMFM 3-55.5 (Washington, DC: Headquarters Marine Corps, 1978), 336.

⁴ The only AirO billets in Marine artillery reside in the three regimental headquarters batteries. In the 28 regimental command chronologies from January 2010 to March 2015, the AirOs consistently described their training accomplishments in terms of currency achieved at TACP shoots.

⁵ “Unit TO&E Report for Marine Corps Information Operations Center (MCIOC),” Total Force Structure Management System, accessed 22 January 2016, 15. For our discussion, TO&E refers to table of organization and equipment.

⁶ *Awards Update*, MARADMIN 424/11 (Washington, DC: Headquarters Marine Corps, 2011).

⁷ Figure 2, drawn from the data in 135 command chronologies, shows that all five major billets in the artillery battalion were staffed with majors less than 5 percent of the time, and all four lieutenant colonel billets in the artillery regiment were staffed with Marine lieutenant colonels less than 15 percent of the time. This assessment does not account for selected officers serving in a billet intended for the next higher rank.

⁸ *Joint Operations*, JP 3-0 (Washington, DC: JCS, 2011), V-6.

⁹ *Joint Operations*, V-9.

¹⁰ Thomas E. Ricks, *Fiasco: The American Military Adventure in Iraq* (New York: Penguin Press, 2006), chapter 14.

weather. The trade-off was laborious clearance procedures and range limitations. Commanders dispersed artillery units across the battlespace to ensure that key locations were accessible to the effects of these munitions. The artillery community added structure to the firing battery to enable the employment of autonomous platoons; they added structure to fire support teams to provide the means to fill gaps in infantry battalions created when weapons company commanders assume control of battlespace as maneuver commanders.¹¹ Instead of making the artillery community a more effective provider of lethal and nonlethal fire support and effects, it became more efficient at its basic task. In phase IV operations, an RCT only required a cannon battery instead of an artillery battalion. When the 2010 Force Structure Review Group (FSRG) gathered to trim the force after a decade of combat, the artillery community lost more structure proportionately to the maneuver forces they support.¹² The artillery community provided the capability that the GCE/MAGTF demanded to fight OIF/OEF, and the FSRG penalized it without regard to the utility of massed artillery during major combat operations.

The artillery community has lost its foothold in fire support and effects in spite of advances in the range, accuracy, and variety of weapons systems. The community's changes have been a series of evolutions vice innovations, and the artillery campaign plan continues the evolution to greater range and accuracy (and renewing current munitions capabilities).¹³ Continued development along these lines did not protect the artillery community from the 2010 FSRG and will not protect it in future competition for limited resources. Unless the community examines itself critically, subordinates its cultural self-interest to the needs of the GCE/MAGTF, takes full advantage of the opportunities of the information age, and acknowledges the realities of warfare in the current operating environment, the artillery community will sentence itself to ultimate obsolescence.

SELF-ANALYSIS

With the community's increasing irrelevance on the changing battlefield of the twenty-first century, artillery cannot simply regain its role by fielding a new weapon system. To bridge the gap between what the artillery community of today provides and what the GCE/MAGTF requires, all options must be available. Nothing can be sacred. The community must be willing to part with any aspect of its culture that detracts from its effectiveness. To find the gap between the services required and provided, this paper will first analyze the organizational culture of the Marine artillery community using Edgar Schein's model. Then it will use key planning documents to look critically at the needs of the GCE/MAGTF. This paper will then investigate the community's shortfalls and propose solutions to provide the best lethal and nonlethal fire support and effects for the GCE/MAGTF in the future operating environment.

ASSESSING ORGANIZATIONAL CULTURE

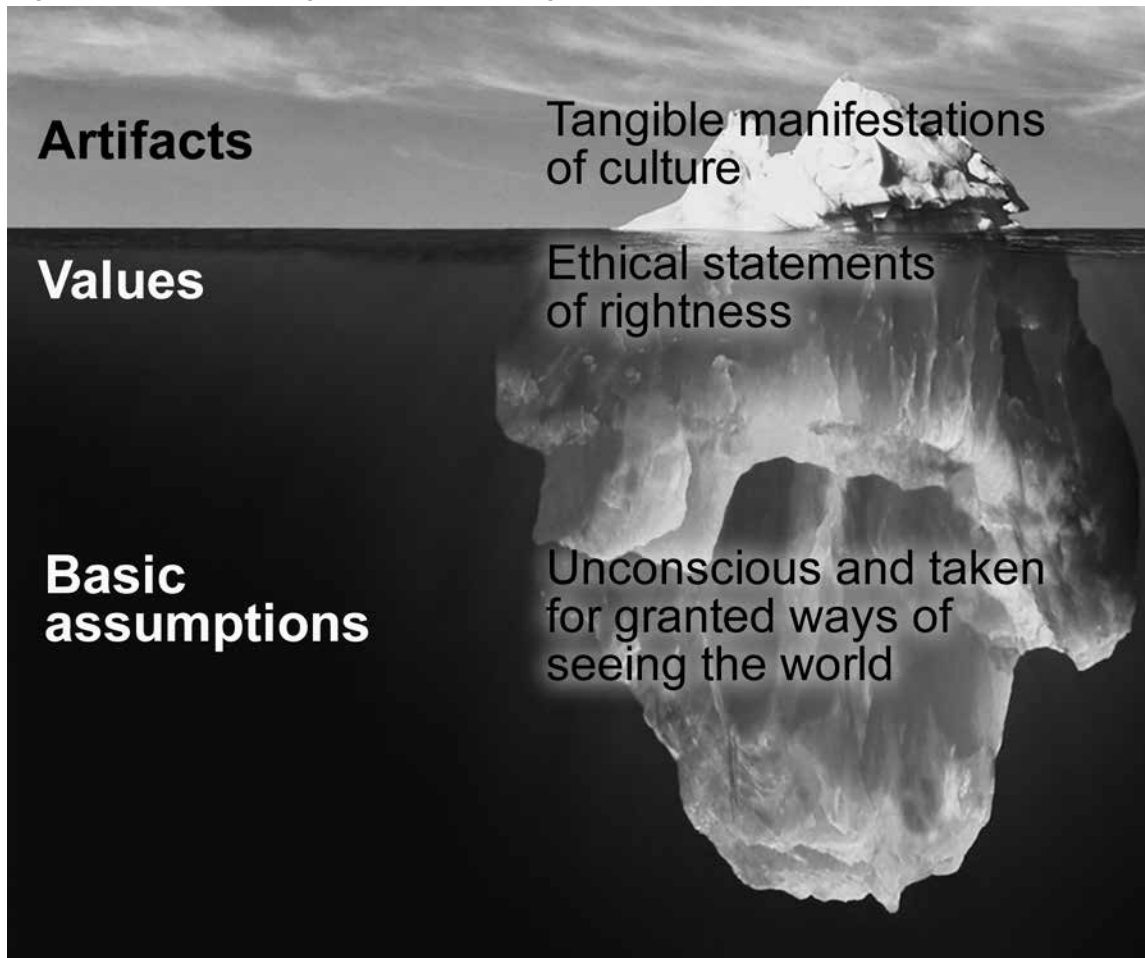
If artillerymen acknowledge that they need to embrace some type of innovation to be relevant on the twenty-first century battlefield, they must carefully investigate the factors that have come together over the course of the last century to create the organizational culture of today's community. It is entirely possible that some factors that were critical in another kind of conflict with less

¹¹ The change in artillery manning within the cannon battery and the fire support team is evident when comparing the following five unit T/O&E reports: Battery A, 1st Battalion, 11th Marines; Headquarters Battery, 1st Battalion, 11th Marines; Fire Support Team, 1st Battalion, 11th Marines; Battery A, 1st Battalion, 11th Marines (historical); and Headquarters Battery, 1st Battalion, 11th Marines (historical).

¹² *Reshaping America's Expeditionary Force in Readiness: Report of the 2010 Marine Corps Force Structure Review Group* (Washington, DC: Headquarters Marine Corps, 2011), 6.

¹³ *Campaign Plan*, 11–14.

Figure 9. Schein's iceberg model to assess organizational culture



Source: Adapted by MCUP

sophisticated technology are no longer relevant and may be discarded. Likewise, the community may know that it needs to make changes, but subconscious cultural factors may hold it back.

Schein's Model

Schein's Model analyzes organizational culture through three layers, often likened to an iceberg (figure 9).¹⁴ The first aspect of organizational culture is the visible artifacts, which include the constructed environment, technology, resourcing decisions, visible or audible behaviors, and public documents. The *visible artifacts* help the observer describe how a group constructs its environment and the behavior patterns among its members, but the artifacts do not directly explain why the group behaves the way it does. Like the iceberg, the rest of the organizational culture remains out of view beneath the surface. The second level is the *organization's values* that govern behavior. Values represent the espoused values of a culture; they focus on what people say is the reason for their behavior, what they ideally would like those reasons to be, and what are often their rationalizations for their behavior. The third and final level of organizational culture is the most deeply concealed: the *underlying assumptions*. These assumptions are the concealed or

¹⁴ D. Maximini, "Organizational Culture Models," in *The Scrum Culture: Introducing Agile Methods in Organizations* (Switzerland: Springer, 2015), 9–25, https://doi.org/10.1007/978-3-319-11827-7_2.

unconscious ideals that actually determine how group members perceive, think, and feel.¹⁵ This paper will assess underlying assumptions by comparing the artifacts to the values. Where they are in agreement, the values and the underlying assumptions are the same. Where there are disagreements, the artifacts reveal the true underlying assumption. One cannot effect fundamental change in an organization without fully understanding its culture and taking action to affect the underlying assumptions. For the purpose of brevity, this paper assumes that the reader has a working understanding of the Marine Corps artillery community and does not require detailed descriptions of the community's artifacts or espoused values.

Artifacts

The Marine artillery community is rife with artifacts that define the culture. To simplify the analysis, when referring to staffing and career progression matters, this paper will avoid trends that apply to individual enlisted artillery military occupational specialties (MOSs) and focus instead on artillery officers because they hold positions that correlate with each enlisted MOS throughout their careers. These artifacts include the formal process to gain a leadership position in the community, how they tell their story and remember their history, how they perform their duties in training and combat, and how they spend their limited monetary and human capital.

To become a leader within the artillery community, artillery officers must perform at a high level throughout their careers with a particular emphasis on "key billets." Key billets differ from one community to the next. Monitors decide when officers execute orders based on their previous completion of key billets. For artillery officers, lieutenants and captains must lead Marines in each grade in the operating forces, and majors must hold the billet of battalion executive officer (XO) or operations officer (OpsO).¹⁶ For lieutenant colonels, performance in key billets, including regimental XO, regimental OpsO, and battalion command determines competitiveness for promotion to colonel and selection for regimental command. Units rotate officer billets internally, carefully ensuring that those with the most promise gain sufficient experience in key billets.¹⁷

The Marine artillery community tells its story in two main ways: the annual observance of Saint Barbara's Day and the unit command chronology.¹⁸ Each winter, artillery units (including other service and nations) gather to celebrate the "traditional brotherhood of stonehurlers, archers, catapulters, rocketeers, and gunners."¹⁹ The ceremony includes the story of Saint Barbara, naming of old and new members of the Honorable and Ancient Orders of Saint Barbara and Molly Pitcher, mixing the artillery punch, making toasts, presenting skits (there is always a skit about the genesis of field artillery), reading the legend of "Fiddler's Green," and remarks from the unit commander and the guest of honor.²⁰ Twice a year, artillery units record everything from

¹⁵ Edgar H. Schein, "Coming to a New Awareness of Organizational Culture," *MIT Sloan Management Review* 25, no. 2 (Winter 1984): 3.

¹⁶ Thomas Carey, ground combat arms major's monitor, telephone interview with author, 20 January 2016; and Scott Culbertson, Marine Air Control Squadron 20, monitor for field artillery company grade officers, telephone interview with author, 20 January 2016.

¹⁷ Staffing stats obtained from 135 artillery command chronologies show that the XO and OpsO billets are more often filled with officers of the T/O rank vice all other major billets within the artillery battalion and lieutenant colonel billets within the artillery regiment.

¹⁸ Saint Barbara was the patron saint of artillerymen.

¹⁹ Joseph Welch, *Sequence of Events for 1st Battalion, 12th Marines Saint Barbara's Day Celebration 2014* (Marine Corps Base Hawaii, Kaneohe Bay, HI, 19 December 2014), 4.

²⁰ Molly Pitcher honors women who have voluntarily contributed to the success of the artillery community. Fiddler's Green is the site of legendary afterlife just for artillerymen. Joseph Welch, *Genesis of Artillery* (script, Marine Corps Base Hawaii, Kaneohe Bay, HI, 19 December 2014), 1–3; and Welch, *Sequence of Events*, 1–14.

manning to maintenance to operations in a command chronology. The unit leadership describes the unit as it would like to be seen. They include what is important and exclude the superfluous. This record goes through the chain of command and ends up at the Archives Branch, Marine Corps History Division, Quantico, Virginia. There, archivists scan and store the documents for future reference by Marines and scholars alike.²¹ The celebration of Saint Barbara's Day and the production of unit command chronologies are perhaps the most visible artifacts of the story of the Marine artillery community.

Marine artillerymen follow a strict set of procedures to create devastating effects on the battlefield; the artifacts of these procedures are the regulations and doctrinal publications that dictate individual and unit actions in training and combat. In training, two of the most prominent documents outside the unit's standard operating procedures (SOP) and local range regulations are the Marine Corps artillery fire support training SOP and the training and readiness (T&R) manual. The former carefully dictates individual responsibilities with a focus on the position commander, position officer in charge, fire direction officer (FDO), operations chief, section chief, and range safety officer (RSO).²² The procedures ensure that multiple command safety-certified personnel confirm firing data to ensure that the unit does not fire rounds outside the designated safety box. The T&R manual lists everything from the detailed requirements of the individual/section to the general overarching requirements of batteries, battalions, and regiments.²³ In combat, units have a large selection of doctrine for employment guidance. Unit SOPs fill in the gaps where doctrine does not keep up with new technology, new employment methods, and nonlinear battlespace. All of these artifacts of tactics, techniques, and procedures are incredibly valuable to illustrate what the community regards as important to sustain readiness, necessary to ensure safety, and most effective in supporting the GCE/MAGTF.

Perhaps the most illustrative artifact for any organizational culture is how it spends its limited human and monetary capital. Internal to its artillery units, the community periodically provides input for updates to its tables of organization to reflect the ideal unit (if its staffing goal were 100 percent).²⁴ Outside artillery units, artillery officers serve in designated billets where their expertise is essential. For tangible microlevel artifacts, the real-time records of manning decisions are available online via Marine Online.²⁵ Monetarily, the artillery community plans its acquisitions to ensure that they meet the future needs of the GCE and the materiel realities of aging equipment. Especially in a fiscally constrained environment, they must direct limited resources to the most critical programs. The Artillery Operational Advisory Group, composed of the artillery regimental commanders, the commander of the Marine detachment in Fort Sill, their senior enlisted artillery counterparts, and key leaders from Plans, Policies, and Operations (PP&O) and Marine Corps Combat Development Command (MCCDC), publishes these resource decisions and publishes them in the *GCE Fire Support Campaign Plan*.²⁶

All of these artifacts provide significant insight into the organizational culture of Marine

²¹ *MCO 5750.1H, Manual for the Marine Corps Historical Program* (Washington, DC: Headquarters Marine Corps, 2009), 5-4.

²² *Marine Corps Artillery Fire Support Training Standing Operating Procedures (SOP)*, JRegtO P3570.1D (Fort Sill, OK: Marine Corps Artillery Regiment Commanders, 2011), II 1-3–II 1-37.

²³ *Artillery Training and Readiness Manual*, NAVMC 3500.7B (Washington, DC: Headquarters Marine Corps, 2015), iii–iv.

²⁴ The 14 artillery T/Os discussed here include the ideal staffing information for every active component artillery unit in the Marine Corps. All artillery T/Os are current as of 22 January 2016.

²⁵ The five rank/MOS reports pulled from Marine Online were a snapshot of all active component artillery officer (second lieutenant to lieutenant colonel) current assignments on 11 January 2016 (the day the author pulled the reports).

²⁶ *Campaign Plan*, 1-15.

artillery, but they are just the proverbial tip of the iceberg. In an ideal, transparent organization, the artifacts should directly reflect the espoused values of the culture.

Values

The artillery community cultivates a set of values to sustain its organizational culture. These are the espoused ideas that the community shares to maintain its unique identity. These values include the drive for statistical perfection (chasing the mil), for providing persistent all-weather indirect fires from a variety of platforms to support maneuver forces in any clime or place, for producing well-rounded MAGTF officers (versed in tactics, logistics, maintenance, and communication), for delivering massed responsive fires using an integrated digital fire support loop, for being the “utility infielder” for the MAGTF (having the flexibility to retask units to contribute to the mission), for supplying the premier fire support experts for the GCE, and for integrating all lethal and nonlethal fires and effects to support the mission. This list is not all-inclusive, but it provides a cross-section of matters that underlie the culture’s artifacts.

Chasing the Mil. Artillerymen pride themselves on their meticulous approach to their duties. *Chasing the mil* is a common term artillerymen use to describe the mindset that everybody must be precise down to the mil (an angle equivalent to 1/17.8 of a degree) to achieve effects on target. Artillerymen bring this mindset to everything from accountability to maintenance to training. Even with fielding automated fire direction systems, such as the Advanced Field Artillery Tactical Data System (AFATDS), artillerymen value the involvement of human subject matter experts in each mission to ensure precision and accuracy.

Timely and Accurate Fires. Artillerymen strive to achieve their own definition of timely and accurate fires for the GCE.²⁷ When some 155mm projectiles require two minutes flight time from firing to impact after all computations and clearance procedures, up to eight minutes from target acquisition to first impacts meets the community’s definition of *timely*.²⁸ Based on the 50-meter casualty radius of the 155mm projectile, rounds impacting 10 meters from a target are considered accurate. The pursuit of accuracy takes priority over timeliness, because of the potential risk to friendly forces and the devastating effect on an unprepared enemy when engaged by an accurate first volley.²⁹

Any Clime and Place. The artillery community understands that the GCE/MAGTF has many options in fire support. However, artillerymen are secure knowing that they provide indirect fires 24 hours a day in all weather conditions. Artillery acquisitions initiatives have yielded three weapon systems with various capabilities and limitations. This value draws a stark contrast with aviation assets that can only remain on station for limited durations (due to fuel limitations) and require favorable weather conditions.

Massed/Digital Fires. Artillerymen claim a monopoly on massed indirect fires. Artillery units are organized and trained to mass fires using the digital sensor-to-shooter loop. The Marine Corps ideally maintains one cannon battery (six howitzers) for each infantry battalion. However, through digital communications, an entire artillery regiment (up to 60 howitzers) could mass effects in one infantry battalion’s area of operations.³⁰ Massing fires has an exponential, not linear effect; 1 volley (one projectile from each howitzer) from a regiment creates the

²⁷ *Artillery Training and Readiness Manual*, 8-3, 19-12.

²⁸ *Fire Support Coordination in the Ground Combat Element*, MCWP 3-16 (Washington, DC: Headquarters Marine Corps, 2001), 3-18; and *Artillery Training and Readiness Manual*, 8-3, 19-12.

²⁹ *Marine Corps Artillery Fire Support Training Standing Operating Procedures (SOP)*, II 1-13–II 1-14.

³⁰ TO&E report for Battery A, 1st Battalion, 11th Marines, 1st Marine Division, 4, 39.

same effect as 43 volleys from a single battery.³¹ Massing fires drastically increases the effects with significantly fewer resources. To quickly communicate mission data, synchronize effects, and reduce human error, artillery commanders place a high priority on exercising the digital loop during live-fire exercises.

MAGTF Officers. The artillery community is unique in the way it closely integrates with all elements of the MAGTF. From their earliest years of service, artillery officers serve in infantry units, integrate aviation capabilities, communicate through different means across great distances, and manage the movement and maintenance of a high volume of rolling stock. Artillery officers serve as their unit logistics officers at the battalion and regiment level.³² They learn early on to think of the cascading effects of their decisions across warfighting functions. As a result, artillery officers pride themselves on being well-rounded.

Utility Infielder. The artillery community acknowledges its role in fire support during OIF/OEF. It has mixed feelings about its execution of “in lieu missions” such as civil affairs, provisional infantry/fixed-site security, and military police tasks. The artillery community is proud of its success and flexibility, but it wants the GCE to see the community as artillery first. They do not want to be the proverbial working party of the division. As a result, since the end of sustained combat operations in Iraq and Afghanistan, the artillery community has dedicated its training resources to conventional artillery operations at the battalion and regiment level.

Premier Fire Support Experts to the GCE. The community has desired to reassume its roles as the (infantry) company fire support team (FiST) leader and (infantry) battalion forward support company after losing them to infantrymen since the last time *Marine Infantry Battalion*, FMFM 6-3, was published in 1978.³³ This was the ultimate goal in replacing the first lieutenant battalion liaison officer billet with a more experienced post-career level school captain battalion fire support officer (FSO). The infantry battalion table of organization (T/O) still has an infantry captain weapons company commander and first lieutenant weapons platoon commanders in each rifle battalion and company, respectively.³⁴ However, infantry battalion commanders now have the option to employ the weapons company/platoons as maneuver elements and leave fire support entirely to the FSOs from the artillery battalion.

Lethal/Nonlethal Fires and Effects. The artillery community learned from OIF I that Marine artillery still plays a decisive role on the battlefield during major combat operations. Furthermore, artillery is one of many lethal fires that commanders can mass at a decisive point. To mass fires from across the MAGTF, artillerymen train to integrate target acquisition, cannon, rocket, aviation, maneuver, and unmanned aerial system (UAS) capabilities to achieve devastating effects. However, as General Mattis alluded, the more effective way to conduct stability operations is through less obtrusive means of lethal/nonlethal fires and effects.³⁵ At the intellectual level, artillerymen acknowledge the need to mass lethal and nonlethal effects, such as IO, cyberoperations, military information support operations (MISO), electronic war-

³¹ *Tactics, Techniques, and Procedures for Observed Fire*, FM 6-30 (Washington, DC: Headquarters, Department of the Army, 1991), 1-3. This statistic is based on a U.S. Army M109A3 155mm self-propelled howitzer regiment consisting of three battalions, each with three batteries, each with eight howitzers. This 8/72-gun battery/regiment is proportional to the 6/54-gun battery/regiment breakdown in today's 10th Marine Regiment.

³² TO&E report for Headquarters Battery, 11th Marine Regiment, 1st Marine Division, Total Force Structure Management System, accessed on 22 January 2016, 4; and TO&E report for Headquarters Battery, 1st Battalion, 11th Marines, 1st Marine Division, 7.

³³ *Fire Support Coordination in the Ground Combat Element*, 1-5; and *Marine Infantry Battalion*, 336.

³⁴ Unit TO&E report for Rifle Company A, 1st Battalion, 11th Marines, 1st Marine Division, Total Force Structure Management System, accessed 26 March 2016, 8; and Unit TO&E report for Weapons Company, 1st Battalion, 11th Marines, 1st Marine Division, Total Force Structure Management System, accessed 26 March 2016, 5.

³⁵ Ricks, *Fiasco*, chapter 14.

fare (EW), civil affairs, and military deception to influence the enemy decision-making process.

This collection of espoused values has slowly developed over time from the Pacific campaign of World War II through the Cold War and into OIF/OEF. They held true in an age of enemy nation states and slide rules. As this paper looks deeper on the iceberg, it will consider if these values still hold true in the information age on a more ambiguous battlefield.

Underlying Assumptions

The underlying assumptions are the subconscious factors that drive an organization. To identify the underlying assumptions, this paper will compare the espoused values with the artifacts. When the artifacts correspond with the espoused values, then the underlying assumption is consistent with the espoused value. However, if the community claims to value something but fails to resource it (evident in the artifacts), then the underlying assumption is that the stated value is a logical fallacy, or the community values that item less than other items that it resources. This paper will first confirm those values validated by the artifacts and then investigate those that present contradictions.

Any Clime and Place. The artillery community has lived up to its values in providing a capability that can function in all physical domains and mission settings. However, today's artillery community (as most of the Marine Corps) would struggle greatly in a future GPS-degraded environment or where the electromagnetic spectrum becomes contested. Additionally, a complete loss of digital fire direction capability would significantly reduce responsiveness.

Chasing the Mil. Artillerymen do bring a meticulous approach to their duties, and their acquisitions reflect this value.³⁶ Target location error is perhaps the greatest source of inaccuracy in artillery, but the community is in the process of acquiring new target acquisition hardware to replace the Vector-21B binoculars. The addition of GPS capability on each howitzer has improved the accuracy of firing unit location. The digital fire control system enables the M777A2 155mm towed howitzer to quickly lay on a target with an accuracy of one-tenth of a mil vice a whole mil, drastically improving accuracy at great ranges. New meteorological technology allows artillerymen to acquire accurate data, even in a blizzard or sandstorm where traditional pilot balloon methods were difficult. This driving desire, ironically, also makes artillerymen unwilling to use the full capabilities of AFATDS, the system that computes technical firing data. Army artillerymen working alongside Raytheon contractors created AFATDS to serve as the brain of the artillery fire direction center (FDC). It is capable of receiving a digital call for fire from an observer, creating a fire command based on guidance (entered by unit FDC men prior to an operation) and the *Joint Munitions Effectiveness Manual* (JMEM), and sending the fire command to the howitzer gun crews without any human involvement. However, due to an inherent distrust of the technology, Marine artillerymen use AFATDS as a calculator only to perform detailed computations to account for nonstandard conditions. AFATDS software is not perfect, but this inherent distrust prevents Marine artillerymen from aggressively seeking the software advances that would fully automate fire direction and from fully leveraging the potential of AFATDS. The ultimate pursuit of accuracy and precision would be the removal of human error from the technical fire direction process. Paradoxically, Marine artillerymen have lost the capability to conduct all-manual operations. There are not enough graphic firing tables and graphic site tables to provide all active component firing batteries with the capability to conduct independent checks in the FDC and the battery operations center (BOC), the equivalent of the battery's forward FDC. Furthermore, the special plotting paper used for surveyed firing charts

³⁶ *Campaign Plan*, 11-14.

required for each battery to conduct 1000- to 6000-level T&R sustainment are no longer available through the supply system.³⁷ The artillery community is in the cognitive “no man’s land” between fully trusting AFATDS and being able to operate (at an acceptable speed) without it. In other words, the desire to “chase the mil” makes artillery less timely and accurate due to artificially inserted human checks and errors.

Timely and Accurate. The artillery community has invested its acquisitions dollars in improving artillery’s accuracy. From the examples listed above to the fielding of precision guided munitions (PGMs), such as the Guided Multiple Launch Rocket System (GMLRS) for use with HIMARS, Army Tactical Missile System (ATACMS), the Excaliber round for the M777A2, the precision-guidance kit (PGK) for use with non-GPS guided 155mm high explosive rounds, and GPS-guided munitions (under development) for the Expeditionary Fire Support System (EFSS). However, timeliness still lags. The fire support process is still cumbersome and unresponsive. The hierarchical deconfliction process in the GCE/MAGTF fire support coordination center (FSCC) and forces fire coordination center (FFCC) are perhaps the main culprit, especially in a battlespace crowded with Marine, Joint, and coalition fixed-wing, rotary-wing, and unmanned aircraft. The hierarchical mission processing procedures in the artillery battery/battalion/regimental FDCs also add to the responsiveness problems before they send the command to the gun sections to fire the mission. The artillery community’s responsiveness issues are problematic when massing artillery with aviation fires from aircraft that can only remain on stations for relatively short periods of time. In the end, the artillery community has clung to its industrial-age mission clearance and processing practices at the expense of timeliness.

MAGTF Officers. The artillery community creates well-rounded officers versed across warfighting functions. However, it does place its greatest stress on artillery-specific operations. While staffing the battalion and regimental logistics officer billets with artillerymen ensures that artillerymen can apply corporate knowledge in that position, the unit arguably faces greater friction from cycling four to six artillery officers (without the intimate corporate knowledge of logisticians) through the billet during the course of two to three years than it would experience by getting experienced 0402 (logistics) captains who would have to learn the nuance of artillery operations.³⁸ Battalions and regiments are not training aids for individual officers to learn about diverse career fields.

Utility Infielder. The artillery community resents that it had to perform the in lieu of missions during OIF/OEF, and it has tried to prevent a repeat in the next major conflict by modifying its acquisitions to focus on precision artillery munitions and decentralized operations to facilitate supporting a widely dispersed, low-CDE (collateral damage estimate) battlefield. During OIF/OEF, the Commandant of the Marine Corps formally tasked the Marine artillery battalions and regiments with the secondary mission of conducting civil-military operations (CMO).³⁹ The Marine Corps stood up active component civil affairs groups (CAGs) in each artillery regiment headquarters, but the Marine artillery community embraced the movement of

³⁷ For the purposes of this discussion, the level of T&R refers to the size of the unit and the activity; for example, 1000-level defines core skills training at the individual formal school level, and 6000-level defines collective training at the company level. *Artillery Training and Readiness Manual*, 1-5.

³⁸ Staffing statistics obtained from 135 command chronologies. The author added up the cumulative time covered across all command chronologies and divided that time by the number of officers listed. The average amount of time for an officer serving as the regimental logistics officer was 6.55 months, and the average amount of time for an officer serving as the battalion logistics officer was 6.03 months. Assuming a notional 0402 officer would serve a tour between two and three years, they would take the place of four to six artillery officers who would otherwise cycle through that billet during the course of that time.

³⁹ *ALMAR 061/05, Assignment of Secondary Civil-Military Operations Mission to the Artillery Regiments Battalions* (Washington, DC: Headquarters Marine Corps, 5 December 2005).

the active duty CAGs to the Marine expeditionary force (MEF) headquarters groups (MHGs) where they currently reside.⁴⁰

Premier Fire Support Experts: Manning. Artillery commanders do not value their fire support responsibilities to the GCE as much as they value other functions of their unit. This is clear in the manner that commanders man and train FSOs.⁴¹ If the federal budget's allocation of limited tax dollars reflects the nation's values, then artillery commanders' manning decisions to allocate limited human capital reflects the community's values. Approximately half of the artillery unit command chronologies from 2010 to 2015 did not even name their senior fire supporter. Of those that did, the servicemember named was often below the T/O rank or a sister servicemember holding the billet in the absence of a Marine. Of note, the data does not reflect those who are selected for promotion serving in a billet intended for that next rank. The correlation between key billets and the assignment of promoted majors/lieutenant colonels shows the manning priority afforded to key billets over all other billets. During this same period, the regimental Air Force Specialty Code (AFSC) billets saw much more turnover within the artillery battalion when compared to all other majors billets. Furthermore, artillery battalions are more likely to gap these FSO billets or staff them with less experienced personnel than the T/O demands.⁴² This did not apply at the artillery regiment because two U.S. Army officers (both nearing retirement) held the position for more than three years each in their respective regiment.⁴³ Officers assigned to these billets prior to the start of the data collection or beyond the end of the data collection accumulate to shorten the average time in billet. However, this affected the data collection for all billets. Therefore, the data reflects shorter averages than the actual billet tenures, but this source of error is reflected roughly uniformly across all billets. The data still offers statistically significant comparative value between billets. A snapshot of all active component field artillery officers assigned to the operating forces on 11 January 2016 shows that commanders gapped FSO billets more often than firing battery billets.⁴⁴ Across the community, there was a 25 percent excess of officers assigned to a battalion or regimental headquarters. Many of these excess officers, mostly first lieutenants, are physically absent, serving as individual augmentments or in the fleet augmentation program (FAP) aboard their respective installation. However, the disproportionate impact on fire support billets sends a clear message. When faced with a resource-constrained environment, commanders accepted disproportionate risk in fire support staffing. This trend is attributable to two factors: career progression and training mindset. Since the company and battalion FSO billets are less important for career progression than the firing battery counterparts (due to number of Marines led), and the regimental AFSC billet is less important for career progression than the battalion OpsO and XO billets (AFSC is not a

⁴⁰ Unit TO&E report for Command Element, I MEF, Total Force Structure Management System, accessed 22 January 2016, 8-25.

⁴¹ Staffing statistics obtained from 135 command chronologies. The author cited the manning data in each document to determine whether major billets at the artillery battalion and lieutenant colonel billets at the regiment were staffed at T/O, one rank below, more than one rank below T/O, or if the billet was held by a sister Service officer for each unit for each month reported. Some billets were considered "gapped" when the unit submitted a command chronology, but failed to list the position in the manning section of the report.

⁴² Staffing statistics obtained from 135 artillery command chronologies. The author cited the manning data in each document to determine the average tenure of officers serving in major billets at the artillery battalion and in lieutenant colonel billets at the artillery regiment. The author calculated the values by adding up the cumulative number of months of billet data from the command chronologies and divided that value by the number personnel named for that billet. The quotient is the average number of months between turnover.

⁴³ Data collection began on 1 January 2010 and ended on 31 March 2015.

⁴⁴ Staffing statistics computed by comparing the cumulative number of T/O artillery officer billets from the 13 artillery T/O reports with the number of officers assigned to fire support, firing battery, and headquarters billets (as determined by unit names in five MOL rank/MOS reports).

key billet), commanders are less likely to staff these fire support billets with top performers and are more willing to rotate them more frequently to optimize throughput in the key billets. The most tragic illustration of prioritizing artillery support over fire support is the manning relationship with the supported infantry unit. Artillery units resist attaching their battalion fire support teams (BFST) on a temporary additional duty (TAD) status prior to deployments (except in the case of MEU deployments). This lack of a solid habitual relationship is a great deterrent for maneuver commanders to commit to naming their artillery FSOs as the FiST leaders and FSCs. The cost of sending fire supporters to the supported maneuver unit with TAD assignments would be that artillery commanders may need to request the use of their own fire supporters to enable artillery unit training.

Fire Support Experts: Training. Regarding the community's training mindset, artillery commanders tend to interpret the intentionally ambiguous T&R manual similarly. When artillery units go to the field, the time is divided into a battery phase, a battalion phase, and a regimental phase (depending on the echelon of the exercise). This normally leaves little dedicated training resources for fire supporters to sustain maneuver- and aviation-oriented scenarios, such as quick fire plans in support of notional breaching operations. When fire supporters add these scenarios to the overall concept of fires, they face resistance to the realism of target refinement immediately prior to firing the associated group or series; this is due to technical challenges associated with current AFATDS software and the confusion it causes within the FDCs.⁴⁵ The Marine Corps artillery safety SOP even refers to the responsibilities of fire supporters under the title of range safety officer (RSO).⁴⁶ The term is appropriate, per *DA PAM 385-63/MCO 3570.1B, Range Safety*, but the SOP does not refer to howitzer section chiefs as position safety officers. The community's choice of wording reinforces the mindset that fire supporters exist to serve as training aids for artillery units. A notable omission from the Marine Corps artillery safety SOP is the lack of guidance for the clearance and integration of fires (i.e., requirements to ensure the safety of maneuver forces and aviation assets employed in close proximity with artillery fires); the only references are the RSO's responsibility to call "check firing" if aircraft enter the danger area and the FSC's responsibility to ensure that target locations do not threaten friendly forces.⁴⁷ *DA PAM 385-63/MCO 3570.1B* and local range regulations also do not provide any guidance. If an artillery round would strike an aircraft under the control of a Joint terminal attack controller (JTAC), the unit commander would have a hard time explaining to an investigator how they expected the JTAC to ensure safe integration, unless it is included in the unit SOP. With leadership constantly under transition at the regimental FSCC or lacking Marine officer leadership at the division FSCC, these agencies struggle to ever progress to the "run" phase of training; they remain in the "crawl" and "walk" phases where they send calls for fire as directed by the FDC.⁴⁸ Although recent iterations of 10th Marines' Exercise Rolling Thunder and 1st Battalion, 12th Marines' Exercise Spartan Fury have included aviation and infantry integration, these have not been the norm.⁴⁹ Events associated with a MEU workup and exercises like the fire support coordination exercises (FSCEXs) within 2d Marine Division or Exercise Lava Viper are excellent examples

⁴⁵ Tactical Training Exercise Control Group, *Battalion Fires Handbook* (Twentynine Palms, CA: Marine Air Ground Task Force Training Command, June 2012), 104.

⁴⁶ *Marine Corps Artillery Fire Support Training Standing Operating Procedures (SOP)*, II 1-35–II 1-37.

⁴⁷ *Marine Corps Artillery Fire Support Training Standing Operating Procedures (SOP)*, II 1-36, F-1.

⁴⁸ *Systems Approach to URP* (Washington, DC: Marine Corps Training, Headquarters Marine Corps, 2009), 17.

⁴⁹ U.S. Marine Corps Command Chronology (ComdC) Collection, 10th Marine Regiment, 2d Marine Division, 1 July to 31 December 2013, Box 2677, Folder 20, Archives Branch, Marine Corps History Division, Quantico, VA; and U.S. Marine Corps ComdC Collection, 1st Battalion, 12th Marines, 3d Marine Division, Box 2740, Folder 27, 1 January to 30 June 2014, Archives Branch, Marine Corps History Division, Quantico, VA.

of integrated fire support training, but they only employ individual artillery batteries.⁵⁰ The artillery community claims to value fire support expertise, but it is unwilling to make compromises in artillery training to gain the expertise.

Lethal/nonlethal Fires and Effects. The artillery community claims to value nonlethal fires and effects, but manning artifacts undermine that assertion. During OIF/OEF, artillery officers routinely served as IO planners, but during the FSRG, artillery leadership failed to lay claim to this developing community. The establishment of Marine Corps Information Operations Command (MCIOC), Marine Forces Cyber Command, and active duty civil affairs groups within the MHGs offered the artillery community an opportunity to establish formal ties to these nonlethal effects capabilities. The ANGLICO T/Os call for 0802s (field artillery) trained as 8002s (JTACs), but the CAG T/Os simply call for 0530s (civil affairs), the Marine Forces Cyber Command T/O calls for 8006s, and the MCIOC T/O calls for 0510/0520/0550s (information ops).⁵¹ The Marine Forces Cyber Command T/O is the most illustrative in telling which communities took the interest in the rising field of cyberoperations. Cyberoperations planner billets are specifically allocated to MAGTF intelligence officers, communications officers, and unrestricted line officers (8006 a miscellaneous MOS that encompasses dozens of career fields, including artillery); there is only one active duty artillery officer serving as targeting branch head/intelligence officer on the T/O.⁵² Identifying communications officers to hold the preponderance of leadership positions in the cybercommunity due to their familiarity in computers is tantamount to making ordnance officers the leaders in the infantry due to their familiarity with personal and crew-served weapons.

Although the contradictions of these underlying assumptions may sound alarming, they are not all necessarily the root causes of the previously described identity crisis. To make that determination, the reader must next compare them with the needs of the GCE/MAGTF. Only then can the artillery community see where it falls short.

THE DEMANDS OF THE GROUND COMBAT ELEMENT/ MARINE AIR-GROUND TASK FORCE

The artillery community does not win battles alone. It supports the GCE and the MAGTF as a whole and shares in its victory or defeat. To determine where the artillery community meets and falls short of the needs of the GCE/MAGTF, this paper will reverse engineer those needs from key documents: *Expeditionary Force 21*, the Tactical Training and Exercise Control Group (TTECG) *Battalion Fires Handbook*, General Robert B. Neller's *FRAGO 01/2016: Advance to Contact*, and the results of the 2010 FSRG. Together, these documents provide explicit and implicit guidance for the future of Marine artillery and fire support and effects as a whole.

Report of the 2010 Force Structure Review Group

The most explicit description of the priorities of the Marine Corps was the results of the FSRG. As the service anticipated a force drawdown following OIF/OEF, it gathered senior leaders

⁵⁰ The six 10th Marine Regiment unit command chronologies covering the time from January 2012 to March 2015 includes 20 FSCEXs, each specifically supporting the fire support and integration training of 2d Marine Division maneuver battalions and regiments. The six 1st Battalion, 12th Marines, unit command chronologies covering the time from January 2012 to March 2015 includes 11 iterations of Exercise Lava Viper, each including an FSCEX, including an artillery battery, an 81mm mortar platoon, and rotary-wing/fixed-wing aircraft in support of fire support and integration training of 3d Marines' subordinate infantry battalions preparing for upcoming deployments.

⁵¹ T/O&E reports for 1st ANGLICO, MCIOC, CE I MEF, and Cyber Command.

⁵² Unit TO&E report for Marine Forces Cyber Command, Total Force Structure Management System, accessed 23 January 2016, 14.

from across the force to determine where to cut structure and where to add it.⁵³ They carefully weighed the contributions of each community against their vision of the current threat. They determined that their decisions would provide a force capable of operating across the ROMO but tailored to conduct crisis response and power projection.⁵⁴

In the process, the FSRG accepted risk in the event of the need to conduct two simultaneous major combat operations and campaigns. This resulted in a recommendation to cut 20 percent of cannon artillery and 11 percent of infantry units; the FSRG cut the artillery community at a proportionately higher rate than its maneuver counterpart. Meanwhile, the group called for increases in intelligence, surveillance, and reconnaissance; Marine special operations capability; cyberspace defense, exploitation, and attack capabilities; an additional ANGLICO; and regionally focused MEB command elements.⁵⁵ The FSRG decided that the Marine Corps of the future would need to trade conventional maneuver units and fire support for capabilities that would enable MEBs to quickly deploy, orient, act, and partner on an information-age battlefield.

Expeditionary Force 21

The most comprehensive vision of the how the Marine Corps will operate in the future operating environment is captured in the *Expeditionary Force 21: Capstone Concept* written in 2014. It defines the environment as one of volatility, instability, and complexity in congested littoral regions around the world, with a focus on the littorals.⁵⁶ It makes repeated references to the Service's ability to suffer the consequences or harness the benefits of the information age while operating across the ROMO.⁵⁷ With this tone, it is not surprising that the document only mentions artillery in relation to the use of precision missions. The 23 lines dedicated to fires in the 45-page document stressed the importance of fire support coordination and responsiveness.⁵⁸ *Expeditionary Force 21* guides the decisions that will shape the Marine Corps of the future; the Marine artillery community must find a way to complement this vision or face greater cuts in the future.

FRAGO 01/2016: Advance to Contact

Four months after becoming the 37th Commandant of the Marine Corps, General Robert Neller issued his guidance as a fragmentary order (FRAGO) to General Joseph F. Dunford's CMC guidance. In this document, Neller directed another deliberate review of the force structure to assess the capabilities of the Marine Corps. After observing the surfaces and gaps that emerged since the 2010 FSRG, General Neller only made a direct appeal to invest additional structure in the IO, EW, and cybercommunities and provide a capability to the MEF and Marine forces commands.⁵⁹

TTECG Battalion Fires Handbook

Perhaps the document that most succinctly describes the GCE's ideal vision of Marine artillery in a conventional operation is the *TTECG Battalion Fires Handbook*. This guidebook provides methods "for the application of fires for this conflict and the next, wherever that may be."⁶⁰

⁵³ *Reshaping America's Expeditionary Force in Readiness: Report of the 2010 Marine Corps Force Structure Review Group* (Washington, DC: Headquarters Marine Corps, 2011), ii.

⁵⁴ *Reshaping America's Expeditionary Force in Readiness*, 2.

⁵⁵ *Reshaping America's Expeditionary Force in Readiness*, 6.

⁵⁶ *Expeditionary Force 21: Capstone Concept* (Washington, DC: Headquarters Marine Corps, 2014), 8.

⁵⁷ *Expeditionary Force 21*, 35–36.

⁵⁸ *Expeditionary Force 21*, 33.

⁵⁹ *FRAGO 001/2016: Advance to Contact* (Washington, DC: Headquarters Marine Corps, 19 January 2016), 4–5.

⁶⁰ *Battalion Fires Handbook*, 1.

These methods are the standard by which TTECG evaluates maneuver battalions during their predeployment mission readiness exercise. Throughout the handbook, artillery is employed as a tool to enable something. It can shape an enemy before friendly forces maneuver, it can suppress air defenses to enable aviation freedom of movement, or it can suppress or obscure enemy forces to enable maneuver forces to close with their position. The cumulative effects of a combined attack are greater than the sum of its parts. This is evident by the emphasis on massing all available assets to employ the full package: aviation, artillery, mortars, maneuver, and direct fire systems.⁶¹ Above all, artillery must be responsive and capable of firing in close proximity with these other assets to maintain tempo on the battlefield. This requires fire supporters who are experienced and confident in their ability to perform this highly technical integration under simulated combat conditions. If the 2010 FSRG, *Expeditionary Force 21*, and *FRAGO 001/2016*, focus on the future operating environment's contingency operation "sweet spot," then the TTECG *Battalion Fires Handbook* is the reminder that the Marine Corps must always maintain its ability to dominate during major combat operations.

THE SHORTFALL

Even a cursory comparison between the artillery community's underlying assumptions and the needs of the GCE/MAGTF reveals a large gap. The Marine artillery community's shortfalls generally fall into two categories: poor responsiveness and a failure to fully embrace the complex demands of the future operating environment. Whether the battlefield of the future includes major combat operations, contingency operations, or long-term stability operations, the GCE/MAGTF must fully drive the tempo of operations and leverage the capabilities of the information age to enable the commander's concept of operations.

RECOMMENDATIONS

With a clear understanding of the organizational culture of the artillery community, the needs of the GCE/MAGTF, and the gap between the two, this paper will next propose recommendations for the future. These recommendations should not be interpreted as an indictment of the abilities or judgment of today's artillery commanders or units. The artillery community is comprised of thousands of personnel trained to execute complicated procedures in a specific way under the most demanding, austere conditions. Some changes will sustain the organizational inertia of the community while others will be very disruptive to the fabric of the community. Some changes are possible with the stroke of a pen, while others will require advances in current hardware and software. Some will be transparent to the members of the community while others will change what it means to be an artilleryman. Humans resist change, especially when the current system may not seem to be broken. However, the proverbial frog in the pot of water on the stove does not think there is anything wrong with the situation even when the water starts to bubble; the results of the 2010 FSRG were the bubbles in the water for the Marine artillery community. Unless the community embraces true innovation, it will ultimately share the fate of the frog.

Continue the Evolution

The Marine artillery community has done an excellent job overseeing a continuous evolution of its major systems, including the artillery pieces, radar, personal target acquisition capabilities, digital fire direction hardware/software, munitions, prime movers, and meteorological data collection. This sustained effort over the decades has brought great precision and accuracy for

⁶¹ *Battalion Fires Handbook*, 4, 8, 70.

an area fire weapon system. The returned focus to artillery battalion and regiment operations since OIF/OEF has reset the artillery community and put it in a better position to deploy and mass fires in major combat operations following years of in lieu of missions. Without proficiency in this area, the artillery community would struggle to provide its unique 24-hour, all-weather, massed lethal fires that the entire MAGTF relies upon. By necessity, artillery has consciously made major combat operations its sweet spot and accepted risk elsewhere in the ROMO. The changes to the artillery battalion T/O to add key structure to the cannon battery to enable platoon operations on a widely dispersed battlefield were important to sustaining operations in the future operating environment. The changes to commit greater structure to fire support billets indicated that the community recognizes its importance, even if commanders do not or cannot fully staff them. However, this evolution has stalled in the area of timeliness, and the evolution only does so much after the artillery pieces return to continental United States (CONUS) following the highly lethal phase of the next major overseas campaign.

Fully Leverage Digital Fire Direction Capabilities

Since the artillery community has improved its accuracy and precision in the three physical dimensions, it can now leverage the capabilities of AFATDS to drastically improve effectiveness in the temporal dimension. AFATDS performs technical fire direction with greater speed and accuracy than a manual FDC or today's digital FDC with numerous human interventions. With full access to the JMEM and all planning guidance, an autonomous AFATDS can perform tactical fire direction with greater speed and effectiveness than a human FDO. The artillery community commits immense human capital to micromanage the AFATDS's performance of these linear processes, at the peril of the supported GCE/MAGTF. The minutes expended on each mission by inserting human participation, utilizing hierarchical industrial age procedures to mass fires, and applying redundant checks at all levels add up to discourage artillery/aviation/maneuver integration, reduce tempo, and impose unnecessary friction into what is already a wicked problem playing out on the battlefield. Mission processing time accumulates in the centralized and decentralized modes that the Marine artillery community currently employs.⁶² Of note, the currently prescribed method for centralized mission processing contains a logical fallacy. It assumes that the FSCC can approve a mission before sending it to the battalion FDC. However, to clear airspace, the FSCC requires the message to observer (MTO), which the FDC produces while processing the mission. The MTO designates the fire for effect unit and the adjusting unit; each firing unit would present a different gun target line (GTL) with a different trajectory with a different maximum ordinate.⁶³ Depending on which unit(s) the FDC employs to support the mission, the resulting GTL may or not be safe for friendly aircraft. Therefore, the centralized artillery mission depicts the compromise; the FSCC relays the unapproved mission to the FDC. The FDC processes the mission and issues the fire order as a "do not load" (DNL) mission and sends the MTO to the FSCC for approval. Once the FSCC approves the mission, which may require time-consuming modifications, the FDC can issue the order to cancel the DNL special instruction and fire the mission. This process adds unnecessary steps, time, and confusion to an already complicated process. The FDC could better focus on ruthlessly maintaining the requirements for accurate predicted fire, coordinating with the battalion FDC or FSCC, and anticipating the next ammunition resupply based on consumption rates. A full commitment to AFATDS would require some software updates to accommodate special mission types and the ability to

⁶² *Campaign Plan*, 3-18; and *Artillery Training and Readiness Manual*, 8-3, 19-12.

⁶³ *Tactics, Techniques, and Procedures for the Field Artillery Manual Cannon Gunnery*, MCWP 3-1.6.4 (Washington, DC: Headquarters Marine Corps, 1996), 5-15.

automatically account for intervening crests. Also, the FSCC role in AFATDS would require the ability to view technical data like gun target line (azimuth), max ordinate, and charge to enable rapid approval. However, the ultimate results would be more simplified roles within the FDC and more timely, accurate fires for the GCE.

After the artillery community fully embraces automation to maximize speed and accuracy, it would logically rebalance its organization to weight its human capital in its fire support role. With battery, battalion, and regimental FDOs setting the conditions for precision by chasing the mil while AFATDS conducts fire direction, the fire supporters would serve a more critical role in the process. To use the “eyes/brain/muscle” metaphor common in the artillery community (the eyes are the fire supporters, the brain is the FDC, and the muscle is the gunline), this innovation would consolidate the eyes of the community with the brain at the FSCC, where they have the optimum vantage point to perform the observe, orient, and decide steps of Boyd’s OODA (observe-orient-decide-act) loop.⁶⁴ This innovation would change what it means to be an artilleryman. To use another metaphor likening an artillery unit to a handgun, artillerymen assigned to firing units would go from being the metaphorical “finger on the trigger” to simply being “cogs in the gun;” and the fire supporters would go from people who “call for fire” to becoming the “finger on the trigger.” The proposed artillery mission process shows how this new flat method for mission processing would work in practice. The shift of power within the community would be drastic. After a long, steady evolution of capabilities chasing the mil across the five requirements for accurate predicted fire, consolidating the steps required to transform a decision into action would provide more timely and accurate fires in support of the GCE/MAGTF.

As a result, the artillery community must revisit its approach to fire support manning to weight those positions with personnel capable of the increased responsibility. First, the regimental AFSC must achieve equal footing with the artillery battalion OpsO and XO. The regimental AFSC must gain key billet standing for promotion and command consideration. This would not stand out as unusual across the Service; many MOSs’ key billets are primary staff positions other than OpsO.⁶⁵ This could be formalized via promotion board precepts (just as transition team positions were specified for consideration during OIF/OEF) until the community fully embraces it.⁶⁶ This elevated standing of the AFSC billet would also encourage commanders to staff it with stronger performers and slow the rotation of officers through the position. Longer tenure in these billets, along with their more prominent role in the community, would logically result in field exercises with a greater emphasis on true fire support integration training.

This proposed innovation raises many questions from artillerymen. The two most prominent concerns are ammunition management and the perception that the artillery community would surrender control of their unit to the supported unit. When maneuver units plan operations, their FSC (with the help of the subject matter experts in the FSCC) drafts the fire support plan. Within this plan, he specifies the essential fire support tasks (EFSTs). In these, he includes an allocation of resources such as aircraft sorties, naval gunfire rounds, and artillery rounds to achieve each task.⁶⁷ When the supporting artillery unit plans, the OpsO filters out the other supporting arms in the EFSTs and creates essential field artillery tasks that guide the artillery unit’s concept of operations.⁶⁸ Essentially, fire supporters already drive ammunition management at the macro level through their fire support plan. This innovation would not change that. As

⁶⁴ Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (New York: Hachette, 2002), 344.

⁶⁵ Carey interview; and Culbertson interview.

⁶⁶ *MARADMIN 327/15, Convening of the FY 2017 U.S. Marine Corps Colonel, Lieutenant Colonel, Major, and Captain Promotion Selection Board* (Washington, DC: Headquarters Marine Corps, 19 August 2015), encl (1), 4.

⁶⁷ *Campaign Plan, 3-7-3-9, D-1-D-3.*

⁶⁸ *Campaign Plan, 10-1-10-2.*

artillerymen in the FSCCs manage the consumption of ammunition during execution, artillerymen in the battery positions would still coordinate and execute internal resupply operations to ensure uninterrupted support. This leads to the next argument of ceding control of the artillery unit to the supported maneuver commander. Since the artillery battalion commander is the FSC for the supported maneuver regiment, they (or a representative) are ultimately responsible for the drafting EFSTs and therefore, how the battalion is employed.⁶⁹ In this regard, they actually gain more direct control of their unit as a result of the proposed change. Sometimes, the artillery battalion commander does not take a hands-on approach to FSC duties, delegating most of the responsibility to the regimental AFSC. The proposed change would demand greater involvement. This relationship between the artillery battalion and the supported maneuver regiment is mirrored with the artillery regimental commander and the Marine division. In the end, the transition to rebalance the artillery community may be challenging, but it would not relinquish the responsibility of ammunition management or the control of the artillery unit to the supported maneuver commander.

Integrate Developing Systems to Enable Rapid Integration

The full automation of technical and tactical fire direction may not result in more responsive artillery support if FSCCs cannot speed up clearance procedures for integrating fires. Today, an artillery fire mission creates a gun target line (GTL) from the firing unit to the target that the FSC must deconflict from ground forces and manned/unmanned fixed-wing/rotary-wing assets. The FSC can approve a mission where the aircraft flies above/below the projectile's trajectory (vertical deconfliction), does not cross the GTL at all (lateral deconfliction), or does not cross the GLT when there will be not projectile travelling along that line (deconfliction by time).⁷⁰ These methods of deconfliction are not difficult for an experienced FSCC, but the positive control requirement can significantly hinder responsiveness. In practice, an AirO tracks aircraft locations within the unit area of operations (AO) using push pins on a map, moving them based on the instructions he or an air controller gave the pilot. This becomes problematic when helicopters or UASs slowly transit from one control measure to the next as a dynamic target appears. The AirO may direct the aircraft to change direction or altitude to avoid a potential collision with a mortar or artillery projectile, or he may oversee the aircraft's attack of the target. Either way, it can be time consuming to study the round's trajectory (possibly for multiple firing agencies), study the aircraft's flight path (possibly for multiple aircraft), determine a safe flight path, provide instructions, and confirm compliance before the FSC can approve the artillery mission. All of this effort is to prevent an aircraft from winning the statistical lottery by passing through a parabolic soda straw of airspace (from the firing unit to the target) at the exact instant that a round travels along its trajectory. The new ground/air-task oriented radar (G/ATOR) system under development will have the capability to acquire and track aircraft within the GCE/MAGTF AO.⁷¹ If this tracking data could be displayed in real time on a common tactical picture, along with a three-dimensional rendition of the artillery soda straw-shaped danger zone produced in AFATDS to replace today's crude GTL, then the integration process could take place quickly and intuitively. There is more than a multimillion-dollar aircraft and pilot at risk in these situations; a call for indirect fire often means that there are Marines on the ground facing

⁶⁹ *Campaign Plan*, 1-4.

⁷⁰ *Campaign Plan*, 5-16–5-19; and *Battalion Fires Handbook*, 106–17.

⁷¹ John Karlovich and Abraxas Patton, "Ground/Air Task Oriented Radar (G/ATOR AN/TPS-80): MAGTF Fires OAG Program Overview and Status" (presentation, Headquarters Marine Corps, Washington, DC, December 2015).

an imminent threat. Unlike the recommendation pertaining to flattening the mission processing procedures, this recommendation would demand continued hardware development in addition to system software integration to increase the responsiveness of fire support.

Formalize Information Operations as a Secondary Mission of Marine Artillery

Finally, the artillery community must fully embrace nonlethal fires and effects. When the artillery pieces return to CONUS after the decisive lethal portion of the next campaign, artillerymen can wait to see which in lieu of missions the GCE/MAGTF assigns, or it can stand ready to retask its battalions to perform roles that are complementary to its primary mission and its espoused values. The artillery community is culturally well-equipped to execute missions in IO and information-related communities. This ability to execute this secondary mission would have an individual and a unit component.

The Marine Corps could formalize this by designating the secondary mission in an ALMAR, similar to when it designated civil-military operations (CMO) as artillery's secondary mission in 2005.⁷² Instead of maintaining a standing capability within the battalions and regiment, a portion of T/O billets across the Marine Corps for IO Marines (0510/0550/0551), MISO Marines (0520/0521), cyberteam leaders (8006 billets), and civil affairs Marines (0530/0531) would be coded for Marines with a primary MOSs of 0802/08XX. For example, in figure 4, the highlighted PMOS field would replace "0000" with an 08XX MOS. Artillerymen would serve in these units as B billets and return to the operating forces. Over time, artillery units would establish a base of experience at all levels of staff noncommissioned officer and officer leadership, capable of enabling a smooth transition of the unit to the secondary mission. When a Marine expeditionary force mobilizes for major combat operations with its organic artillery regiment, an uncommitted battalion outside that regiment receives training and MOS certification from trainers from the appropriate agency. That newly trained information battalion would store its howitzers and fully commit to its new mission for approximately one year until another battalion would take its place. The 2d Battalion, 11th Marines, demonstrated how this would work in 2008 when it deployed as provisional civil affairs in support of OIF.⁷³ As this experience permeates the community over time, this marriage between artillery and IO would yield an organization that provides better lethal and nonlethal fire support and effects to the GCE/MAGTF. It would also offer the Marine Corps a pipeline to man these IO-related billets and the ability to maintain a robust IO capability without committing large standing units that would likely be underutilized outside stability operations. There is a possibility that, without this merging of artillery and IO, the 2025 Force Structure Board could recommend to commit structure to standing information battalions in each MHG (per the MCIOC commander's recommendation) by further cutting artillery.⁷⁴

Many artillerymen may wonder if artillery units could support such a specialized mission or if this marriage between communities could lead to the transition of artillery battalions into information battalions. To address the ability of an artillery unit to fill these roles, it is important to consider that most of the current units with these capabilities are composed of Marines with secondary billet MOSs. With the exception of certain enlisted MOSs and officer MOSs that require a graduate degree, most of these billets can be staffed by artillerymen with several weeks of MOS training. The more highly specialized positions could reside in small detachments in the MHG; the merging of the capabilities at the MHG with the experienced IO Marines and

⁷² *ALMAR 061/05*.

⁷³ "2d Battalion, 11th Marines History," 1stMarDiv.Marines.mil, accessed 22 January 2016.

⁷⁴ Col Drew Cukor, "Marine Corps Information Operations" (lecture, Marine Corps Command and Staff College, Quantico, VA, 4 March 2016).

the newly trained personnel in the artillery battalion would complete the transformation of an artillery battalion into an information battalion. After all, the standing IO units have a similar composition of career IO specialists, experienced IO practitioners, and novices. As far as the possibility of the wholesale replacement of artillery battalion structure with information battalions, this is unlikely because of the relative importance of artillery and IO during different phases of a conventional campaign.⁷⁵ Up until the culmination of phase III (dominate) operations, artillery is the critical capability that the GCE/MAGTF must mass on the battlefield; meanwhile, IO capabilities can be consolidated at a higher echelon. During phases IV and V (stabilize and enable civil authority) operations, artillery can be employed sparingly and still achieve the desired effect. At this portion of the campaign, IO capabilities must be dispersed widely to the lowest possible level across the battlefield. These different missions will not be in direct conflict with each other within a campaign. These two reservations of most artillerymen are understandable, but after closer investigation, they do not stand up to scrutiny.

In the end, this secondary mission commits artillery to a critical task that corresponds to the mindset and the espoused values of the Marine artillery community. Furthermore, it guarantees the artillery community a critical role across all phases of the next campaign. For the Marine Corps as a whole, it ensures the longevity of two indispensable capabilities for the manpower price of one.

CONCLUSIONS

The Marine artillery community has evolved over the last century to play a critical role in how the service executes combined arms maneuver warfare. Phase III operations of OIF I demonstrated the culmination of that evolution. However, since that high point, the artillery community struggled to remain relevant, often leaving their artillery pieces in CONUS to serve as provisional security forces, military police, and civil affairs. In spite of the fielding of GPS-guided artillery munitions, dispersing smaller firing units across greater geographic areas, and executing a range of necessary in lieu of missions, the Marine Corps chose to deeply cut artillery during the 2010 FSRG.

A careful investigation of the organizational culture of the artillery community shows the artifacts, espoused values, and underlying assumptions that made it successful during its long evolution through OIF I. However, some of its underlying assumptions are at odds with the developing needs of the GCE, the MAGTF, and the Marine Corps as a whole. To meet the overall needs of the Service in the future operating environment, the Marine artillery community must be willing to innovate to provide more responsive fire support as well as institutionalizing the ability to contribute to the MAGTF's success on the information age battlefield.

First, the community must take the necessary steps to flatten the artillery mission processing procedures and make the mission approval process faster and more intuitive. Cultural norms currently hold the artillery community back from taking the necessary steps to slash minutes of response time from each mission. These steps include hardware and software developments as well as a reorganization that would change what it means to be an artilleryman.

Finally, the Marine artillery community must formalize and fully embrace a secondary IO mission. This would provide artillerymen with a meaningful role that coincides with the community's training and espoused values. This relationship between the two communities would provide structure and security to two capabilities that can each seem less than critical during certain phases of a campaign.

⁷⁵ *Joint Operations*, V-6.

In closing, this assessment and its recommended solutions recognize the immense progress and contributions of the artillery community as well as the potential of artillerymen to play a decisive role in the future operating environment. Although the changes detailed in this paper would require the community to reconsider some aspects of its cultural identity, they are absolutely necessary to better support the GCE/MAGTF and guarantee the relevance of the community into the future.

Beyond Carriers

Tomorrow's Seapower Today: Expanding Presence, Increasing Capability, More Fully Integrating the Joint Naval Force, and Modernizing the Fleet Portfolio

by Lieutenant Colonel Mark Thieme, USMC¹

The United States projects naval power in a manner that can no longer keep pace with expanding national security interests and combatant command requirements. Conflict trends and best available estimates of the future operating environment indicate an increasing requirement for forward deployed naval forces. This growing need is taking place against a backdrop of budgetary constraints that threaten to reduce rather than increase the number of capital ships, readiness programs, and available maritime force packages.² The U.S. Navy's fleet portfolio must be restructured to meet increased demand at a time of decreasing resources. Only a thorough reorganization could provide new capabilities, support expanded forward presence, and enhance interoperability between the nation's naval, Joint, and special operations forces. Taking a leading role in this reorganization would be the modern equivalent of World War II's escort carriers. The adoption of such smaller, but still decidedly deadly and effective carriers, would provide the nation a wider array of capabilities and methods for sea power projection with broad cross-Service implications. Fortunately those ships already exist.

THE CURRENT ENVIRONMENT AND THE NEED FOR A NEW APPROACH

The nation's strategic documents, in consonance with leading scholars such as David Kilcullen and Robert D. Kaplan, describe a future security environment where combinations of state, nonstate, environmental, humanitarian and cyber threats span the globe.³ World geographies are replete with unresolved social, political, and economic tensions. When these pressure zones erupt, the emerging conflicts escalate rapidly, are increasingly violent, assume less predictable forms, and reflect a convergence between state and nonstate adversaries deploying advanced capabilities, especially regarding antiaccess/area-denial (A2AD), autonomous platform, cyber,

¹ LtCol Thieme is a graduate of the MCU's Marine Corps War College. This paper won the LtGen P. K. Van Riper Writing Award for academic year 2015–16.

² The term *capital ship*, as expressed here, refers to aircraft carriers and amphibious ships capable of launching and recovering strike aircraft.

³ *National Security Strategy, 2015* (Washington, DC: White House, 2015); *The National Military Strategy of the United States of America, 2015* (Washington, DC: Joint Chiefs of Staff, 2015); *Quadrennial Defense Review, 2014* (Washington, DC: Department of Defense, 2014); David Kilcullen, *Out of the Mountains: The Coming Age of the Urban Guerrilla* (Oxford, UK: Oxford University Press, 2013); and Robert D. Kaplan, *The Revenge of Geography: What the Map Tells Us about Coming Conflicts and the Battle against Fate* (New York: Random House, 2012).

Table 1. United Nations peace operations and conflict trends

Level of violence	Description of levels	UNMIBH	UNMIK	UNTAET	MONUC	UNAMSIL	UNMISSET	UNMIL
10	No cease-fire; major armed violence in some or all of AOR							
8	Partial cease-fire between some in AOR							
7	All armed parties sign accord; one or more sign in bad faith					X		
6	Significant, hostile armed groups not parties to peace accord				X			
5	All parties sign in good faith; violent factions break away				X			
4	General cease-fire; no peace accord							
3	Other states/entities use ex-fighters for criminal purposes				X		X	X
2	All armed parties sign accord; one or more obstruct mission	X	X					
1	All armed parties sign in good faith; minimal spoiler activity			X				X
		1996			1999		2003	

Note: UNMIBH=United Nations Mission in Bosnia Herzegovina; UNMIK=United Nations Mission in Kosovo; UNTAET=United Nations Transitional Administration in East Timor; MONUC=based on the French for United Nations Organization Stabilization Mission in the Democratic Republic of the Congo; UNAMSIL=United Nations Mission in Sierra Leone; UNMISSET=United Nations Mission of Support in East Timor; United Nations Mission in Liberia; UNOCI= United Nations Operation in Côte d'Ivoire; ONUB=United Nations Operation in Burundi; MINUSTAH=based on the French for United Nations Stabilization Mission in Haiti; UNMIS=United Nations Mission in Sudan; UNMIT=United Nations Integrated Mission in Timor-Leste; UNAMID=United Nations Mission in Darfur; MINURCAT=based on French for United Nations Mission in Central African Republic and Chad; UNMISS=United Nations Mission in the Republic of South Sudan; MINUSMA=United Nations Multidimensional Integrated Stabilization Mission in Mali; and MINUSCA=based on the French for United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic.

Source: Dr. William Durch, "UN Politics and International Peace Operations," 2015, adapted by author.

and other military-grade technologies.⁴ The conflict trend line for the past 20 years reflects increasing violence, while even the majority of "peace" operations conducted in the past decade involved high intensity conflict (table 1). The United States will confront a diverse set of trans-regional actors capable of acting in multiple domains and presenting challenges that rapidly intensify to crisis levels. The greatest threats likely will develop within vast, densely populated and highly interconnected urban expanses along the littorals, which are set to see concentrated growth in coming decades.⁵

THE PROBLEM

The *Unified Command Plan (UCP)* confirms these challenges and lists more than two dozen countries spanning the full range of military operations as potential threats on the horizon. As the UCP outlines, most geographic combatant commanders are already clamoring for greater per-

⁴ *National Security Strategy, 2015; The National Military Strategy of the United States of America, 2015; Quadrennial Defense Review, 2014; Kilcullen, Out of the Mountains; Kaplan, The Revenge of Geography; and Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Washington, DC: Air-Sea Battle Office, Department of Defense, 2013).

⁵ David Kilcullen, "The City as a System: Future Conflict and Urban Resilience," *Fletcher Forum on World Affairs* 36, no. 2 (2012); and Gen Joseph F. Dunford Jr., "From the Chairman: Our Force and Our Fight," *Joint Forces Quarterly* 80 (2016): 2-3.

UNOCI	ONUB	MINUSTAH	UNMIS	UNMIT	UNAMID	MINURCAT	UNMISS	MINUSMA	UNMISS II	MINUSCA
						X				X
					X	X		X	X	
X							X			
	X		X		X			X		
			X							
		X		X						
				X		X		X		
			X		X		X			
2004			2006-7			2012				2014

sistent presence of naval forces, including four carrier strike groups (CSG) and amphibious ready groups with Marine expeditionary units (ARG/MEU) embarked.⁶ Although the current naval fleet includes 20 capital ships, normal training and maintenance cycles make it impossible to sustain the deployment of more than two or three CSGs and two ARG/MEUs at any given time. Moreover, these deployments are concentrated in the Pacific and Central commands.⁷ However, some crises during the past decade have required as many as five simultaneously deployed carriers.⁸ The joint force, and the Navy in particular, has responded to this increased demand by increasing deployment lengths while decreasing training and maintenance cycles. Consequently there has been an unsustainable reduction in overall force readiness, as evidenced by the recent short-term absence of a carrier in the Middle East. The fleet has become worn down and can no longer sustain current requirements with the existing inventory of commissioned capital ships.⁹ Fixing this capabilities-versus-requirements shortfall requires a reexamination of how naval strike groups are organized, manned, trained, and employed.

These limitations should not surprise anyone who has been paying attention to the erosion of naval capacity in recent years. In fact, the current problems were well documented in a 2010 CNA study examining the current “two-hub” strategy.¹⁰ The report concluded that the current two-hub strategy is only supportable through decreased engagement abroad. This reduced capacity leaves joint force commanders with fewer options for dealing with regional problems ranging from high-intensity combat to humanitarian assistance. As illustrated in figure 10, persistent naval presence is concentrated within the Middle East and Southeast Asia. However, this

⁶ Andrew Feickert, *The Unified Command Plan and Combatant Commands: Background and Issues for Congress* (Washington, DC: Congressional Research Service, 2013); and Daniel Whiteneck et al., *The Navy at a Tipping Point: Maritime Dominance at Stake?* (Alexandria, VA: Center for Naval Analyses, 2010).

⁷ Whiteneck et al., *The Navy at a Tipping Point*; John Pike, “Where Were the Carriers?,” *GlobalSecurity.org*, 2011; and Takafumi Hiroe, “Aircraft Carrier Locations,” *GoNavy.jp*, 23 March 2016.

⁸ Pike, “Where Were the Carriers?”

⁹ Richard Sisk, “US Navy Down to Five Aircraft Carriers at Sea, None in the Mideast,” *Military.com*, 4 November 2015.

¹⁰ Whiteneck et al., *The Navy at a Tipping Point*.

force posture underserves the African and European theaters, where national security interests are at stake. Additionally, naval force composition is structured and deployed to address the distant ends of the conflict spectrum, leaving a capability gap in the middle where the proponderance of conflict increasingly resides (figure 11). In short, the current tempo and structure of deployed naval forces cannot support existing or anticipated global demands. Moreover, the most recent shipbuilding plans offer no relief.

THE SOLUTION

The 2015 Navy shipbuilding plan does not increase existing authorizations for aircraft carriers and amphibious ships.¹¹ By limiting the Navy to maintaining status quo for capital ships, the nation's long-term capacity to maintain persistent presence and maritime dominance throughout the global commons is at risk. The answer to a capacity problem is equally simple—increase capacity. The United States requires a larger, more flexible fleet capable of maintaining greater persistent presence in more theaters to meet ever-increasing requirements for flexible naval forces. Reprising a role similar to the escort carriers, but modernized to include embarked squadrons of strike aircraft as well as conventional and special operations maritime forces, presents an opportunity to resolve the problem of how to enlarge the fleet, expand forward presence to three hubs, increase engagement, and simultaneously contain costs.

Escort carriers factored prominently across the spectrum of conflict throughout World War II, serving with distinction in both the Atlantic and Pacific theaters and accounting for approximately 80 percent of all carriers built during the war period. These medium-size carriers only carried one-quarter to one-third as many aircraft as their heavy fleet carrier counterparts. However, they also cost much less and could be built significantly faster.¹² Moreover, when sailing in groups of two or more, these medium carriers acquitted themselves favorably in numerous battles while undertaking a broad range of combat missions. During this historic period, the heavy carriers were surged during contests of crucial strategic significance, while the escort carriers were allocated against the majority of mid- and low-intensity combat roles. No such capability exists today, yet the requirements are obvious.

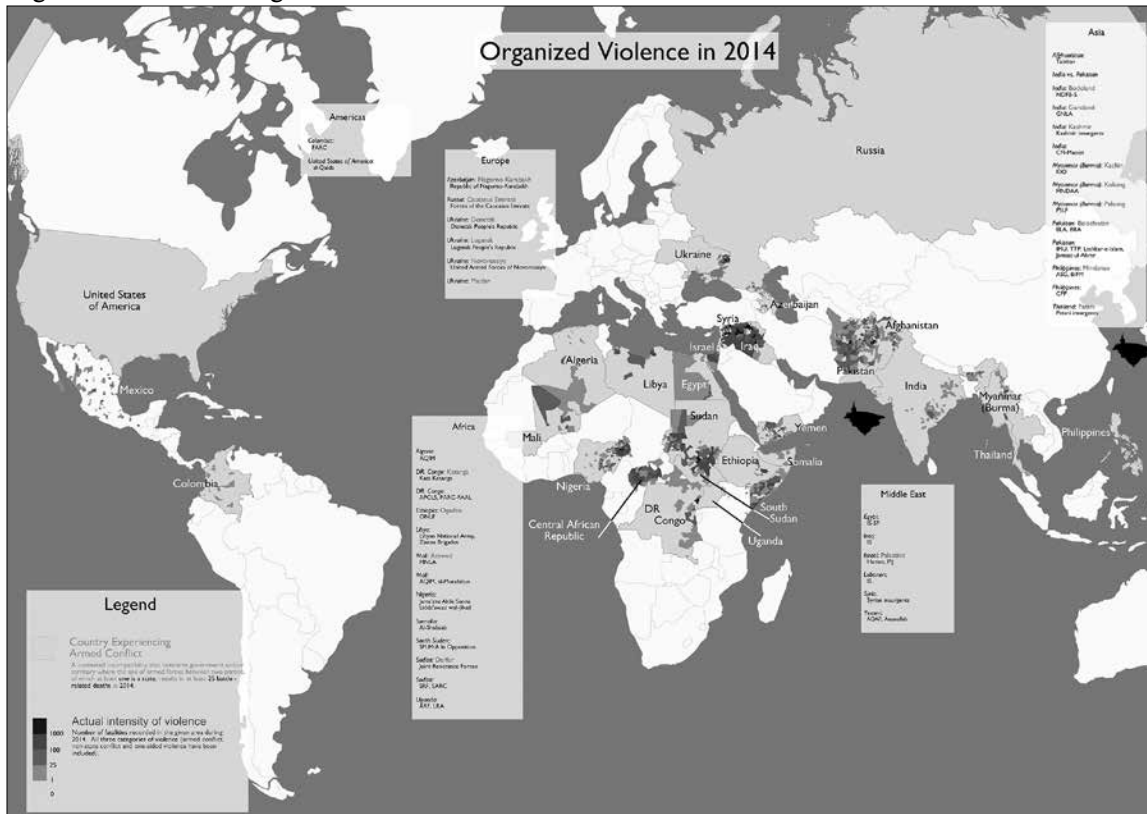
The new *America*-class Landing Helicopter Assault (LHA) capital ships present a significant opportunity to reconstitute light carrier strike groups. They solve many of the capacity, capability, and budgetary shortfalls. These latest amphibious assault flagships were designed to support ARG/MEU missions and to serve as the centerpiece of expeditionary strike group/Marine expeditionary brigade (ESG/MEB) operations. Each ship can support as many as 1,600 embarked warfighters, as well as a flexible array of fixed- and rotary-wing aviation with approximately 20 Lockheed Martin F-35B Lightning II strike aircraft.¹³ Ironically, when the *America*-class LHAs were procured, they were seen as a potential solution to the wrong problem; they were evaluated extensively against the ARG/MEU mission sets and fell substantially short due to their design emphasis on supporting strike aircraft at the expense of landing craft. Instead, these ships should have been considered as a solution to carrier limitations, where they offer an alternative

¹¹ Ronald O'Rourke, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress* (Washington, DC: Congressional Research Service, 2016).

¹² Al Adcock, *Escort Carriers in Action*, Warship no. 9 (Carrollton, TX: Squadron/Signal Publications, 1996); William T. Y'Blood, *The Little Giants: U.S. Escort Carriers against Japan* (Annapolis: Naval Institute Press, 1987); and Norman Friedman, *U.S. Aircraft Carriers: An Illustrated Design History* (Annapolis: Naval Institute Press, 1983).

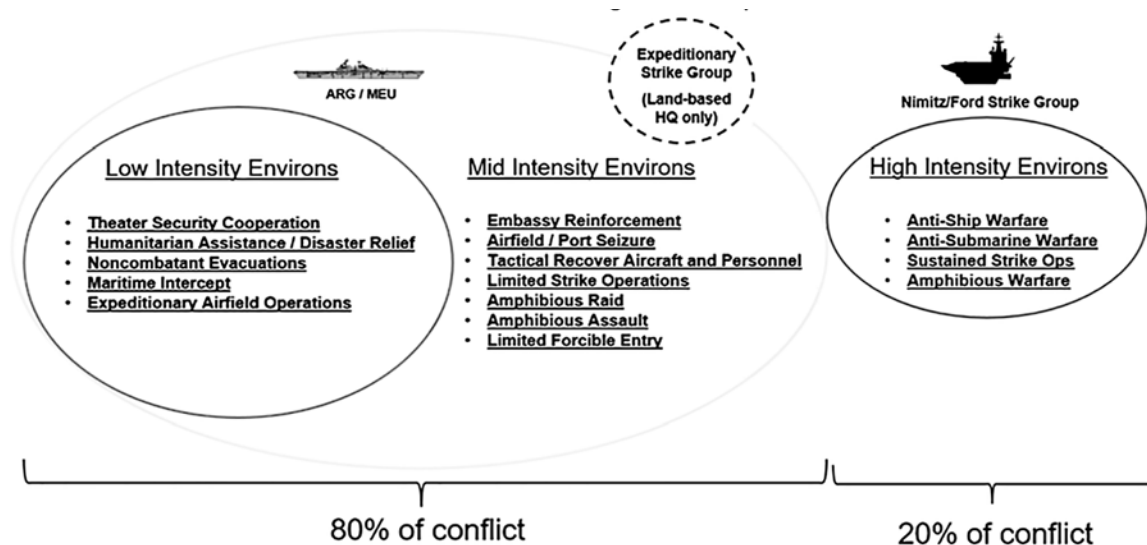
¹³ *Assessments of Selected Weapons Programs*, GAO-17-333SP (Washington, DC: Government Accountability Office, March 2015); Navy Programs, "LHA 6 (formerly LHA[R]) New Amphibious Assault Ship," GlobalSecurity.org, 2006; and Sydney J. Freedberg Jr., "Huntington Ingalls Agrees to Fixed-Price Deal for Next LHA Amphib," BreakingDefense.com, 31 May 2012.

Figure 10. Demand signals versus resources available



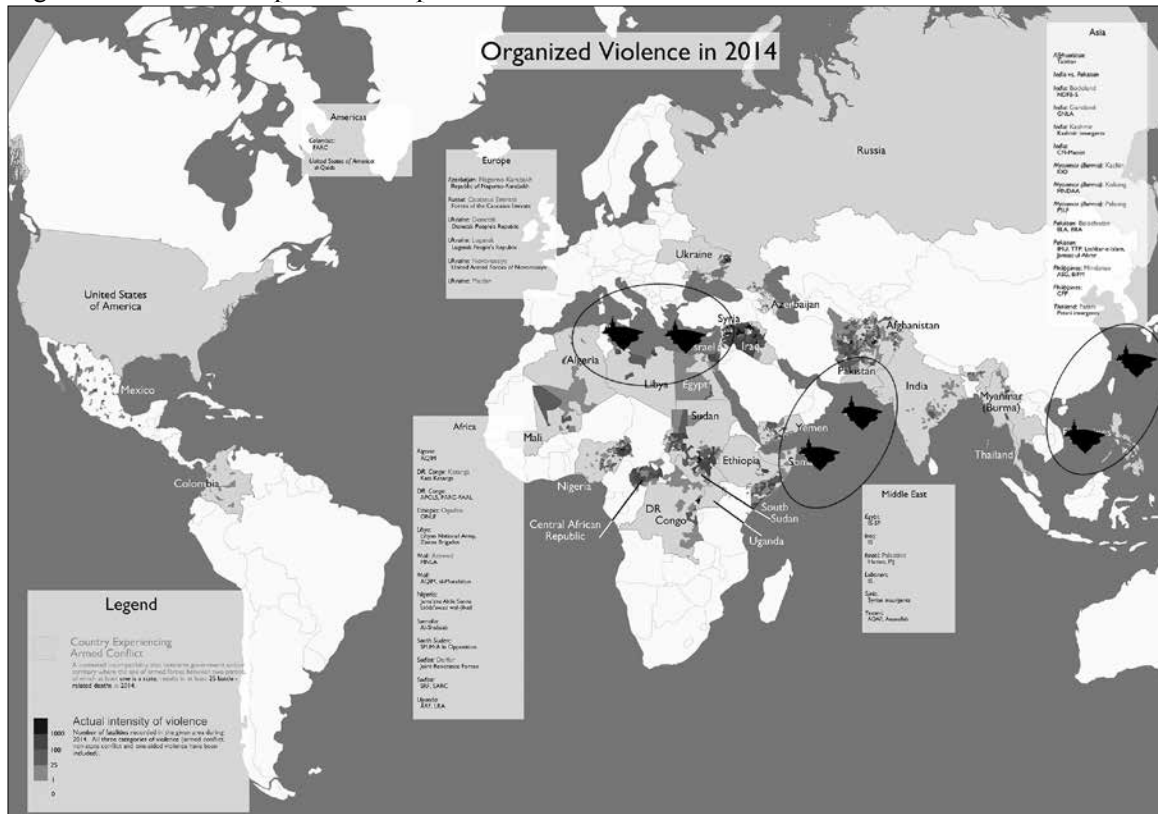
Source: Therése Pettersson and Peter Wallensteen, “Armed Conflicts, 1946–2014,” *Journal of Peace Research* 52, no. 4, (2015), adapted by author.

Figure 11. Current maritime force packages and spectrum of conflict



Source: Adapted by MCUP

Figure 12. Three hub persistence presence



Source: Pettersson and Wallensteen, “Armed Conflicts, 1946–2014,” adapted by author

to carriers as a means of naval power projection. The pairing of two *America*-class LHAs as part of a light carrier strike group (or *America* strike group), with maximum complements of Navy F-35 aircraft (approximately 40 fighters), is numerically similar to a CSG (40–45 fighters) but with the advantage of distributing that capability across two platforms. However, unlike CSGs, *America* strike groups also provide a new capability with the potential to launch and sustain up to a brigade-size element of landing forces and to do so while distributed within or even disaggregated across regions. Additionally, joint force maritime packages centered on an *America* strike group could readily host Marine Corps Special Purpose MAGTFs, special operations units, or Army light infantry capability sets up to battalion strength. *America* strike groups also present greater interoperability with ARG/MEUs than any current carriers because of their common flight decks and aviation detachments.

If the shipbuilding portfolio were rebalanced to consist of more *America*-class light carriers and fewer *Nimitz*-class and *Ford*-class supercarriers, the corresponding increase in naval capacity will enable reestablishment of a persistent ARG/MEU or carrier presence in the Mediterranean. Such an increase in power projection and persistent presence across “three hubs” offers joint force commanders substantial new capability sets, with large implications from both joint force and allied perspectives (figure 12). *America* strike groups also give geographic combatant commanders additional flexibility for shifting weight within and between theaters. Disaggregating carrier strike groups would be a new capability. These strike groups could distribute combat power rapidly, projecting power concurrently in the East and South China seas, for example, or

conducting maritime interdiction near the Straights of Hormuz while simultaneously conducting expeditionary operations in the Gulf of Aden. Within the Mediterranean, the strike group could simultaneously support sustained strike operations in the Levant (countries bordering the eastern Mediterranean Sea, extending from Greece to Egypt) and Sahel (southern fringe of the Sahara desert region that stretches from Mauritania to Chad). Naval aviation and assault support aircraft could shift across sea and shored-based expeditionary sites with relative ease in a manner that is currently impractical.

Benefits to maritime force postures and global presence extends beyond the Navy-Marine Corps team. Future America strike groups could host and deploy special operations units in a manner currently beyond reach. Elite Army light infantry regiments and other fly-away units could be supported afloat, increasing opportunities for theater security cooperation, presence for purpose, or shows of force. Each hub could contain as many as three omnipresent maritime strike platforms suitable for short-duration Afloat Forward Staging Bases (AFSB). Strike group lethality also increases due to its new ability to deploy conventional, unconventional, joint, or allied landing forces. Increasing these naval platform's presence abroad also increases opportunities for enhanced allied interoperability, especially among nations that have purchased or are considering adopting the F-35, or possess growing amphibious capabilities, such as England, France, Australia, or even India.

Outside of peak, high-intensity combat operations, most strike and interdiction requirements experienced in Afghanistan, Iraq, Libya, and Syria indicate daily average sortie requirements well below a *Ford*-class carrier's capabilities, but well within that of an America strike group.¹⁴ Moreover, the future operating environment reflects a battlespace across numerous countries that are never likely to require sortie generation rates that will approach the capability of a single carrier platform.¹⁵ New aircraft carriers, although state of the art, do not give joint force commanders any innovative options or additive capabilities; in fact, they actually narrow decision space by providing too much capability for many problems.¹⁶ Major combat operations involving state actors, to which the carriers are perfectly suited, constitute the minority of combat characterizations.¹⁷ Although current carrier strike groups provide unmatched air combat power critical to success in those most extreme combat environments, they present a degree of excess in the vast majority of lower-intensity environments that U.S. forces already face and will continue to see in the coming decades. Carriers are simply not the optimal platform for conducting irregular warfare. They do not carry landing forces or capabilities appropriate to forcible entry or conflict within densely populated urban environments, neither do they carry aircraft capable of long-range insertion or extraction. This observation does not suggest that carriers cannot support irregular warfare; rather, it takes significantly more than airpower to win these engagements, and airpower is the primary tool that carriers provide joint force commanders.

The majority of omnipresent naval striking power is aligned against the types of high-intensity warfare least likely to occur. Positioned for the low end of the conflict spectrum, ARG/MEUs remain underresourced for many of the higher-probability, medium-intensity irregular warfare challenges. They lack forcible entry capability, sustainable offensive, and close air sup-

¹⁴ Galrahn, "The Monster Myths of the CVL Concept," *U.S. Naval Institute* (blog), 27 August 2009.

¹⁵ Therése Pettersson and Peter Wallensteen, "Armed Conflicts, 1946–2014," *Journal of Peace Research* 52, no. 4 (2015).

¹⁶ Sydney J. Freedberg Jr., "Polmar's Navy: Trade LCS and Carriers for Frigates and Amphibs," *BreakingDefense.com*, 18 December 2015; and Steven Wills, "Four Carrier Crisis, but Yet No Funeral for the Flattop," *Center for International Maritime Security*, 11 January 2016.

¹⁷ Sebastian L. v. Gorka and David Kilcullen, "An Actor-Centric Theory of War: Understanding the Difference between COIN and Counterinsurgency," *Joint Forces Quarterly* 60 (2011): 14–18.

port, as well as defense against surface and subsurface naval threats. However, when coupled with America strike groups, potentially already containing landing forces, the resulting joint naval force provides a persistent presence capable of immediate response and scalability across the *entire* range of military operations and, most important, simultaneously across multiple theaters at any time. Presently, responsiveness on this scale can only be achieved in one theater at a time and requires reassigning assets from other engagements, training, or maintenance priorities.

Finally, the effects upon adversary decision-making must be considered. Disaggregation of flagships, strike aircraft, and joint landing forces combined with greater sea-based supplies reduces A2AD risk profiles.¹⁸ Three America strike groups and separate ARG/MEUs patrolling Pacific, Mediterranean, and Middle Eastern areas of interest presents a very challenging targeting dilemma, especially when surging additional strike platforms. Three groups of maritime strike platforms within each persistent presence hub would substantially complicate any adversary's A2AD targeting problem. Methods for entering and extracting land forces would be extremely difficult for adversaries to predict. Adversaries faced with joint naval forces distributed across thousands of coastal miles will make different decisions. Those actions they do undertake will confront a far more lethal, unpredictable, scalable, and swift array of responses from the joint force than they do today.

MORE CAPACITY, LESS COST

Creating operational dilemmas for potential adversaries, increasing capabilities, expanding presence, and tightening joint force integration are not the only reasons for reconfiguring naval forces. The problem set is amplified due to the increasingly disproportionate share of overall budgeting that carrier modernization programs require with each production generation. The *Nimitz*-class aircraft carriers produced between 1975 and 2009 cost an average \$4.5 billion each. The carrier air wing averaged approximately 90 aircraft and could support a sortie generation rate of 120 per day.¹⁹ The newest *Ford*-class aircraft carriers arriving between 2018 and 2025 are nearly triple the cost at approximately \$13 billion per ship.²⁰ They host approximately 70 aircraft, of which 40–45 are fighters, and have an increased sortie generation rate of 160 per day.²¹ By comparison, the new LHAs cost approximately \$3 billion apiece, support approximately 20 strike aircraft, and generate about 45 sorties per day. Additional savings through aviation conversion also would apply. CVNs support carrier variant of the F-35C, which cost \$114 million apiece, LHAs carry the vertical takeoff variant of the F-35B, which cost \$102 million apiece.²² Converting one strike group's air wing from F-35Cs to F-35Bs could save an additional \$500 million. Thus, an America strike group comprised of two LHA "light carriers" results in a shipbuilding and aviation baseline cost advantage of \$7.5 billion over the newest *Ford*-class supercarrier. It may be determined this conversion is less than the \$7.5 billion suggested here, and it is overly optimistic to think that replacing all remaining *Nimitz*-class carriers with two America LHA ships per strike group would actually save \$60 billion. However, even if average costs result in no budgetary advantage, America strike groups bridge the gaps between capabilities and requirements and provide far greater utility than presented by the current fleet plan. *Ford*-class

¹⁸ Jack Curtis, "How Do We Make Our Carriers Deadlier with What We Already Have?," *War on the Rocks* (blog), 2 November 2015.

¹⁹ "United States Navy Fact File: Aircraft Carriers—CVN," Navy.mil, 2016.

²⁰ Henry Hendrix, *At What Cost a Carrier?* (Washington, DC: Center for a New American Security, 2013).

²¹ Nora Bensahel, Thomas Davis, and David W. Barno, *The Carrier Air Wing of the Future* (Washington, DC: Center for a New American Security, 2014).

²² Lockheed Martin, "How Much Does the F-35 Cost?: Producing, Operating and Supporting a 5th Generation Fighter," F35.com, 2016.

carriers should be saved for when and where they matter most, and purchase levels should be commensurate with those probabilities.

The Navy has identified the need for more ships and demand signals from the geographic combatant commanders to support this fleet readiness objective. While a need clearly exists to retain the *Ford*-class carriers in some quantity, an even greater need exists to develop a strike group capability better suited to the majority of requirements. Rebalancing is complicated, and the optimal ratio of *Nimitz*/*Ford* to *America* capital ships with the myriad implications across the DOTMLPF-P deserves further study.²³ Today, the Navy enters its fourth year with only 10 of 11 authorized carriers. Meanwhile, the first *Ford*-class carrier may not be deployment certified until 2018.²⁴ *America* strike group experimentation, testing, and evaluation can begin now as the first two LHAs—USS *America* (LHA 6) and *Tripoli* (LHA 7)—enter the fleet with new capabilities that best support forward naval presence, future threats, and national security interests.

²³ Doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy (DOTLPP-P) refers to the first step in the functional solutions analysis, which determines or recommends whether a materiel capability can fill a capability gap.

²⁴ Christopher P. Cavas, "Carrier Ford Delayed by Need for More Tests," *Defense News*, 22 September 2015; Takafumi Hiroe, "Aircraft Carrier Locations"; Sam LaGrone, "Ford Carrier Suffers 'Slight Deterioration' in Testing Schedule, Could Delay Sea Trials 2 Months," *USNI News*, 22 September 2015; and Megan Eckstein and Sam LaGrone, "Carrier Ford's Maiden Deployment Could Face 2-Year Delay Due to Shock Trials," *USNI News*, 10 September 2015.

Artificial Intelligence

Perspectives on Risks and Rewards for “AI” Technology Adoption

by Major Scott A. Humr, USMC¹

THE FUTURE

The year 2030 was quite a year.² It was the year the number of autonomous cars surpassed traditional human vehicle operators. In fact, many traditional tasks are now offloaded to technologies that use Artificial Intelligence (AI). AI technologies continue to make progress in areas that have traditionally been the purview of humans. From controlling vehicles, diagnosing diseases and prescribing treatments, to providing human knowledge enhancement, AI was hailed as a savior by many in first world countries with the resources to invest in building a reliable infrastructure to support the data requirements of AI and its ubiquitous access to almost every area of their lives. Indeed, AI has improved the lives of many people in the world, or at least in the areas that enjoy relative prosperity and peace.

Areas of the world that never seemed to adopt these technologies or make as much progress as the United States highlights the stark contrasts between these cultures even sharper. Some cultures appeared so savage to the sensibilities of the 2030 American citizen, the U.S. military regularly chooses to use autonomous drones and robots to keep the peace in these areas when required. This would have been unthinkable 10 years ago given what the military learned from the wars in Iraq and Afghanistan, which demonstrated that humans need to engage with humans to help “win hearts and minds.” This changed, however, when fewer U.S. citizens could meet the rigorous standards of military service.

In 2027, the military had to implement its own driving school, because many new applicants had never manually driven a vehicle. Additionally, the military Services had to implement more in-depth psychological screenings to ensure new servicemembers could properly adjust to the rigorous requirements of military service. Unfortunately, the military could not stem the tide of the fundamental shift in the quality of its servicemembers in both the officer and enlisted ranks and had to lower standards in some areas. AI was able to make up for some of the losses by no longer requiring certain occupations, thus allowing the Services to shift manpower resources to more critical areas. Likewise, AI made many tasks, which previously required numerous individuals or were deemed “too dangerous,” no longer reliant on a human component.

As AI became more and more ubiquitous, people offloaded many tasks to machines powered by AI. It first started with autonomous cars and additive manufacturing in late 2019, when the

¹ Maj Humr is a graduate of MCU’s Command and Staff College. This paper won the Col Bevan G. Cass Award for academic year 2016–17.

² *Artificial Intelligence and Life in 2050: One Hundred Year Study on Artificial Intelligence* (Stanford, CA: Standing Committee of the One Hundred Year Study of Artificial Intelligence, 2016), 1.

technology became very good and economical. This allowed such mundane tasks as meal planning, grocery shopping, and operating motor vehicles to become things your parents did, and thus were seen as anachronisms to the new generation. Consequently, this new generation now had more free time to pursue more self-indulgent activities. AI also has been a boon for much of the U.S. manufacturing and services sector as well. For instance, no one has worked at a McDonald's in almost five years once the restaurants became fully autonomous in early 2025. Sadly, unemployment has reached an all-time high within the teenage population and in the general population because of the confluence of inexpensive AI and the lack of foresight to reeducate the workers AI has replaced. Coupled with the advancements in virtual reality (VR), many people now spend a great deal of time exploring VR worlds and interacting with friends and artificially intelligent avatars in computer-generated worlds.³ Unfortunately, many researchers noted that these trends have contributed to increases in prescription drugs consumption to combat the effects of a more sedentary lifestyle and an upward incidence of obesity for the general military-age population. Worse, many eligible military-age people are practically unable to function without a device connected to the internet. While many other countries in the world are seeing similar trends within their own populations, the U.S. military has now sounded the alarm for something it should have seen on the horizon 10 years ago—an unstable admixture of diminishing human abilities enabled by an overreliance on technology, but more specifically, the adoption of AI.

TODAY

While the above extrapolation of Stanford University's report, *Artificial Intelligence and Life in 2030*, describes a future that may not necessarily happen, the technology described within it is here today and is making significant progress at an accelerating pace.⁴ Of all the advancements described above that have the potential to significantly change the lives of many people, AI commands a noteworthy advantage over any other technology because AI will likely underpin many new technologies.⁵ To be sure, AI holds many risks and rewards for the organizations that adopt it and make it a fundamental part of their operations. This research will explore such risks and rewards to help understand what AI adoption may signify to the U.S. military and the United States Marine Corps specifically. Undoubtedly, there are substantial advantages to adopting AI and leveraging its capabilities; however, the dangers of offloading many tasks to AI can have the unforeseen effect of negating a traditional workforce and making individuals and organizations subservient to it in ways that may elude the common observer. Therefore, the Marine Corps should approach AI with a clear view toward how it is used and what tasks it should perform. To remain competitive in today's environment, the Marine Corps must pursue AI technologies, while also guarding against cognitive complacency to mitigate risks that challenge or potentially compromise fundamental human capabilities in the long run. Certainly, while the Marine Corps may embrace the adoption of AI in many areas, implementing new strategies to mitigate its effects, fitting it into an operating concept, and developing a framework for its use will become critical if the Marine Corps is to maintain individual capabilities for expeditionary environments and austere situations that deny it a technological advantage or decouple the human-to-human aspect necessary to solve problems AI cannot fix.

Current literature on AI-enabled weapons systems receives the most attention within the military establishment; however, other significant impacts of AI in such areas as human cogni-

³ Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (New York: Random House, 2016), 331.

⁴ Kevin Kelly, *What Technology Wants* (New York: Penguin, 2010), 260.

⁵ "Artificial Intelligence Technologies," Engineering and Physical Sciences Research Council, accessed 10 December 2016.

tion and substitution in noncombat arms occupations within military circles receive little attention. Therefore, this research will concentrate on other lesser known benefits and risks of AI that have the potential to affect the military in many significant ways. Overall, this research looks to provide a circumspect outlook on the adoption of AI to provide military leadership a clearer view of the many different aspects of this technology beyond the current focus on weapons systems alone.⁶

WHAT IS AI?

The field known as Artificial Intelligence is quite diverse and does not have one agreed upon definition.⁷ Two prominent computer scientists, Stuart J. Russell and Peter Norvig, assert the field encompasses four general areas:

- (1) systems that think like humans (e.g., cognitive architectures and neural networks);
- (2) systems that act like humans (e.g., pass the Turing test via natural language processing; knowledge representation, automated reasoning, and learning),
- (3) systems that think rationally (e.g., logic solvers, inference, and optimization); and
- (4) systems that act rationally (e.g., intelligent software agents and embodied robots that achieve goals via perception, planning, reasoning, learning, communicating, decision-making, and acting).⁸

In their view, AI will demonstrate uniquely human characteristics, namely cognitive abilities such as rational thinking. Having these characteristics would provide a system that could mimic capabilities that only humans have previously exhibited. AI, in their terms, would demonstrate the ability to plan or project a future condition from a current state through a list of logical or reasonable objectives to accomplish that end. Indeed, AI could provide a means to anticipate or predict the future through sophisticated algorithms that have the appearance of representative human reasoning and logical inference.

Nils J. Nilsson, a prominent computer scientist and AI researcher, provides another helpful definition by stating, “Artificial intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.”⁹ The qualities and characteristics described in the above definitions get to the essence of what AI attempts to achieve: systems or machines that imitate to some degree a type of human-level intelligence. Such an AI-enabled computer would demonstrate human-level intelligence by developing hypotheses, running multiple simulations, taking feedback from sensing mechanisms, and updating its own programming code if necessary to improve or modify future decisions. While far from simplistic, narrowing human intelligence down to easy-to-follow steps would not likely capture all nuances of the dynamic human mind. Nevertheless, AI could provide a way to synthesize large quantities of data at speeds greater than human

⁶ In a forthcoming article titled “Sea Power and Automation,” Professors John Arquilla and Peter J. Denning from the Naval Postgraduate School write that “today the pattern of radical change is recurring. The rapid rise of digitization and networking signal the beginning of the end of the [aircraft] carrier’s primacy. Indeed, by our reckoning, the next capital ship will be virtual. It will be a massive network of small, digitally controlled entities, very artfully teamed with human operators.”

⁷ John P. Holdren and Megan Smith, *Preparing for the Future of Artificial Intelligence* (Washington, DC: National Science and Technology Council Committee on Technology, Executive Office of the President, 2016), 6.

⁸ The Turing test was developed by Alan Turing in 1950 to determine whether a machine was capable of exhibiting intelligent behavior equal to, or indistinguishable from, a human. Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 6–7.

⁹ Nils J. Nilsson, *The Quest for Artificial Intelligence: A History of Ideas and Achievements* (Cambridge, UK: Cambridge University Press, 2010), 13.

cognition, while ostensibly eliminating common human biases and inaccurate heuristics many individuals use to make decisions.

Broadly, AI can imitate human-level intelligence across three general categories: creative, predictive, and reactive types of intelligence.¹⁰ Creative intelligence consists of AI performing pattern recognition on information and inventing something new to solve a problem.¹¹ Reactive intelligence requires sensing, then taking action to achieve an end-state.¹² Predictive intelligence processes previously gathered information and produces a prediction or estimation to take pre-emptive actions.¹³ Combinations of all three types of intelligence in AI would come the closest to achieving some aspects of human-level intelligence. Thus, the underlying objective of AI is to imitate or reproduce intelligent actions that only humans are capable of performing.¹⁴ By replicating the intelligence of humans across a variety of domains, AI holds the promise of not only performing human tasks faster, but also doing them better.

The current state of AI encompasses a variety of uses, but has remained typically confined to narrow domains.¹⁵ Search algorithms, email spam filters, travel planners, stock trading, shopping recommendations, and computer games are rudimentary examples of AI applications that have brought conveniences to many users and enhanced economic benefits for companies that have employed them.¹⁶ In fact, AI is becoming even more pervasive. Businesses and consumers both have the ability to connect a number of devices such as thermostats, refrigerators, and washing machines to the internet for continuous intelligent-monitoring, now known as the Internet of Things (IOT).¹⁷ IOT is a technology that achieves continuous monitoring and automation by leveraging artificial intelligence to improve such things as energy efficiency or tracking the number of occupants in a building.¹⁸ As a result, many diverse groups are benefiting from AI-enabled devices in a wide variety of domains.

To achieve these results, AI incorporates many different technical approaches, such as statistical modeling through the application of sophisticated algorithms, rule-based inquiry, and decision tree-type concepts. These more rudimentary approaches to AI are generally hardcoded in software and can follow an if-then-else logic. They can appear as AI because humans generally understood the context of its use and developed the logic behind the algorithms. The generally predictable nature of the environment and the subsequent results are the benefits of this approach to AI. However, this type of AI is also less adaptable to new situations and typically has a narrow application in use. Such methods and solutions that were at one time considered AI no longer hold such status. For example, techniques to sort and analyze large data sets that provided novel insights, widely known as “Big Data” analytics, were once termed an AI technology, but are now considered “routine data processing.”¹⁹ Consequently, defining AI becomes more difficult as research in this area advances and makes AI of yesterday appear more prosaic.

Machine learning is another approach to AI that is more advanced and possesses greater

¹⁰ P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin Press, 2009), 77.

¹¹ Singer, *Wired for War*, 77.

¹² Singer, *Wired for War*, 77.

¹³ Singer, *Wired for War*, 77.

¹⁴ Singer, *Wired for War*, 77.

¹⁵ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 7.

¹⁶ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 7.

¹⁷ Jayavardhana Gubbi et al., “Internet of Things (IoT): A Vision, Architectural Elements, and Future Directions,” *Future Generation Computer Systems* 29, no. 7 (2013): 1650.

¹⁸ Jayavardhana Gubbi et al., “Internet of Things (IoT),” 1650.

¹⁹ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 7.

predictive capabilities.²⁰ Machine learning broadly encompasses three types of learning: supervised, unsupervised, and reinforcement.²¹ Supervised learning uses a statistical method to explore existing data sets to “derive a rule or procedure that explains the data or can predict future data.”²² Machine learning requires a body of data divided into training sets, test sets, and a statistical function or model that best represents the parameters of the data.²³ This results in a continuous cycle of training, testing, and adjusting statistical parameters to achieve the best results. Unsupervised learning uses unstructured or unlabeled data to extract meaningful information without a known outcome or goal.²⁴ This unsupervised method of learning can reveal hidden connections within a cluster of data to provide useful insights.²⁵ Reinforcement learning is given a reward function that seeks to maximize its outcomes through a continuous trial and error approach and improves its performance as it interacts with an environment.²⁶ Indeed, continuous research in the fields of machine learning are pushing the boundaries of AI and come closer to mimicking how the human brain functions.

Deep learning and neural networks, both a subset of machine learning, attempt to model the human brain to develop AI. Deep learning uses a similar approach to machine learning to train the system, but receives inputs that commonly pass through hundreds of layers of complex nodes or “neurons” to provide even better results.²⁷ Machine learning and deep learning both hold great potential for making AI more adaptable to a wider range of domains. Combinations of different approaches also have brought about methods AI researchers have termed deep neural networks and convolutional neural networks that are more sophisticated. However, due to the increased complexity of running various statistical functions over very large training sets of data, comprehending how these types of AI systems produce the conclusions they render makes the process indecipherable.²⁸

This inscrutability aspect of AI poses a variety of challenges for researchers and users alike. Machine learning and deep learning use models that often have hundreds or even millions of adjustable parameters that make understanding the decision process difficult.²⁹ This makes the ease of explaining AI inversely proportional to its sophistication and prediction capabilities. In other words, as AI improves, it becomes increasingly difficult to understand how it arrives at a decision. Some have referred to this problem in AI as a “black box” problem.³⁰ While the inputs and outputs of such systems are usually predictable, the inability to understand the inner-workings of these systems makes their complete safety and efficacy practically unverifiable.³¹ This opacity aspect of AI, therefore, raises serious issues for more advanced AI on the horizon. Consequently, humans may have to trust AI without fully understanding how it came to its conclusions.

The most advanced versions of AI, which currently do not exist, are Artificial General In-

²⁰ For the purposes of our discussion, the term *machine learning* refers to the ability that computers have to learn without being programmed. Aaron M. Bornstein, “Is Artificial Intelligence Permanently Inscrutable?,” *Nautilus*, 1 September 2016.

²¹ Sebastian Raschka, *Python Machine Learning* (Birmingham, UK: Packt Publishing Ltd., 2015), 2.

²² Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 8.

²³ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 9.

²⁴ Raschka, *Python Machine Learning*, 6.

²⁵ Raschka, *Python Machine Learning*, 6.

²⁶ Raschka, *Python Machine Learning*, 6.

²⁷ Raschka, *Python Machine Learning*, 10.

²⁸ Bornstein, “Is Artificial Intelligence Permanently Inscrutable?”

²⁹ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 8.

³⁰ For the purposes of this discussion, *black box problem* refers to the difficulty of the system to provide a suitable explanation for how it arrived at an answer. James Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era* (New York: St. Martin's Press, 2013), 113–14.

³¹ Barrat, *Our Final Invention*, 114.

telligence (AGI) and Artificial Super Intelligence (ASI). Theoretically, both forms of AI would exhibit intelligence on par with or exceed human intelligence. As such, AGI would exhibit intelligence equal to humans, while ASI would demonstrate an intelligence beyond a human level. Yet, the gap between current AI and AGI or ASI remains significant.³² In most estimations, AGI and ASI are decades away from becoming a reality.³³ Nevertheless, prominent technologists have voiced serious concerns regarding AI development that has resulted in various oversight councils taking up a mission to monitor the field and advance policies that would potentially curb AI development.³⁴ Other technologists, such as the well-known director of engineering at Google and futurist Raymond Kurzweil, have regarded the development of AGI and ASI as necessary for “man’s survival.”³⁵ Kurzweil, best known for his book *The Singularity is Near* (2005) and the concept of the “law of accelerating returns” best captures the zeitgeist among AGI proponents by stating,

What, then, is the Singularity? It’s a future period during which the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed. Although neither utopian or dystopian, this epoch will transform the concepts that we rely on to give meaning to our lives, from our business models to the cycle of human life, including death itself.³⁶

Contrary to Kurzweil’s position, prominent technology entrepreneur Elon Musk states that AI poses a greater threat than nuclear weapons.³⁷ Philosopher and neuroscientist, Samuel B. Harris, argues that if intelligence is only a matter of information processing, incremental improvements in AI will ultimately lead to ASI.³⁸ Whether AI evolves to AGI or ASI, and poses an existential threat to human survival, advancements in the field of AI have gained much attention and have raised concerns amongst the private sector as well as the military.

As it currently stands, advanced AI does not seem likely to command any near-term advantages over human tasks that require “social intelligence, creativity and general intelligence.”³⁹ A January 2017 report commissioned by the DOD exploring the risks of AGI echoes this same assessment.⁴⁰ Researchers relying on such measures as the Turing test or AI demonstrating general problem-solving capabilities have been the foremost standard for assessing the intelligence level of AI.⁴¹ Stanford computer scientist, John McCarthy claimed brain and intellect function is still not well understood in the areas of psychology and neuropsychology and therefore difficult to imitate.⁴² For now, further examination of AI performing more urbane tasks will push the boundaries of AI possibilities, but current research such as Stanford’s *Artificial Intelligence and Life in 2050* will bring the practical challenges of AI for the forefront.

³² Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 7.

³³ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 7.

³⁴ “The Future of Life Institute (FLI),” Future of Life Institute, accessed 8 January 2017.

³⁵ Barrat, *Our Final Invention*, 116.

³⁶ Barrat, *Our Final Invention*, 133.

³⁷ Jeff Stone, “Elon Musk Warns Artificial Intelligence Is a Greater Threat than Nuclear Weapons, But AI Is Here to Stay,” *International Business Times*, 5 August 2014.

³⁸ Sam Harris, “Can We Build AI without Losing Control Over It?,” TedTalk video, 14:27, June 2016.

³⁹ Jason Furman, “Is This Time Different? The Opportunities and Challenges of Artificial Intelligence” (speech, Council of Economic Advisers Remarks at AI Now: The Social and Economic Implications of Artificial Intelligence Technologies in the Near Term, 7 July 2016), 4.

⁴⁰ Richard Potember, *Perspectives on Research in Artificial Intelligence and Artificial General Intelligence Relevant to DoD*, JSR-16-Task-003 (McLean, VA: MITRE Corporation, 2017), 55.

⁴¹ John McCarthy, “From Here to Human-level AI,” *Artificial Intelligence* 171, no. 18 (2007): 1174, <https://doi.org/10.1016/j.artint.2007.10.009>.

⁴² McCarthy, “From Here to Human-level AI,” 1175.

THE REWARDS OF AI

If AI is already demonstrating important business and personal value in many narrow domains, it stands to reason the U.S. military could potentially benefit from adopting it in a number of practical ways as well. Most importantly, with its promise to simulate simple decision making all the way to near human-level intelligence, it follows that human labor is a prime target for AI substitution. Funding for military personnel is the second largest expenditure within the DOD budget, consuming almost 24 percent.⁴³ In fact, the 2017 DOD budget request for military personnel alone was \$138.8 billion.⁴⁴ With such a large expenditure item, it is easy to foresee that even small reductions in personnel can result in millions in cost savings and cost avoidance. While it is doubtful AI could replace many within the DOD workforce, it is not difficult to project that numerous positions are susceptible to replacement and enhancement through AI.

Occupations that have repeatable tasks with clear business rules and little ambiguity are prime candidates for AI substitution or augmentation. In one study by Oxford University, researchers predicted that “around 47 percent of total US employment is in the high-risk category” for replacement by computerization.⁴⁵ Many of the positions they cite that are susceptible to automation were in “transportation and logistics occupations, together with the bulk of office and administrative support workers, and labor in production occupations.”⁴⁶ To kick off 2017, a Japanese insurance firm announced that it would replace 34 employees with AI to increase productivity by 30 percent and save approximately \$1.2 million in salaries.⁴⁷ In a 2013 study on medical outcomes leveraging machine learning, researchers at Indiana University found that AI-based simulations not only reduced medical treatment costs by more than half, but they also improved patient outcomes by nearly 50 percent.⁴⁸ In such occupations as legal, medical, and education, where services are becoming more standardized and systematized, AI is ready to make access to these services for little to no cost.⁴⁹ As more information is codified in digital formats and machine learning becomes increasingly able to systematize and synthesize this information, AI is poised to outperform its human analogue across a variety of occupations. Consequently, as data continues to increase in volume and velocity, it becomes increasingly difficult for humans to understand these more complex, data-rich environments and will require augmentation from AI to develop better understanding.⁵⁰

Managing vast volumes of data in complex environments is another advantage AI provides. Monitoring devices and sensors can provide large amounts of information for decision making; however, optimizing the feedback to control parameters within such complex environments could easily overwhelm human decision makers. For instance, Google data centers (DC), which are massive computer warehouses that require sophisticated monitoring equipment and sensors

⁴³ “Department of Defense (DOD) Releases Fiscal Year 2017 President’s Budget Proposal,” press release, 9 February 2016.

⁴⁴ “Department of Defense (DOD) Releases Fiscal Year 2017 President’s Budget Proposal.”

⁴⁵ Carl Benedikt Frey and Michael A. Osborne, *The Future of Employment: How Susceptible Are Jobs to Computerization* (Oxford, UK: Oxford Martin School, University of Oxford, 2013), 44.

⁴⁶ Frey and Osborne, *The Future of Employment*, 44.

⁴⁷ “Japanese Insurance Firm Replaces 34 Staff with AI,” BBC News, 5 January 2017.

⁴⁸ “Can Computers Save Health Care? IU Research Shows Lower Costs, Better Outcomes,” IU News Room, 11 February 2013.

⁴⁹ Richard Susskind and Daniel Susskind, “Technology Will Replace Many Doctors, Lawyers, and Other Professionals,” *Harvard Business Review*, 11 October 2016.

⁵⁰ Dr. Shelly Gallup, Naval Postgraduate School, states: “Current experiments with swarms (hundreds of UAVs operating totally autonomously to decide on the best way to prosecute a target, and the Navy’s ASW [Anti-Submarine Warfare] Continuous Trail Unmanned Vessel (ACTUV) have demonstrated a much higher level of intelligence than anything before. These advances are edging up to the boundaries at which human intelligence is being surpassed by the capacity problem—takes more humans to work a problem than a smart machine.”

to optimize their efficiency, used machine learning to analyze DC power usage and reduce its power usage effectiveness (PUE).⁵¹ Estimated PUE reductions could save hundreds of millions of dollars over several years of operations.⁵² Similarly in cybersecurity, machine learning has helped detect security anomalies by sifting through overwhelming volumes of security event data to better identify malicious activity and provide more relevant security alerts to security professionals.⁵³ With a greater ability to process large volumes of information, AI can provide reductions in certain occupational specialties and cost savings, while simultaneously improving the efficiency and effectiveness of information technology.

If the research holds true, the military could equally stand to save billions of dollars, while improving the efficiency and effectiveness of its IT systems by using AI. AI has the potential to both substitute and augment human capital across many categories. Other nonmonetary or intangible benefits may become an even bigger driver for AI adoption. Automated intelligent machines, for example, can work around the clock, do not take leave, do not require health care, would not call in sick, would likely never commit sexual harassment, and would likely never experience fatigue. Such intangibles, while difficult to measure, should become factors in conducting cost-benefit analysis and estimating any return on investment (ROI) calculations for adoption of AI.

While AI holds the potential to provide savings due to a reduction in human labor costs and system improvements, it also provides a means to augment users with capabilities that can enhance their warfighting prowess. Developments in neural machine translation (NMT) and natural language processing (NLP) have provided significant improvements in translation of languages in recent years.⁵⁴ Latest improvements in NLP and NMT have resulted in such technologies as the Google Neural Machine Translation (GNMT), which can translate languages without being cued to the language beforehand.⁵⁵ This technology could provide all military personnel a means to communicate with numerous coalition partners with a potential reduction in the number of interpreters required for operations. Reducing misunderstanding and providing human intelligence (HUMINT) personnel greater capabilities is a noteworthy goal for such technology, but these capabilities will not end there. Advances in image recognition and medical diagnostics also can provide advantages to warfighters.

Visual recognition and abstract reasoning are no longer limited to humans. In a recent study, AI scientists, Andrew Lovett and Kenneth D. Forbus, showed that an AI platform that out-performed an average adult on the Raven Progressive Matrices test (a nonverbal test that measures abstract reasoning through visual pictures).⁵⁶ In other experiments, AI has identified tumors better than a human and has provided medical diagnosis from pathology reports.⁵⁷ Computer vision and other complementary types of AI capabilities could dramatically improve the speed and accuracy of a military physician's diagnosis, which may result in potential savings from staff reductions. However, having trained personnel that understand how to use AI may become the next high-demand

⁵¹ Jack Clark, "Google Cuts Its Giant Electricity Bill with DeepMind-Powered AI," *Bloomberg*, 20 July 2016.

⁵² Clark, "Google Cuts Its Giant Electricity Bill with DeepMind-Powered AI."

⁵³ Paul F. Roberts, "Machines v. Hackers: Cybersecurity's Artificial Intelligence Future," *Christian Science Monitor*, 25 July 2016.

⁵⁴ Yonghui Wu et al., "Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation," *CoRR*, 2016.

⁵⁵ Mike Schuster, Melvin Johnson, and Nikhil Thorat, "Zero-Shot Translation with Google's Multilingual Neural Machine Translation System," *Google Research* (blog).

⁵⁶ Andrew Lovett and Kenneth Forbus, "Modeling Visual Problem Solving as Analogical Reasoning," *Psychological Review* 124, no. 1 (2017): 60, <https://doi.org/10.1037/rev0000039>.

⁵⁷ Gideon Lewis-Kraus, "The Great A.I. Awakening," *New York Times Magazine*, 14 December 2016.

skill that may initially command higher wages if a shortage exists in this burgeoning field.⁵⁸

Most important, AI has the potential to increase operational reach. Writing on the AI and robotics revolution, economists and authors of several books on automation, Erik Brynjolfsson, Andrew McAfee, and Michael Spence state in *Foreign Affairs* that “Technology expands the potential reach, scale, and monitoring capacity of a decision-maker, increasing the value of a good decision-maker by magnifying the potential consequences of his or her choices.”⁵⁹ AI could deliver these promises through leveraging machine learning algorithms, modeling, and simulations that help decision makers understand complex and vast amounts of information as long as the decision maker is not overwhelmed with choices. Indeed, AI can amplify leadership choices by parsing through large volumes of data at speeds far greater than human capacity can process. AI could provide recommendations and impact analysis of logistics shortfalls by fusing together weather analysis; air, ground, and sea lines of communication factors; node throughput; transportation availability; maintenance scheduling; and current consumption rates to forecast more effectively. With a large network of sensors, forecasting would mimic applications, such as Google Maps or Waze, which leverage AI to provide ideal driving directions and alternate routes when necessary.⁶⁰ Thus, more information properly combined through an AI platform can provide more optimal decision making.

Technology commentators state that 2016 was the year that Artificial Intelligence came of age.⁶¹ From human-machine augmentation to full human substitution, AI has already given a glimpse to many that it is the future of better productivity and prosperity.⁶² However, this productivity and prosperity will not come without a cost. President Barack H. Obama’s National Science and Technology Council states that AI will “reduce demand for certain skills that can be automated while increasing demand for other skills that are complementary to AI.”⁶³ While it is still too early to tell how quickly AI will bring extensive change, significant research remains an ongoing pursuit to understand AI safety and efficacy.

THE RISKS OF AI

On 21 January 2016, vice chairman of the Joint Chiefs of Staff, Air Force General Paul J. Selva, at a Brookings Institute forum on DOD technology and innovation asked, “What happens when that thing can inflict mortal harm and is empowered by artificial intelligence?”⁶⁴ General Selva’s comments reflect the futuristic *Terminator* scenario that is often used to warn the masses on the dangers of runaway AI. While this is in fact an important concern, other risks exist in the adoption of AI that fall far short of apocalyptic ASI scenarios. Indeed, *DOD Directive 5000.09* directly addresses autonomy in weapons systems; however, it does not address autonomy in nonweapons systems.⁶⁵

In fact, nonweapons systems can pose dangerous consequences as well. In 2015, there were several nonweaponized AI failures; for example, a robot grabbing for auto parts clutched and killed a man, image tagging software classified black people as gorillas, and adult content filter-

⁵⁸ Cade Metz, “The Battle for Top AI Talent Only Gets Tougher from Here,” *Wired*, 23 March 2017.

⁵⁹ Erik Brynjolfsson, Andrew McAfee, and Michael Spence, “New World Order,” *Foreign Affairs*, July/August 2014.

⁶⁰ Benjamin Jensen and Ryan Kendall, “Waze for War: How the Army Can Integrate Artificial Intelligence,” *War on the Rocks* (blog), 2 September 2016.

⁶¹ Alex Hern, “2016: The Year AI Came of Age,” *The Guardian*, 28 December 2016.

⁶² Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 2.

⁶³ Holdren and Smith, *Preparing for the Future of Artificial Intelligence*, 2.

⁶⁴ Jim Garamone, “Vice Chairman: Military, Nation Need Dialogue About New Technologies,” *Defense.gov*, 21 January 2016.

⁶⁵ *DOD Directive 5000.09, Autonomy in Weapon Systems* (Washington, DC: Department of Defense, 2012).

ing software failed to remove inappropriate content.⁶⁶ In 2016 alone, the most public AI failures included an AI designed to predict recidivism acted racist, game nonplayable characters designed unauthorized superweapons, patrol robot collided with a child, world champion-level Go playing AI lost a game, and a self-driving car had a deadly accident.⁶⁷ To be sure, such accidents demonstrate that the military will need to consider safety and ethics issues for nonweapons types of AI as well.

AI also has shown to change peoples' behaviors. One research study demonstrated that humans can at times ascribe anthropomorphic characteristics to computers that simulate human behaviors.⁶⁸ Dr. Julie Carpenter, a professor at the University of Washington who also studies human-robot interaction (HRI), found that in the explosive ordnance disposal (EOD) community, members displayed interesting behavior toward their robots. For instance, EOD personnel regularly gave names to their robots and displayed a range of emotions when their robots were destroyed during a mission.⁶⁹ Such behaviors can become dangerous if humans begin ascribing moral qualities or unnecessary value to robots that are unwarranted, therefore, potentially compromising decision making.

As alluded to in the 2030 introduction scenario above, AI holds the potential to affect the quality of the military's future workforce. Arguably, technology in general and AI specifically are not neutral in their effects on human beings. In his book, *Darwin among the Machines*, technology historian George Dyson states, "Everything that human beings are doing to make it easier to operate computer networks is at the same time, but for different reasons, making it easier for computer networks to operate human beings."⁷⁰ Dyson sees a symbiotic relationship between humans and machines in a corresponding way that the sharing of information globally not only rewards the human, but improves the network itself. As cited by technology writer Kevin Kelly, Ted Kaczynski, better known as the Unabomber, states emphatically in his manifesto:

As society and the problems that face it become more and more intelligent, people will let machines make more of their decision[s] for them, simply because machine-made decisions will bring better result[s] than man-made ones. Eventually a stage may be reached at which the decisions necessary to keep the system running will be so complex that human beings will be incapable of making them intelligently.⁷¹

While still controversial, Kaczynski's provocative predictions seem more prescient in 2016 than it did in 1995 and are in line with what many technologists see today.⁷² In fact, offloading intelligence to machines is becoming more of a concern. In one instance, the information age itself has had the opposite effect by allowing individuals to *know* more; it in fact allows them to know less because information recall is accomplished easier with online search engines.⁷³ This results in individuals becoming more reliant on the internet's ability to provide information and

⁶⁶ Roman V. Yampolskiy and M. S. Spellchecker, "Artificial Intelligence Safety and Cybersecurity: A Timeline of AI Failures," Cornell University Library, 2016, 4.

⁶⁷ Yampolskiy and Spellchecker, "Artificial Intelligence Safety and Cybersecurity," 5.

⁶⁸ Sara Kiesler et al., "Anthropomorphic Interactions with a Robot and Robot-like Agent," *Social Cognition* 26, no. 2 (2008): 169–81, <https://doi.org/10.1521/soco.2008.26.2.169>.

⁶⁹ University of Washington, Doree Armstrong, "Emotional Attachment to Robots Could Affect Outcome on Battlefield," press release, 17 September 2013.

⁷⁰ George B. Dyson, *Darwin among the Machines: The Evolution of Global Intelligence* (New York: Basic Books, 1997), 10.

⁷¹ Kelly, *What Technology Wants*, 204.

⁷² Theodore J. Kaczynski, "Industrial Society and Its Future," *Washington Post*, 22 September 1995.

⁷³ Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains* (New York: W. W. Norton, 2011), 180–81.

has the potential to make humans more shallow thinkers.⁷⁴ Thus, a challenge arises in how much trust AI-enabled technologies command and how users should evaluate results when it becomes the sole source of information gathering for the masses.

The elusive effects of technology go beyond the search engine, of course. The Effective Altruism Foundation's report titled, *Artificial Intelligence: Opportunities and Risks*, cites research that shows automation, pathological gaming, and internet consumption in fact affect social behavior and attention spans in a way that raise significant concerns.⁷⁵ Providing rich technological environments can therefore nurture such negative predilections if not properly guarded against. Mica R. Endsley, a researcher with Situational Awareness Technologies, states that an "automation conundrum" manifests when "more automation is added to a system, and the more reliable and robust that automation is, the less likely that human operators overseeing the automation will be aware of critical information and able to take over manual control when needed."⁷⁶ This conundrum produces what Endsley calls an "Out-of-the-Loop (OOTL) error," making human situational awareness the key issue to improve in autonomous technology.⁷⁷ The question of autonomy is meaningful problem for adopting AI in the military if the aforementioned trends continue in a negative direction. While this phenomenon is not the fault of technology, per se, or AI, particularly, it nevertheless highlights shortfalls in human cognition and awareness in an autonomous environment with conditions that can easily breed the above-mentioned apathetic behavior. Ultimately, if AI affects human cognition, an imperative emerges in understanding how it impacts human judgment.

A subtler risk exists in trusting AI for decisions humans may not fully understand themselves or ones that require critical judgment. Because AI-based decisions modeled on machine learning and deep learning become more inscrutable over time, trust becomes inferred; therefore, any "flaws in data or the algorithms can leave professionals susceptible to an especially pernicious form of automation bias."⁷⁸ Consequently, users "could become mindlessly bound to the output of AI analyses, even if its user suspects something is amiss."⁷⁹ In other words, because of the sheer amount of data it has analyzed to produce a decision, AI decision making could become so complex that "managers could increasingly find themselves playing a subservient role to software and be forced to rubber stamp its recommendations."⁸⁰ Compounding the issue further, in a *Statement for the Record on Worldwide Threat Assessment of the US Intelligence Community* to the U.S. Senate Select Committee on Intelligence, Director of National Intelligence James Clapper stated, "AI systems are susceptible to a range of disruptive and deceptive tactics that might be difficult to anticipate or quickly understand."⁸¹ Accordingly, these situations provide a conundrum for organizations that want to implement AI. AI provides a potential way to make better decisions, but at the same time, it does not necessarily provide the *why* behind the decision because of the inherent limitations of understanding the algorithms and the data sets used for learning.⁸²

⁷⁴ Carr, *The Shallows*, 194.

⁷⁵ A. Mannino et al., *Artificial Intelligence: Opportunities and Risks* (Berlin, Germany: Foundation for Effective Altruism, 2015), 5.

⁷⁶ Mica R. Endsley, "From Here to Autonomy: Lessons Learned from Human–Automation Research," *Human Factors* (2016): 4, <https://doi.org/10.1177/0018720816681350>.

⁷⁷ Endsley, "From Here to Autonomy," 4.

⁷⁸ Nicholas Carr, *The Glass Cage: How Our Computers Are Changing Us* (New York: W. W. Norton, 2015), 122.

⁷⁹ Carr, *The Glass Cage*, 122.

⁸⁰ Carr, *The Glass Cage*, 117.

⁸¹ *Statement for the Record on Worldwide Threat Assessment of the U.S. Intelligence Community: Hearing before the U.S. Senate Select Committee on Intelligence* (9 February 2016) (statement of James R. Clapper, director of National Intelligence).

⁸² Brent Daniel Mittelstadt et al., "The Ethics of Algorithms: Mapping the Debate," *Big Data & Society* 3, no. 2 (2016): 4, <https://doi.org/10.1177/2053951716679679>.

Another risk worth understanding is that selecting an AI technology means choosing which AI to adopt. As more start-up AI companies are purchased by only a few of the largest technology firms (e.g., Google, Facebook, Amazon, and Microsoft) the military may have fewer options to choose from in the future.⁸³ While such a trend can ensure greater support for AI advancement, it also narrows the field of competition, limiting available choices. For instance, the military might feel obligated to an AI technology provider that could hold a monopoly on system maintenance, sustainment, and improvements. This could result in an unhealthy marriage for the military if the firm that provides AI fails or sells out to a competitor. Such risk with vendor lock-in proves difficult when attempting to switch to another AI system if a vendor no longer supports a system or the technology becomes obsolete. In either case, such a proprietary system may require sustainment past its useful life and result in a similar situation where the U.S. Navy must sustain the use of the outdated Microsoft XP operating system past its end-of-life support date. Consequently, this additional support has cost the Navy approximately \$9 million a year.⁸⁴ Similarly, such concerns that have always plagued technology acquisitions will for AI as well.

The nature of AI and its potential to become a game-changing technology makes answering questions of suitability more difficult, especially if the system becomes mission critical or if disparate AI systems optimize resources in competition with one another. For example, an experiment conducted by Google AI researchers demonstrated that multiagent AIs playing a matrix game social dilemma (e.g., prisoner's dilemma, gathering, and wolfpack) were uncooperative in some scenarios.⁸⁵ Therefore, integration of separate AI technologies will need to account for how these systems cooperate with each other when attempting to optimize parallel resources. For these reasons, purchasing AI from a vendor or developing it in-house comes with clear trade-offs; however, the complexity within AI design itself will require a thoughtful approach to avoid and lessen its inherent risks.

Certainly, other inherent risks with AI systems are consistent with their complex nature. Current AI systems are designed and developed by software engineers and programmers who understand the constructions of these very complex systems.⁸⁶ The upkeep of such systems may require the military to devote significant resources to sustain the program to improve algorithms when necessary, upgrade systems when required, or retain program expertise to maintain AI systems. AI systems may have large data requirements that necessitate dedicated data center support from a virtual or private cloud.⁸⁷ AI methods such as convolutional and neural networks perform better on large arrays of graphics processing units (GPU) rather than the standard central processing units (CPU) found in most data centers today.⁸⁸ Arguably, military data centers that desire to deploy certain types of AI would need to ensure the correct hardware is available to operate AI effectively. Therefore, military leaders need to understand total cost of ownership of AI systems and determine an appropriate return on investment for AI as they do for other technologies.

While understanding AI risks and how they will potentially affect the military recruitment population, de-skill its workforce in certain areas, and relinquish some decision making, there are also questions of AI ethics. For example, if AI causes injury or harm to a person, current

⁸³ "The Race for AI: Google, Twitter, Intel, Apple in a Rush to Grab Artificial Intelligence Startups," CBInsights.com, 21 July 2017.

⁸⁴ David Goldman, "Navy Pays Microsoft \$9 Million a Year for Windows XP," CNN Money, 26 June 2015.

⁸⁵ Joel Z. Leibo et al., "Multi-agent Reinforcement Learning in Sequential Social Dilemmas" (paper presented at the International Conference on Autonomous Agents and Multiagent Systems, Sao Paulo, Brazil, 12 May 2017).

⁸⁶ Carr, *The Glass Cage*, 161.

⁸⁷ Amit Tyagi, "Artificial Intelligence: Boon or Bane?," *SSRN*, August 2016, 6, <https://doi.org/10.2139/ssrn.2836438>.

⁸⁸ Stan Hanks, "This Is What Makes Nvidia's AI Supercomputer Different—and It's Huge," *Forbes*, 19 August 2016.

liability laws fail to address who would shoulder the blame, especially if machine learning AI has been taught its behavior from various sources.⁸⁹ Because machine learning improves with more information, controlling the quality of AI training data might prove very challenging since it is unrealistic to screen vast amounts of data without an AI system in the first place. Since machine and deep learning algorithms are often inscrutable, pinpointing the exact data that might have caused the trouble becomes an intractable problem. The ethics of AI is a burgeoning field of study, but space limitations here prohibit a complete discussion on the matter and should be addressed in future research separately. Nevertheless, laws, policies, and ethics related to AI systems will likely lag behind the continuous fielding of AI-enabled cybersystems and the rapid introduction of related technologies, yet this does not absolve organizations from their responsibility to craft strategies and guidelines for use in their absence.

HOW THE MILITARY CAN RESPOND TO AI

Replicating human intelligence or performing tasks makes replacing or augmenting military personnel one of the foremost benefits of AI. With the potential pool of eligible military recruits already projected to become inadequate due to increasing numbers with criminal records, obesity, and insufficient education, it is unlikely AI will completely solve these problems.⁹⁰ Equally an issue, in a July 2015 report, researchers Matthew F. Cancian and Michael W. Klein cite declining scores for the General Classification Test (GCT) of Marine officers since 1980 as an indicator of how the entry-level population is changing.⁹¹ AI-based technologies will further help and hinder these concerns in several ways. With the adoption of AI society wide, the military may need to update how it assesses recruits and officer candidates for future occupational specialties and develop new tests to ensure cognition is adequate. If AI performs as well as many project, it will potentially reduce manpower requirements for some occupations and provide “extended intelligence” for others.⁹² The adoption of AI may demand that the military also adopt new tests and recruit for specific skills not previously required to operate AI. More to the point, AI may bridge the future gap in inadequate numbers of personnel by replacing some occupations or making average personnel sufficient to accomplish more complex tasks when augmented with AI.

AI will not only have an impact on personnel within the U.S. military, but it will also change how it operates. For instance, AI could provide new insights on DOD information by indexing and cataloging information across its many disparate data centers. Leveraging machine learning or neural networks, AI can sort through the vast amounts of unstructured and structured data that resides across the DOD to uncover insights previously undetected. AI monitoring for the Internet of Things (IOT) technology can provide a wide range of smart monitoring of equipment providing increased efficiency, indications and warnings of component failure, and cost savings in the areas of human capital while improving energy usage and efficiency. AI also has shown promising results in the area of cybersecurity and could provide both offensive and defensive capabilities for the DOD cyberforce.⁹³ The list of possible uses of AI is potentially limitless and provides many opportunities for the U.S. military across many domains. Nevertheless, the DOD will need to balance the opportunities AI provides with its many potential downsides as well.

⁸⁹ Illah Reza Nourbakhsh, “The Coming Robot Dystopia: All too Inhuman,” *Foreign Affairs*, July/August 2015.

⁹⁰ “Who Will Fight the Next War?,” *Economist*, 24 October 2015.

⁹¹ Matthew F. Cancian and Michael W. Klein, *Military Officer Quality in the All-Volunteer Force* (Washington, DC: Brookings, 2015).

⁹² Reid Hoffman, “Using Artificial Intelligence to Set Information Free,” *MIT Sloan Management Review* 58, no. 1 (2016): 20.

⁹³ Jeremy Hsu, “DARPA Challenge Tests AI as Cybersecurity Defenders,” *IEEE Spectrum*, 13 July 2016.

Clearly, AI is poised to change many aspects of the countries that adopt it, resulting in balancing opportunities with its downsides. Because of the undeniable influence of commercial and private sector developments, the U.S. military will undoubtedly face a flurry of AI demonstrations and solicitations for military applications. “U.S. companies are both the world’s most prolific producers and the world’s most enthusiastic consumers of technology; therefore, many of the effects of this digital revolution will likely be seen first in the United States,” writes Andrew McAfee and Erik Brynjolfsson in *Foreign Affairs*.⁹⁴ For these reasons, the U.S. military will need to develop the foresight to anticipate and respond to potential rapid changes in the culture. For example, if driverless vehicles become a public standard, freeing more individuals from the need to earn a personal driver’s license or learn to drive, the U.S. military may have to implement a more rigorous driving school to provide instruction from a rudimentary level. Even if the military does adopt driverless vehicles in some capacity, it is a mistake to assume that such vehicles could operate in austere environments where electronic signatures may become a liability or complex terrain and human factors become insurmountable for AI to handle properly, potentially hampering freedom of action. If AI replaces some military occupational specialties (MOS) in garrison, the military may still require the functions in a deployed environment with limited or no access to the technology, which could lead to excess human capacity if not cross-trained in other functions. Additionally, the military will also need to review its operational security (OPSEC) policies to account for AI. While current OPSEC briefings include the dangers of social media, they also will need to account for always-on AI technology, such as Apple’s Siri, Amazon’s Alexa, and Google Home’s AI-enabled assistants, that may inadvertently gather sensitive information from military families, DOD employees, and defense contractors. To be successful, the U.S. military will require a systematic whole-of-DOD and government approach to how the Armed Services field and plan for AI systems. Developing a well-informed, holistic approach to AI will be difficult but not impossible.

To stay ahead of adversaries while also creating efficiencies with the DOD, military leaders will need to explore and experiment with the benefits of AI. Such an approach should seek to partner with the most mature AI organizations in the public and private sector to stay abreast of the latest developments. The DOD will also need to ensure that AI is mature, sustainable, and well tested before implementation in a production environment. Therefore, the DOD will need to devise a battery of tests and experiments that AI should accomplish with a special emphasis on safety and how it may affect human cognition and awareness. Human-AI augmentation may still require its participants to perform to a specified set of standards in case the technology were to fail in dangerous circumstances. Providing oversight through such approaches as the human-autonomy systems oversight model, can keep humans cognitively engaged in order to help improve safety and increase situational awareness when AI technologies encounter unforeseen problems.⁹⁵ Equally important, DOD should develop clear data and information classification standards for metatagging and labeling content to ensure portability to different AI systems. Content curation and an ongoing development of the corpus of knowledge AI has access to will require management by experts versed in AI development.

The DOD cannot afford to ignore the many advances in the field of AI. Predictably, the benefits and potential new military realities of AI may provide advantages for a “third offset” in U.S. capabilities.⁹⁶ While not all encompassing, many of the aforementioned recommendations

⁹⁴ Andrew McAfee and Erik Brynjolfsson, “Human Work in the Robotic Future,” *Foreign Affairs*, July/August 2016.

⁹⁵ Endsley, “From Here to Autonomy,” 4–5.

⁹⁶ Bob Work, “The Third U.S. Offset Strategy and Its Implications for Partners and Allies” (speech, Willard Hotel, Washington, DC, 28 January 2015).

will require significant planning and resources to develop AI within the DOD and should come under the oversight of a diverse council of experts across a broad swath of disciplines to ensure success.

HOW THE MARINE CORPS CAN RESPOND TO AI

AI will have far-reaching impacts across society; therefore, the Marine Corps must develop an appropriate response to this game-changing technology that can challenge both conventional wisdom and its approach to warfare in the twenty-first century. As the *Marine Corps Operating Concept* (MOC) highlights the need to “reap the benefits of technological progress,” while inspiring the force to “capture the full potential inherent in automation,” the Marine Corps will need to carefully balance these opportunities with both short-term and long-term risks.⁹⁷

AI can provide attractive opportunities for increasing the Marine Corps’ warfighting capacity. For instance, the *2016 Index of U.S. Military Strength* conducted by the Heritage Foundation found that the Marine Corps was “weak” when it came to overall warfighting capacity due to an inability to fight a major regional conflict in two theaters simultaneously.⁹⁸ Hence, AI could provide a way to automate or augment some occupations to add capacity to selected MOSs. AI already has shown great progress in the domain of some autonomous platforms and will continue to provide the Marine Corps a greater range of options from tactical resupply to target identification with its ability to provide safety standoff in dangerous circumstances. The real challenge will come when AI and humans share the battlefield and introduce new risks that will require acknowledgment and potential mitigation.

While the MOC states that “automation can mitigate risk, reducing the exposure of humans to harm, and reduce the workload on personnel,” automation also will introduce potentially unforeseen risks of its own.⁹⁹ From the aforementioned examples, such as occupation deskilling, cognitive complacency, overreliance on technology, and the increasing the complexity of the information technology environment, AI has the potential to behave as a sagacious genie that synthesizes large quantities of data, an act that no human could potentially perform.¹⁰⁰ While such a system may become indispensable through self-reinforcing processes, implementation would need to account for having a high degree of protection and a team of specialized personnel to maintain it. Therefore, AI could lend itself to become a friendly center of gravity or a critical vulnerability if it becomes an indispensable warfighting tool.

With all the same challenges that the U.S. military will face with adopting AI, the Marine Corps will also face both new opportunities and risks to how it conducts operations.

The *Marine Corps Operating Concept* suggests that “as machines advance from performing repetitive tasks to dynamic workloads, it will free people to focus on the things they do uniquely or best.”¹⁰¹ To free people from these tasks, AI will require training by the experts that currently perform these tasks. This means Marines would train an AI platform to take over their function, potentially making themselves obsolete at some point, which could generate resentment manifested in ways that attempt to deliberately make AI fail through sabotage or create unnecessary friction during the implementation phase. As the MOC states, “The challenge, as machines become more capable and autonomous, is how to put people and things together in

⁹⁷ *Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century* (Washington, DC: Headquarters Marine Corps, 2016), 16.

⁹⁸ *2016 Index of U.S. Military Strength: U.S. Marine Corps* (Washington, DC: Heritage Foundation, 2016).

⁹⁹ *Marine Corps Operating Concept*, 16.

¹⁰⁰ Aaron Bazin, “How to Build a Virtual Clausewitz,” *Strategy Bridge*, 21 March 2017.

¹⁰¹ Bazin, “How to Build a Virtual Clausewitz,” 16.

the most effective pairings for the mission at hand.”¹⁰² Consequently, the adoption of AI that replaces occupations wholesale will require a clear transition or reskilling program for some of the workforce. Effectively pairing AI with personnel to augment their cognitive capacity will most likely require new skills for functioning with AI to reap the full capabilities of the system. Moreover, AI can also provide a way to better organize the Marine Corps’ information management processes. From metatagging, file organization, archiving, and document lifecycle management, AI could provide a more standard information environment with greater consistency of process across the Marine Corps therefore, flattening the learning curve while also making on-boarding of new personnel more productive and faster.

Lastly, finding the right fit for AI will become an important challenge. The MOC states that the Marine Corps’ ability to successfully carry out “the Concept” will rely on “how to use unmanned systems and automation at all echelons and in every domain—because mastering the man-machine interface offers a revolution in military operations.”¹⁰³ Arguably, the Marine Corps is already reaping the benefits of man-machine capabilities seen within the last decade of combat operations. Lockheed Martin’s K-MAX unmanned helicopters supported resupply missions and the more than 20 different types of robots used for surveilling a room EOD provided unmeasurable benefits in the form of improved situational awareness and safety.¹⁰⁴ While AI has some potentially clear benefits to offer the current operational paradigm, the real revolution will come when an adversary uses weaponized AI without any ethical inhibitions.

Given the current state of AI-enabled machines and their capacity to interpret large quantities of information, while out-cycling human cognition through sheer brute-force processing, the limiting factor in future warfare could be humankind. At the very least, if a human is making the binary decision to kill or not, the human may not understand how the AI came to its conclusions. If an adversary can leverage AI to make faster decisions and autonomously prosecute targets with no human-in-the-loop hindering the process, it follows that the Marine Corps might need to reevaluate its stance on conventional AI use.¹⁰⁵ If not, this will ostensibly sacrifice or severely limit the advantage autonomous technologies are supposed to provide in the first place.¹⁰⁶ Other options could allow autonomous AI to engage in limited, nonlethal activities that provide a comparable alternative. Consequently, AI technology will continue to outpace both international and domestic legislation, which will require interim guidance on how the Marine Corps approaches these developments and potential ethical quandaries.

CONCLUSIONS AND RECOMMENDATIONS

AI will have significant impacts on the U.S. military as a whole. Clearly, AI will pose multifaceted challenges with adoption and implementation, which indicates a variety of generally knowable and unknowable trade-offs. Mutual exclusivity, however, will not exist between benefits and risks because AI substitution for human skills will provide narrow expertise, but little to no versatility in additional uses. Therein lies a spectrum of potential trade-offs that may offer a significant competitive advantage against an adversary and a clear risk in others. Hence, the

¹⁰² Bazin, “How to Build a Virtual Clausewitz,” 16.

¹⁰³ Bazin, “How to Build a Virtual Clausewitz,” 9.

¹⁰⁴ Sydney J. Freedberg Jr., “Love Letters to Robots: Why Marines Extended K-MAX in Afghanistan,” *Breaking Defense*, 18 March 2013; and Henry S. Kenyon, “U.S. Robots Surge onto the Battlefield,” *SIGNAL*, March 2008, 45.

¹⁰⁵ Chad Hawthorne and Dave Scheidt, “Moving Emergent Behavior Algorithms from Simulation to Hardware: Command and Control of Autonomous UxV’s” (paper presented at the 10th International Command and Control Research and Technology Symposium: The Future of C2, McLean, VA, 13–16 June 2005).

¹⁰⁶ David J. Atkinson, “Emerging Cyber-Security Issues of Autonomy and the Psychopathology of Intelligent Machines” (paper presented at the 2015 AAAI Spring Symposium: Foundations of Autonomy and Its (Cyber) Threats: From Individuals to Interdependence, Palo Alto, CA, 23 March 2015).

Marine Corps will need to continue its efforts in developing and increasing human capacity while also pursuing AI in areas that make the most sense.

Crafting a force that can both increase its combat effectiveness and grow its capacity is possible with AI, but will come at a cost. AI offers an opportunity for organizations to focus on their core competencies. By intelligently reducing and or eliminating occupations more suitable for AI, such as many administrative, human resource, intelligence, and logistics positions, the Marine Corps can potentially exchange them for additional combat arms roles. At the same time, the Marine Corps will most likely need to develop, recruit, or contract a number AI experts and autonomous systems engineers to ensure new technology is integrated and appropriately nested within the overall Marine Corps Enterprise Network (MCEN) and the Joint Information Environment (JIE). The complexities of maintaining and integrating such systems will require advanced degrees and experience to properly implement optimally within an ecosystem of many other technologies and competing interests. Thus, eliminating some positions and implementing new ones will provide significant considerations for balancing human resources and talent management when adopting AI technology as a program of record in any domain.

In the mid- to short-term, the Marine Corps should pursue a dual strategy where both AI and humans can perform side-by-side until it is clear AI can handle tasks at an acceptable level, while ensuring a degree of safety and efficacy. Tasks that may require a human in the loop will become more complex with contributions of AI. While research in the area of AI decision making is ongoing, the Marine Corps cannot afford to ignore testing AI and human interactions on a small scale. Studies in the area of automation are replete with examples demonstrating inadequate human reactions or responses when automation fails or an unexpected event takes place.¹⁰⁷ As a result, further research in this area needs to explore mitigation strategies to ensure overall organizational effectiveness is not diminished from AI implementation.

Most importantly, the human component underlies the fundamental aspects of AI itself. In fact, it is the human characteristics that are the most valuable features of AI itself, which are often the most complex to represent within a machine. Most important, AI can neither fundamentally replace the very thing that created it without dire consequences nor change the nature of warfare itself. The MOCs' admonition with respect to how technology intersects with the human and the nature of war is worth repeating at length:

It is critical to emphasize, however, that technology will never override the human dimensions of war. Like conflicts of the past, wars of the future will be characterized by their destruction, bloodshed, and suffering. No level of automation or use of robotics will replace the fact that war will always center on violence directed by humans against other humans. Killing is inherent to fighting, and war's violent essence will never change. Hence, war will continue to be an extreme trial that will test our strength, stamina, and endurance. On the battlefields of tomorrow, our Marines and Sailors will still have to contend with danger, fear, exhaustion, and privation. While new technologies and scientific advancements may grant us advantages, ultimately, it will be our hardened resolve and will to win that will prove decisive in future combat.¹⁰⁸

Accordingly, even technologies such as AI should not distract the Marine Corps from pursuing activities and research that are foundational to the conduct of warfare. Developing Ma-

¹⁰⁷ Charles Duhigg, *Smarter Faster Better: The Secrets of Being Productive in Life and Business* (New York: Random House, 2016), 81.

¹⁰⁸ *Marine Corps Operating Concept*, 6.

rines through rigorous training and education to operate independently on mission-type orders, “off-the-grid” sans technology will become elemental in an environment where technological advantages are fleeting. Nevertheless, AI technologies will expand the boundaries of how and where warfare is conducted across the range of military operations (ROMO). Adversaries not constrained by a more Western ideology or bounded by our fundamental ethical considerations may push to challenge our notions of what we are willing to do. Just as the crossbow, machine gun, and airplane pushed the limits of destruction humans were willing to inflict on an enemy, history may add AI to this list as well.

AI can provide a capability that can potentially morph in importance as the technology can scale quickly. The ease of scalability in AI technology could lead from small-scale implementation to such an importance that it becomes “too big to fail.” To this point, *Warfighting* Marine Corps Doctrine Publication 1 (MCDP 1) is instructive: “There are two dangers with respect to equipment: the overreliance on technology and the failure to make the most of technological capabilities.”¹⁰⁹ This makes heeding the warning of MCDP 1 problematic if AI is not closely monitored once it crosses a threshold of becoming a mission essential/critical system. As a result, the Marine Corps cannot abandon core tenets of its development of human qualities that have provided the foundation for all its past and current successes.

Finding the optimal combination of AI technology will prove difficult because the push to adopt technology is unrelenting from the commercial and military industries. For this reason, balancing will become the operative word with adoption of AI. By continuously experimenting with AI where it makes practical sense, the Marine Corps can adhere to core principles and gain the most from using AI-based technologies. In fact, recent research has confirmed that leveraging the inherent flexible and diverse characteristics of human reasoning (inductive, deductive, long-term memory, etc.) with the strengths of domain-specific AI, what some term as a *centaur*, have provided the most effective combination for tackling problems.¹¹⁰

When the Marine Corps decides to implement AI within any warfighting domain, it should tread carefully and not abandon its primary focus on developing and maintaining the underlying human character that has defined warfare for millennia. Again, MCDP 1 states that “technology can enhance the ways and means of war by improving humanity’s ability to wage it, but technology cannot and should not attempt to eliminate humanity from the process of waging war.” It is doubtful that the next major war will be exclusively fought by robots alone, but will likely be enhanced with many different forms of autonomous technologies enabled by AI. For sure, robots destroying other robots is perhaps a battle after a fashion, but such a spectacle is not a sufficient condition to win a war ultimately rooted in human machinations. War will remain a human endeavor tangentially enhanced by AI technology to help impose violence or the threat of violence to break the will of an adversary. To be sure, the Marine Corps need not eliminate the human from all calculations when adopting AI technology, nor can it. By embracing the strengths of both AI and the individual Marine, the Marine Corps can increase its warfighting prowess through proper pairing and appropriate training for the most effective combinations. In the end, the Marine Corps can embrace this hybrid conception that does not abandon, but enhances the one true incalculable in war: the human will.¹¹¹

¹⁰⁹ *Warfighting*, MCDP 1 (Washington, DC: Headquarters Marine Corps, 1997), 67.

¹¹⁰ Kevin Kelly, *The Inevitable: Understanding the 12 Technological Forces that Will Shape Our Future* (New York: Viking, 2016), 41.

¹¹¹ Basil H. Liddell Hart, *Strategy* (New York: New American Library, 1974), 323.

Fighting for Time

Military Intelligence and the Delivery of “Decision Advantage”

by Major John Minear, USAF¹

In short, most intelligence is false, and the effect of fear is to multiply lies and inaccuracies.

~Carl von Clausewitz²

In general, commanders expect too much of intelligence officers. However, this condition has been brought about primarily by G2's [intelligence] themselves, since they tend to give the impression that they can achieve that which so far has been impossible; that is, predict the future. All commanders should realize that no matter how wise, brilliant, or experienced their G2's may be, they can no more read the future with certainty than can the commander himself or anyone else.

~Colonel Elias Carter Townsend, U.S. Army³

Arguments over whether military intelligence forecasts should consider enemy capabilities or enemy intentions are probably as old as intelligence itself. . . . For intelligence purposes, only one thing counts: capabilities.

~Brigadier General Oscar W. Koch, U.S. Army⁴

A dilemma exists, and potentially has always existed, regarding the purpose and use of intelligence in warfare: How does intelligence affect military operations? According to John Keegan in *Intelligence in War*, the intent of intelligence was to achieve a military advantage while averting the enemy's ability to do the same.⁵ The problem is, he claims, that the current argument of intelligence superiority being critical for success in war fails to be proven throughout history.⁶ This seems to run contrary to current U.S. Joint doctrine, claiming, “Pre-

¹ Maj Minear is a distinguished graduate of MCU's Command and Staff College. This paper was nominated for the LtGen Edward W. Snedeker Award of the Armed Forces Communications and Electronics Association for academic year 2016–17.

² Carl von Clausewitz, *On War*, eds. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1989), 117.

³ Elias Carter Townsend, *Risks: The Key to Combat Intelligence* (Harrisburg, PA: Military Service Publications, 1955), 2.

⁴ BGen Oscar W. Koch with Robert G. Hays, *G-2: Intelligence for Patton* (New York: Schiffer Publishing, 2004), 55–56.

⁵ John Keegan, *Intelligence in War: Knowledge of the Enemy from Napoleon to Al-Qaeda* (New York: Alfred A. Knopf, 2003), 4.

⁶ Keegan, *Intelligence in War*, 334.

dictive . . . intelligence can mitigate the risks inherent in military operations and increase the likelihood of success.”⁷ A careful examination of the purpose of intelligence in warfare and how it contributed to success in battle is necessary to isolate the variables needed to maximize the effect of military intelligence. While the prominent school of thought continues to gravitate toward assessing enemy intent, this paper argues that a faster reorientation on an enemy’s capabilities (i.e., location and strength) is by far a more direct route to victory than by merely predicting the enemy’s intent.

The key to unlocking the dilemma is to identify the characteristics of operational-level military intelligence necessary for a commander to achieve victory. Since the definition, and inevitably the purpose, of *intelligence* is to “answer questions about an adversary for a decision maker,” the purpose of military intelligence is to provide those answers in support of military operations.⁸ The two competing schools of thought, or theories of intelligence, used to deliver the answers to the decision maker focus on either enemy capabilities or intent. *Capability-based intelligence*, comprised of an enemy’s location and strength, is “an action which one is able to perform” and determines what one can do, whereas intention or *predictive-based intelligence* is based on a “determination to act in a particular manner” and attempts to predict what an adversary plans to do.⁹ Joint doctrine advocates for predictive intelligence, claiming it is most useful when it both “focuses on the future and adversary intent” as well as being provided “in sufficient detail as to be actionable.”¹⁰

Regardless of the type of intelligence used, Keegan argues that intelligence factors rarely determined the outcome of a battle and that intelligence is usually necessary but not a sufficient condition of victory.¹¹ If Keegan is right that “in combat willpower always counts for more than foreknowledge,” then what besides the “foreknowledge” provided by predicting enemy intent must be obtained to maximize the impact of military intelligence?¹² To achieve the solution to the dilemma, we must first analyze military theory to identify how intelligence affects a commander’s ability to make decisions involving an enemy and then analyze examples throughout history where the intelligence proved useful.

MILITARY THEORISTS’ VIEWS ON INTELLIGENCE

If one wishes to accept battle, one needs only sufficient time to bring the units under arms. If one desires to avoid an engagement, one needs sufficient time to allow the main body to march off without becoming engaged.

~Helmuth von Moltke¹³

Perfect intelligence in war must of necessity be out-of-date and therefore cease to be perfect. We deal with partial and outmoded sources from which we attempt to compose an intelligible appreciation having regard to the rules of evidence and our soldierly training and which must be prepared constantly to revise as

⁷ *Joint Intelligence*, Joint Publication (JP) 2-0 (Washington DC: Joint Chiefs of Staff, 2013), I-2.

⁸ Maj John M. Minear, USAF, “Chasing Relevance: Building Actionable Intelligence Analysis,” *Mitchell Forum*, no. 5 (2016), 2.

⁹ Townsend, *Risks*, 22.

¹⁰ *Joint Intelligence*, II-9.

¹¹ Keegan, *Intelligence in War*, 334.

¹² Keegan, *Intelligence in War*, 25.

¹³ Daniel J. Hughes, ed., *Moltke on the Art of War: Selected Writings* (Palo Alto, CA: Presidio Press, 1993), 255.

new evidence emerges. We deal not with the true but with the likely. Speed is therefore the essence of the matter.

~E. T. Williams¹⁴

In order to win we should operate at a faster tempo or rhythm or, better yet, operate inside adversary's Observation-Orientation-Decision-Action time cycle or loop.

~Colonel John Boyd, U.S. Air Force¹⁵

To subjectively analyze Keegan's claims, a review of military theorists' views must occur to identify the value of intelligence in war. While analyses of military theorists are readily available, the examination of intelligence therein usually focuses on types of information used in battle rather than how intelligence affects a commander's decisions. The scope of this analysis will therefore focus on intelligence provided to a commander at the operational level of war, which "links the tactical employment of forces to national strategic objectives."¹⁶ An examination of intelligence supporting policy and strategic level decisions, such as those determining how and when to wage war, is beyond the scope of this paper.

The first section analyzes the influential military theorists ranging from the sixth-century Chinese theorist Sun Tzu to the nineteenth-century theorists of the Napoleonic Era, Carl von Clausewitz and Antoine-Henri Jomini, to determine how they valued intelligence. However, the analysis of the military theorists will assume that an understanding of terrain and its effects on the battlefield is necessary for victory for all military theorists. Additionally, the analysis of the theorists will not compare their methods for collecting information since they changed substantially over time.

Sun Tzu: The Art of War

More than any other writer on warfare, Sun Tzu is the most idealistic at incorporating knowledge of the adversary into military theory. His famous verse on intelligence—to know yourself and your enemy to be safe in every battle—is a simple, yet prescriptive formula to plan for success in war.¹⁷ The verse confirms that failure to obtain knowledge of either oneself or the enemy will result in defeat.¹⁸ If knowledge of oneself is understood as *operations* while knowledge of the enemy is *intelligence*, then the verse identifies the immense value of intelligence yet limits its role to being equal with, and never surpassing, operations. Howev-

¹⁴ E. T. Williams, memo WO 208-3575, "The Use of Ultra by the Army," ca. 1945, quoted in J. Ferris and M. I. Handel, "Clausewitz, Intelligence, Uncertainty and the Art of Command in Military Operations," *Intelligence and National Security* 10, no. 1 (1995): 1, 41–42.

¹⁵ Frans P. B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (London: Routledge, 2007), 141.

¹⁶ *Joint Operations*, JP 3-0 (Washington, DC: Joint Chiefs of Staff, 2017), I-13.

¹⁷ Gary Gagliardi, trans., *Sun Tzu's the Art of War: Plus the Ancient Chinese Revealed* (Seattle, WA: Clearbridge Publishing, 2007), 39. The complete translation of the verse is: "Know yourself and know your enemy. You will be safe in every battle. You may know yourself but not know your enemy. You will then lose a battle for every one you win. You may know neither yourself nor your enemy. You will then lose every battle."

¹⁸ Gagliardi, *Sun Tzu's the Art of War*.

er, simply relying on one verse from Sun Tzu fails to capture the full meaning of his work.¹⁹

For Sun Tzu, the study of victory in warfare encompassed everything from tactics, logistics, and economic costs, as well as the moral and practical state of the countries involved.²⁰ His holistic approach translated into a comprehensive view of intelligence that encompassed all levels of warfare and, as a consequence, advocated for “predict[ing] the enemy to overpower him and win.”²¹ Michael Handel’s *Masters of War* describes Sun Tzu’s view of the role of intelligence:

[He] optimistically assumes that good intelligence makes it possible to predict the outcome of a war or battle. . . . His logic is simple and linear; good intelligence forms the basis for better planning, and the possibility of controlling events on the battlefield allows for the implementation of those plans, culminating in the achievement of victory.²²

Sun Tzu regarded the development of a “true picture” of the enemy as the most valuable resource to a commander; the result of “always knowing the enemy’s situation” through the extensive use of spies.²³ This provides a commander the ability to know “when to attack and when to avoid battle” as a key component for ensuring victory.²⁴

While Sun Tzu placed an excessive reliance on intelligence, he overestimated the value of planning in shaping the battlefield.²⁵ His inflated value for planning is directly related to his views that spies can gain all of the required information, which can mislead practitioners into believing that intelligence can solve all of the problems on the battlefield. Keegan argued against this exact type of logic. Additionally, it is impossible to predict with any degree of accuracy, since the more detailed a prediction, the higher likelihood of error.²⁶ This limits the utility of Sun Tzu’s claims that one can predict an enemy to overpower them in battle, but it does not rule out the usefulness of understanding the enemy’s political intent. Regardless of the limitations of his work, Sun Tzu still provides critical insight into the value of intelligence to a commander:

1. Knowledge of the enemy is equal, but not surpassing, the value of knowledge of one’s self.
2. All levels of war require intelligence support.
3. The most valuable intelligence tool for a commander is a “true picture” of the enemy.
4. Knowledge of political intent is useful since political objectives are the reason for war.

¹⁹ Derek M. C. Yuen, *Deciphering Sun Tzu: How to Read The Art of War* (New York: Oxford University Press, 2014), 14–27. Understanding Sun Tzu’s work also requires an appreciation for the difference between Chinese and Western strategic thought. Overall, Chinese grand strategy merged politics with warfare holistically, employing all possible powers against an adversary, while also systemically dealing with nothing in isolation and fully appreciative of relationships and context. Their approach employed both strategy, utilizing a plan to achieve the desired aim, and stratagem, utilizing a plan to outwit an opponent. Additionally, the Chinese, through the dialectic and dynamic nature of yin and yang, viewed everything as “interconnected, interpenetrating, and interdependent.” These relationships clearly demonstrate the Chinese relationship between the *straightforward* governance of politics and the *crafty* nature of warfare.

²⁰ Yuen, *Deciphering Sun Tzu*, 14.

²¹ Michael I. Handel, *Masters of War: Classical Strategic Thought*, 3d ed. (London: Frank Cass Publishers, 2000), 252; and Gagliardi, *Sun Tzu’s the Art of War*, 109.

²² Handel, *Masters of War*, 236.

²³ Gagliardi, *Sun Tzu’s the Art of War*, 146–47. Although Gagliardi uses the English translation *spies*, the original text “specifically means a between space, as we might say a go-between or a channel of information.” This clarifies the role of spies as collectors of information.

²⁴ Gagliardi, *Sun Tzu’s the Art of War*, 39.

²⁵ Handel, *Masters of War*, 252.

²⁶ Colin S. Gray, *Another Bloody Century: Future Warfare* (Paris: Phoenix Press, 2007), 39.

Carl von Clausewitz: On War

While Carl von Clausewitz shared similar views with Sun Tzu regarding the holistic nature of war, such as the paradoxical trinity between the government, the people, and the military, he differed significantly from Sun Tzu's idealistic view of intelligence.²⁷ Clausewitz epitomized a soldier's distrust for intelligence, claiming that nearly all reports received about the enemy were mostly uncertain or simply false.²⁸ His viewpoint, shaped by the massive amount of often-contradictory information received within war at the operational and tactical levels, also resulted from the limited aperture of human collection capabilities at that time as well as the speed at which information traveled during the Napoleonic era:

Unless the enemy is so close as to be in full view . . . knowledge of his position will be incomplete. It will be acquired from reconnaissance, patrols, prisoners' statements and spies, and it can never really be reliable for the simple reason that all such reports are always a little out of date, and the enemy may in the meantime have changed his position.²⁹

Clausewitz also understood that all knowledge, when viewed through the "fog or moonlight" of war, seemed "grotesque" and distorted; that most intelligence was made worse by the effects of fear in battle, leading to incorrect assessments of relative strengths. Clausewitz identified the difficulty of accurate recognition as "the most serious source of friction in war," thereby arguing that "the only situation a commander can know fully is his own; his opponent's he can know only from unreliable intelligence."³⁰ Therefore, he believed that obtaining the only sources of useful information were through "direct contact with the enemy" or through a "commander's direct observations."³¹

Even though Clausewitz distrusted intelligence, he identified multiple areas where intelligence about an enemy did present an advantage. First, he understood that certain conditions, such as forces on the defensive, presented a commander with information superiority over an aggressor due to the increased availability of information from their close contact with the local inhabitants.³² Therefore, the increase in the available information presented an intelligence advantage. Second, Clausewitz identified the need for intelligence while planning at the outset of conflict to ascertain the political probability of an enemy pursuing the "absolute" form of war.³³ Strategic intelligence was consequently a fundamental requirement for planning. Finally, Clausewitz advocated for understanding the adversary's "dominant characteristics" from which their center of gravity originates, their "hub of all power and movement, on which everything depends."³⁴ Knowing the "dominant characteristics" of an enemy required an accurate identification of their capabilities, to include strengths and weaknesses.

Clausewitz's antagonistic view of intelligence offset his more pragmatic approach regarding the role of a commander's judgment on the battlefield.³⁵ Rather than a heavy emphasis on the en-

²⁷ Yuen, *Deciphering Sun Tzu*, 27; and Clausewitz, *On War*, 89.

²⁸ Clausewitz, *On War*, 117.

²⁹ Clausewitz, *On War*, 273.

³⁰ Clausewitz, *On War*, 84, 117, 140.

³¹ Handel, *Masters of War*, 251.

³² Clausewitz, *On War*, 373.

³³ Clausewitz, *On War*, 584.

³⁴ Clausewitz, *On War*, 595–96.

³⁵ The analysis in this paper only identifies the intelligence factors that affect a commander's judgment. See Ferris and Handel, "Clausewitz, Intelligence, Uncertainty and the Art of Command in Military Operations," for an analysis of the psychological characteristics of a good commander, as identified by Clausewitz, and the effect of intelligence on factors such as character, boldness, and determination.

emy, he required a higher degree of judgment from a commander, guided by knowledge of men and affairs, common sense, and the laws of probability.³⁶ Since the destruction of the enemy's armed forces was his highest priority, any lack of judgment, or "partial ignorance of a situation," was a delay toward the progress of the enemy's defeat.³⁷ In this context, Clausewitz revealed a significant variable: the time available for calculating probabilities during the circumstances of conflict.³⁸ As Clausewitz identified, the whole purpose of raising an army is to ensure they fight at the right time and place.³⁹ Therefore, accurate knowledge of the enemy assimilated faster than the pace of conflict maximizes the time available for effective judgment, thereby facilitating the proper positioning of all efforts against the enemy's power of resistance, or more precisely, "*the total means at his disposal and the strength of his will.*"⁴⁰

Even though Clausewitz marginalized the value of intelligence on the battlefield, a view shaped by the circumstances of his time, he indirectly identified how intelligence personnel could increase their value to a commander. The following principles are deduced from his work:

1. Due to the nature of warfare, intelligence is often unreliable. Once collected, essential facts must be consistently reverified to maintain their credibility and usefulness.
2. Accurate assessments of enemy strength, based on sound judgment and the laws of probability, reduce friction in war.
3. The timeliness of intelligence from a battlefield directly contributes to its accuracy, and consequentially, its value to a commander.
4. Accurate knowledge of the enemy assimilated faster than the pace of conflict maximizes the time available for effective judgment.
5. Determining enemy strengths and weaknesses is a prerequisite to identifying centers of gravity.
6. Strategic-level intelligence is necessary to shape the overall campaign plan.

Antoine-Henri Jomini: The Art of War

Antoine-Henri Jomini differed significantly from Clausewitz in his writing style, providing a more straightforward prescription for the use of intelligence.⁴¹ In stark contrast to Clausewitz's distrust of intelligence in war, Jomini advocated the utilization of all means of collecting information; even though the information may be contradictory or imperfect, the truth could be sifted through it.⁴² He further argued that with enough intelligence, any event, entirely or in part, could be hypothesized and planned for within the limits of probability or possibility.⁴³ Therefore, Jomini implied that the commander must possess a staff that can analyze information, identify fact from inaccurate or deceptive reporting, and turn it into finished intelligence. Jomini also argued that a commander should be able to estimate the enemy's options and plan courses of action against them, thereby preventing unexpected ruin.⁴⁴ His claim implies that all enemy courses of

³⁶ Clausewitz, *On War*, 117.

³⁷ Clausewitz, *On War*, 85, 99.

³⁸ Clausewitz, *On War*.

³⁹ Clausewitz, *On War*, 95.

⁴⁰ Clausewitz, *On War*, 77, emphasis in original.

⁴¹ Victor M. Rosello Jr., "The Origins of Operational Intelligence" (unpublished paper, School of Advanced Military Studies, U.S. Army Command and General Staff College, 1989). Jomini never uses the word *intelligence* in his work. Instead, he used *reconnaissance* and *enemy movements* to describe intelligence.

⁴² Baron de Jomini, *The Art of War*, trans. Capt G. H. Mendel and Lt W. P. Craig Hill (Philadelphia, PA: J. B. Lipponcott, 1862), 250.

⁴³ Jomini, *The Art of War*.

⁴⁴ Jomini, *The Art of War*.

action should be identified and weighed according to their relative probability, thereby enabling the planning of friendly courses of action to counter them. Even with such a high emphasis on obtaining information on the enemy, Jomini cautiously warned that “perfect reliance” should never be placed on intelligence alone.⁴⁵

Jomini filled a critical void left by Clausewitz by arguing that intelligence, regardless of how imperfect, is necessary for success. His writing is more scientific than theoretical and attempted to isolate warfare from political or social factors, which leaves multiple areas underdeveloped or missing altogether.⁴⁶ However, his description of intelligence, while lacking details or even depth, offers the following principles for application:

1. Intelligence analysts must use all-source information to identify the facts; single sources of information must be verified with additional sources.
2. Intelligence analysts must identify all courses of action available to an enemy and weigh them in order of probability.

Summary

The knowledge gained from analyzing Sun Tzu, Clausewitz, and Jomini is in how each theorist relates to the other. Sun Tzu’s idealization of intelligence sharply contrasts Clausewitz’s idealization of the commander, yet Jomini complements both by focusing on the principles of warfare for the practitioner. Therefore, the ideal form of military intelligence should be derived from the idealized and practical approaches of the three. The following six principles of operational-level intelligence analysis, in addition to the previously addressed assumption of knowledge of the operational environment, should guide the formation and application of military intelligence personnel and organizations:

Knowledge of the operational environment and its effects are foundational to sound intelligence analysis.

1. Accurate orientations of the enemy’s capabilities (location and strength) are the commander’s most valuable tool to reduce friction.
2. The enemy’s capabilities always change; therefore, the pace of intelligence must surpass the tempo of the conflict.
3. All available sources of information must be used to maintain an accurate picture of the enemy and must continually be cross-checked to verify its accuracy.
4. An accurate orientation of the enemy’s capabilities directly aids planning; it is a prerequisite for identifying centers of gravity and prioritizing an enemy’s available courses of action.
5. Strategic-level intelligence must provide an estimate regarding the enemy’s political intent or their objectives for the war; this is the only knowledge of enemy intent necessary to shape campaign planning at the operational level.
6. Intelligence enhances but is not a replacement for sound judgment and decision making by a commander.

Of the six principles, the first three deal directly with time and tempo as directly contributing to the success of military operations. The next two identify how to use information and its value to operational planning. The last principle summarizes the three theorists views of warfare by reinforcing the axiom that “intelligence does not produce command decisions, [only] a commander does.”⁴⁷

⁴⁵ Jomini, *The Art of War*.

⁴⁶ Rosello, “The Origins of Operational Intelligence,” 9.

⁴⁷ Ferris and Handel, “Clausewitz, Intelligence, Uncertainty and the Art of Command in Military Operations,” 11.

An additional observation is worth noting regarding the use of surprise and deception. Between the three theorists, Sun Tzu's idealistic view of intelligence directly correlates to his favorable view of surprise and deception. He argued that deception be the weapon of choice and the basis for successful military operations while also believing in the ability to achieve surprise to attain victory.⁴⁸ This differs significantly from Clausewitz and Jomini, who both believed surprise is hard to achieve and deception was unimportant and a waste of time.⁴⁹ While a complete analysis of both is beyond the scope of this paper, it is worth noting that the value placed on intelligence correlates to the value put on surprise and deception.

CASE STUDIES

Strategy is the art of making use of time and space. I am less chary of the latter than of the former; space we can recover, time never. . . . I may lose a battle, but I shall never lose a minute. . . . Time is the great element between weight and force.

~Napoleon Bonaparte⁵⁰

War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty. A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth.

~Carl von Clausewitz⁵¹

The two case studies selected for this analysis, Napoleon's Danube Campaign of 1805 against the Third Coalition and the Civil War's Chancellorsville Campaign of 1863, closely represent the writings of Sun Tzu, Clausewitz, and Jomini since they occur at the point in history where the scale of war expanded significantly. However, the commanders during both campaigns had not yet developed or were just beginning to develop intelligence organizations capable of handling the massive amount of information required to support military operations. Therefore, the analysis of each campaign will focus on whether each commander adhered to the six principles of operational-level intelligence previously identified. While sources and collection methods do account for success or failure in intelligence, and therefore cannot be ignored, they will only be analyzed in the case studies to the extent needed to determine their contributions to the application of the six principles.

The Danube Campaign

Napoleon Bonaparte's aggressive campaign against the Third Coalition in the summer of 1805 was a masterpiece of command and the use of intelligence. The Third Coalition, comprised of England, Austria, Russia, and Sweden, was busily constructing plans for an offensive against France to restore Europe to the regional balance before 1789.⁵² Presented with threats from multiple directions, Napoleon focused his main effort against the coalition's greatest potential strength by moving his Grande Armée of 210,000 troops to the Danube front while positioning

⁴⁸ Handel, *Masters of War*, 253.

⁴⁹ Handel, *Masters of War*.

⁵⁰ Napoleon III, *Correspondance de Napoléon Ier*, vol. 18, no. 14707 (Paris: 1858): 218, as quoted in David G. Chandler, *Campaigns of Napoleon: The Mind and Method of History's Greatest Soldier* (New York: Scribner, 1973), 149.

⁵¹ Clausewitz, *On War*, 101.

⁵² Chandler, *Campaigns of Napoleon*, 382.

additional forces to cover his flanks.⁵³ His objective was to eliminate the merging of Austrian forces, under Archduke Ferdinand and General Karl Mack, with Russian troops moving west.⁵⁴ The campaign succeeded with the surrender of Mack's army of 30,000 personnel at Ulm, Germany, on 20 October 1805 and the eventual defeat of the Russian and Austrian armies at Austerlitz on 2 December. The campaign resulted in the balance of power shifting decisively in France's favor, positioning Napoleon's Grande Armée as the dominant force in Europe.⁵⁵

Napoleon's use of intelligence is evident from the beginning of his campaign planning. When his Grande Armée set out on the campaign from Boulogne on the Danube in late August 1805, Napoleon's chief of staff already developed a map of the theater of war that encompassed intelligence gathered by the French ambassador at Dresden regarding Russian and Austrian forces.⁵⁶ Napoleon also sent senior officers on an extended two-week reconnaissance mission to gain all available information about the environment before he could complete his final plans in September. What he could not gain from reconnaissance, he learned by studying history, geography, politics, and even statistics.⁵⁷ His statistical bureau compiled strategic intelligence with information from every source of information available, including an extensive network of spies who gained vital information on Russian and Austrian political intent.⁵⁸ Additionally, his Ministry of Foreign Affairs created intelligence products by analyzing diplomatic dispatches and foreign publications, which he compiled into a book of information about every army in Europe.⁵⁹

Regardless of how much information he processed, Napoleon's ability to reorient faster than his adversaries was a critical strength. His general staff compiled all observation reports from each corps' cavalry patrols and interrogation reports from captured enemy personnel.⁶⁰ The information kept Napoleon current on changes in Mack's movements and actions along the Danube. As the campaign progressed, his chief of staff compiled and annotated intelligence reports from reconnaissance and road surveys onto an operational-level map, enabling Napoleon to calculate daily march times for each of his seven *corps d'armée*.⁶¹ The map provided him with an actual orientation of his forces in time and space relative to his adversary. Napoleon's ability to maintain an effective orientation was in stark contrast to the planning efforts of the Third Coalition. The planning of the Austrians and Russians was riddled with inconsistencies and errors, including the Austrian staff's failure to account for the 10-day difference between their Gregorian calendar and Russia's Julian calendar as well as defective chains of command, which eliminated their ability to maneuver their combined forces against the French armies quickly.⁶²

Napoleon's ability to reorient faster than his adversaries enabled him to outmaneuver his opponents. His knowledge of Mack's mission to cover the approach for the Russian armies enabled him to pursue an aggressive march to cut their lines of communication and envelop the Austrian Army, even though he lacked information regarding the timeline for the Russians' arrival. Meanwhile, Mack was operating in a "fool's paradise," the result of deception and faulty

⁵³ Chandler, *Campaigns of Napoleon*, 384.

⁵⁴ Chandler, *Campaigns of Napoleon*, 384–85.

⁵⁵ Peter Paret, "Napoleon and the Revolution in War," in *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler*, eds. Edward Mead Earle, Gordon Alexander Craig, and Felix Gilbert (Princeton, NJ: Princeton University Press, 1943), 123.

⁵⁶ Jay Luvaas, "Napoleon's Use of Intelligence: The Jena Campaign of 1805," *Intelligence and National Security* 3, no. 3 (1988): 43.

⁵⁷ Luvaas, "Napoleon's Use of Intelligence," 41.

⁵⁸ Rosello, "The Origins of Operational Intelligence," 19; and Luvaas, "Napoleon's Use of Intelligence," 44.

⁵⁹ Luvaas, "Napoleon's Use of Intelligence," 43.

⁶⁰ Rosello, "The Origins of Operational Intelligence," 19.

⁶¹ Chandler, *Campaigns of Napoleon*, 385.

⁶² Chandler, *Campaigns of Napoleon*, 382–83.

intelligence concerning Napoleon's intent and the position of his forces.⁶³ By 15 October, Napoleon completed his encirclement of the Austrian Army and began his bombardment.⁶⁴ Two days later, after losing multiple battles around Ulm, Mack petitioned for an eight-day armistice from Napoleon, hoping Russian aid might arrive in time to save his army. Napoleon, armed with intelligence that the Russian Army was still more than 100 miles away, agreed to the terms.⁶⁵ However, on 20 October, five days ahead of schedule, Mack surrendered his army of more than 30,000 personnel to Napoleon.⁶⁶ While an impressive victory in itself, Napoleon's campaign was only 26 days old and was only getting started.

The second portion of the Danube campaign was another race against time. Based on intelligence regarding the signing of the Treaty of Potsdam between Tsar Alexander I of Russia and King Frederick William III of Prussia, Napoleon calculated he had only 12 weeks before 400,000 combined Prussian, Austrian, and Russian soldiers would converge against him on the Danube.⁶⁷ To minimize additional threats to his flanks, Napoleon decided to thrust into the heart of Austria and take their capital of Vienna.⁶⁸ For eight weeks, Napoleon's *corps d'armée* pushed toward Vienna on the heels of the Russians, but failed to encircle them before they united with the Austrians.⁶⁹ After capturing the capital without a fight, Napoleon faced critical issues: his troops were exhausted, two armies already plundered the resources along his line of retreat, and his enemy was growing stronger.⁷⁰ He decided on a course of action to lure the Russian and Austrian forces out of their camps on Olmütz to attack his forces.⁷¹

Napoleon's plan to lure the allied armies into battle at Austerlitz on 2 December 1805 was directly aided by the timely intelligence of the enemy's strengths and weaknesses. While the allied armies held a two-to-one force ratio advantage, they lacked an overall commander, preferring instead for each emperor to maintain command of their troops. Napoleon calculated that, by tempting the allies with his smaller force, only 53,000 at the time while ordering a forced march of his remaining 22,000 men to the fight, he could defeat the 89,000 enemy soldiers by exploiting divisions within their forces.⁷² The plan worked. Through a careful preparation of the battlefield near Austerlitz, and through feigning weakness by abandoning key terrain on the Pratzen Heights, Napoleon baited the allies into an attack separating the Austrian and Russian formations. His counterattacks against each force, aided by the timely arrival of his additional *corps d'armée*, forced a complete route by the allies. The resulting armistice, signed at the Treaty of Pressburg on 26 December, removed Austria as a threat and destroyed the coalition's unity on Napoleon's eastern flank.

The Danube Campaign clearly demonstrates Napoleon's use of all six principles of operational-level intelligence. The tempo of his intelligence, as well as his staff's ability to incorporate multiple sources of information at all levels thereby orienting him on enemy strengths and weaknesses, allowed him to outmaneuver the Austrian and Russian armies at Ulm and Austerlitz. While critics argue he lacked a formalized intelligence organization, particularly in the lower echelons, to centralize the collection, collation, and analysis of information, they fail to comprehend that Napoleon's intelligence support during the Danube Campaign provided him the

⁶³ Chandler, *Campaigns of Napoleon*, 397.

⁶⁴ Chandler, *Campaigns of Napoleon*, 400.

⁶⁵ Chandler, *Campaigns of Napoleon*.

⁶⁶ Chandler, *Campaigns of Napoleon*, 402.

⁶⁷ Chandler, *Campaigns of Napoleon*, 403.

⁶⁸ Chandler, *Campaigns of Napoleon*.

⁶⁹ Chandler, *Campaigns of Napoleon*, 408.

⁷⁰ Chandler, *Campaigns of Napoleon*, 410.

⁷¹ Chandler, *Campaigns of Napoleon*.

⁷² Chandler, *Campaigns of Napoleon*.

answers needed and at a tempo fast enough to win decisive engagements against a larger adversary.⁷³

The Chancellorsville Campaign

The Battle of Chancellorsville during the American Civil War provides another excellent example of how reorienting faster than the adversary can enable a commander to defeat a numerically superior force. Following the defeat of Major General Ambrose E. Burnside against General Robert E. Lee at the Battle of Fredericksburg in December 1862, Major General Joseph Hooker spent the winter and spring of 1863 rebuilding and reorganizing the Army of the Potomac to continue its march toward Richmond, Virginia. After three revisions to his plans, Hooker's cavalry, a full corps less one battalion, set off on 27 April 1863 in a risky move to outmaneuver Lee's army entrenched at Fredericksburg and cut off his lines of communication. From 28 to 30 April, Hooker successfully crossed the Rappahannock River with three corps of infantry at Kelly's Ford and established his headquarters at Chancellorsville. As his forces moved out in three columns on 1 May, Hooker held no expectation, nor was he prepared, to risk a major battle to secure his main objectives that day.⁷⁴

On the morning of 1 May, Lee, aware of Hooker's movements, ordered Lieutenant General Thomas J. "Stonewall" Jackson's II Corps to attack and by 1030, Hooker's and Lee's forces were engaged on the Orange Turnpike between Chancellorsville and Fredericksburg. Hooker, realizing his three columns, which were separated by the dense wilderness, were at risk of being "whipped in detail" by the notoriously aggressive Jackson, ordered his forces to withdraw and occupy previous positions around Chancellorsville.⁷⁵ By that night, all of Hooker's corps were back where they left earlier that morning. While Hooker prepared his positions for a defensive fight on his ground, Lieutenant General J. E. B. Stuart continued his reconnaissance of the Union positions with his cavalry corps, while Jackson probed the Union lines near the Hazel Grove.⁷⁶ Their discoveries would shape Lee's plan for the following day.

Lee's decision to attack, aided by the accurate intelligence of Hooker's right flank and accurate knowledge of the road networks, was both bold and incredibly risky.⁷⁷ On the evening of 2 May, Jackson, having marched his forces all morning and afternoon, attacked Hooker's right flank and achieved a near complete surprise. The resulting route of Major General Oliver Howard's XI Corps and the total collapse of Hooker's right flank were slowed only by the approaching darkness and hastily reassembled defensive lines. The next morning, out of fear that the forces in the salient of Hazel Grove might be cut off, Hooker made one of his most fateful decisions of the campaign by ordering their complete withdrawal from the high ground.⁷⁸ This gift to Lee's artillery enabled them to shell Hooker's lines, as well as his headquarters in Chancellorsville. Following two days of fighting, including the stalled Union attack from Fredericksburg, Hooker ordered a complete withdrawal of all forces across the Rappahannock River during the night of 5 May, providing the victory to Lee.⁷⁹

Intelligence played a crucial role in the campaign for both Hooker and Lee, yet it was Hooker who enjoyed the greatest advantage before the battle. After taking command on 25 January

⁷³ Rosello, "The Origins of Operational Intelligence," 21.

⁷⁴ Stephen W. Sears, *Chancellorsville* (New York: Houghton Mifflin, 1996), 202.

⁷⁵ Sears, *Chancellorsville*, 211–12.

⁷⁶ Sears, *Chancellorsville*, 224.

⁷⁷ Sears, *Chancellorsville*, 232.

⁷⁸ Sears, *Chancellorsville*, 312.

⁷⁹ Sears, *Chancellorsville*, 492–501. The victory came at a high cost for Lee with 13,460 casualties, or approximately 21 percent of his forces, compared to 17,304 Union casualties, or approximately 13 percent of their forces.

1863, Hooker's primary source of intelligence was the remnants of Allan Pinkerton's Secret Service. The Secret Service only reported raw intelligence to the commander and, because his agents lacked training in estimating the strength of combat units, estimates were often grossly inflated.⁸⁰ Additionally, the Union Army had yet to compile any estimates on the strength of the Army of Northern Virginia.⁸¹ Just 10 days after he took command, Hooker looked to "organize and perfect a system for collecting information as speedily as possible."⁸² Leading the effort was his new deputy provost marshal, Colonel G. H. Sharpe, who would eventually lead the "separate and special" Bureau of Military Information (BMI) later established on 30 March 1863.⁸³ The only connection to Pinkerton's Secret Service was John Babcock, who remained with the Army of the Potomac and would be invaluable to Sharpe's BMI.⁸⁴ For the first time in the war, the Army of the Potomac had an intelligence organization that coordinated and consolidated all-source intelligence to provide an accurate picture of the enemy.⁸⁵

While both Hooker and Lee were able to build a picture of the other's army, Hooker's orientation of Lee's capabilities was far more accurate. Even though Hooker's strategic assessment of Lee's intent proved disastrously false, believing he would retreat to Richmond or the Shenandoah Valley once Union forces crossed the Rappahannock, he possessed a remarkable understanding of Lee's capabilities.⁸⁶ Between the first all-source report compiled on 15 March to just before the beginning of the campaign, Sharpe's BMI continually refined their estimates enabling Hooker to know "almost as much about Robert E. Lee's army as Lee himself knew."⁸⁷ Conversely, Lee's secret service overestimated the Army of the Potomac's strength to be more than 150,000, which Lee assumed was much closer to being only a two-to-one advantage.⁸⁸ Since Lee knew Union enlistments were coming due and felt he had no more to worry about Hooker than his predecessors, he incorrectly assumed that any attack would be against his current fortifications.⁸⁹ Lee's overconfidence in his assessment of Hooker's intent left him unprepared to meet the threat from the Army of the Potomac.⁹⁰ While both generals held accurate estimates of enemy strength, their confidence in their estimates of intent left them vulnerable to surprise.

With a few exceptions, Hooker and Lee utilized the same collection methods with varying levels of success. Both armies gained intelligence from the adversary's newspapers and the keen eyes of their signal corps, yet only the Union possessed the capability to employ observation balloons.⁹¹ While both used spies and scouts, Hooker's BMI relied more heavily on civilian spies,

⁸⁰ Sears, *Chancellorsville*, 69.

⁸¹ Harold W. Nelson and Jay Luvaas, eds., *The U.S. Army War College Guide to the Battles of Chancellorsville and Fredericksburg*, 1st ed. (Carlisle, PA: South Mountain Press, 1988), 300.

⁸² Sears, *Chancellorsville*, 69.

⁸³ Nelson and Luvaas, *The U.S. Army War College Guide*, 300–1.

⁸⁴ Sears, *Chancellorsville*, 69.

⁸⁵ Sears, *Chancellorsville*, 70.

⁸⁶ Nelson and Luvaas, *The U.S. Army War College Guide*, 311.

⁸⁷ According to a visitor to Hooker's headquarters on 22 April, Hooker knew "all that is necessary to know in regard to the enemy, every regiment and brigade, division, etc., all their latest arrivals and departures, etc., all collated, compared from many sources, and fully confirmed. The secret service of Gen. Hooker is far superior to anything that has ever been here before." Sears, *Chancellorsville*, 102, 151. The info was so accurate that by the end of April, "the B.M.I.'s latest count of Lee's infantry came to 54,600, just 1,600 short of its actual numbers. In estimating Lee's artillery at 243 guns, the B.M.I. over counted by just 23."

⁸⁸ Sears, *Chancellorsville*, 102, 112–13.

⁸⁹ Sears, *Chancellorsville*, 102, 113.

⁹⁰ Sears, *Chancellorsville*, 102, 113–14.

⁹¹ Sears, *Chancellorsville*, 102, 101.

detectives, and deserters whereas Lee preferred the use of scouts from his cavalry.⁹² This preference in collection methods initially favored Hooker's BMI, since their detailed estimates enabled Hooker to refine his plan a third time by mid-April.⁹³ However, the lack of cavalry available for scouting proved disastrous for Hooker and gave Lee the decisive advantage of a faster reorientation once the fighting commenced.

While Hooker enjoyed the initial advantage, Lee's use of intelligence during the battle shifted the initiative squarely into his favor. Even though Hooker had an understanding of the road network around Chancellorsville, thanks to the work of his topographical engineers during planning, he was completely unprepared for the dense thicket that made it nearly impossible to maneuver outside of the narrow roads.⁹⁴ Because Hooker tasked his cavalry to maneuver south against Lee's lines of communication, he was blindfolded in battle since he lacked the scouts required to gather intelligence on Lee's location.⁹⁵ Hooker still possessed his observation balloons, but they were of limited use in Fredericksburg with only six to eight miles of visibility.⁹⁶ Additionally, when reports were generated from the aerial observers, they did not reach Hooker in time due to significant problems with the telegraph lines.⁹⁷ With virtually no intelligence arriving regarding Lee's location, Hooker mistakenly thought the lack of intelligence meant nothing had changed on the morning of 1 May.⁹⁸

Hooker most likely decided to withdraw his forces from their initial contact with the Confederates based on his orientation of the enemy's strength. Armed with the BMI's orders of battle and reports concerning the movement of Jackson's corps against the Union center, numbering 33,500 to as high as 48,000 infantry, Hooker likely possessed the clearest picture of anyone on the battlefield.⁹⁹ Since Hooker only had 30,000 men employed south of the Rappahannock separated by the dense wilderness into three separate columns, Jackson could engage any one of them with a significant advantage in strength.¹⁰⁰ Following the withdrawal to Chancellorsville, Sharp and the BMI spent the night consolidating reporting and, by the morning of 2 May, produced an accurate estimate of the strength of Lee's forces but were unable to provide specific locations.¹⁰¹ Without cavalry to scout the enemy forces, Hooker lacked the ability to develop an accurate orientation of Lee's army as it maneuvered toward his right flank.

As Lee assessed the situation he faced on the evening of 1 May, he was aided by the timely reconnaissance of his generals and his staff. After reconnoitering his right flank and determining it lacked a suitable opening, he decided to attack on his left. However, he needed two critical pieces of intelligence to carry out the attack: "the location of Hooker's right flank, and a hidden way to reach that flank." After receiving reports regarding the location of Hooker's flank, the Union's position of strength at Hazel Grove, and Stuart confirming control of all roads by Confederate forces, Lee only needed a guide to lead Jackson's corps to Hooker's right undetected.

⁹² Nelson and Luvaas, *The U.S. Army War College Guide*, 302–3. The terms *spies* and *scouts* were often used interchangeably. Spies were "individuals located permanently within enemy lines or territory who were actively involved in collecting information valuable to their military leaders. . . . Scouts were organized under a chief who direct their movements, and their duties were to serve as couriers between the network of spies and their military leaders. . . . Scouts became 'the real eyes and ears of the army' as they probed forward as far as the enemy picket line and then used their trained powers of observation to find out what was happening on the other side."

⁹³ Sears, *Chancellorsville*, 130.

⁹⁴ Sears, *Chancellorsville*, 100, 201.

⁹⁵ Nelson and Luvaas, *The U.S. Army War College Guide*, 307.

⁹⁶ Nelson and Luvaas, *The U.S. Army War College Guide*, 309.

⁹⁷ Sears, *Chancellorsville*, 201.

⁹⁸ Sears, *Chancellorsville*, 202.

⁹⁹ Sears, *Chancellorsville*, 212.

¹⁰⁰ Sears, *Chancellorsville*.

¹⁰¹ Sears, *Chancellorsville*, 227–28.

Jackson's chaplain, Reverend Beverly Tucker Lacy, was from the area and, knowing the terrain well, guided Jackson's corps through the wilderness the following morning. Even though the Union forces on Hazel Grove observed the movement of Jackson's forces toward their right flank, Hooker's lack of cavalry hindered his ability to reorient to the threat Jackson presented until it was too late.¹⁰²

Following Jackson's attack on 2 May, Hooker reestablished his defensive positions and assessed his situation. However, he still lacked the ability to locate the enemy beyond his picket lines. With his forces in the salient of Hazel Grove, and unable to determine where Lee might strike next, Hooker made the decision to abandon the key terrain. He most likely based the decision off of a worst case assessment: an attack cutting off Hazel Grove timed with an attack to his rear would leave him "between two fires and liable for capture."¹⁰³ Therefore, since Hooker was unable to determine the location of Lee's forces, he abandoned the critical terrain that significantly contributed to his defeat.

The Chancellorsville Campaign provides a comprehensive picture of how the principles of operational-level intelligence enhance the planning and execution of a campaign. During the planning phase, Hooker possessed a distinct advantage by utilizing five of the six principles to his advantage. His only failure was his incorrect assessment of Lee's intent, which later surprised him as the battle commenced. Meanwhile, Lee overcame his intelligence deficiencies in the weeks leading up to the battle, including being surprised by Hooker's aggressiveness, and utilized all of the principles to defeat Hooker masterfully. Table 2 compares the effects of the principles to both Hooker and Lee before and during the battle. When combined, the successes from both generals provide a complete picture of how intelligence can enhance the decision making of a commander during planning and execution.

A VISION FOR OPERATIONAL-LEVEL INTELLIGENCE ANALYSIS

Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war.

~Carl von Clausewitz¹⁰⁴

War and warfare do not always change in an evolutionary linear fashion. Surprise is not merely possible, or even probable, it is certain.

~Colin S. Gray¹⁰⁵

To apply the principles of operational-level intelligence consistently between Napoleonic, Civil War, and modern eras, it is important to understand the differences in how information was collected and analyzed. During the Napoleonic campaigns and the Civil War, most of the information was gathered and interpreted by the cavalry or scouts. When information was reported

¹⁰² Sears, *Chancellorsville*, 232, 245. Hooker sent a dispatch to Gen Howard, commander of the XI Corps situated on Hooker's right flank, warning of Jackson's movement to his right and ordered pickets to move out to "obtain timely information of their approach." Bradford A. Wineman, *The Chancellorsville Campaign, January–May 1863*, CMH Pub 75-9 (Washington, DC: Center of Military History, 2013), 26. Feeling that his actions were enough to protect his line, "he chose to take no further action until he had a better understanding of Lee's intentions."

¹⁰³ Sears, *Chancellorsville*, 312–13.

¹⁰⁴ Clausewitz, *On War*, 119.

¹⁰⁵ Gray, *Another Bloody Century*, 25.

Table 2. Principles of operational-level intelligence, Chancellorsville Campaign

		(+ Enhancing; (0) Neutral; (-) Degrading			
		Planning (March–30 April)		During Battle (1–5 May)	
		Hooker	Lee	Hooker	Lee
*	Knowledge of the operational environment and its effects are foundational to sound intelligence analysis.	0	0	-	+
1	Accurate orientations of the enemy's capabilities (location and strength) are the commander's most valuable tool to reduce friction.	+	0	0	+
2	The enemy's capabilities always change; therefore, the pace of intelligence must surpass the tempo of the conflict.	+	0	-	+
3	All available sources of information must be used to maintain an accurate picture of the enemy and must constantly be cross-checked to verify its accuracy.	+	0	+	+
4	An accurate orientation of the enemy's capabilities directly aids planning; it is a prerequisite for identifying centers of gravity and prioritizing an enemy's available courses of action.	+	-	-	+
5	Strategic-level intelligence must provide an estimate regarding the enemy's political intent or their objectives for the war; this is the only knowledge of enemy intent necessary to shape campaign planning at the operational level.	-	-	0	0
6	Intelligence enhances but is not a replacement for, sound judgment and decision-making by a commander.	+	-	-	+
Totals:		+4	-3	-3	+6

to the commander, he alone often conducted the analysis to derive the changes in enemy capabilities. While Napoleon and Hooker both enjoyed the benefits of intelligence organizations analyzing and summarizing intelligence for their consumption, they still relied on scouts and cavalry to provide updates as a battle progressed.

Understanding the requirements of an effective scout or cavalry officer is a critical link for understanding how to integrate the principles of operational-level intelligence analysis in today's environment. Field Marshal Helmuth von Moltke, the famous Prussian military officer, best summarized this requirement in 1869:

It is necessary to use trained and well-mounted officers with sharp and ready eyes.

It is a question of coming quickly to a point that allows a broad view, using rapid judgment, many times in flight, to survey the recognizable details of the enemy situation, the state of his bivouac, his strength, direction of march, and so forth, and then immediately sending clear, complete, and, above all, reliable reports.¹⁰⁶

Moltke later expanded on this observation, arguing further that cavalry officers “must possess quick perception and judgment and must be well trained in reading maps and comparing them with the terrain so as to be able to form a clear picture from brief observations of the enemy.”¹⁰⁷ The cavalry officer, embodied with “cleverness and skill” and a “quick perception,” was required to provide assessments with very little observation since skirmishers and enemy cavalry often

¹⁰⁶ Hughes, *Moltke on the Art of War*, 197.

¹⁰⁷ Hughes, *Moltke on the Art of War*, 253.

limited the time and opportunity to gather information.¹⁰⁸ Moltke described the cavalry officer as someone capable of accurately collecting information, analyzing its significance, and sending a clear and reliable assessment of the enemy's location and strength.

Even though the scale of modern warfare necessitates the separation of collection and analysis functions, intelligence analysts are still required to collect information, though not directly from the enemy. Whether it is through stacks of printed reports or searching through an electronic database, analysts must still possess "cleverness and skill" with a "quick perception" to cull the information needed to assess changes in enemy location and strength. Today's analysts are collectors of information that is already collected and must perfect the skills required to find the relevant information. Therefore, since the requirements of an effective cavalry officer still apply to today's intelligence analyst, the principles of operational-level intelligence analysis can be applied to historical and modern eras equally.

Training Intelligence Analysts

Training intelligence analysts to operate in the modern environment should begin with the fundamental elements that will produce the cleverness, skill, and a quick perception needed to deliver the principles of operational-level intelligence analysis. The first, and perhaps most important skill, is to develop geospatial competencies to understand the terrain and its effect on the operational environment. This includes such tasks as reading maps, utilizing different coordinate formats and datums, and accessing information from databases utilizing geospatial data. This skillset is a prerequisite for determining the location of an adversary and is used in all aspects of operational-level intelligence. Next, analysts must understand how to assess the strength of their adversary by analyzing force compositions, doctrine, tactics, weapon systems, logistics, and the long list of other factors used in providing an accurate orientation of the enemy's strengths and weaknesses. Not only are strengths and weaknesses critical for an understanding of the enemy's capabilities, but they are also a building block for the center of gravity analysis used in planning.

It is not enough for operational-level intelligence analysts to simply analyze the location and strength of the adversary; they must also be able to identify changes in location and strength fast enough to affect planning and ongoing operations. Analysts must learn how to identify trends and changes in normal behavior to provide a quicker reorientation for the commander. Therefore, analysts must learn how to database activity, establish trends in behavior, identify deviations from normal trends, and isolate the reason for the deviation to determine if a change in strength occurred. For example, an analyst investigates a decrease in an enemy's normal training routines and identifies the cause as a shortage of resources. The logistical weakness is identified and included in the latest estimates of the enemy for future plans. Without an established trend of normal activity, the analyst may never have identified the changes in behavior nor investigated their cause.

While the types and quantity of data collected today are significantly larger and more diverse, the basic skill sets of the intelligence analyst are the same as the cavalry officer conducting reconnaissance. The goal of intelligence training, when framed within Moltke's requirements for cavalry officers, is essentially the same:

It is necessary to use trained and [skilled intelligence analysts] with sharp and ready eyes. It is a question of [collecting] quickly [all relevant information], using rapid judgment, many times in [time-constrained environments], to [identify] the recognizable [changes] of the enemy situation, [his location], his

¹⁰⁸ Hughes, *Moltke on the Art of War*, 251.

strength, [trends], and so forth, and then immediately [write] clear, complete, and, above all, reliable [assessments].¹⁰⁹

Determining the location and strength of an enemy, establishing and identifying changes in trends, and depicting them in a common format are the core competencies of the military intelligence analyst. Just as an infantryman must master marksmanship or a pilot must master flying an airplane before they can hope to be effective in combat, so too must an intelligence analyst master their fundamentals. They are essential to fulfilling the first principle of operational-level intelligence analysis: *accurate orientation of the enemy's capabilities (location and strength) are the commander's most valuable tool to reduce friction.*

Missionizing Intelligence Analysis

Building intelligence analysts experienced in determining the changes in enemy capabilities is important, but if the analysts are not capable of keeping pace with the tempo of conflict, their efforts are wasted. Two problems exist in speeding up the pace of intelligence analysis: the ability of analysts to find the right information and the duplication of effort amongst intelligence organizations. While the volume of information collected makes it hard for a single analyst to sift through all relevant information necessary to answer an assigned question, multiple analysts deconflicting and coordinating their efforts can dramatically shorten the time required to sift through massive databases. Additionally, developing the right tools and techniques to find information faster, along with proficiency in gathering the information, will further expedite the process.

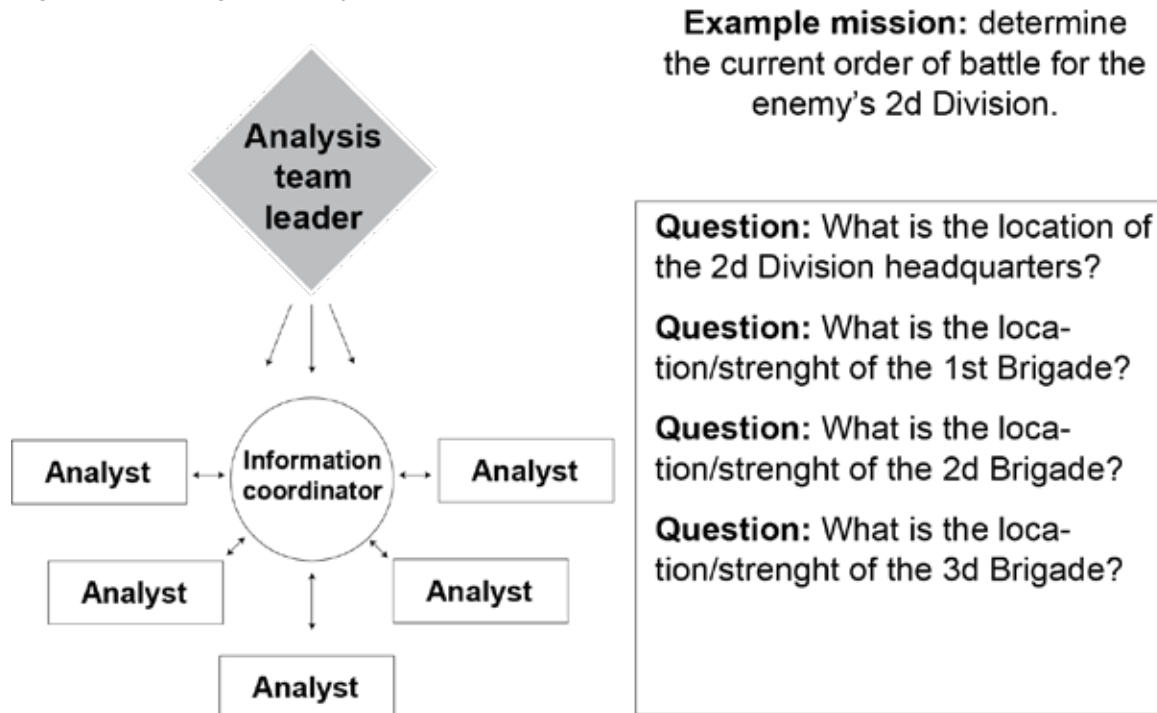
Adopting techniques used in collection management can significantly improve the methods for collecting information. While collection assets are usually tasked independently, they are often coordinated to collect different types of intelligence against the same target. Analysts, when working as a team, can adopt the same principle by dividing the labor and focusing on different databases or sources. Additionally, a team of analysts scouring multiple databases can utilize the collection technique of cross-cueing, whereby information from one asset identifies an area of interest and is used to cue the collection from the remaining platforms. When employed by an analytical team, this enables them to quickly isolate the critical variables, such as the location or signature of a target, necessary for finding the required information within the massive amount of data available. Therefore, designated information coordinators can enable cross-cueing by recording info upon discovery, pushing it to each analyst, and summarizing the results for products or additional analysis.

While information is required, the purpose of conducting analysis is always to answer questions. Analytical teams also require a leader to reduce the problem into manageable questions, plan the analytical strategy, and utilize critical thinking to guide the team around analytical pitfalls as well as identify potential indications of deception from the enemy. The analytical teams, when working as part of a larger coordinated plan, create cumulative results in a time-dominated environment. The result, as summarized in figure 13, is an organization of mission-oriented analytical teams, focused on identifying changes in enemy capabilities within a specific timeframe.

Another practice used in intelligence collection is developing synchronization matrices to sequence collection missions in time and space. Since the leaders of analysis must be able to identify and prioritize a commander's questions, schedule teams to conduct analysis, and deliver

¹⁰⁹ Hughes, *Moltke on the Art of War*, 197.

Figure 13. Intelligence analysis teams



Source: Adapted by MCUP

the products within the timelines required, synchronization matrixes enable them to sequence their teams in time while coordinating with other organizations for additional analytical support. Assigning missions to analytical teams aligns their effects to a commander's operational or campaign objectives and, when sequenced with operations, ensures the intelligence is continuously updated to keep pace with the tempo of the conflict. This guarantees that the intelligence required for critical decisions is available when needed, as well as eliminates duplication of effort across multiple organizations when employed within an entire theater or command. Missionizing intelligence analysis fulfills the second principle of operational-level intelligence analysis: *the enemy's capabilities always change; therefore, the pace of intelligence must surpass the tempo of the conflict.*

Focusing Analytical Effort

If analytical teams are tasked with the mission to answer questions within a specific timeframe, then their time becomes a valuable commodity and must be focused toward understanding the enemy's capabilities. While current doctrine argues that commanders "require and expect timely intelligence estimates that accurately identify adversary intentions," analyzing the enemy's intent is best left to the strategic level of conflict where the pace of change is less dynamic.¹¹⁰ Instead, the capabilities of the enemy "must be projected into the future" by showing what the enemy is capable of achieving giving their current location and strength.¹¹¹ This is not the same as predicting intent, since listing enemy capabilities to effect friendly courses of action only focuses on what is achievable and not the capability that is most likely to occur. Aiming for

¹¹⁰ *Joint Intelligence*, II-9; and Minear, "Chasing Relevance," 3.

¹¹¹ Edwin E. Schwein, *Combat Intelligence: Its Acquisition and Transmission* (Washington, DC: Infantry Journal Press, 1936), 8.

precision in determining most likely enemy courses of action becomes increasingly similar to predicting probable intent.¹¹² However, focusing on capabilities does not alleviate the need for operational-level intelligence analysts from utilizing assessments of intent. Instead, leaders of analysis must request the necessary analysis from relevant organizations and use their assessments to enhance their understanding of the enemy or to identify when the assessed intent does not match the enemy's capabilities. When assessments of capabilities and intent fail to agree or diverge in their estimates, analysts must utilize all sources available to identify the reason for the variations or to determine if the enemy is actively deceiving them.¹¹³

In addition to coordinating assessments of the enemy's intent, leaders must also coordinate other areas of analysis that they lack either the time or expertise to analyze effectively.¹¹⁴ The purpose is not to burden other organizations with undesirable work; rather, it is to maintain the continuous focus on identifying changes in enemy capabilities to aid the commander's ability to make timely decisions. The focus on using external support and all available sources of information fulfills two of the principles for operational-level intelligence analysis: *all available sources of information must be used to maintain an accurate picture of the enemy and must constantly be cross-checked to verify its accuracy*; and *strategic-level intelligence must provide an estimate regarding the enemy's political intent or their objectives for the war; this is the only knowledge of enemy intent necessary to shape campaign planning at the operational level*.

Delivering Intelligence Analysis

While the core function of operational-level intelligence analysis is to constantly identify changes in the enemy's capabilities, the effort is useless unless it is focused and delivered when needed. The planning of operations or campaigns requires a tailored approach to analyzing an enemy within a complex problem, but should not be treated as the primary mission of operational-level intelligence organizations. The intelligence analysts tasked with supporting planning teams should be trained to preemptively answer the specific types of questions necessary for planning as early as possible, such as conducting intelligence preparation of the operational environment, listing courses of action based on capabilities, and delivering the information necessary for conducting center of gravity analysis. Since the strength of an enemy's military often provides the "source of power that provides moral or physical strength, freedom of action, or will to act," accurate and timely depictions of enemy capabilities will always be the foundation for the center of gravity analysis.¹¹⁵ Therefore, while it is important to deliver tailored intelligence, analysts must consistently analyze the enemy's capabilities throughout the planning process to fulfill the fifth principle of operational-level intelligence analysis: *an accurate orientation of the enemy's capabilities directly aids planning; it is a prerequisite for identifying centers of gravity and prioritizing an enemy's available courses of action*.

Commanders also require tailored intelligence to support their decisions, but the delivery of the intelligence must not become the primary role of the organization at the expense of conducting analysis. Without the timely identification of changes in enemy capabilities, a commander

¹¹² Schwein, *Combat Intelligence*, 10.

¹¹³ The logic does not advocate the need for analysts to always agree on all assessments; rather, analysts should investigate the reasons why strategic-level assessments of intent do not line up with their understanding of the enemy's capabilities.

¹¹⁴ For example, the National Geospatial-Intelligence Agency should be used to the maximum extent possible to provide graphics and information relating to understanding the operational environment, while the Defense Intelligence Agency should be tasked with providing background data on an enemy force to gain a greater understanding of their doctrine and tactics.

¹¹⁵ *Joint Planning*, JP 5-0 (Washington, DC: Joint Chiefs of Staff, 2011), III-22.

will fall into the same trap as General Hooker at Chancellorsville by having a solid understanding of his enemy, but unable to orient himself on how the enemy is maneuvering to defeat him. Commanders require an assessment of risk to make sound decisions.¹¹⁶ Therefore, analysts delivering intelligence to a commander must understand how to represent the risk of the enemy's capabilities in relation to the commander's forces. Analysts must also realize that their work supports but does not direct the commander, since the sixth and final principle of operational-level intelligence analysis states: *intelligence enhances but is not a replacement for sound judgment and decision making by a commander.*

CONCLUSION

The "intention of the enemy having thus been discovered by some vague occult process, our former teachings concluded that the enemy would execute a maneuver suitable for carrying out this intention. All that one had to do was to place one's self in the enemy's boots and determine what one would do in like circumstances—hence "the most probable enemy action!" Now, knowing exactly what the enemy is going to do, the commander has little difficulty in arriving at a clear-cut decision for his own maneuver. The only hitch in the whole proceedings is that nine times out of ten, the enemy will execute a totally different maneuver than the one which we have so logically evolved as his most probable one!

~Colonel Edwin E. Schwein¹¹⁷

The analysis of military theorists clearly demonstrates the role of intelligence analysis in war, yet Clausewitz's argument that the only sources of useful information are obtained through "direct contact with the enemy" or through a "commander's direct observations" is still unresolved.¹¹⁸ Since Clausewitz never observed warfare with the aid of modern intelligence collection technology, his conclusions are permanently skewed by the collection methods available during his lifetime. Regardless of these limitations, an important lesson can be learned from his statement. If intelligence is to be useful, it must be presented in a way that is easily understood by the commander and it must be so trustworthy that it is as if the assessments were the commander's own observations. Therefore, while current near-real-time intelligence can provide an instantaneous picture, the commander's intelligence analysis organization must be the eyes and ears of the command that carefully observes changes in the enemy's location and strength. By missionizing intelligence analysis teams and synchronizing their effects, operational-level intelligence organizations can build the necessary framework to provide a clear, accurate, and timely picture for commanders thereby providing them the best opportunity for sound judgment and faster decision making against an adversary.

Finally, the question regarding the significance of military intelligence in warfare can be answered in light of the analysis conducted. While John Keegan's argument that intelligence rarely determined the outcome of a battle contradicts the current doctrine's claim that predictive intelligence can increase the likelihood of success, the analysis of military theorists identifies that both Keegan and current doctrine are right, as well as wrong, in their conclusions. Keegan was correct in stating, "willpower always counts for more than foreknowledge," but his error was in

¹¹⁶ Townsend, *Risks*, 9.

¹¹⁷ Schwein, *Combat Intelligence*, 10.

¹¹⁸ Handel, *Masters of War*, 251.

emphasizing “foreknowledge” in his analysis.¹¹⁹ Keegan is also wrong in claiming that history fails to prove that intelligence superiority is critical for success since both Napoleon’s Danube Campaign and the Chancellorsville Campaign demonstrated the crucial role intelligence played in securing victory. Meanwhile, current intelligence doctrine is correct in claiming that intelligence can mitigate risk and increase the likelihood of success, but it is wrong in placing emphasis on predictive intelligence rather than a timely and accurate depiction of enemy capabilities. As the principles of operational-level intelligence analysis indicate, knowledge of the enemy’s capabilities matters most in combat. Therefore, in light of the analysis conducted, this paper concludes that a faster reorientation on an enemy’s capabilities is by far a more direct route to victory than merely predicting the enemy’s intent.

¹¹⁹ Keegan, *Intelligence in War*, 25.

Gaining Actionable Human Intelligence

A Military and Law Enforcement Approach to Interrogations

Utilizing a Rapport-based, Empathy-driven, and Noncoercive Method

by Supervisory Special Agent Patrick J. Gallop Jr., Federal Bureau of Investigation¹

The United States' ability to fully maximize its national power by applying all the elements of the DIME (diplomatic, intelligence, military, economic) model is paramount to winning the Global War on Terrorism. One key facet of DIME is the intelligence piece, which includes the ability to obtain information from individuals. This paper examines four different processes as it relates to the technique of interviewing and interrogating individuals who may possess actionable terrorist information. When military and law enforcement investigators interview these individuals the use of enhanced interrogation techniques (i.e., the use of the Central Intelligence Agency (CIA) program of coercive techniques of psychological abuse) is a process some senior U.S. officials believe provides useful information.² Besides the moral question on the technique, one must examine whether the information obtained from an enhanced interrogation is more valuable than using a rapport-based, empathy-driven, and noncoercive interrogation. Recent history has shown that coercive interrogation techniques have not been effective and are not in consonance with our values. Rapport-based, empathy-driven, and noncoercive interrogation utilized by the FBI's High-Value Detainee Interrogation Group (HIG) in comparison to so-called enhanced (or harsh) interrogation techniques and other law enforcement methods provides more accurate and actionable human intelligence in the fight against terrorism.

DEFINING INTERROGATIONS

The ability of a military or law enforcement officer to interview an individual to obtain accurate and actionable human intelligence is paramount to the success of a criminal or terrorist investigation. Most individuals understand the process of an interview, especially if one has been part of the workforce and has been subjected to a job interview. The interviewer asks a series of questions, which after each question the interviewee has an opportunity to respond. Sometimes during the interview process, there is a connection between the interviewee and the interviewer and other times the interviewee wants the interview to end because of its unpleasant nature. Law enforcement and military interrogators when interviewing an interviewee will go through a

¹ Special Agent Gallop is a graduate of MCU's Command and Staff College. This paper was nominated for the William J. "Wild Bill" Donovan Intelligence Writing Award of the Central Intelligence Agency Associate Director for Military Affairs for academic year 2016-17.

² Alfred W. McCoy, *Torture and Impunity: The U.S. Doctrine of Coercive Interrogation* (Madison, WI: University of Wisconsin Press, 2012), 36.

similar process by asking a series of questions. But what happens when the interrogator believes the interviewee is withholding information? This is when the interrogator may switch from an interview into an interrogation. As described by FBI Special Agents Brian Boetig and Arnold Bellmer, *interrogation* can be defined as: “From a legal perspective, interrogation is questioning, or the functional equivalent, likely to produce incriminating statements.”³ Some interrogation manuals define an interrogation as an attempt to elicit a confession from the interviewee; however, there is no doctrinal definition but can be more accurately defined as the interrogator trying to obtain the truth from the interviewee.

There are many manuals providing techniques to approach an interrogation but the four most utilized methods are Enhanced Interrogations, the Reid Technique, the British PEACE Model, and the HIG model. Enhanced Interrogations are based on the CIA’s program of coercive techniques of psychological abuse employed on detainees. The Reid Technique is a well-known law enforcement interrogation method utilizing a questioning phase to determine deception followed by a distinct interrogation phase. The interrogation phase starts with the interviewer directly accusing the interviewee of a crime or not being truthful and does not end until the interviewee confesses or stops the interrogation. The British PEACE Model is a nonaccusatory information gathering approach to an interview and interrogation designed by British law enforcement and psychologists. The HIG method to interrogation is specifically designed for each interviewee to flexible, rapport based, and with the goal of obtaining as much information as possible. The HIG method’s key to success is the ability to build rapport (a connection between the interviewer and interviewee), empathy (the interviewee feels they are understood), and a noncoercive environment (an atmosphere where the interviewee feels they can talk).

With the advancement of social media outlets and the scrutiny of the media, interrogators must closely examine their approach to interrogations. As described in “Ethical Intelligence,” media coverage routinely identifies unethical behavior by interrogators in the United States’ Intelligence Community.⁴ Additionally, interrogators should not want to violate an individual’s human rights and would not want to see someone go to prison for a crime that person did not commit.

ENHANCED INTERROGATIONS

The interrogation method that has received the most media attention is an Enhanced Interrogation as it raises serious moral convictions as to the use of psychological and physical coercion. According to the Congressional Research Service’s *Perspectives on Enhanced Interrogation Techniques* then Director of Central Intelligence George Tenet authorized enhanced interrogation techniques, which incorporated significant physical or psychological pressure. These techniques included the attention grasp, walling technique, facial hold, insult slap, cramped confinement (small box two hours and a large box up to 18 hours), insects, wall standing, stress positions, sleep deprivation (not to exceed 11 days at a time), and the waterboard technique.⁵ Additionally, there is also the human element that entered into the realm of enhanced interrogations, which can bring even greater embarrassment upon their organization. For example, in 2004, it was discovered the interrogation and treatment of detainees in military detention centers in Iraq and elsewhere disregarded or misinterpreted guidance on the use of the military’s interrogation

³ Brian Parsi Boetig and Arnold R. Bellmer, “Understanding Interrogation,” *FBI Law Enforcement Bulletin*, October 2008, 17.

⁴ “Ethical Intelligence,” *Marine Corps Gazette* 97, no. 12 (December 2013): 70.

⁵ Anne Daugherty Miles, *Perspectives on Enhanced Interrogation Techniques* (Washington, DC: Congressional Research Service, 2016), 22.

techniques.⁶ Images of the maltreatment of prisoners in Abu Ghraib soon surfaced, and there was overwhelming outrage worldwide.

There are individuals who believe the use of enhanced interrogation techniques provide useful information and therefore believe that the ends justify the means of their use. In December 2014, former Vice President Richard “Dick” Cheney was asked by Fox News host Bret Baier if the ends justified the means in the use of enhanced interrogation techniques. Vice President Cheney argued the enhanced interrogation techniques provided actionable intelligence that was “absolutely vital in preventing another attack.”⁷ Although the enhanced interrogation techniques provided some valuable information, it has been proved to, at times, be unreliable. For example, in 2003, then U.S. Secretary of State Colin Powell had informed the United Nations there was credible evidence linking Saddam Hussein and al-Qaeda. This information was obtained from Ibn al-Shaykh al-Libi, a suspected member of al-Qaeda, utilizing enhanced interrogation techniques. Al-Libi made these statements after being kept in a tiny metal box for 17 hours and repeatedly being punched because he thought this information was what his interrogators wanted to hear. This information was later found to be false.⁸

As a result of the use of enhanced interrogation techniques and its ethical implications and adverse impact on human rights, President Barack H. Obama signed Executive Order (EO) 13491 in January 2009. EO 13491 restricted the use of interrogation techniques by any U.S. government agency to those listed in the Army Field Manual and set Common Article 3 of the Geneva Conventions as a “minimum baseline.” EO 13491 required individuals detained to be treated humanely and the detainee shall not be subjected to violence or atrocities to one’s personal dignity.⁹ Additionally, EO 13491 established a special task force to review interrogation policies. The special task force reviewed the current interrogation procedure and recommended the creation of the HIG made up of experienced interrogators and support personnel from across the Intelligence Community, Department of Defense, and Federal Bureau of Investigation. In April 2010, the HIG was officially established and developed its interrogation process.¹⁰

THE REID TECHNIQUE

If the HIG was formed in 2010 and established its own interrogation process, then the question must be asked what were law enforcement agencies utilizing for their interrogations for the past several decades? The most widely used interrogation method utilized by law enforcement is named after the man who invented it—John E. Reid, a former Chicago police officer and polygrapher. According to Douglas Starr, “rather than brutalize suspects, as police often did in those days, he [John Reid] used modern science, combining his polygraphic skills with an understanding of human psychology.”¹¹ John Reid obtained a law degree from DePaul University and joined the Chicago Police Department in 1936. In 1940, Reid was trained as a polygraph examiner and was assigned to the Chicago’s Scientific Crime Detection Laboratory. In 1947, Reid left the Chicago Police Department to form his company; John E. Reid and Associates

⁶ Miles, *Perspectives on Enhanced Interrogation Techniques*, 6.

⁷ “Cheney Defends CIA Interrogation Techniques, Calls Senate Report ‘Deeply Flawed,’” *Fox News*, 11 December 2014.

⁸ Alev Scott, “U.S. Develops New ‘Soft’ Techniques to End Torture,” *Newsweek*, 30 January 2015.

⁹ Miles, “Perspectives on Enhanced Interrogation Techniques,” 7.

¹⁰ Miles, “Perspectives on Enhanced Interrogation Techniques,” 16.

¹¹ Douglas Starr, “The Interview,” *New Yorker* 89, no. 40 (December 2013).

trains more interrogators than any other company in the world, including police forces, private security companies, the military, the Federal Bureau of Investigation, the Central Intelligence Agency, and the United States Secret Service.¹²

John Reid identified three steps to solving a crime, with the third step being the possible use of the Reid Technique for interrogating an interviewee. John Reid identified the first of the three steps to solving a crime as the factual analysis step. The first step represents the collection and analysis of the information related to the crime scene, the victim, and possible subject. The first step is crucial to determine a possible direction the investigation should take and perhaps some insight into the possible offender.¹³ The investigator cannot take shortcuts during this step.

Reid identified the second of the three steps to solving a crime as the interview of possible subjects. This step is a very highly structured interview, referred to as a behavior analysis interview, consisting of a nonaccusatory question-and-answer session intended to obtain information from the interviewee in a controlled environment. The first part of this step includes obtaining background information from the interviewee. Examples of this type of questioning include: "What is your date of birth?," "Where did you grow up?," and "What do you do for employment?" These questions will allow the investigator to evaluate the interviewee's normal behavior pattern when responding to questions. Also, this will allow the investigator to establish rapport with the interviewee, which is extremely important in assessing the interviewee's intelligence, communication skills, mental health, and general suitability for the interview. During the remainder of the second step, the investigator will continue asking investigative questions to elicit the interviewee's actions, motivations to commit the crime, opportunity, access, relationship to the victim, activities on the day of the crime, or possible alibi. Additionally, the investigator will ask behavior-provoking questions, which will provide verbal and nonverbal indicators of deception. During the second stage, the investigator must evaluate the evidence of the case in conjunction with the truthfulness of the interviewee and decide if this interview should move into the third step, which is the interrogation.¹⁴

The third step of the Reid process to solving a crime involves nine separate parts within this process known as the Reid Technique for interrogating the interviewee. The first part of this step is called the positive confrontation. The positive confrontation is used to advise the interviewee that they are without a doubt the person who committed the crime or not being completely truthful with the interviewer. During this part of step three, the investigator can use props or real evidence to substantiate their claim. Additionally, the investigator will use proxemics and paralanguage to enhance their confident demeanor. This is accomplished by closing the distance between the investigator and interviewee, and the investigator will lower their voice. The accusation will avoid descriptive or emotionally charged phraseology.¹⁵ An example of a direct accusation would be: "John, there is no doubt in my mind you are responsible for the missing money from the bank."

The second part of the third step is the development and delivery of interrogation themes. Most of the interrogation occurs during this part, and if delivered correctly by the investigator, the interviewee may be persuaded to tell the truth. These interrogation themes should build internal anxiety with deception and outweigh the perception of the consequences associated

¹² *The Reid Technique of Interviewing and Interrogation* (Chicago, IL: John E. Reid & Associates, 2012), i; and Starr, "The Interview."

¹³ "PEACE," Reid & Associates.com, 22 December 2016.

¹⁴ "PEACE."

¹⁵ *The Reid Technique of Interviewing and Interrogation*, 44–45.

with the crime. Theme development can provide the interviewee with an opportunity to save self-respect, perhaps push the blame elsewhere, or minimize the crime.¹⁶ The investigator will establish themes prior to the interview (step 1), during the interview (step 2), and during the interrogation process (step 3). The investigator must be proficient at active listening and have the ability to be empathetic in their delivery of the themes. The investigator provides moral reasons for the person's guilt or lack of being truthful. The investigator will never provide legal justification or provide promises of leniency.

The third part of step three is the investigator's ability to handle denials. During this part of the interrogation, the investigator must be ready to handle any statement or refusal of the interviewee to accept the truthfulness of an allegation.¹⁷ It should be anticipated that both truthful and guilty individuals will immediately deny the allegation; however, a guilty person will easily stop denying if the investigator handles this part correctly. An innocent person's denials will typically get stronger as the investigator attempts to stop the denials. If the interviewee easily stops their denials and begins to listen to the investigator, the investigator should move on with the interrogation.

The final six parts of the Reid Technique are fairly straightforward, and if the investigator applies the entire process correctly and appropriately, one should never get to this point of an interrogation if the interviewee was being truthful. The fourth part is overcoming objections, which is a statement proposed by the interviewee as an excuse or reason why the investigator's accusation is incorrect. The fifth part is ensuring the investigator maintains the interviewee's attention. The sixth part is the investigator's ability to handle the interviewee's passive mood.¹⁸ At this point in the interrogation, the interviewee is internalizing whether they should be truthful. It is very important that the investigator built rapport with the interviewee and has been empathetic during the third step or the remainder of the steps in the interrogation may not work. The seventh part of the third step is the investigator's ability to provide an alternative question. According to the *Reid Technique of Interviewing and Interrogation*, "an alternative is a question asked of the suspect, in which the suspect is offered two incriminating choices concerning some aspect of the crime. Accepting either choice represents the first admission of guilt."¹⁹ Everyone likes choices, and this allows the interviewee to choose the more palatable choice with a simple nod of the head or "yes." Part eight of the third step is having the interviewee verbally relate the details of the offense. The last part of the third step is obtaining a witness to the oral confession or obtaining a written statement from the interviewee.²⁰

The Reid Technique has been the interrogation method most used throughout the law enforcement communities for the last several decades. It is a highly effective tool; however, it takes a very skilled investigator to ensure it is utilized properly. Many local, state, and federal law enforcement agencies train their investigators to use the Reid Technique or a process very similar. In 2014, then Attorney General Eric Holder created a new policy that individuals in federal custody, following the person's arrest but prior to their first appearance in court, will be electronically recorded.²¹ There will be an increase in videotaped interrogations appearing in court and the Reid Technique will be closely scrutinized. Currently, many law enforcement training facilities, including the FBI Academy at Quantico, Virginia, provide some type of interrogation

¹⁶ *The Reid Technique of Interviewing and Interrogation*, 48.

¹⁷ *The Reid Technique of Interviewing and Interrogation*, 61.

¹⁸ *The Reid Technique of Interviewing and Interrogation*, 70, 72.

¹⁹ *The Reid Technique of Interviewing and Interrogation*, 73.

²⁰ *The Reid Technique of Interviewing and Interrogation*, 78, 80.

²¹ Department of Justice Office of Public Affairs, "Attorney General Holder Announces Significant Policy Shift Concerning Electronic Recording of Statements," *Justice News*, 22 May 2014.

training based on the Reid Technique to their new investigators (new agent trainees). There are many different elements to the Reid Technique and it requires the investigator to clearly understand and implement each step. How will these interrogations stand up in a court of law?

FALSE CONFESSIONS

When an investigator interrogates an individual, the result must be to obtain the truth from this person. There are many issues on the line to get the interrogation right, and the slightest misstep could be catastrophic. For example, if the person falsely confesses, there is a strong chance an innocent person may go to jail; the reputation of the investigator and their organization is on the line; and valuable information that could be used to solve a crime or stop a terrorist attack could be missed. It is vital to national security and upholding justice that the method used during interrogations results in actionable intelligence. The information obtained from enhanced interrogations and the Reid Technique will be analyzed for the possibility of inducing false confessions.

In 2003, why did Ibn al-Shaykh al-Libi provide evidence that proved to be false while being subjected to enhanced interrogation techniques? Mark Fallon, former chief of counterintelligence operations for Europe and the Middle East in Naval Criminal Investigative Service (NCIS) described obtaining false confessions from enhanced interrogation techniques as follows: “We think because we torture someone and get a confession that torture works. But that confession might be false—which is much more dangerous than no confession. Torture has made us less safe.”²² The false information provided by al-Libi was one of many key pieces of information used by then Secretary of State Powell to convince the United Nations there was a link between al-Qaeda and Saddam Hussein. Ultimately, the United States and a coalition of several other countries invaded Iraq and overthrew Hussein’s regime. One does not want to look back on monumental moments in history and second-guess their choices; however, knowing the information al-Libi provided was false tends to have that effect.

In 2004, the *IG Special Review* concluded that the CIA Detention and Interrogation (D&I) Program, which included enhanced interrogation techniques, was effective in yielding useful information.²³ However, according to the *Perspectives on Enhanced Interrogation Techniques*, the SSCI Study indicated the claims of effectiveness by the CIA “were inaccurate and not based on credible measures of success.”²⁴ The al-Libi interrogation is an example of obtaining information that was inaccurate. Senator John McCain, a former Vietnam prisoner of war, provides a first-hand explanation as to why detainees subjected to enhanced interrogations may provide unreliable intelligence:

I know from personal experience that the abuse of prisoners will produce more bad than good intelligence. I know that victims of torture will offer intentionally misleading information if they think their captors will believe it. I know they will say whatever they think their torturers want them to say if they believe it will stop their suffering.²⁵

Enhanced interrogations have produced actionable human intelligence; however, this method has been proven to produce false or misleading information.

The Reid Technique has been the primary method of law enforcement when interrogating individuals; nevertheless, there has been escalating concern with the number of false confes-

²² Scott, “U.S. Develops New ‘Soft’ Techniques to End Torture.”

²³ Miles, *Perspectives on Enhanced Interrogation Techniques*, 13.

²⁴ Miles, *Perspectives on Enhanced Interrogation Techniques*, 14.

²⁵ Miles, *Perspectives on Enhanced Interrogation Techniques*, 14.

sions obtained from this method. According to Starr, a growing number of scientists and legal scholars have raised concerns about the Reid Technique. Starr stated that “of the three hundred and eleven people exonerated through post-conviction DNA testing, more than a quarter had given false confessions. . . . The extent of the problem is unknowable, because there’s no national database on wrongful convictions. But false confessions, which often lead to convictions are not rare, and experts say that Reid-style interrogations can produce them.”²⁶ The Reid Technique is very structured and requires the investigator to thoroughly understand and complete each step. This allows for possible human error and potential inherent biases to factor into the application of the Reid Technique.

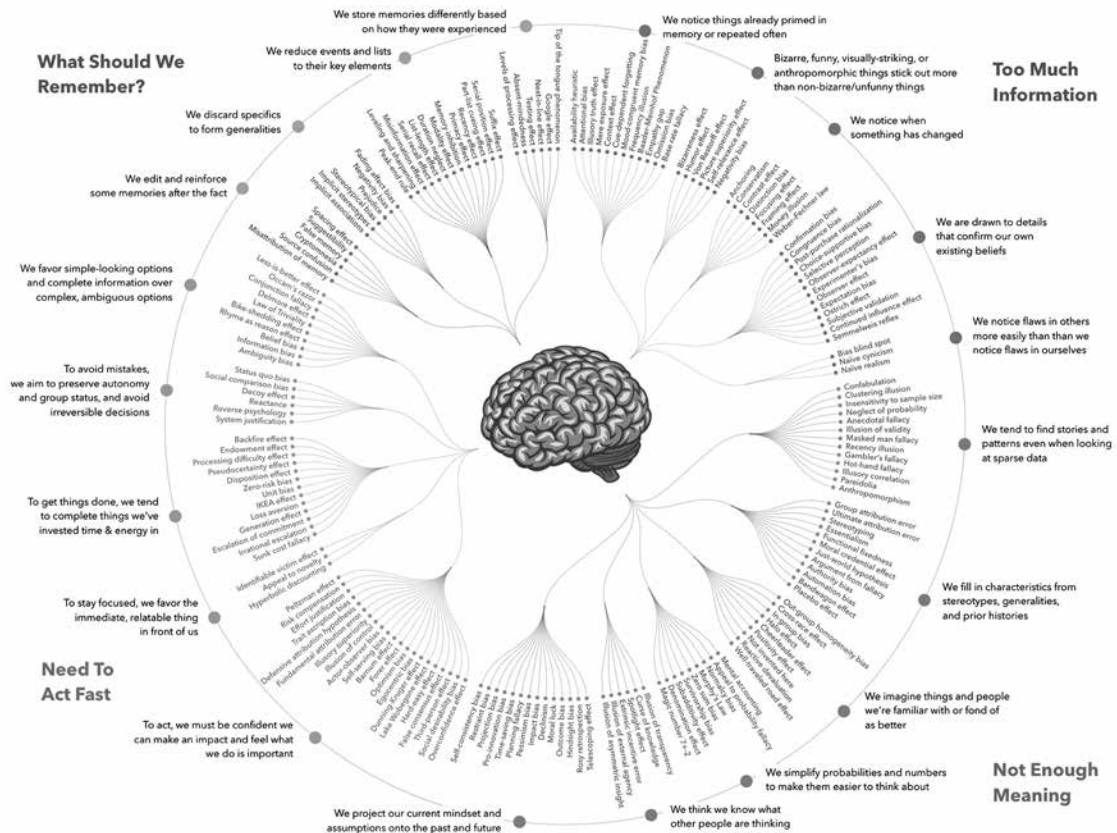
The first step in the Reid Technique can be compromised if the investigator or team of investigators fails to adequately address the factual analysis. This includes obtaining as much information as possible. Also, the team of investigators must control their inherent biases and must avoid falling victim to group-think bias. The team must use critical thinking skills throughout the investigation.

The second step of the Reid Technique requires the investigator to build rapport with the interviewee. Without adequately building rapport the investigator fails to fully identify the interviewee’s intelligence, communication skills, mental health, and general suitability for the interview. If the investigator fails to fully address the second step, this may set the stage for a possible false confession. Additionally, if the investigator fails to build rapport and understand the mental capacity of the interviewee, asking behavioral questions to elicit verbal and nonverbal indicators of deception will be worthless. Lastly, in the second step, if the investigator did a poor job analyzing the evidence and mistakenly identified the interviewee as being untruthful the investigator may wrongly decide to move into the third step.

The third step of the Reid Technique is most effective if the investigator has properly addressed the first and second steps before moving to the third step. In the third step, it is crucial for the investigator to initiate the positive confrontation correctly. For example, when employing proxemics (the use of spatial distance between individuals) never make the interviewee feel they are trapped and have no way out. Also, when delivering the positive confrontation, the investigator should never raise their voice or make the process confrontational. The second part of step three requires the investigator to be proficient at active listening so they do not miss the reason the person is not being truthful. Additionally, if the investigator inadvertently provides some type of promise, especially leniency, the interviewee may confess to end the interrogation process. The third part of step three can result in an overly aggressive investigator having difficulty properly handling denials. The investigator becomes aggressive which, depending on the personality of the interviewee, may cause the interrogation process to incorrectly continue. The last parts of the third step are fairly straightforward and, if employed correctly, will prevent a false confession. It is extremely important that the investigator does not interject leading questions or certain case facts during the interview or interrogation. When obtaining details of the offense a person who has provided a false confession but provides details of the crime may obscure the investigator’s ability to detect the false confession. Additionally, with interrogations being recorded the investigator may skip obtaining a second investigator to witness the confession, and the investigator may forget to obtain a written statement from the interviewee. Failing to bring in a second investigator to witness the confession and not obtaining a written statement from the interviewee are lost opportunities to ensure the investigator does not obtain a false confession.

²⁶ Starr, “The Interview.”

Figure 14. Cognitive biases



Source: John Manoogian III, adapted by MCUP.

Additional factors that can adversely impact the interrogation are inherent biases, especially a Reid Technique interrogation, which is a stressful process by its very nature. When one thinks of *bias*, they tend to equate the term with *prejudice*. According to Christine Orrey, biases are unconscious attitudes and beliefs that exist deep within our psyche. Additionally, when under pressure, an individual's cognitive process begins to break down and the person's subconscious mind plays a greater role in decision making.²⁷ The interrogation room is stressful for both the interviewee and the investigator. If the investigator is not aware of these inherent biases, they may inadvertently rely on them to make unfortunate decisions during the interrogation process (figure 14).²⁸

The Reid Technique is reliant on the investigator to properly follow all three steps completely; however, if an investigator is inexperienced, poorly trained, not focused, overly stressed, or falls victim to inherent biases the process could be flawed. For example, according to Starr, it was reported that Richard Leo, a law professor at the University of San Francisco had undergone the Reid Technique training and then spent nine months sitting in on nearly 200 interrogations at the Oakland, Hayward, and Vallejo, California, police departments. Leo found that

²⁷ Christine Orrey, "What Biases Exist in Police Decision-Making?," *Law & Order* 58, no 12 (December 2010): 53–54.

²⁸ Samantha Lee and Shana Lebowitz, "20 Cognitive Biases that Screw up Your Decisions," *Business Insider*, 26 August 2015.

most of the police officers used key elements of the Reid Technique; however, many failed to perform the initial interview and went straight into the interrogation.²⁹ Additionally, according to “The Interview,” when the behavioral analysis interview is conducted, the investigator becomes focused on the interviewee’s nonverbal behavior. These nonverbal behaviors may indicate the interviewee is being deceptive; however, in reality the interviewee is being truthful. The investigator inadvertently becomes focused on the perceived deception and becomes more aggressive in their questions, which trigger nervousness in the interviewee. This behavior results in confirmation bias and the investigator inadvertently moves to the interrogation and feels bound to obtain a confession. Psychologists call this cycle the Othello Effect, where the tragic escalation of accusation and fear leads Othello to wrongfully kill his wife Desdemona for adultery, which she did not commit.³⁰

BRITISH PEACE MODEL

An alternative solution to the Reid Technique is the British PEACE Model, a nonaccusatory information gathering approach to interviews and interrogations. In 1990, Britain was caught up in a flurry of false confessions and decided to move away from the accusatorial-style interrogation. The British government appointed a commission of academics, detectives, and legal experts to develop an interview method that would incorporate present-day psychological research. This commission worked on developing this new method and generated the British PEACE Model. PEACE stands for Preparation and Planning, Engage and Explain, Account, Closure, and Evaluate. According to Starr, by 2001, every police office in England and Wales was trained to use the PEACE model.³¹

In the British PEACE model, investigators are not instructed to obtain a confession but strictly to interview the person to gather information and evidence. The investigator focuses on the details of the information provided by the interviewee and does not rely on nonverbal behavior. This interview will produce a cognitive load on the interviewee, making it difficult to maintain a lie. For example, in January 2008, David Chenery-Wickens was accused of murdering his wife and was questioned using the PEACE Model by Detective Constable Gary Pattison of East Sussex. Detective Pattison was respectful and polite while asking Chenery-Wickens open-ended questions about his wife’s disappearance. Chenery-Wickens was given plenty of time to answer the questions, and after an hour and a half, the interview ended. A few days later, the interview was reconvened and Chenery-Wickens found it increasingly difficult to recall the details previously given to Detective Pattison. As Detective Pattison asked more questions and showed more evidence to Chenery-Wickens, the lies mounted. At no point in the interview did Detective Pattison directly accuse Chenery-Wickens nor did Detective Pattison obtain a confession. Detective Pattison did not need a confession because the accumulation of lies captured in the videotaped interview plus the evidence against Chenery-Wickens was enough to convict him of murder. Chenery-Wickens was ultimately sentenced to 18 years in prison.³²

The British PEACE model provides a solid foundation for a rapport-based, empathy-driven, noncoercive environment to conduct an interrogation; however, there are two major limitations when applying this process in the United States. First, in Britain, an interviewee can be advised that, if they do not talk with law enforcement, their silence will be used against them in court. This is in violation of a U.S. citizen’s Fifth Amendment right to silence. Second, in Britain, a

²⁹ Starr, “The Interview.”

³⁰ Starr, “The Interview.”

³¹ Starr, “The Interview.”

³² Starr, “The Interview.”

person can be offered a reduced sentence by up to one-third off their sentence if they agree to plea early in the process. In the United States, law enforcement officers are precluded from making any promises; therefore, offering the interviewee time off their sentence if they confess is not an option.

HIGH-VALUE DETAINEE INTERROGATION GROUP (HIG)

The use of enhanced interrogations, the Reid Technique, and the British PEACE model did not provide a method for the military and law enforcement to obtain the most accurate human intelligence needed in the fight against terrorism. This would change as a result of President Obama signing EO 13491 in January 2009, which created a task force to review the U.S. government's interrogation procedures and generate a method that addressed the shortcomings of enhanced interrogations, the Reid Technique, and the British PEACE model. HIG was officially formed "to deploy the nation's best available interrogation resources against terrorism detainees identified as having access to information with the greatest potential to prevent terrorist attacks against the United States and its allies . . . [and to] serve as the locus for interrogation best practices, lessons learned, and research for the federal government."³³ HIG has conducted a comprehensive review of current interrogation methods and existing behavioral and social sciences related to interrogation. The group has not identified an exact definition of interrogation; however, most definitions state that it is a formal process that includes accusatory questioning attempting to elicit information from a detainee that they believe are personal or secret. HIG assumes the purpose of the interrogation is to gather valuable intelligence, which requires "an individualized, flexible, rapport-based, and information-gathering approach."³⁴

The HIG interview and interrogation has an operational framework consisting of three main areas: planning and analysis, the interview, and closing. Planning and analysis consists of data assessment, objective setting, context management, cultural impact, and predictable dialogue. This stage can last years or may only take a few minutes; either way, this stage must be deliberate and thoughtful as the investigative team learns as much about the case and the interviewee prior to conducting the interrogation. The interview team should consider all information and intelligence available and distinguish what is fact, what is believed true but not verified, and what are the assumptions based on the data and beliefs. According to the *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, "you should consider what information you need from the subject and weigh this against what the subject is likely to know and what the subject will likely be more or less willing to provide. Taking these things together will help formulate your objectives and approach."³⁵ The planning and analysis stage will provide the foundation needed for the investigative team to be successful and it is the cornerstone for an effective interrogation.

Within this stage the investigative team must consider several key elements. Data assessments will provide the information and intelligence already gathered and assists in formulating objectives and approaches. Objective setting ensures the investigative team meets the goal of the interrogation. Additionally, during this stage, the investigative team must address context management. This includes the setup of the room, the investigative team's appearance, and behaviors. Next, the investigative team must have an understanding of the interviewee's culture, as this may have a significant impact on how the interviewee perceives themselves or how they view the investigative team. Lastly, the investigative team role plays how the interrogation may occur.

³³ *HIG: Interrogation Best Practices Report* (Washington, DC: HIG, FBI, 2016), 1.

³⁴ *HIG: Interrogation Best Practices Report*, 1–2

³⁵ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book* (Washington, DC: HIB, FBI, 2016), 6.

This will allow for constructive feedback and address possible barriers to overcome during the actual interrogation.³⁶

The second stage of the HIG process is the interview, which includes the interview and possible interrogation of the interviewee as these are both incorporated and treated as the same event.³⁷ The investigative team's collaborative effort continues into the second stage as they carefully assist the investigator in planning for and managing first impressions. As first impressions play a vital role in determining the nature of the interaction, the team assesses the type of person the interviewee is most likely to respond to and develops a brand for the investigator. This investigator's brand must be genuine and align with the interviewee throughout the process, as this is needed for an interrogation to be successful. Additionally, the team plans for an environment most conducive to produce a positive interaction with the interviewee. Contributing to the investigator's brand may include the physical setting, the investigator's appearance, and specific language that will be used by the investigator to positively impact the interviewee.³⁸

Prior to the interrogation, the investigative team develops a strategy to build and maintain rapport throughout the interrogation, as rapport is the most important component of a successful interrogation. Rapport begins with the investigator and interviewee developing a common understanding of the purpose for the interrogation. It is important for the interviewee to have some type of understanding as to why they are meeting with the investigator. During the course of the interrogation, the investigator continues to note the interviewee's needs and motivations and allows the interviewee to have a sense of autonomy within the interaction.³⁹

As the interrogation process continues, it is particularly important that the investigator demonstrates empathy by understanding the interviewee's perspective and that their motivations are valid. This is a difficult process for the investigator, as they cannot let their true feelings be displayed. The investigator cannot come across as if they are judging the interviewee, only that the investigator is accepting that whatever the interviewee has done is part of who they are. Additionally, the investigator should allow the interviewee to discuss topics they would like to discuss as this will work toward showing empathy; however, using paraphrasing, the investigator can effectively move the line of questions back to the investigation. Lastly, by displaying appropriate empathy for the interviewee, the investigator through skillful conversation can evoke the motivations and beliefs of the interviewee.⁴⁰

Once the investigator has developed rapport and demonstrated empathy toward the interviewee, the investigator must employ strategies to encourage conversation and to address the objectives of the interrogation. The investigator must use active listening skills during the interrogation to ensure the interviewee and not the investigator, is doing most of the talking. Active listening helps the interviewee lower his/her emotions, builds more rapport, encourages the interviewee to talk, and allows the investigator to gather information.⁴¹ It should be noted that, during an accusatory style interrogation such as the Reid Technique, the investigator is doing most of the talking, which will have a negative effect on rapport.

During the interview stage, the investigator will conduct a cognitive interview requiring the interviewee to employ all of his/her senses to put themselves back into a given place to recall all possible details. The cognitive load placed on the interviewee who is lying will become very evident to the investigator. The interviewee will want to come across as if they are telling the

³⁶ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 6, 8, 10, 18, 21.

³⁷ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 23.

³⁸ *HIG: Interrogation Best Practices Report*, 3.

³⁹ *HIG: Interrogation Best Practices Report*, 3.

⁴⁰ *HIG: Interrogation Best Practices Report*, 4.

⁴¹ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 32.

truth; however, when asking them to sketch details, telling the story in reverse order, or telling the story from another perspective, the cognitive load will be too great and will diminish their ability to answer seemingly easy questions.⁴²

At this point in the interview stage, the investigator has developed significant rapport and displayed ample empathy to build trust. As defined in the *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, "trust is a psychological state compromising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another. You trust someone to know what worries you and believe they will not abuse that knowledge."⁴³ If the interviewee trusts the investigator, they will begin the negotiation process. Trust is fundamental to a negotiation as both the interviewee and investigator must believe what the other is saying. HIG recommends that the investigator or an observing member of the investigation team keep a log of what the investigator has done and promised, so these are consistent with both parties.⁴⁴ It is at this point in the HIG process the interviewee will begin to provide truthful information.

The third and final stage of the HIG process is closing the interrogation, which can be overlooked by most investigators during a traditional interrogation; however, this is extremely important for the HIG process to be successful. This final stage is planned ahead by the investigative team and allows the investigator to leave open future contact with the interviewee unlike an accusatorial-style interrogation, which by the nature of the accusatorial environment tends to damage rapport potentially closing the door for future contact. During the closing, the investigator will reaffirm rapport, ensure targeted message achieved, and summarizes to the interviewee the information obtained during the interview.⁴⁵ The interrogator ultimately leaves the interviewee with a feeling future contact will be a positive experience.⁴⁶

According to Meissner et al., the results of both accusatory (The Reid Technique) and information-gathering (HIG) methods produced confessions in the field; however, experimental data indicated the information-gathering method "increased the likelihood of true confessions, while reducing the likelihood of false confessions."⁴⁷ The findings of the Campbell Collaboration's accusatorial versus information-gathering study resulted in the following:

Three studies assessed the direct contrast between accusatorial and information-gathering interrogative methods in eliciting true confessions (k=3, N=215) and false confessions (k=3, N=215). A random effects analysis demonstrated that information-gathering methods produced significantly greater frequency of true confessions (g=0.64, z=1.97, p<.05), while significantly reducing the frequency of false confessions (g=-0.77, z=2.19, p<.05), when compared with accusatorial methods. See Appendix B.⁴⁸

In summary, the HIG method requires the investigator to effectively plan and constantly reassess their line of questioning throughout the entire process using a team approach. Additionally, the team must be prepared to build rapport prior to the interrogation and throughout the process. Next, the investigator must have an empathetic approach and not come across

⁴² *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 59.

⁴³ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 65.

⁴⁴ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 65–66.

⁴⁵ *HIG Core Interview and Interrogation Skills Course Participant's Reference Book*, 69.

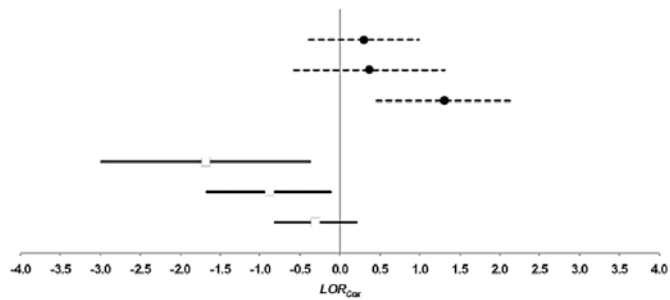
⁴⁶ *HIG: Interrogation Best Practices Report*, 6.

⁴⁷ Christian A. Meissner et al., *Interview and Interrogation Methods and Their Effects on True and False Confessions* (Oslo, Norway: Campbell Collaboration, 2010), 8, <https://doi.org/10.4073/csr.2012.13>.

⁴⁸ Meissner et al., *Interview and Interrogation Methods and Their Effects on True and False Confessions*, 30, 52.

as judgmental. During the interview the investigator has developed rapport and displayed empathy, which allows the interviewee the correct setting to tell their story. If the investigator has maintained rapport and continued empathy there will be an established trust and negotiation period without the need to transition into an accusatory interrogation. Because the process never turns accusatorial the investigator can successfully move to the last step, which is ensuring a good closing to have future contact with the interviewee. Once the entire process has been completed, the investigator and the investigative team must provide feedback to each other to learn from mistakes and ensure positive items are used in future interrogations (figure 15).

Figure 15. Accusatory vs information gathering interrogation technique



Note: Forest plot of independent samples assessing the influence of accusatorial vs. information-gathering interrogative methods in eliciting true confessions (circular markers with dashed lines) and false confessions (square markers with solid lines) in an experimental context.

Source: Provided by the author.

INTERROGATION EXAMPLES

The HIG method formalized its training program in 2012 and it provides the best opportunity to employ a rapport-based, empathy-driven, and noncoercive interrogation. Based on several interviews of seasoned FBI special agents, the HIG method works; however, it is not a new process. HIG has formalized the process, which will greatly enhance law enforcement’s ability to successfully gain valuable information from interviewees and/or detainees. Since 2012, HIG has trained approximately 2,000 interviewers from more than 40 different Intelligence Community, law enforcement, state and local, and foreign partners. Supervisory Special Agent Colton Seale, HIG lead trainer, believes the model has been rapidly growing and has been extremely effective in obtaining accurate information. According to Seale, the program has been so successful the Federal Law Enforcement Training Center (FLETC) has revamped parts of its interview and interrogation training based on the HIG model.⁴⁹

Supervisory Special Agent Derrel Martin served as a captain in the U.S. Army, worked 8 years as a police officer with the Nashville Police Department, and has been with the FBI for more than 20 years. In 2009, Martin assisted the U.S. military during Operation Enduring Freedom at Forward Operating Base Salerno near the city of Khost, Afghanistan, where he was responsible for attempting to obtain information from captured Taliban. During these interviews, Martin was teamed up with U.S. Army personnel and an interpreter who spoke Pash-tun. Additionally, there was no background information on the interviewee, who was recently captured by U.S. Special Forces. Martin and his team were unable to build rapport, there was no common ground with the interviewee, which meant no empathy could be established, and the environment was not conducive for one to freely talk. Martin stated, “there was a horrible return on information.”⁵⁰

⁴⁹ Supervisory Special Agent (SSA) Colton Seale, email to author, 5 January 2017.

⁵⁰ SSA Derrel Martin, interview with author, 24 January 2017.

Martin believed the best use of an interrogation was through the use of good planning, having a reliable partner, building rapport, ensuring common ground with the interviewee, and establishing a noncoercive environment. He recalled a specific investigation that involved a bank president in Carthage, Tennessee, who embezzled \$8 million. Martin worked very closely with a Federal Deposit Insurance Corporation (FDIC) investigator and they were very well prepared for this interrogation. Martin and the FDIC investigator spent significant time with the interviewee building rapport. Additionally, since they knew a great deal about the interviewee, they were successful in establishing common ground. Lastly, Martin wanted the interviewee to feel they could freely talk and welcomed a suggestion for the interview location. The interviewee requested a McDonalds, which had a section that was fairly private. He guided the interviewee through the interrogation, and at key moments, either showed empathy or presented evidence. Based on rapport, empathy, and establishing a noncoercive environment, the bank president provided truthful information about their criminal activity.⁵¹ Martin, unbeknownst to him, used the same interrogation method developed by the HIG.

Martin never attended training on the Reid Technique; however, he was familiar with the process. He observed several interrogations where a law enforcement official attempted to use the Reid Technique and was unsuccessful in obtaining any useful information. The agent noted, as a result of the direct accusation within the Reid Technique, rapport could easily be destroyed. Once rapport was damaged, future interviews with the interviewee were nearly impossible.⁵²

Retired FBI Special Agent Frank Runles served as a captain in the U.S. Army and worked for the FBI for more than 20 years. In 2005, Runles spent four months at the Guantánamo Bay detention camp assisting the U.S. military with interviewing detainees. In 2007, Runles spent an additional four months in Iraq, assisting the U.S. military with detainee interviews. These interviews were difficult to obtain information, as Runles believed the following conditions were the key to a successful interrogation: the interviewer(s) needed to know as much about the case and interviewee as possible; the interview team needed to be a cohesive unit; the interviewer must build rapport with the interviewee; the interviewer must show empathy to indicate an understanding of the interviewee; and the interviewer must establish an environment where the interviewee feels a level of security in divulging information.⁵³

Agent Runles recalled working a drug investigation while assigned to the Guam Resident Agency, where he employed his interrogation methodology. Runles advised that the first thing he needed to do prior to interrogating the individual was to learn as much about the case as possible, including facts, other witness interviews, evidence obtained in the case, and an understanding of the interviewee. After arresting the interviewee, Runles decided to conduct the interrogation in a large conference room, which he felt provided a more conducive environment to allow the interviewee to talk freely in a noncoercive environment.

During the interrogation, Runles spent a significant amount of time allowing the interviewee to talk and build their story. At this point in the interrogation, the agent has developed significant rapport and understanding of the interviewee's situation. Additionally, while the interviewee has been telling their story, if parts appear to be untruthful, Runles can question the information and place significant cognitive load on the interviewee. This process, combined with rapport and empathy, produced truthful statements from the interviewee. At no time during the interrogation did Runles accuse the interviewee of committing the crime; however, the interviewee provided a

⁵¹ Martin interview.

⁵² Martin interview.

⁵³ SSA Frank Runles, interview with author, 27 January 2017.

full confession.⁵⁴ The interrogation process used by Runles, unbeknownst to him, was the same methodology developed by HIG.

FBI Special Agent Michael Vanmeter served as a lieutenant commander in the U. S. Navy, worked 3 years as a police officer with the Washington, DC, Metropolitan Police Department, and has been with the FBI for more than 18 years. Vanmeter worked investigative cases that involved “sovereign citizens,” groups of U.S. citizens who believe the government is illegitimate. The agent described these interrogations as very challenging, because at the onset of the process, the interviewer represents the government, which makes it challenging to get the interviewee to talk. To overcome this challenge, Vanmeter indicated the interviewer must be prepared for this reaction and have a complete understanding of the case and interviewee. Additionally, the interviewer must actively listen to the interviewee, which will assist in building rapport. Next, the interviewer must find common ground with the interviewee and display empathy. Lastly, the interrogation must take place in an environment where the interviewee does not feel threatened and has a sense of freedom in discussing what they may know. Vanmeter stated, “I couldn’t believe how many times one of the sovereign citizens would say, ‘You’re the nicest person to ever arrest me’.”⁵⁵ The agent described the process developed by HIG.

CONCLUSION

The three most important elements to an interrogation are the interrogators’ ability to 1) build rapport, 2) show empathy, and 3) provide a noncoercive environment. FBI special agents have been successfully employing this technique for many years, which has now been formalized by HIG. Rapport is the essential element to ensure the interviewee is in sync with the interrogator, providing an environment supportive of conversation. Empathy is the ability for the interrogator to understand and effectively convey the interviewee’s perspective. Lastly, there must be a noncoercive environment generated by the interrogator. It has been proved that the human brain can be coerced into situations that, under normal circumstances, do not occur, such as confessing to a crime that interviewee did not commit.

HIG has developed an approach to interrogations that incorporates all three of these elements and has been shown to be very effective. As law enforcement agencies continue to struggle with their image in the wake of antipolice protests fueled by such groups as Black Lives Matter, the adoption of the HIG approach to interrogations would be a step in the right direction. Additionally, in a world with terrorism on the rise (e.g., the Boston Marathon Bombing, San Bernardino, and the Orlando Nightclub shootings), we need interrogators who can obtain the most accurate and actionable human intelligence from the interviewees. It may prevent the next 9/11 or possibly something much worse.

⁵⁴ Runles interview.

⁵⁵ SSA Michael Vanmeter, interview with author, 27 January 2017.

A Cold, Hard Fight

The Marine Corps Can Be a Force Multiplier in Arctic Alaska

by Major Daniel M. Murphy, USMC
and Major Kathryn E. Wagner, USMC¹

Brigadier General William Mitchell once referred to Alaska as “the most strategic place on earth.”² Alaska, and the significant amount of Arctic territory surrounding it, represents a challenging and complex area of the world whose importance will only grow in the coming decade. Geographic changes resulting from climate change will make the region, with its vast natural resources and strategic shipping lanes, geopolitically more important and potentially more contested.³ Across the Bering Strait, a resurgent Russia continues to develop its military capability and posture its forces within the geographical pivot area.⁴ As the Marine Corps studies and defines future operating concepts, it should consider Arctic Alaska as a possible area of operations. The Marine Corps, with its unique warfighting capabilities, can integrate with the existing Alaskan Command (ALCOM) structure to contribute to the joint fight in this challenging theater; three employment models of Marine forces provide the joint force commander (JFC) scalable and responsive options across the range of military operations (ROMO) for the Alaska theater of operations (figure 16).⁵

ARCTIC OVERVIEW AND STRATEGIC CONTEXT

The Arctic environment is challenging because of its extremely cold, harsh climate, its vast sea and land space, and its limited infrastructure. The region’s economic value currently centers on its natural resources, such as oil and natural gas, with an estimated 22 percent of the world’s supply lying undiscovered below the land and water of the Arctic.⁶ As climate change reduces the ice shelf, the Arctic waters are becoming more navigable and increasingly viable as strategic

¹ Maj Murphy and Maj Wagner are graduates of MCU’s School of Advanced Warfighting. Maj Wagner received the General Clifton B. Cates Award of the Navy League of the United States for academic year 2016–17.

² *Hearings on H. R. 6621 and H. R. 4150, Committee on Military Affairs*, House of Representatives, 74th Cong. (1935) (testimony of BGen William Mitchell), cited in LtGen R. H. Handy, “Alaska Military Snapshot” (presentation, ALCOM capabilities brief, 23 July 2016), PowerPoint slide 5.

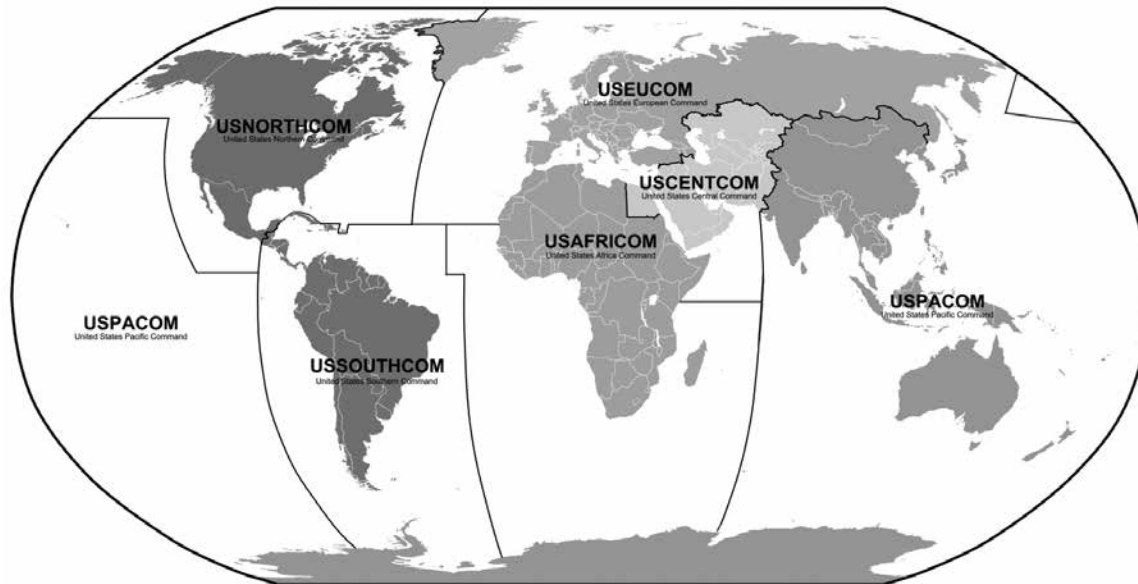
³ Covering three continents, the Arctic region includes: United States (Alaska), Canada, Russia, Denmark (Greenland), Iceland, Finland, Sweden, and Norway. Amanda Briney, “A Geography and Overview of Earth’s Arctic Region,” ThoughtCo.com, 3 March 2017.

⁴ The term *geographical pivot area* was originally defined by Sir Halford J. Mackinder, English geographer and founder of the field of geopolitics. See Matthew R. Slater, Michael Purcell, and Andrew M. Del Gaudio, ed., *Considering Russia: Emergence of a Near Peer Competitor* (Quantico, VA: MCU Press, 2017).

⁵ ALCOM is a joint subordinate unified command under U.S. Northern Command.

⁶ LtCol Todd Manyx, *The Arctic: A Climate and a Place*, SIG Report (Washington, DC: Strategic Initiatives Group, Headquarters Marine Corps, 2016), 1.

Figure 16. Geographic Combatant Commands (GCC)



Source: Adapted by MCUP.

shipping lanes. Currently, two sea routes—the Northern Sea Route and the Northwest Passage—are open for shipping for portions of the year. A third route, the Transpolar Sea Route, is expected to become a viable shipping lane by 2025 (figure 17). The Bering Strait will likely become a critical strategic chokepoint in the coming decades.⁷ The map illustrates the projected enhanced shipping access along these routes.⁸ By 2030, all three sea routes will be open for at least five weeks of the year.

The Arctic has been a contested region in the past. During the Cold War, it was heavily militarized, with both Russia and the United States dedicating significant forces to Arctic operations.⁹ Russia has considerable economic, political, and security interests in the area. Approximately one-fifth of the Russian landmass lies north of the Arctic Circle.¹⁰ Additionally, “the region provides 20 percent of Russia’s gross domestic product and 22 percent of its exports, pri-

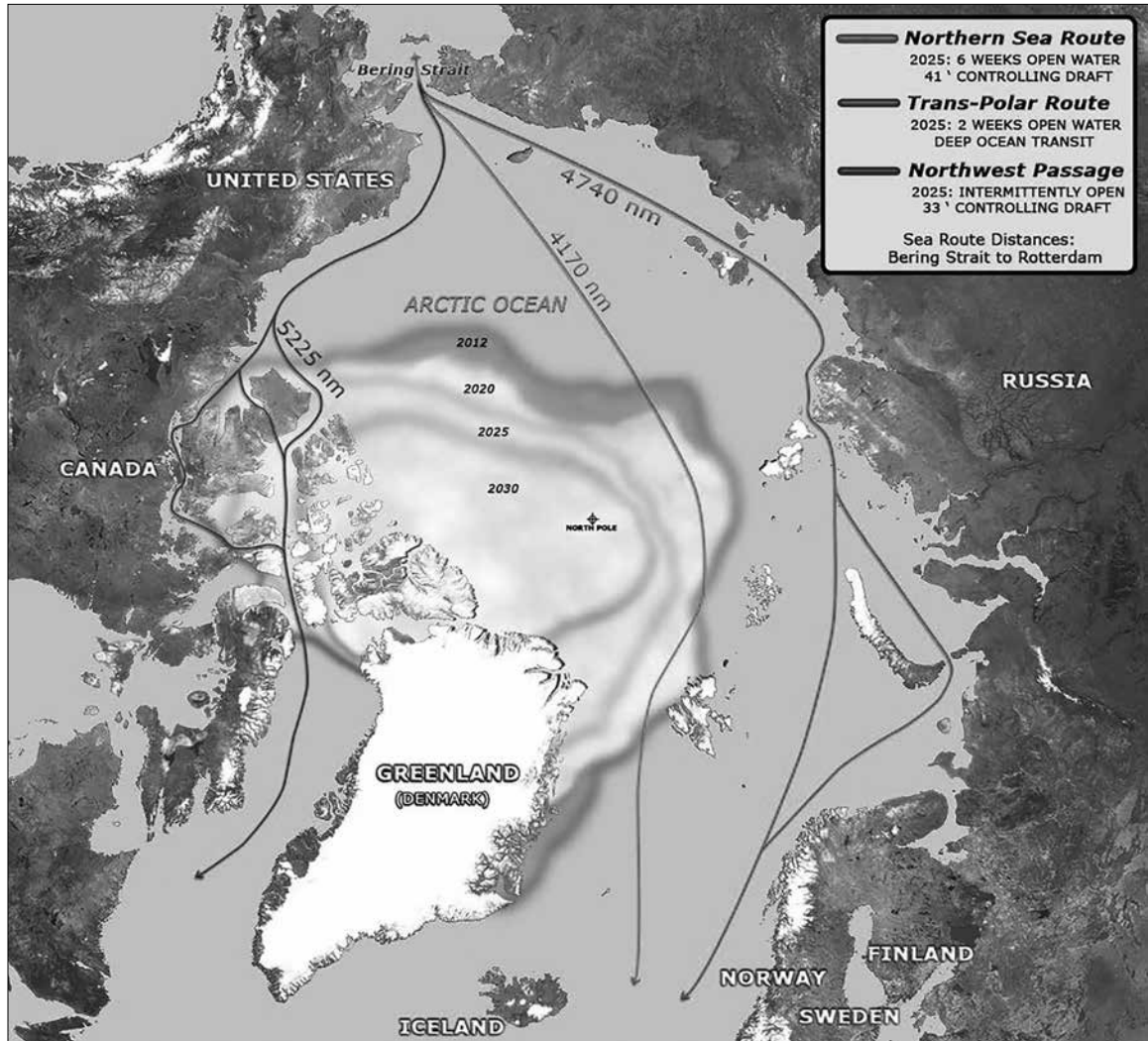
⁷ LtCol Manyx’s SIG report from January 2016 states, “The Polar routes are expected to offer savings for routes between Northern Europe and the Northern Asia ports that are 24 percent shorter compared to the Strait of Malacca and the Suez Canal transit. . . . [E]stimated significant financial savings will include up to \$600,000 per ship, per direction, with annual savings of approximately \$60–\$120 billion.”

⁸ *U.S. Navy Arctic Roadmap: 2014–2050* (Washington, DC: Navy Task Force Climate Change, Navy Department, 2014), 11.

⁹ From 1918 to 1920, the U.S. Army deployed forces to Russia during its civil war and after the October (Bolshevik) Revolution. The American Expeditionary Force-Siberia consisted of approximately 8,000 soldiers that landed in Vladivostok and conducted operations for 19 months; and the American Expeditionary Force-North Russia’s Polar Bear Expedition consisted of approximately 5,000 soldiers that landed in Archangel and conducted operations for 9 months. These events remain foremost in the minds of Russians, making their concerns about protecting Russian sovereignty in the Arctic not unfounded. During World War II, the Japanese seized the Aleutian Islands of Attu and Kiska in June 1942, and the Allies fought a bloody battle to retake the islands in May 1943. See Gibson Bell Smith, “Guarding the Railroad, Taming the Cossacks: The U.S. Army in Russia, 1918–1920,” *Prologue* 34, no. 4 (Winter 2002); and George MacGarrigle, *Aleutian Islands: The U.S. Army Campaigns of World War II*, CMH Pub 72-6 (Fort McNair, DC: U.S. Army Center of Military History).

¹⁰ *Report on Arctic Policy* (Washington, DC: International Security Advisory Board, Department of State, 2016).

Figure 17. Arctic sea routes



Source: Official U.S. Navy map.

marily energy and minerals. . . . The region is also home to 2 million Russians.”¹¹ Russia has advanced several territorial claims to disputed or unclaimed areas of the Arctic, including the vast underwater Lomonosov Ridge.¹² The Northern Sea Route passes almost exclusively through Russian waters. Recently, Russia has devoted considerable resources to building or upgrading Arctic bases and forces as part of a long-term plan that includes adding six new military bases and opening “ten Arctic search-and-rescue stations, 16 deep-water ports, 13 airfields, and 10 air-defense radar stations across its Arctic periphery.”¹³

The United States government recognizes the growing importance of the Arctic and pub-

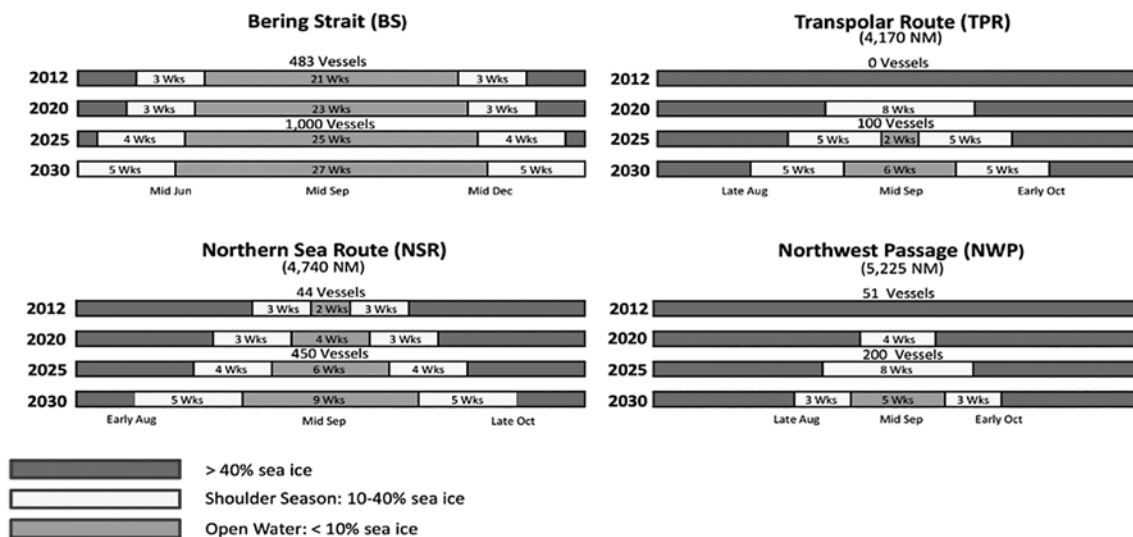
¹¹ John Grady, “Report: New Forum Needed to Negotiate Arctic Security Concerns,” USNI News, 28 August 2015.

¹² Ronald O’Rourke, *Changes in the Arctic: Background and Issues for Congress* (Washington, DC: Congressional Research Service, 2017), 24.

¹³ Jeremy Bender, “Pentagon Report: Russia Just Put the Finishing Touches on 6 Arctic Military Bases,” *Business Insider*, 7 December 2015.

Figure 18. Arctic sea route navigability

Arctic Sea Route Navigability



Source: *U.S. Navy Arctic Roadmap, 2014–2050*.

lished several national policy and strategy documents on the subject, including a national security strategy document and a national defense strategy document. In the 2013 *National Strategy for the Arctic Region*, President Barack H. Obama defined the end state as “an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of trust and cooperation, and where economic and energy resources are developed in a sustainable manner that also respects the fragile environment and the interests and cultures of indigenous peoples.”¹⁴ In addition to these two documents, the Navy published the *U.S. Navy Arctic Roadmap 2014–2050*, an update from the original 2009 report.

These documents currently assess the Arctic as a low-threat environment; however, the United States recognizes that as the Arctic becomes more accessible and its economic importance grows, the potential for disagreement and conflict increases (figure 18). Thus, the United States’ approach toward the Arctic is one of active engagement with partners and allies to cooperate and peacefully resolve issues. The U.S. government also understands the need to remain engaged in the region politically and militarily to ensure national interests, to exercise sovereignty, and to promote international cooperation. These interests and efforts are prioritized against competing national interests across the globe, yet the challenging operating environment of the Arctic requires deliberate planning and preparation to operate successfully now and in the future. Efficient, effective, and creative employment of the joint force will be imperative in future Arctic operations, because the theater may encompass an economy of force and supporting efforts balanced across a multitude of global threats.

The *U.S. Navy Arctic Roadmap* makes no mention of the Marine Corps as an element of its naval force nor does ALCOM currently include Marine forces; however, Marine Corps capa-

¹⁴ Barack H. Obama, *The National Strategy for the Arctic Region* (Washington, DC: White House, 2013), 4.

bilities can readily assist the Navy in its Arctic strategic objectives and can be a valuable asset in ALCOM's joint fight.

ALASKAN COMMAND

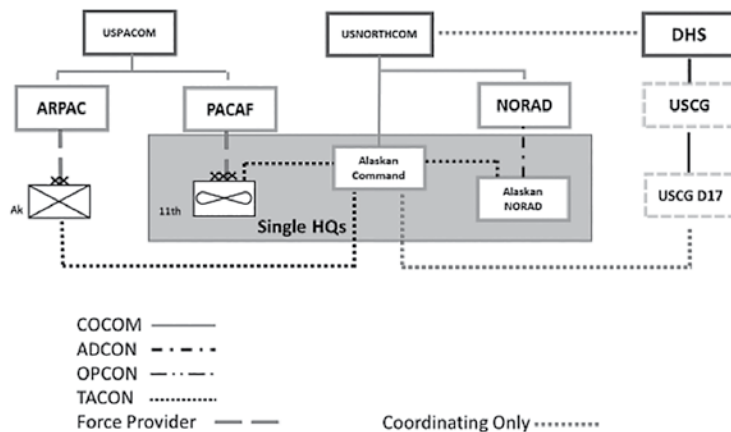
The American Arctic region is overseen by Alaskan Command. ALCOM is a unique and complex command (figure 19). There are three major commands within the Alaska theater of operations: ALCOM, U.S. Army Alaska, and U.S. Coast Guard District 17. In addition to being a joint subordinate unified command, ALCOM also functions as Eleventh Air Force and Alaska North American Aerospace Defense Command (NORAD) region headquarters.¹⁵ ALCOM's primary focus is to facilitate readiness, plan and execute defense support of civil authorities (DSCA) missions, and identify Arctic capabilities shortfalls. The Alaska NORAD region is responsible for maintaining aerospace control and defense of its area of operations. The Eleventh Air Force is primarily a force provider composed of two active duty wings: one is solely responsible for supporting Exercise Red Flag-Alaska and contains no offensive air capability; and two Air National Guard (ANG) wings augment Eleventh Air Force and provide refueling, combat search and rescue, and combat support.¹⁶

U.S. Army Alaska consists of two maneuver units and support units. U.S. Army Alaska's primary mission is as a force provider and reports to United States Army Pacific (USARPAC). Its secondary mission is to "support theater engagement in the Pacific/Arctic and military operations in the [Alaska Joint Operating Area] AK-JOA."¹⁷ The two maneuver units within

U.S. Army Alaska include a Stryker brigade combat team and an airborne infantry brigade combat team.¹⁸

U.S. Coast Guard (USCG) District 17 executes missions in support of homeland defense, DSCA, and search and rescue (SAR). USCG District 17 cooperates with the Canadian military and coast guard in its SAR mission and works to support freedom of navigation missions when one of the USCG icebreakers is

Figure 19. Current command structure in Alaska



Source: Adapted by MCUP.

¹⁵ NORAD is a United States and Canada binational organization charged with aerospace warning and control for North America. Aerospace warning includes the detection, validation, and warning of attack against North America whether by aircraft, missiles, or space vehicles through mutual support arrangements with other commands. Aerospace control includes ensuring air sovereignty and air defense of the airspace over Canada and the United States. The renewal of the NORAD Agreement in May 2006 added a maritime warning mission, which entails a shared awareness and understanding of the activities conducted in U.S. and Canadian maritime approaches, maritime areas, and internal waterways. "About NORAD," NORAD.mil.

¹⁶ Handy, "Alaska Military Snapshot," slide 7; and the websites for Air National Guard, 176th Wing, and Air National Guard, 168th Wing.

¹⁷ USARPAC, "About: Mission," Army.mil.

¹⁸ The Stryker brigade is structured around the Stryker eight-wheeled version of the General Dynamics light armored vehicle (LAV) III.

attached to the district.¹⁹ ALCOM does not currently have any plans to integrate naval forces into the defense of Alaska or plans for power projection or deterrence operations in the Alaskan theater.

ALCOM is unique in that it has several Department of Defense (DOD) and interagency partners, such as the National Guard, the Alaska Air National Guard, and the Alaska Naval Militia.²⁰ Since the Alaska theater falls inside U.S. territory, ALCOM has homeland defense and civil support missions in addition to traditional military missions. This complex command structure, with many command relationships, presents interoperability challenges and opportunities. The current ALCOM structure has limited ability to conduct major offensive operations; however, it provides an initial structure to evolve as a joint task force (JTF) if it is augmented by other elements of the joint force to conduct expanded operations. Marine forces training and operating in Alaska would provide excellent opportunities for ALCOM to learn Marine capabilities and enhance interoperability for potential JTF missions.

THE SOLUTION

As a scalable, deployable, and expeditionary force able to tailor units to specific missions, the Marine Corps can present numerous force packages with a variety of relevant capabilities to enhance both the naval and the joint force in Arctic Alaska operations. The extensive Alaska coastline and limited infrastructure ashore make the amphibious and expeditionary nature of the Marine Corps an attractive option to extend the joint force's operational reach. Operating from the sea as part of the Navy-Marine Corps team or as a shore-based Marine Air-Ground Task Force (MAGTF), Marine forces can conduct operations ranging from conducting partner and joint interoperability training in a permissive environment to raids or forcible entry operations in a hostile environment, which would demonstrate the United States power projection capability while enhancing its deterrence and sea control. The MAGTF's maneuverability becomes a force multiplier for the combatant commander by enhancing employment opportunities across the battlespace.²¹ This maneuverability makes U.S. actions less predictable to the enemy, forcing them to guard against multiple possibilities.

To operate in the Arctic environment effectively, the Marine Corps can provide task organized MAGTF options able to meet the significant logistical and manning requirements necessary to support extreme cold-weather operations. The Marine Corps also can offer creative solutions outside the traditional MAGTF constructs that use elements of the task force in new ways to address the future operating environment. Applying distributed operations or alternate shipping platform concepts, the Marine Corps can partner with and leverage interagency capabilities, such as with the Coast

¹⁹ LTC Jerry L. Smith, USCG, operations officer on USCGC *Polar Star* (WAGB 10), email to author, 15 November 2016. Ice operations are categorized into domestic icebreaking and polar icebreaking. An icebreaker is necessary to escort any vessel through the ice (ice escort). Maneuverability is restricted to the width of the channel, which is dependent on ice pressure and thickness. Polar icebreakers are divided into light, medium, and heavy.

²⁰ ALCOM does not have U.S. Navy forces assigned to it. However, Joint Base Elmendorf-Richardson, where ALCOM headquarters resides, lists the Alaska Naval Militia, Military Sealift Command, and Navy Operational Support Center-Anchorage as Navy units associated with the base. The Alaska Naval Militia is controlled by the state of Alaska, but is partially federally regulated and equipped; as such, at least 95 percent of its members must be Navy or Marine reservists. Its four mission areas include medical, explosive outload teams, reconnaissance and port security, and naval construction. See Handy, "Alaska Military Snapshot."

²¹ Alaska's 47,000 miles of coastline, which comprises two-thirds of the entire U.S. coastline, and Alaska's 32 military facilities, 12 of which are major bases or stations, enable expeditionary and amphibious Marine forces capable of operating at sea or ashore in an austere environment to achieve significant operational reach in an immense and harsh environment with limited infrastructure. Handy, "Alaska Military Snapshot," slide 6.

Guard or U.S. Customs and Border Protection, to exercise sovereignty and provide deterrence.²²

Three models of Marine Corps force employment in the Alaska theater offer different opportunities to consider how Marine forces might support ALCOM operations. The first model supports traditional Marine training and exercise during Phase 0 operations, which could provide a foundation of knowledge for both the Marine Corps and ALCOM to guide scalable, tailored MAGTFs in future crisis and contingency response operations across the ROMO.²³ The second model demonstrates how the Marine Corps can be employed as part of a naval force, either on traditional amphibious ships or on alternative shipping, such as USCG ships. A third model advances current shore-based special purpose MAGTFs (SPMAGTFs) into a nontraditional, task-organized “flying column” that takes advantage of Marine competencies as a self-sustaining, light infantry-centric force able to conduct long-range operations in the austere Arctic environment with dedicated aviation support.²⁴

MODEL 1: BUILDING A FOUNDATION

Alaska Phase 0 Training Opportunities

The Marine Corps executes different training exercises and operations within the United States and across the globe during Phase 0 operations. These endeavors provide valuable training and rehearsal opportunities for Marine units and higher headquarters staffs. Theater security cooperation and bilateral exercises also bolster partnerships with other nations and their militaries while demonstrating the credibility of Marine expeditionary capabilities, which may act as a deterrent to potential adversaries. Examples of such exercises include the Marine Rotational Force-Darwin in Australia, the Unit Deployment Program in Okinawa, and the Marine expeditionary units (MEUs). Similar opportunities and benefits may exist in Alaska for the Marine Corps and ALCOM, but it may be more cost effective and simpler to coordinate because of venue proximity to the United States.

The Marine Corps can send forces to conduct training in Alaska that take advantage of the state’s extensive land, sea, and air training areas and live-fire ranges.²⁵ The Joint Pacific Alaska Range Complex (JPARC) in and around Joint Base Elmendorf-Richardson hosts multiple major training exercises each year and is capable of brigade-level training.²⁶ Alaska-based training would sharpen Marines’ combat skills, enhance their ability to operate in a cold-weather climate,

²² There also may be opportunities to leverage existing and future civilian infrastructure to support potential military activities. Commercial facilities in Alaska, particularly in the mining and natural resource industry, are designed to withstand the remote and harsh environment. These facilities must be able to operate independently in extremely cold climate with limited infrastructure. As such, they often include landing strips or helicopter pads to make them accessible by air, can store bulk fuel, feature standalone power and communications capabilities, and can support groups of people for extended periods with billeting and mess facilities. Such facilities may provide opportunities for dual military and civilian use based on their current configuration or with moderate modifications. This approach may be cost effective in terms of both initial investment and long-term maintenance. Additionally, cooperating with civilian entities enables the military to take advantage of their local knowledge, while also reassuring the population and commercial enterprises that the federal government remains invested in their security.

²³ *Joint Operations*, Joint Publication 3-0 (Washington, DC: Joint Chiefs of Staff, 2017), V-13.

²⁴ The concept of *flying column* refers to a small land unit capable of rapid mobility and it has been used successfully dating as far back as the British during the Boer War, as well as with the Chindits, or long-range penetration groups, during WWII. Maj Scott R. McMichael, *A Historical Perspective on Light Infantry*, Research Survey No. 6 (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1987); Viscount William Slim, *Defeat Into Victory: Battling Japan in Burma and India, 1942–1945* (New York: Cooper Square Press, 1956); and Byron Farwell, *The Great Boer War* (South Yorkshire, UK: Pen & Sword Books, 2009).

²⁵ The JPARC consists of 1.5 million acres for ground maneuver training, 65,000 square miles of air space, and 42,000 square nautical miles of maritime activity areas. Handy, “Alaska Military Snapshot,” slides 14–19.

²⁶ Handy, “Alaska Military Snapshot,” slides 14–19.

enable Marines to assess the capability and adequacy of Alaska's infrastructure to support real world operations, and build relationships between the Marine Corps and ALCOM.

Conducting unit training or participating in large-scale exercises in Alaska would enhance the readiness and proficiency of Marine forces while improving interoperability with joint, interagency, or coalition partners. These exercises also could be an important low-level deterrence activity designed to signal to America's adversaries and allies its willingness and competence to conduct Arctic operations. The Marine Corps should engage with ALCOM during the global force management process to determine what scheduled exercises would be appropriate to support with each force package and align the training and exercise evaluation plan to assign available units to participate in these exercises. Alaska may provide worthwhile venues to conduct predeployment training (PTP) for MEUs or SPMAGTFs; unit training as an alternate to Twentynine Palms, California, or Yuma, Arizona; reserve unit annual training; or major amphibious exercises, such as Bold Alligator or Dawn Blitz.²⁷ For example, a West Coast MEU in its PTP cycle and its associated amphibious ready group (ARG) could participate as part of the naval forces in Exercise Northern Edge or a reserve unit could conduct cold weather and maneuver training at JPARC for its annual training.²⁸

MODEL 2: MAINTAINING SEA CONTROL IN ALASKA

The Marine Corps as a Naval Force

Arctic Alaska has significant key terrain and viable ports within the littorals. In addition to the strategic chokepoint of the Bering Strait, other littoral areas could enable power projection and sea control for U.S. forces operating in the Arctic Alaska, but also may be vulnerable to an adversary's actions.²⁹ The limited road and rail network make the sea and air key modes of transportation. Thus, the Marine Corps' ability to operate from the sea would support increased maneuverability and power projection options for ALCOM. As part of the Navy-Marine Corps teams, embarked Marines can conduct traditional training and operations aboard amphibious shipping.³⁰ Northern Edge, a major biennial exercise, includes joint air, sea, and land training in which the U.S. Navy regularly participates.³¹ This exercise is an excellent opportunity for the Navy-Marine Corps team to conduct amphibious training with a MAGTF embarked on amphibious shipping. Combined Navy and Marine Corps training in an Arctic environment would also help determine the icebreaking requirement needed to support amphibious oper-

²⁷ Bold Alligator is an annual multinational littoral warfare exercise dating back to 2011. Dawn Blitz is a Navy-Marine Corps exercise that simulates an amphibious assault by landing infantry and support on a beachhead.

²⁸ Commander, U.S. Pacific Fleet Public Affairs, "Marines Work Together during Exercise Northern Edge 2011," Navy.mil, 20 June 2011; and Yereth Rosen, "Northern Edge Military Training in Gulf of Alaska Gets Navy's OK— with Limits," *Alaska Dispatch News*, 25 April 2017. In 2011, Marine Aerial Refueler Transport Squadron 452 (VMGR), a Marine Reserve Lockheed Martin KC-130 squadron from Stewart Air National Guard Base, NY, conducted aerial refueling operations in JPAC as part of Northern Edge; additionally, 3d Air Naval Gunfire Liaison Company (3d ANGLICO), a Marine Reserve unit from California, also has conducted fires and airborne training as part of Alaska-based exercises.

²⁹ The Alaska littorals contain the Aleutian Islands, Alaska Peninsula, Saint Lawrence Island, Seward Peninsula, and the Gulf of Alaska. Alaska has 58 ports along its extensive coastline, ranging from very small to medium, with the port of Anchorage listed by the DOD as a strategically vital U.S. port. *Report to Congress on Arctic Operations and the Northwest Passage*, OUSD (Policy) (Washington, DC: Department of Defense, 2011).

³⁰ JPARC sea spaces include more than 42,000 nautical miles of temporary maritime activities areas for surface, subsurface, and airspace training adjacent to air and land ranges. Handy, "Alaska Military Snapshot," slides 14–19.

³¹ Handy, "Alaska Military Snapshot," slide 23.

ations north of the 60th parallel North for an ARG or expeditionary strike group (ESG).³²

Limited amphibious shipping also has driven the Marine Corps to examine alternative shipping platforms to conduct amphibious operations. The Alaska theater of operations provides ample opportunities to continue this experimentation with the Coast Guard or other ships. Coast Guard District 17, responsible for Alaska and partnered with ALCOM, remains actively engaged in maritime Alaska. It supports Department of Homeland Security missions to prevent terrorism and enhance security, secure and manage borders, and strengthen national preparedness and resiliency.³³ Operating throughout Alaska's waters, the Coast Guard provides several opportunities to conduct interoperability training, such as embarking Marines on Coast Guard ships, working with Marine aviation to conduct external lift and fast-roping operations, or assessing the feasibility of landing rotary-wing or unmanned aircraft.³⁴ Marines could conduct cross training with the Coast Guard in visit, board, search, and seizure (VBSS) and maritime interdiction operations (MIO). As part of ALCOM's DSCA mission, Marines could assist in training or executing search-and-rescue (SAR) operations, mass rescue operations (MRO), and other contingency response operations the Coast Guard executes.

MODEL 3: OPERATIONAL MANEUVER ELEMENTS

Marine Arctic Flying Columns

The third model is an operational maneuver element designed to operate at the high end of the ROMO, potentially as an economy-of-force measure in Arctic Alaska as a supporting effort in a major international conflict. This version of a shore-based SPMAGTF could be task organized with subordinate Marine Arctic flying columns (MAFC) designed to conduct distributed operations across a large area. The threat of Russia's massed fires, combined with the vast space of the Arctic, makes the decentralization of U.S. forces important.³⁵ The MAFC model originates from the Chindit concept employed in Burma during World War II. While the Chindits fought in thick jungles, light infantry maneuver units today would be able to operate independently, to be supplied primarily by air, and to conduct long-range distributed operations in Arctic Alaska. These MAFCs can conduct distributed operations in a harsh environment against an enemy who has demonstrated an ability to mass fires quickly and efficiently.

Creating company-reinforced flying columns capable of operating independently with associated aviation combat element (ACE) and logistics combat element (LCE) support builds on the company landing team concept and applies it to the Arctic environment.

Able to operate independently, these MAFCs could mutually support one another and mass quickly to project combat power at a decisive point. The ground combat element (GCE) would employ a hub-and-spoke structure to support the distributed operations. Normal command-and-control structures at the battalion level and above would remain in place to retain span of

³² The USCG possesses five icebreakers, four of which are operational. Of the two heavy icebreakers in its fleet, only one is operational and the other is being cannibalized for parts to support the operational one. The light icebreaker and medium icebreaker support domestic icebreaking missions on the Great Lakes and in New England. The single operational heavy icebreaker, USCGC *Polar Star*, predominately supports icebreaking missions in the Antarctic for scientific research endeavors. The remaining medium icebreaker, USCGC *Healy* (WAGB 20), supports Arctic presence missions to include deterrence and search and rescue. Smith to author.

³³ "Missions," USCG.mil.

³⁴ Coast Guard District 17 assets include 52 boats, 15 cutters, and 17 aircraft. The term *fast roping*, or fast rope insertion extraction system, refers to the technique of descending a thick rope to board ships at sea or to deploy troops from helicopters when the aircraft cannot actually touch down.

³⁵ The term *massed fires* refers to concentrating the effects of combat power at the most advantageous place and time to produce decisive results. Phillip Karber and Joshua Thibeault, "Russia's New Generation Warfare," *Potomac Foundation*, 13 May 2016.

control. The ACE would be task organized into four composite squadrons with the addition of one C-130 fixed-wing squadron. One composite squadron would be in general support of the SPMAGTF and provide most of the logistical maneuver for the MAFCs with a heavy-lift core squadron. Three of the composite squadrons would be distributed and provide direct support to each of the battalions and its three MAFCs with fires and assault support capabilities. Although distributed, the ACE would be functionally aligned through the aviation command-and-control system to offer surge and redundancy capabilities, allowing the commander to distribute assets evenly or to weight them according to effort or area as the mission dictates. Logistics support to the MAFCs would mainly be supported by air, allowing the distributed units to travel lighter and faster. The LCE would provide all tactical logistics functions to the hub locations to support the battalions and direct support ACE squadrons. The ACE squadrons would include a Marine wing service support (MWSS) detachment for aviation ground support (AGS) to the airfields.

Current SPMAGTFs deployed in Central and European Commands demonstrate utility in the responsiveness of a shore-based MAGTF; however, this employment model also comes with some challenges. Host-nation caveats on basing and overflight rights can limit the force structure or the operational flexibility of the SPMAGTF. As a versatile and responsive yet small force, SPMAGTFs must determine command-and-support relationships within the joint force to receive both operational direction and sustainment.³⁶ Operating in Alaska could mitigate some of these challenges for a SPMAGTF. It would be based in and operating from sovereign U.S. territory, alleviating host-nation basing or overflight issues. ALCOM, as a subordinate unified command, provides a nucleus for a joint task force under which the SPMAGTF could operate and the existing military infrastructure, units, and sustainment activities could readily support the SPMAGTF.

CHALLENGES, OPPORTUNITIES, AND RECOMMENDATIONS

The Marine Corps has the potential to bring significant value to joint operations in Arctic Alaska as the region becomes more important strategically in the coming decade, and ALCOM's existing structure provides a workable framework on which to build a joint task force capable of employing forces across the ROMO. Near-term challenges should be addressed to posture the Marine Corps and the joint force for future success in Arctic Alaska. As the region grows in importance during the next 10 years, the complexity of the threat will evolve, and so too should the United States' response to it.

As the Marine Corps and ALCOM examine future operations in Arctic Alaska that involve Marine forces, it is important for both organizations to build relationships and common understanding that will enhance operational effectiveness and command and control. The Marine Corps should staff the two vacant Marine billets in ALCOM to provide subject matter expertise on Marine capabilities that can assist ALCOM in accomplishing its missions. The Marine Corps should seek opportunities to conduct unit training, including as participants in major exercises, at Alaska's numerous training areas and live-fire ranges. The Navy, along with the Marine Corps, should seek to conduct naval and amphibious training in Alaska. Additional opportunities exist for Marine forces to participate in current ALCOM operations, such as cross training with the Coast Guard and experimenting with Coast Guard ships as alternative shipping plat-

³⁶ Col Robert C. Fulford, USMC, "26th Marine Expeditionary Force (MEU) [and] SPMAGTF-CR-AF 14.2 Deployment Observations" (presentation, School of Advanced Warfare, Marine Corps University, 13 April 2017). In a follow-on email 27 April 2017, Col Fulford granted the authors' permission to attribute his remarks in this paper in accordance with MCU's nonattribution policy.

forms. These steps will build relationships and enhance interoperability now to help seamlessly execute future joint operations.

The Marine Corps should examine the unique demands of an extreme cold-weather environment and take steps now to prepare for operations in such a theater. During the past 15 years, the U.S. military largely has focused on desert operations. There has been little attention on training in an extreme cold-weather environment, apart from Mountain Warfare Training Center courses in Bridgeport, California. The most recent cold-weather exercise for the Marine Corps, Cold Response 16 in Norway, was the largest exercise of this type since the late 1990s and provided useful lessons relevant to Arctic Alaska. Establishing an equipment pool for joint or Marine forces in Alaska to support both training and real-world operations would greatly enhance Marine responsiveness in the Alaska theater.

CONCLUSION

As climate change causes the ice shelf to recede, the accessibility and economic potential of the Arctic will increase. The increased value of the Arctic coincides with a resurgent Russia intent on capitalizing on the economic opportunities in the region while flexing its growing military muscle. U.S. national security policy has identified the importance of the Arctic and wants it to remain “stable and conflict-free,” while sustaining global freedom of navigation and U.S. sovereignty. ALCOM currently supports a variety of training and operational missions, providing an existing structure for joint force operations to be augmented and enhanced with Marine formations to meet larger forces and higher-end operations.

The unique capabilities of the MAGTF can be leveraged by the joint force across the ROMO in the Arctic Alaska operating environment. The Marine Corps can augment the Navy and Coast Guard to establish sea control and power projection, both as a deterrent force and in execution of contingency operations. Developing three MAGTF models, the Marine Corps could provide the joint force commander with capable and responsive solutions to a variety of scenarios across the ROMO. The Marine Corps’ expeditionary nature and naval character readily lend itself to both sea- and land-based operations in the vast, austere Arctic Alaska and its limited infrastructure.

To achieve this capability, significant challenges must be addressed by the Marine Corps, ALCOM, and the Department of Defense to meet the future demands of major operations in the Arctic Alaska theater. Taking steps now to address these challenges will enable the United States to effectively confront any future threats in the Arctic. DOD should assess, identify, and source its icebreaker capability to support future strategic aims, including the ability to conduct amphibious operations in the Alaska theater. The Marine Corps should seek to participate in Alaska unit training or exercise opportunities both on land and at sea with the Navy, explore Coast Guard ships as alternative sea transportation, and develop the MAFC concept. Dedicated to fighting and winning in “any clime and place,” the Marine Corps can take steps now to prepare and plan for excelling in the harsh Arctic environment and providing the joint force commander with a game-changing capability.

Arctic Opening

U.S. Joint Force Capabilities in 2025

by Major Jonathan R. Martin, USA¹

During the Cold War, the Arctic region was important to both the United States and the Soviet Union. The United States feared that the Soviet Union would launch a nuclear attack over the Arctic. The Soviet Union shared similar concerns, but the Arctic is also important due to its geographic position and its limited access to warm water ports. The Soviet Union's northern ports are a critical requirement for its ability to project sea power. These security concerns in the Arctic compelled both the United States and the Soviet Union to develop capabilities to operate in land, sea, and air domains in the region. However, the posturing by each side in the Arctic never escalated into open conflict. In the immediate aftermath of the Cold War and the close of the twentieth century, the United States' focus on the region waned and the Soviet Union was faced with more pressing problems resulting from the collapse of the empire.

In the last 10 years, the Arctic region has reemerged as an important area that is prone to conflict by way of the geopolitical competition between the United States and its allies and Russia. Those U.S. allies include the North Atlantic Treaty Organization (NATO) states with Arctic coastlines, particularly Canada, Norway, Denmark (Greenland), and Iceland.² Changes in the region's climate are leading to changes in the character of that competition. The operational environment in the Arctic is changing as the Earth's average temperatures rise. The estimates of the pace of change vary, but if current trends continue, humans will have greater access to the Arctic in the next 10–15 years. Ease of access will allow for the exploitation of the region's energy resources, as well as provide new sea lines of communication (SLOC) between the Atlantic and Pacific Oceans. Additionally, for Canada and Russia, the opening of the Arctic affords new opportunities to project sea power.

The competition between the United States and Soviet Union was limited to posturing during the Cold War. The potential that future competition between the United States and Russia in the Arctic could escalate into armed conflict cannot be ignored. The Arctic is opening. The Department of Defense (DOD) will need to be capable of achieving its objectives in the region in accordance with National Security Strategy.³

As the United States prepares for future war, it would be helpful if American leaders understand: What capabilities will the United States require in 2025 to achieve its national secu-

¹ Maj Martin is a graduate of MCU's School of Advanced Warfighting. This paper won the Joint Service Planner Award of the Military Officers Association of America for academic year 2015–16.

² Greenland is an autonomous government that remains part of the Kingdom of Denmark.

³ *National Security Strategy Report* (Washington, DC: White House, 1987–2015).

urity objectives in the Arctic?⁴ The United States should be able to achieve its national security objectives in the Arctic in 2025 by developing Arctic capabilities primarily through service and joint doctrine development, joint and multinational training exercises, and the establishment or improvement of limited base and road infrastructure in Northern Alaska.

ARCTIC OPERATIONAL ENVIRONMENT IN 2025

The media continually debate the cause and effects of climate change.⁵ While the details of that debate are beyond the scope of this paper, we can make a valid assumption that current trends with respect to the effects in the Arctic will continue. This assumption suggests that SLOCs in the Arctic will continue to open and that there will be an increase in sea traffic by military and commercial ships as well as those engaged in scientific research and exploration. This supposition, however, does not mean the harsh conditions that define the Arctic environment have or will ease in the near future. When planning for operations in the Arctic, the “rule of three” is a useful consideration. Dusty Finley, the chief of the G37 Force Management Division for U.S. Army Alaska, explains that “operations in the Arctic are three times more expensive and take three times longer to execute.”⁶

The major change to the sea domain in the Arctic is the opening of SLOCs (see figure 17).⁷ According to the Council on Foreign Relations (CFR), the Northern Sea Route (NSR) by Eurasia and through Russian claimed territorial waters first opened in 2005.⁸ The Northwest Passage (NWP) through Canadian territorial waters opened for the first time in 2007.⁹ Dr. Scott G. Borgerson, the visiting fellow for ocean governance at CFR and an adjunct senior research scholar at Columbia University estimates that a voyage from Shanghai, China, to Hamburg, Germany, via the NSR is 30 percent shorter than travelling through the Strait of Malacca and the Suez Canal. In 2009, five cargo ships used the NSR, which increased to 71 ships in 2013. In 2013, the Danish MS *Nordic Orion* saved an estimated \$80,000 in fuel by transiting the NWP.¹⁰ Borgerson expects that, by 2025, a SLOC will open across the North Pole outside of the jurisdiction of any state.¹¹ The change in the sea domain in the Arctic presents obvious opportunities, but with opportunity comes risk. First, there is the risk associated with the rule of three. While transiting the Arctic may offer some savings in international shipping, the costs of preparing for and executing search-and-rescue operations cannot be ignored. Second, competition creates the potential for conflict.

In addition to opening of SLOCs, rising temperatures also are affecting key ground lines of communication (GLOC) in the Arctic. Many outposts in the Arctic region rely on ice roads during the winter. As temperatures rise, the period those roads are open each year decreases.¹² Developing an understanding and accounting for changes to both SLOCs and GLOCs is the

⁴ *DOD Directive 7045.20, Capability Portfolio Management* (Washington, DC: Department of Defense, 25 September 2008). The DOD defines the term *capability* as “the ability to achieve a desired effect under specified standards and conditions through a combination of means and ways across doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) to perform a set of tasks to execute a specified course of action.”

⁵ “Teaching the Truth about Climate Change,” *New York Times*, 10 October 2015.

⁶ Dusty Finley, *A Framework for Optimizing Land Domain Forces in the Arctic*, The Army in the Arctic White Paper (Fort Richardson, AK: G37 Force Management Division, U.S. Army Alaska, 2015).

⁷ RAdm Jonathan White, USN, “United States Navy Arctic Roadmap Update” (speech, 6th Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations, Washington, DC, 15 July 2015).

⁸ “The Emerging Arctic: A CFR InfoGuide Presentation,” Council on Foreign Relations, 25 March 2014.

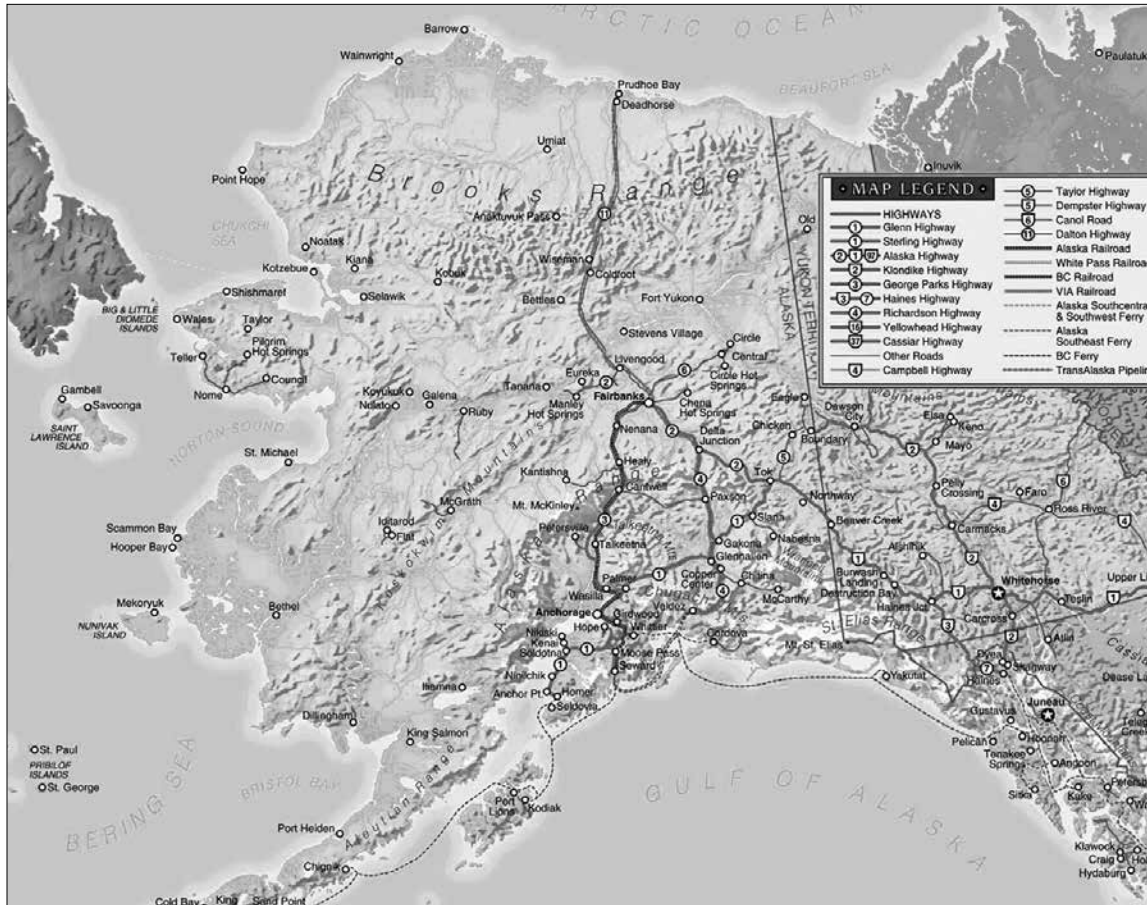
⁹ “The Emerging Arctic.”

¹⁰ “The Emerging Arctic.”

¹¹ Scott Borgerson, “Sea Change: The Transformation of the Arctic,” *The Atlantic*, November 2008.

¹² “Arctic Change: Table of Indicators,” PMEL.NOAA.gov, November 2004.

Figure 20. Alaska road network and C-17-capable airfields



Source: *Northwest Explorer Blog*, adapted by MCUP.

most critical factor when considering the development and maintenance of joint capabilities for the Arctic. While the changing climate will not significantly affect the air domain in the Arctic, it is still important to consider the effects that changes to the sea and land domains will have on air operations in the region. Figure 20 depicts the road network in Alaska as well as the Boeing C-17 Globemaster III-capable airfields. The road network north and west of Fairbanks is extremely limited.

Most research on the Arctic has focused on future opportunities for resource exploitation and commercial shipping as well as the environmental and safety risks associated with those activities. When thinking about future conflict, another consideration is the effect of changes in the Arctic on Russia's geostrategic position in the world. Before developing a strategy and Arctic capabilities for the joint force, the United States should consider the implications of the Arctic opening in the context of its relationship with its NATO allies and Russia.

RUSSIA'S ARCTIC CAPABILITY DEVELOPMENT

Russia has invested heavily in the Arctic region during the last 15 years, while the United States has been focused on a "pivot" to Asia and perpetual conflicts in the Middle East and South Asia. The development of Russian commercial and military capabilities in the Arctic has been coupled with some diplomatic initiatives, including the planting of the Russian flag on underwa-

Figure 21. Arctic territorial claims



Source: Adapted by MCUP.

ter Lomonosov Ridge at the North Pole and an increase in bellicose rhetoric. It is too early to tell if Russia will reap what it hopes to sow in terms of resource exploitation and commercial opportunities in the region, but as *The New York Times* recently noted, “The dream of an Arctic Klondike, made possible by the rapid warming of once-icebound waters, has been at the core of Russia’s national ambitions and those of the world’s biggest energy companies for more than a decade.”¹³ Figure 21 depicts the Lomonosov Ridge and the territorial claims in the Arctic.¹⁴ Further discussion of the issues and circumstances surrounding those claims, as well as an explanation of the role of the Arctic Council, can be found below.¹⁵

Russia’s investment has included significant improvements in the structure and capacity of its Arctic forces. The Russian Arctic is divided into four military districts—Leningrad, Volga-Urals, Central, and Far East—and two regional border commands at Murmansk and Petropavlovsk-Kamchatskiy. The two border commands fall under the purview of the Federal Security Service (*Federalnaya Sluzhba Bezopasnosti* or FSB). The FSB is responsible for protecting Russia’s land borders and its Arctic coastline, and it will monitor activity along the NSR.¹⁶

When it comes to power projection in the Arctic, Russia made significant changes to the command structure of its Arctic forces in 2014. On 1 December 2014, the Arctic Joint Strategic Command, with its main strike force the Northern Fleet-United Strategic Command (OSK Sev-

¹³ Steven Lee Myers and Clifford Krauss, “Melting Ice Isn’t Opening Arctic to Oil Bonanza,” *New York Times*, 7 September 2015.

¹⁴ Rajesh Mirchandani, “The Struggle for Arctic Riches,” *BBC News*, 23 September 2010.

¹⁵ The overarching legal framework that governs the Arctic is the UN Convention on the Law of the Sea (UNCLOS). The United States is the only Arctic state that has not ratified UNCLOS. States have a right to the resources within 200 nautical miles of their land, or their exclusive economic zone (EEZ). However, states can claim resources beyond the EEZ if those resources are extracted from that states continental shelf. Russia claims that its continental shelf extends to the North Pole. The Lomonosov Ridge is important it is part of Russia’s claim, and it extends from the Russian coast to the North Pole. The Arctic Council is the primary forum for international cooperation on the Arctic. “The United Nations Convention on the Law of the Sea of 10 December 1982,” United Nations, 4 May 2017.

¹⁶ Heather A. Conley and Caroline Rohloff, *The New Ice Curtain: Russia’s Strategic Reach to the Arctic* (Washington, DC: Center for Strategic and International Studies, 2015), 70.

Figure 22. Russian military bases and SAR in the Arctic



Source: Adapted by MCUP.

er), was established to provide command and control of all Russian military forces operating in the Arctic.¹⁷ The OSK Sever has the equivalent status of a military district and reports directly to the National Defense Control Center in Moscow.¹⁸ The missions that fall under the purview of OSK Sever include coastal patrolling, installation security, ensuring free passage of the NSR, antiterrorism operations to protect oil and gas installations, and tanker traffic on SLOCs.¹⁹ Additionally, OSK Sever plays an important role in Russia's nuclear arms capability since it is estimated that 81 percent of Russia's 576 sea-based nuclear warheads are on submarines in the Northern Fleet.²⁰

In the past few years, Russia has constructed 14 airfields, 10 search-and-rescue stations, 16 deep-water ports, 10 air defense radar stations, and one drone base in the Arctic.²¹ The drone base in Anadyr is located within 420 miles of mainland Alaska and approximately 300 miles from Saint Lawrence Island.²² In the eastern Arctic, Russia has reopened bases on Wrangel Island, Arctic Ocean, and Cape Schmidt, northeast Siberia. Russia conducted landing exercises with a tactical airborne battalion from the 83d Separate Air Assault Brigade and the 155th Separate Marine Brigade from Russia's Pacific Fleet upon the reopening of these facilities (figure 22).²³

On Kotelny Island, eastern Siberian coast, Russia has renovated the Temp air base to accommodate the Ilyushin Il-76 heavy transport aircraft (slightly larger than a Lockheed C-141 Starlifter) and to house the 99th Arctic Tactical Group (99th ATG).²⁴ The 99th ATG is a new

¹⁷ Zachary Keck, "Russia to Establish Arctic Military Command," *Diplomat*, 21 February 2014; and Matthew Bodner, "Russia's Polar Pivot," *Defense News*, 11 March 2015.

¹⁸ Conley and Rohloff, *The New Ice Curtain*, 73.

¹⁹ Conley and Rohloff, *The New Ice Curtain*, 77.

²⁰ Conley and Rohloff, *The New Ice Curtain*, 78.

²¹ Conley and Rohloff, *The New Ice Curtain*, 73.

²² Conley and Rohloff, *The New Ice Curtain*, 74.

²³ Conley and Rohloff, *The New Ice Curtain*, 74.

²⁴ Conley and Rohloff, *The New Ice Curtain*, 74.

formation in the Russian Navy tasked with developing combined arms capabilities to fight in the harsh conditions of the Arctic.²⁵ As part of the establishment of OSK Sever, Russia positioned Pantsir-S1 surface-to-air missiles and artillery systems on Kotelnny Island.

In the Murmansk region, Russia established a base at Alakurtti, approximately 50 kilometers from the Finland-Russia border to house an Arctic brigade. On the Kola Peninsula in Penzhenga, approximately 10 kilometers from the Norway-Russia border the 200th Independent Motorized Infantry Brigade and the 61st Independent Red Banner Naval Infantry Brigade are based. The 61st Independent Naval Infantry Brigade was recently reorganized and expanded from a regiment to a brigade.

When it comes to sea power, Russia's Northern Fleet is its largest fleet and, as noted earlier, consists of most of Russia's missile-carrying strategic submarines.²⁶ The Northern Fleet naval forces are dispersed among 12 bases, which are all located in the Arctic. The composition of the fleet is 33 submarines, of which 9 are strategic and 24 are tactical, 11 surface combat ships, 9 patrol and coastal combat ships, and 4 amphibious landing ships.²⁷ Russia has 40 active icebreakers with 6 under construction and 5 more planned for construction, giving them a significant advantage in terms of icebreakers. This fleet includes seven large nuclear power icebreakers. Russia is the only state in the world with nuclear-powered icebreakers.²⁸

As far as airpower in the Northern Fleet, Russia has 18 Sukhoi Su-33 all-weather fighter aircraft, 5 Sukhoi Su-25 UTG (*Uchebno-Trenirovochnyi Gakovyi*, or Trainer Naval) attack aircraft, 13 Tupolev Tu-142M/MR antisubmarine aircraft, 3 electronic warfare aircraft, 9 military transport aircraft, 1 Kamov Ka-27 antisubmarine warfare helicopter, and 1 Kamov Ka-29 assault transport helicopter.²⁹ As of 2013, two surface-to-air missile (SAM) regiments and all 18 Su-33 fighter aircraft were based on the Kola Peninsula, while another SAM regiment was located in the vicinity of Archangel at Severodvinsk Naval Base and Shipyard.³⁰ There was group of Mikoyan MiG-31 supersonic interceptors at Rogachevo Airbase on the Novaya Zemlya archipelago. Russia plans to double the forces on Novaya Zemlya by 2020.³¹

The activity of Russia's strategic bombers in the Arctic has been of concern to the United States and NATO since 2007. The Tupolev Tu-95 bomber, supersonic Tu-160 heavy bomber, and Tu-22M3 long-range bomber regularly patrol over the Arctic and often violate the airspace of the United States and its allies. In 2007, Russia violated American airspace in Alaska 18 times, and since the annexation of Crimea, there has been a marked increase in Russian bombers entering the airspace of NATO allies as well as Finland and Sweden.³² For example, in 2014, Russian jets were intercepted by Norway 74 times, which is a 27 percent increase in violations of Norwegian airspace from 2013. In conjunction with the escalation of Russian air incursions, there also has been an increase in Russian submarine activity in the North Atlantic and North Pacific. The Greenland-Iceland-United Kingdom (GIUK) gap is important in this regard, as it is the primary SLOC for Russian submarines based in the Kola Peninsula to project into the Atlantic (figure 23).³³

Russia's effort to develop its military capabilities in the Arctic is significant. Given the size of

²⁵ "Sneak Peak at Russia's 'under Renovation' Arctic Base," RT.com, 18 September 2014.

²⁶ Conley and Rohloff, *The New Ice Curtain*, 76.

²⁷ Conley and Rohloff, *The New Ice Curtain*, 76.

²⁸ "Major Icebreakers of the World," USCG Office of Waterways and Ocean Policy, 26 June 2015.

²⁹ Conley and Rohloff, *The New Ice Curtain*, 76.

³⁰ Conley and Rohloff, *The New Ice Curtain*, 79–80.

³¹ Conley and Rohloff, *The New Ice Curtain*, 79–80.

³² Conley and Rohloff, *The New Ice Curtain*, 81.

³³ Conley and Rohloff, *The New Ice Curtain*, 82.

their Arctic coast and the importance of the Arctic region to their economy, this is a rational allocation of their military resources. The United States and its allies can use Russia's current strategy in the Arctic to frame development of each state's own Arctic strategy as well as that for NATO. The importance of the Arctic to Norway and Canada is on par with the importance of the region to Russia. The region does not rate the same level of importance on the list of national security priorities for Denmark or the United States. Therefore, the United States should consider the broader interests of foreign states and take into account their national security strategies and other regional strategies.

NATO AND AMERICAN ALLIES IN THE ARCTIC

The change to the operational environment in the Arctic and Russia's development of its military capability in the Arctic is not occurring in isolation of other international events. The tension between Russia and the West due to the annexation of Crimea and operations in Ukraine is noteworthy. Therefore, it is important to consider the interests of NATO members in the Arctic as both independent states and members of the alliance. The claims made by the NATO states with Arctic coastlines can be seen in figure 21.

Norway is the only NATO member that has both an Arctic coastline and a physical border with Russia. Given this circumstance, Norway has the most to lose when it comes to the Arctic opening. Norway's primary concerns are the proximity of Russian military forces to its border and the potential for conflict with Russia about the Svalbard archipelago that sits between Norway and the North Pole.³⁴ Since 2010, Norway has been implementing a military strategy that

Figure 23. GIUK gap



Source: Adapted by MCUP.

³⁴ The Svalbard archipelago belongs to Norway, but there is a large community of Russian miners who reside there. The Svalbard archipelago is governed by the 1920 Svalbard Treaty, or Spitsbergen Treaty, which grants Norway sovereignty of the islands, but limits governance of the islands. There are no visa requirements for Russians to travel there. For more information on the Svalbard Treaty, see "The Svalbard Treaty," IUO.no, 9 February 1920.

focuses funding and resource allocation on their Arctic capability.³⁵ Norway established a joint operations headquarters (JOH) in Bodo on August 1, 2009 as part of its effort to focus on their Northern regions. The JOH's mission is,

Overseeing the evolution of Norway's High North defenses into a centralized command and coordinated fighting structure that will be able to call upon an Air Force (NAF) equipped with [Lockheed Martin] F-35s [Lightning IIs], forward Army battalions deploying CV90 tracked armored fighting vehicles and high mobility Archer [self-propelled howitzer] artillery units, and a stronger Navy operating anti-aircraft and submarine-hunting Arctic-class *Fridtjof Nansen*[-class] frigates and *Skjold*[-class] corvettes.³⁶

The JOH presents an opportunity for the United States and NATO to develop command-and-control capabilities in the Arctic through joint multinational exercises. The United States cannot afford to devote the same percentage of its military resources to the Arctic given the other challenges it faces as a hegemon, but the American government could leverage Norway's efforts to develop and validate its doctrine for cold-weather operations. Through these exercises, the United States can provide NATO the necessary leadership to prepare the alliance for future operations in the Arctic.

Canada's interests in the Arctic are focused on the opportunities presented by the opening of the Northwest Passage (NWP) and opportunities for resource exploitation. Like Russia, Canada's Arctic coastline is vast in relative terms compared to the United States, Norway, and Denmark. Due to the abundance of islands in Canada's Arctic, the NWP traverses through Canada's territorial waters. Therefore, Canada requires a different set of resources in terms of icebreakers and fixed infrastructure to ensure that adequate forces are available and positioned to conduct SAR operations as the volume of international shipping in the NWP increases.

At present, Canada has 13 icebreakers, which includes two heavy, four medium, and seven light models.³⁷ The United States has five icebreakers with one large icebreaker under construction. As of June 2014, four of the five icebreakers are operational, including one large icebreaker, two medium icebreakers, and one small icebreaker.³⁸ The United States and its allies are at a disadvantage both collectively and separately when compared to Russia in terms of icebreakers (figure 24). Russia's fleet of 40 icebreakers is impressive and demonstrates the importance of the region to their economy since the end of World War II. The U.S. Coast Guard is responsible for the United States icebreaker fleet, but it works in conjunction with the Navy. As such, both the U.S. Coast Guard and U.S. Navy are saddled with priorities other than those in the Arctic and the estimated cost to build a new icebreaker may top a billion dollars.³⁹ Therefore, allies are going to be critical to the success of any strategy the United States will execute for the Arctic in 2025.

UNITED STATES JOINT FORCE IN 2025

In May 2013, the United States published *The National Strategy for the Arctic*.⁴⁰ The Department of Defense (DOD) followed suit with the publication of its *Arctic Strategy* in November 2013.⁴¹

³⁵ Gerard O'Dwyer, "Norway Prioritizes High North Equipment," *Defense News*, 3 March 2015.

³⁶ O'Dwyer, "Norway Prioritizes High North Equipment."

³⁷ "Icebreaking Operations Services," Canadian Coast Guard, Government of Canada, 20 December 2016.

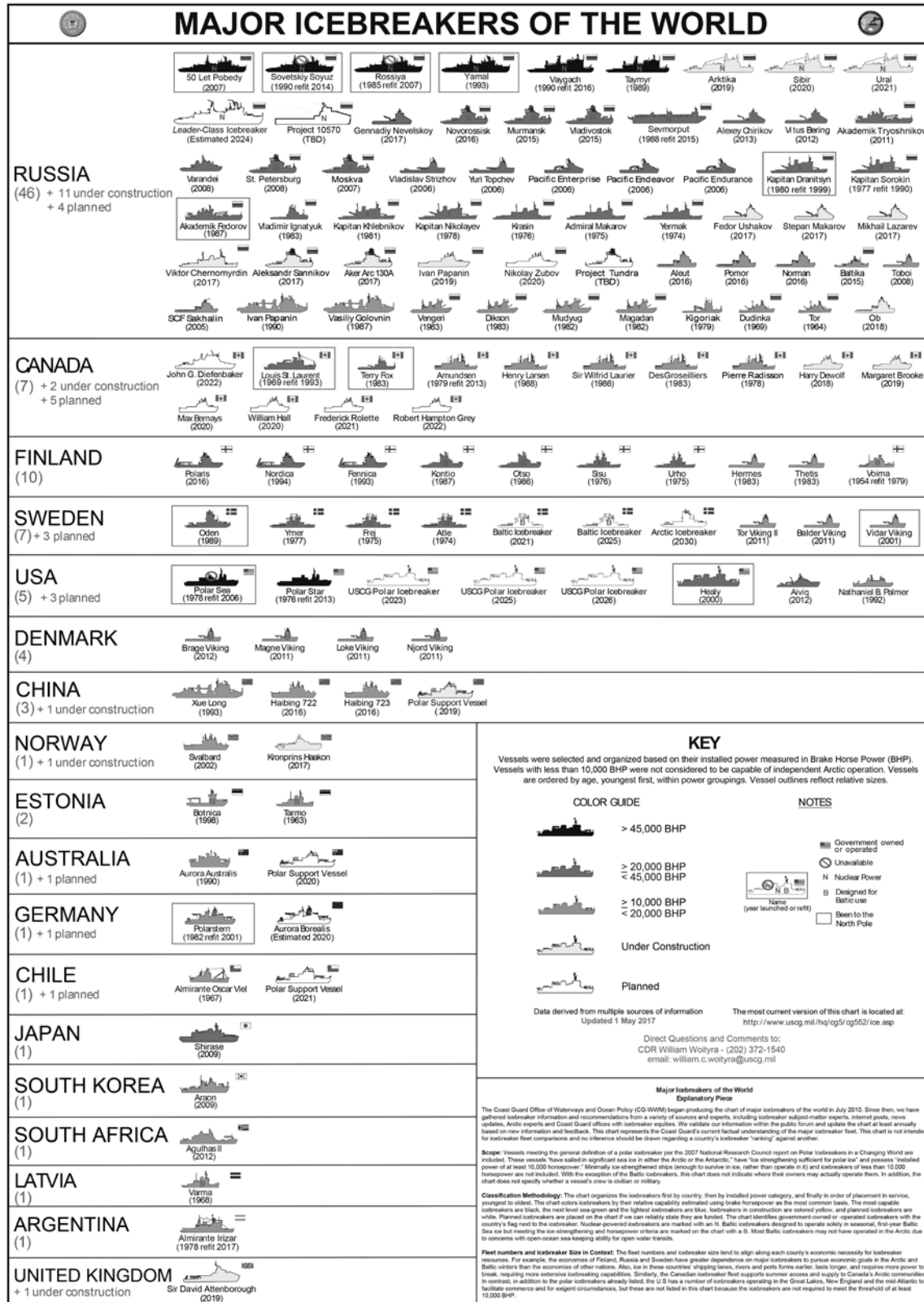
³⁸ "Major Icebreakers of the World."

³⁹ Stew Magnuson, "Sticker Shock: \$1 Billion for New Icebreaker," *National Defense*, 1 June 2013.

⁴⁰ Obama, *The National Strategy for the Arctic Region*.

⁴¹ *Arctic Strategy* (Washington, DC: DOD, 2013).

Figure 24. Icebreakers of the world



Source: U.S. Coast Guard, Office of Waterways and Ocean Policy, adapted by MCUP.

Both of these documents are useful policies that outline what the United States wishes to achieve in the Arctic, and they provide some broad guidance on ways to go about that, though leaving a significant void when it comes to means and circumstances. Therefore, developing of the joint force's capabilities for 2025 is an effort worth pursuing during the next decade.

The DOD *Arctic Strategy* states that the desired end state for the Arctic is, “a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges.”⁴² The supporting objectives outlined by DOD to achieve the above end state are first, “ensure security, support safety, and promote defense cooperation” and second, “prepare for a wide range of challenges and contingencies.”⁴³ Subsequently, the DOD *Arctic Strategy* provides the following ways or tasks to achieve its objectives:

1. Exercise sovereignty and protect the homeland;
2. Engage public and private sector partners to improve domain awareness in the Arctic;
3. Preserve freedom of the seas in the Arctic;
4. Evolve Arctic infrastructure and capabilities consistent with changing conditions;
5. Support existing agreements with allies and partners while pursuing new ones to build confidence with key regional partners;
6. Provide support to civil authorities, as directed;
7. Partner with other departments and agencies and nations to support human and environmental safety; and
8. Support the development of the Arctic Council and other international institutions that promote regional cooperation and the rule of law.⁴⁴

With the exception of icebreakers, the joint force possesses the resources (e.g., infantry, aircraft, ships, etc.) to achieve the end state outlined in the DOD's *Arctic Strategy*. Assuming that the end state will remain unchanged in 2025, the individual Services and the joint force have a clear understanding of the capabilities they need to develop during the next decade. The validation of Service, joint, and multinational doctrine through a series of exercises will be critical to success in 2025.

The geographic combatant commander responsible for advocating for the capabilities required to achieve the objectives listed in the DOD's *Arctic Strategy* is the commander of U.S. Northern Command (NORTHCOM). However, the commander of U.S. European Command (EUCOM) is responsible for more Arctic territory in their area of responsibility. The respective areas of responsibility for the geographic combatant commands are depicted in figure 16. Coordination between the NORTHCOM and EUCOM combatant commands will be required as the United States develops its Arctic capabilities. Additionally, a host of other actors—other governmental agencies, such as the Department of Homeland Security (DHS), nongovernmental organizations, transnational corporations, and indigenous populations—will affect joint force operations in the Arctic. Executing the tasks listed in the *Arctic Strategy* with the diverse set of actors mentioned above is a tall order in any operational environment. Only multiple combined joint exercises in the harsh Arctic environment will enable the United States to develop its Arctic capacity by 2025.

⁴² *Arctic Strategy*, 2.

⁴³ *Arctic Strategy*, 5–6.

⁴⁴ *Arctic Strategy*, 7.

In 2025, the United States should be capable of conducting joint operations in the Arctic to deter Russian aggression, and if necessary, defeat Russian forces, secure SLOCs, and seize and hold key terrain. If the United States does not develop the capability of its joint forces to fight and win in the Arctic, Russia will exploit this weakness to secure its interests in the region and advance its interests globally. The challenge for the United States is finding the resources to develop an Arctic capability while satisfying the demands of higher priority operations elsewhere in the world.

At present, the military Services are not prepared to conduct major operations in the Arctic as a joint force. Each Service has forces trained to operate in the Arctic, and the Services are in varying stages of developing plans that account for the changes in the operational environment discussed above. For example, in January 2011, the U.S. Army and Marine Corps updated their doctrine on cold-weather operations.⁴⁵ In February 2014, the U.S. Navy published the *U.S. Navy Arctic Roadmap*, which outlines their plan to improve the training and readiness of their forces in the near term (present to 2020), midterm (2020–30), and far term (beyond 2030).⁴⁶ On 25 February 2014, with the assistance of Alaska National Guard C-130 aircraft, elements of the U.S. Army's 4th Brigade Combat Team (Airborne), 25th Infantry Division, conducted the division's first airborne operation north of the Arctic circle, approximately 495 miles North of Fairbanks in the North Slope Borough.⁴⁷ Relative to Russia, the United States' Arctic-capable forces are limited. The risk associated with downsizing forces based in close proximity to Arctic regions can be reduced through the execution of joint exercises that draws on forces based in the continental United States.

The U.S. Air Force currently bases aviation assets capable of operations in the Arctic at Joint Base Elmendorf-Richardson (JBER), Eielson Air Force Base, approximately 30 miles southeast of Fairbanks, and Stratton Air National Guard Base in Scotia, New York. The air forces at JBER include the 11th Rescue Coordination Center, two airlift squadrons, three rescue squadrons, and an air control squadron. The composition of those squadrons includes the C-17 Globemaster, Lockheed HC-130N, and Fairchild C-123 Providers as well as Sikorsky HH-60G Pave Hawk helicopters.⁴⁸ The 354th Fighter Wing at Eielson is equipped with General Dynamics F-16 Fighting Falcons. Figure 13 depicts the U.S. Air Force organizations currently training and supporting operations in Alaska. The 109th Airlift Wing at Stratton Air National Guard Base has ski-equipped Lockheed LC-130 Hercules aircraft that are capable of landing on glaciers and unprepared snow fields.⁴⁹ The 109th Airlift Wing supports the National Science Foundation's work in Antarctica and a combination of scientists from the United States and Europe in Greenland each year.⁵⁰

The U.S. Navy has modest forces assigned to Arctic operations on Kodiak Island in Alaska, but the *U.S. Navy Arctic Roadmap* provides a plan to prepare them to accomplish their mission as part of the joint force. Specifically, the roadmap states, "By 2020, the Navy will increase the number of personnel trained in Arctic operations. The Navy will grow expertise in all domains by continuing to participate in exercise, scientific missions, and personnel exchanges in Arctic-

⁴⁵ *Cold Weather Operations*, ATTP 3-97.11/MCRP 3-35.1D (Washington, DC: Department of the Army, 2011).

⁴⁶ *U.S. Navy Arctic Roadmap*.

⁴⁷ The North Slope Borough is America's northernmost municipal government. U.S. Army Alaska Public Affairs, "Paratroopers Jump North of Arctic Circle," Northcom.mil, 27 February 2014.

⁴⁸ Maj Brian C. Harber, USA, *Climate Change and International Competition: The U.S. Army in the Arctic Environment* (Fort Leavenworth, KS: School of Advanced Military Studies, U.S. Army Command and General Staff College, 2015), 20.

⁴⁹ Harber, *Climate Change and International Competition*, 20.

⁵⁰ Harber, *Climate Change and International Competition*, 20.

like conditions.”⁵¹ The Navy does not plan to be fully capable of responding to emergencies affecting national security in the Arctic until 2030.⁵² Combined joint exercises in 2020 will be essential to validate the Navy’s progress toward Arctic capability development.

The U.S. Army has forces at three major bases in Alaska. The 1st Stryker Brigade Combat Team, 25th Infantry Division, is located at Fort Wainwright and the 4th Brigade Combat Team, 25th Infantry Division, discussed above is at JBER. The 49th Missile Defense Battalion provides ground-based ballistic missile defense at Fort Greely and is colocated with additional combat support and combat service support units. In addition to these forces mentioned above, U.S. Army Alaska also operates the Northern Warfare Training Center (NWTC) at Black Rapids.

CONCLUSION AND RECOMMENDATION

The Arctic is opening and Russia has invested significantly in its military capabilities to operate in the region. The United States and some of its NATO allies, including Norway and Canada, have significant interests in the region. As the United States looks ahead to 2025 and beyond, the DOD should consider allocating resources to develop Arctic capabilities through Service and joint doctrine development and then validate that doctrine through joint and multinational training exercises. The establishment or improvement of limited base and road infrastructure in northern Alaska may be necessary due to the wear and tear on existing infrastructure during the exercises.

A series of exercises should begin no later than 2020 to ensure that the joint force is prepared to fight and win in the Arctic in 2025. In Area One (north of Norway), NATO should execute mission command exercises from the JOH in Norway based on a scenario where conflict occurs over the Svalbard archipelago. In Area Two, (Alaska), a combined joint exercise in 2020 that includes Norway, Canada, and Denmark should be conducted. The exercise should consist of ground, air, and naval force deployment from the United States to establish sea control in the Bering Strait and Beaufort Sea, seize and defend Alaska ports and airfields at Prudhoe Bay, Barrow, Kotzebue, and Nome that will significantly challenge and test the joint forces ability to operate in an Arctic environment.

The participation of forces from Canada, Norway, and other NATO states in these exercises will allow for the validation of Service, joint, and multinational doctrine. Norway’s participation is critical because the most probable scenario where a conflict will occur in the Arctic in 2025 is in the Svalbard archipelago. Canada’s participation is critical because the United States will need to rely on Canada’s icebreakers in the event of a conflict with Russia. The United States is accepting risk if it does not build more icebreakers, but given current budget constraints and competing priorities for ship building, it is unlikely that the resources will be available to grow the United States’ icebreaker fleet. Therefore, the United States can mitigate that risk by improving interoperability with allies that have icebreakers.

The NWTC exists to train leaders to fight and win in harsh cold-weather conditions and mountain environments. The NWTC asserts that they are relevant because “a soldier trained in winter is also a good summer fighter; trained only in summer is helpless in the winter.”⁵³ The same statement applies to the joint force. It is only through combined joint exercises in harsh Arctic environment that the United States will be able to develop the capability to counter Russian aggression in the region in the future.

⁵¹ *U.S. Navy Arctic Roadmap*, 18.

⁵² *U.S. Navy Arctic Roadmap*, 18.

⁵³ George K. Swinzow, *On Winter Warfare* (Hanover, NH: Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, 1993), 58.

Arctic Readiness

Key Changes for Twenty-First Century Naval Expeditionary Warfare

by Lieutenant Commander Nicholas J. Oldfield, USN¹

We are open for dialogue with our foreign partners and with all neighbors in the Arctic region. But we will naturally defend our own geopolitical interests firmly and consistently.²

~Vladimir Putin, Russian President

HISTORY'S MOST VALUABLE LESSON IN ARCTIC TRAVEL

The Arctic is a geographical area of the world that mankind has attempted to exploit for hundreds of years, seeking its abundant natural resources, mapping its deep currents in attempts to discover shorter intercoastal passages, and providing a strategic military stronghold. In 1845, Sir John Franklin set sail on board the HMS *Erebus* (1826), accompanied by the HMS *Terror* (1813), to find the Northwest Passage through the North American Arctic archipelagos. The objective of this voyage was to provide a shorter sea route between Great Britain and Asia, thus saving time and reducing cost while procuring and exchanging goods, namely spices. The voyage was met with harsh cold-weather conditions; eventually, all personnel and both ships were lost after the crew suffered through three gruesome winters. Those on board who did not develop lead poisoning from the containerized tin rations or did not develop scurvy decided to take their chances in the environment and walk out onto the ice in search for an Inuit village to survive or to be rescued. Those men eventually turned to cannibalism in hopes of surviving through the austere conditions, but those few eventually succumbed to the elements. It was not until fall 2014 that the *Erebus* was located, and two years later in the fall of 2016, the wreckage of the *Terror* found, that new discoveries revealed how the crews lived and died while trapped in the sea ice. One of the lessons learned from this expedition is that no matter how well one plans for harsh conditions, mother nature can change everything for better or for worse, and mankind should anticipate the latter when facing the Arctic.

ARCTIC READINESS AND THE FUTURE OF NAVAL EXPEDITIONARY WARFARE

This paper will discuss the current state of U.S. Navy Arctic readiness, with a focus on naval expeditionary forces required for rescue missions, and will advocate future support for upcoming endeavors. The scope of this paper will cover a current assessment of capabilities and ca-

¹ LCdr Oldfield is a graduate of MCU's Command and Staff College. This paper was nominated for the LtGen John A. Lejeune Award of the Marine Corps League for academic year 2016–17.

² Rowan Scarborough, "Ice-cold War: Russian Icebreakers Outnumber U.S. Vessels in Vital Arctic," *Washington (DC) Times*, 19 February 2017.

capacities, a comparison of the United States with other nations, and recommendations on how to best prepare for future requirements in the harsh Arctic environment. The Navy published the *U.S. Navy Arctic Roadmap* in February 2014 to guide the fleet on items to address as the Arctic becomes more prevalent to national security concerns. This roadmap is a good start, but it falls short in assessing current Arctic response to catastrophic situations, both armed and unarmed. The Navy cannot afford to skip to the future by not addressing the current and short-term realities. There will be a predictable increase in expeditionary warfare involvement within the Arctic region, due to the high technical skills required. To properly prepare for future expeditionary Arctic readiness, the Navy must address: icebreaker capabilities and capacities; required infrastructure for air, land, and sea forces and equipment; localized command and control (C2); train in the environment under all conditions; and expand partnership capacity to deter aggression and provide response for most catastrophic situations that may occur.

ARCTIC DRAMA

Ice levels are retreating exponentially in the Arctic, resulting in additional seagoing passageways and newly accessible resources, which is something Franklin and his crew had hoped for.³ These recently available resources are significant to the United States, as well as other Arctic bordering countries. International sea traffic will increase competition for the revealed treasures, thus increasing the U.S. national security requirements, which will in turn involve the U.S. Navy and other maritime forces.

Many nations, not just Arctic nations, realize that the Arctic can provide an economic boost once its passages and resources become more accessible. China has already explored the possibility of shipping through the Arctic, initiating a dispute with Russia.⁴ Russia has recently appealed to the United Nations to extend its exclusive economic zone (EEZ) farther into the Arctic region.⁵ Article 55 of the United Nations Convention on the Law of the Sea (UNCLOS) defines the EEZ as, “an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.”⁶ Article 56 further defines a nation’s rights as applied to the EEZ, “sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds.”⁷ Any competition over territorial control for resource procurement may generate conflict. The Iraqi invasion of Kuwait in 1990 for control of the tiny oil-rich land is a recent example of such a conflict. The United States needs to prepare for potential hostilities.

Currently, the United States monitors many situations remotely via satellite, but the government also deploys its nuclear-powered submarines to secure and assess the Arctic environment throughout the year. Ice is present at the High North practically year-round, and its southward reach increases as winter months arrive. Should one of these submarines encounter a condition where they require rescue assistance, the U.S. government is extremely limited in its ability to

³ Heather A. Conley and Caroline Rohloff, *The New Ice Curtain: Russia’s Strategic Reach to the Arctic* (Washington, DC: Center for Strategic International Studies, 2015), I.

⁴ Conley and Rohloff, *The New Ice Curtain*, I.

⁵ Conley and Rohloff, *The New Ice Curtain*, XII.

⁶ United Nations Convention on the Law of the Sea (UNCLOS), Article 55, “Exclusive Economic Zone,” 10 December 1982.

⁷ UNCLOS, Article 56, “Exclusive Economic Zone,” 10 December 1982.

safely rescue the crew of the sub. To plan for impending encounters, either armed or unarmed, the U.S. Navy needs to consider Arctic operations in its entirety and make serious preparations to defend the freedom of movement, available resources, and ultimately defend U.S. national security in the Arctic. Part of those considerations must be to develop more robust capabilities to support current U.S. operations in the environment, thereby positioning themselves as a valid deterrent to opposing forces.

THE ARCTIC HOV LANES WITH A RUSSIAN EZ-PASS

As previously introduced, there is a desire to find the shortest route to cross the ocean dating back hundreds of years. Recently, scientists have made note of the changing Arctic seaways due to global warming. Sea ice is retreating farther North during summer months, making two routes increasingly passable: the Northwest Passage (NWP) through the Canadian archipelago and the Northern Sea Route (NSR) by way of Russia (see figure 17).

These new passages offer more expedient routes for nations who utilize the Arctic seas. Arctic nations (e.g., United States, Canada, Russia, Norway, Denmark [Greenland], and Iceland) are not the only ones to make note of the available sea routes. China successfully navigated the NSR with the icebreaker ship *Xuelong* (Snow Dragon) in 2012 to verify a safe voyage to the Chinese research station at Svalbard, a Norwegian archipelago.⁸ The following year, the Chinese sent the first container ship, the *Yong Sheng*, to see if such a vessel could safely traverse the same route through the NSR.⁹ This action ignited conflict with Russia, as that government does not recognize the NSR as international waters and considers them territorial waters. However, a quicker route to cross the world is not the only reason Russia is concerned with increased foreign presence through the NSR, particularly when vast resources in the region are at stake that could be used to boost Russian economy or whomever can claim the area's riches first.

Russia's need to maintain and establish Arctic control and dominance is mostly driven by its economic needs. Per the 2008 *Circum-Arctic Resource Appraisal* (CARA), approximately 13 percent of the world's hydrocarbon reserve may be found in the Arctic along with 1,700 cubic feet of natural gas and 44 billion barrels of natural gas liquids.¹⁰ These resources are distributed in pockets around the region, with Russia estimated to control of most of the natural gas and the United States having most of the oil off Alaska within the countries' respective EEZ.¹¹ Article 57 of UNCLOS limits the EEZ boundary stating, it "shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured."¹² All natural resources are claimable by the country of the EEZ, and trespassers are considered poachers. Russia has been trying to expand its EEZ by appealing to the international community. In 2001, and again further refined in 2015, Russia submitted its claim to expand its Arctic territory by more than 463,000 square miles to the Commission on the Limits of the Continental Shelf (CLCS).¹³ They claim that the country's continental shelf expands beyond the standard 200 nautical miles, thus, their EEZ must be adjusted. The CLCS does not decide the outcomes of countries' claims, but they are considered an authority on assigning country ownership with regard to the law of

⁸ Conley and Rohloff, *The New Ice Curtain*, XI.

⁹ Conley and Rohloff, *The New Ice Curtain*.

¹⁰ Kenneth J. Bird et al., *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle* (Reston, VA: U.S. Geological Survey, 2008); and David Fairhall, *Cold Front: Conflict Ahead in Arctic Waterways* (London: I. B. Taurus, 2010), 21.

¹¹ Fairhall, *Cold Front*, 22.

¹² UNCLOS, Article 57, "Exclusive Economic Zone," 10 December 1982.

¹³ Conley and Rohloff, *The New Ice Curtain*, XII.

the sea.¹⁴ Now that Russia has made its case to increase its Arctic reach, the security of such resources and EEZ expansion must be taken into consideration.

During the past few years, Russia has been increasing its military presence in the Arctic. In 2014, Russia held the largest post-Soviet military exercise, Vostok 2014, that involved more than 100,000 personnel and thousands of military assets across all Services.¹⁵ This exercise was Russia's way of demonstrating to the world its technical and operational capabilities to mobilize and amass its military to respond to hostilities or threats in the Arctic. In an additional demonstration of further strategic significance, Russia has reestablished Soviet-era airfields in the High North, totaling 14 operational bases since the end of 2015.¹⁶ All this military power, plus C2 exercises, has shown Russia's refusal to play the waiting game for international rulings to determine which countries control what parts of the Arctic. This has caused the United States, Canada, and partner nations to reassess their own Arctic posture and capabilities to counter or deter further Russian dominance. Until those international boundary determinations are ratified, the current boundaries remain in effect but with conflicts of their own.

INTERNATIONAL LINES AND LAW

In 1982, the UN updated and signed into effect the current UNCLOS, which detailed various international laws from freedom of maneuver to the requirement for response as part of the International Convention for the Safety of Life at Sea (SOLAS). Russia and China ratified the UNCLOS, but the United States did not. The U.S. government, at the objection of its naval leadership, did not want the most powerful naval power to potentially be governed by an international entity or law if there was an objection on America's part. The United States does follow the faith of the UNCLOS guidelines, but retains the autonomy to choose an alternative option if in disagreement with the situation. As Fairhall references in *Cold Front*, "Increased realization that the oceans contain all kinds of valuable resources has recently prompted new kinds of UN regulation to control not only surface activity but also economic exploitation of the seabed."¹⁷ This is precisely why the United States did not ratify the UNCLOS, in that they wished to maintain freedom to maneuver and to consider potential resource procurement. Russia continues to remind the international governing body that America remains independent. This ongoing dispute translates into territory or boundary claim disturbances in various parts of the world, not just the Arctic.

Freedom of navigation is the vanguard for all surface and subsurface vessels in the NSR and NWP. Russia claims that the NSR bisects parts of their territorial waters, likewise Canada claims the NWP as its own.¹⁸ In both cases, those respective nations would then hold the ability and right to charge a fee and control who may transit through the passages; a northern Panama Canal by comparison. The United States would like to see the NWP declared an international strait so the U.S. Navy can move freely between the Atlantic and Pacific Oceans.¹⁹ The United States considers a body of water that connects two high seas used for international shipping as part of pre-UNCLOS laws, falling under the 1958 Convention on the Territorial Sea and the Contiguous Zone for innocent passage.²⁰ Currently, the UN would be the designator of

¹⁴ Conley and Rohloff, *The New Ice Curtain*, XII.

¹⁵ Conley and Rohloff, *The New Ice Curtain*, XIII.

¹⁶ Conley and Rohloff, *The New Ice Curtain*, XIII.

¹⁷ Fairhall, *Cold Front*, 29.

¹⁸ Fairhall, *Cold Front*, 147.

¹⁹ Fairhall, *Cold Front*.

²⁰ Shelagh D. Grant, *Polar Imperative: A History of Arctic Sovereignty in North America* (Vancouver, Toronto, Berkeley: Douglas & McIntyre, 2011), 451.

the NWP under the Law of the Sea provisions. Canada continues to hold firm that parts of the NWP are indisputably within territorial waters so the Canadian government can protect the area from potential pollution.²¹ Since the United States has not ratified the UNCLOS, the dispute remains a friendly topic of contention between the two nations. While this is just one example of amicable passageway disputes, there are also additional conflicts between America and Canada with regard to territorial waters versus EEZ rulings.

The territorial waters boundary between the United States and its northern neighbor are still not completely resolved today. The boundary where Alaska meets the Yukon Territory is a tenuous, unofficial “agree to disagree” arrangement that is reviewed constantly by both governments as more resources in the area become available. The United States believes that the maritime boundary in the Beaufort Sea should be at a 90-degree angle from the coastline boundary, while Canada mandates the boundary created by the Anglo-Russian Treaty of 1825 should be followed.²² The difference of this boundary has a significant impact on resource ownership; in this instance, vast amounts of oil, fishing grounds, and pollution rights are all up for contention. While this dispute remains on amicable terms, Russia, on the other hand, has not come to such an agreement with the American government. Initially proposed in 1990, Russia and the United States have still not ratified an agreement settling disputed waters in part of the Bering Sea.²³ Reasons for this dispute are a matter of understanding geometry and how it is applied to maps and charts. Cartographers typically use two types of lines to map such boundaries. Rhumb lines and great circle lines are used on two common map projections, Mercator and Conic.²⁴ Because each country interpreted the boundary line described in the treaty for the sale of Alaska (1867) as a straight line, the Soviet Union depicted the Bering Sea marine boundary as a rhumb line on a Mercator projection whereas the United States used a great circle line on a conic projection. Therefore, each country’s claim maximized the amount of ocean area and seafloor under their respective territorial control. Because the Soviet Union disbanded prior to the 1990 boundary settlement being sanctioned, Russia now maintains the old Soviet views, keeping the conflict in a disturbed state.²⁵ The United States holds to that settled Soviet maritime boundary and patrols the waters as such, because it gives more territorial control and benefit to American interests.

To shorten the list of maritime boundary disputes in the Arctic region, a summary is depicted in figure 21. With all these unsettled boundaries, there lies a potential for conflict escalation, both armed and unarmed, which brings about addressing regional securities.

²¹ Fairhall, *Cold Front*, 30.

²² Grant, *Polar Imperative*, 454. The Anglo-Russian Treaty of 1825, or the Treaty of Saint Petersburg, defined the boundaries in the Pacific Northwest of North America at parallel 54° 40' North.

²³ Grant, *Polar Imperative*, 458.

²⁴ The term *Mercator projection* refers to a map introduced in 1569 by Gerardus Mercator. It is often described as a cylindrical projection, but it must be derived mathematically. The meridians are equally spaced, parallel vertical lines, and the parallels of latitude are parallel, horizontal straight lines, spaced farther and farther apart as their distance from the Equator increases. This projection is widely used for navigation charts, because any straight line on a Mercator-projection map is a line of constant true bearing that enables a navigator to plot a straight-line course. It is less practical for world maps because the scale is distorted. The term *Conic projection* refers to a tangent to the globe along a line of latitude. This line is called the standard parallel. The meridians are projected onto the conical surface, meeting at the apex, or point, of the cone. Parallel lines of latitude are projected onto the cone as rings. The cone is then “cut” along any meridian to produce the final conic projection, which has straight converging lines for meridians and concentric circular arcs for parallels. The meridian opposite the cut line becomes the central meridian. Thus, the farther you get from the standard parallel, the more the distortion increases. As such, cutting off the top of the cone produces a more accurate projection.

²⁵ Grant, *Polar Imperative*, 458.

SECURITY IN THE ARCTIC

Due to boundary disputes, passageway control, and territorial water/EEZ considerations and developments, every Arctic country is reviewing security concerns and increasing awareness; in particular, evaluating what measures possibly to take as Russia increases its rhetoric and military buildup. America, Canada, and Denmark have been addressing this concern since the end of World War II.²⁶ The United States initially assumed the majority of defense responsibilities for the region due to its military capacity; however, the roles have changed since the end of the Cold War in that the threat of a nuclear submarine carrying nuclear warheads has decreased.²⁷ Yet, the possibility of a foreign submarine operating in Arctic waters is still present, explaining why the United States has continued submarine deployments to track and deter other countries' submarines from operating in or around North American waters and waters of disputed territory. In addition, the American government also would maintain freedom of navigation for its own submarines. Since the Cold War, new technologies have been and are now being developed that increase surveillance capacity. Thus, Canada and the United States have collaborated to update their strategies for Arctic surveillance.

U.S. submarines have been at the forefront of Arctic surveillance, as Canadian submarines are limited in numbers and are not nuclear powered. Since physical patrolling has its limits to submarines or airplanes, alternative methods needed to be employed. To increase the capacity to monitor the Arctic, Canada has adopted its "Northern Strategy" by launching Radarsat-2 satellite system to monitor shipping and pollution in the region.²⁸ The U.S./Canada alliance of North American Aerospace Defense Command (NORAD) also has led with the early warning air surveillance for both countries. Remote listening and radar stations can be found all over the North American High North. Those outposts, which are manned and operated by Canadian Armed Forces (CAF), are in communication with NORAD as one of the senior security commands, as well as Canadian Maritime Forces Atlantic (MARLANT), the naval command overseeing Arctic waterways, and Joint Task Force North (JTFN) controlling CAF and reporting to Canadian Joint Operations Command (CJOC). These improvements to alternate methods of surveillance have been substantial. However, all the monitoring is for nothing unless there is a physical means to enforce the boundaries and defend against threats. To further increase Arctic physical security, patrolling, and defense abilities, both the United States and Canada are looking to invest in additional surface vessels with improved icebreaking capabilities.

At the time this paper was written, Russia has the greatest number of Arctic-capable surface ships. Their public inventory boasts 40 plus icebreakers, including 4 heavy nuclear powered ones. China's numbers and inventory are unknown entities but, as their previously mentioned exploration of the NSR passageway demonstrated, they are considering pursuit of increased Arctic travel, potential resource acquisition, and possible annexation. In comparison, the combined inventory of the United States and Canada is eight vessels in all, with none of them under nuclear power. Since recognizing the deficiency of capable vessels, Canada has laid the keel for its first of six Arctic Offshore Patrol Ships (AOPS), targeting a commissioning year of 2018.²⁹ The United States is also planning to beef up the Coast Guard's surface capability with the addition of four icebreakers. As noted on the USCG website, "The operational polar icebreaking fleet currently includes one 399-foot heavy icebreaker (Coast Guard Cutter Polar Star, commis-

²⁶ Grant, *Polar Imperative*, 458.

²⁷ Grant, *Polar Imperative*, 459.

²⁸ Grant, *Polar Imperative*, 459.

²⁹ Department of National Defence, *Harry Dewolf-class Arctic Offshore Patrol Ship Fact Sheet* (Ottawa, Canada: Royal Canadian Navy, 2015).

sioned in 1976) and one 420-foot medium icebreaker (Coast Guard Cutter Healy, commissioned in 2000).³⁰ In January of 2016, the Coast Guard published requirements to the acquisitions section to solicit industry for bids on the future icebreakers procurement. The goal is to have the contract awarded by 2020 and begin construction shortly after. This aligns a couple of years behind the Canadian AOPS. Once completed, the two nations will have bolstered their physical support by having ships able to navigate thick winter sea ice and provide the much-needed support to current submarine patrols. The increase in icebreaker capacity will add a dimension to the current surveillance aircraft and the satellite and remote radars as a defense in depth system. These contracts are a positive step in correcting the Canadian and US inventory deficiency, but still fall short in inventory and capacity comparison to Russia.

THE U.S. NAVY IS DESIGNATED AS THE LEAD FOR ARCTIC SECURITY

In February 2014, CNO Admiral Greenert published *The U.S. Navy Arctic Roadmap: 2015–2050*. The *Roadmap* discusses the plan for future developments ranging from current posture, which is assessed as appropriate, to far term considerations and requirements.³¹ It is interesting to note that the analysis encourages naval training to occur primarily in the summer months when the Arctic ice has receded and does not specifically mention any training recommendations during the winter months. By limiting training windows, the Navy is hindering the true understanding of the Arctic environment, since most the year the Arctic is under thick ice and not navigable by most surface vessels. As previously stated, submarines currently patrol the Arctic waters daily due to the ice limitations on current sea-going vessels. The *U.S. Navy Arctic Roadmap* does not address the support required for submarines in this environment. Therefore, the plan lacks the logistical considerations to maintain the safety of the crew and operability of the submarines themselves.

If a submarine were to become distressed under thick winter ice, the U.S. Navy cannot perform any type of rescue. The physical number of ships in the United States and Canada icebreaker inventory poses a problem. Coupled with the limited number of icebreakers is the capability of the icebreakers themselves—neither country is outfitted with a vessel that can match Russia’s heavy icebreaking capability. Therefore, a stranded sub in an inaccessible location to the United States or Canada would be at the mercy of Russia. As the LOS states, if a vessel has the means and capability to save the life at sea, you are obligated to do so, even if the ship must navigate into the territorial waters of another nation. Given the nature and secrecy of any U.S. nuclear submarines, it would be a hard pill to swallow to allow Russia to attempt such access and recovery, but it would be expected of Russia to attempt it under the LOS obligations. In August 2000, the *Kursk* (K 141), a nuclear-powered Russian *Oscar II*-class submarine, sank in a little more than 100 meters depth in the Barents Sea, taking 118 lives. Russia was conducting a large-scale naval exercise at the time. Norwegian seismic listening stations in the area logged and reported two separate explosions at the time the submarine was lost.³² Survivors onboard had moved to an escape compartment, but the capsule and emergency buoy failed to work, trapping 23 men on the bottom of the sea with oxygen levels falling and unable to support life. NATO nations offered their assistance, but Russia was reluctant to accept, wanting to preserve the secrecy of its nuclear submarine’s operating capability. Thus, all lives were lost. On the *Kursk*’s 15-year anniversary, an article states that, “according to experts, lives could have been saved if

³⁰ “Acquisition Directorate,” USCG.mil, 13 January 2017.

³¹ *U.S. Navy Arctic Roadmap*, 7.

³² “The Day the Kursk Sank: 15 Years on, Russia Remembers One of Worst-ever Submarine Tragedies,” RT.com, 12 August 2015.

rescue operations had begun sooner.”³³ Had Russia acted sooner and allowed NATO assistance, 23 lives could have been saved. President Vladimir Putin declined to share further reasoning for delaying foreign rescue assistance. The survivors’ families and the Russian public are still resentful over his actions, or lack thereof. The United States, Canada, Russia, or any other nation operating submarines in the Arctic may find themselves in a situation like the *Kursk*, but with additional complications to rescue attempts due to the thickness of sea ice and remoteness of the region. To properly plan for such a catastrophe, many considerations must be addressed by the United States to mount an appropriate and successful response.

RESCUE CAPABILITIES

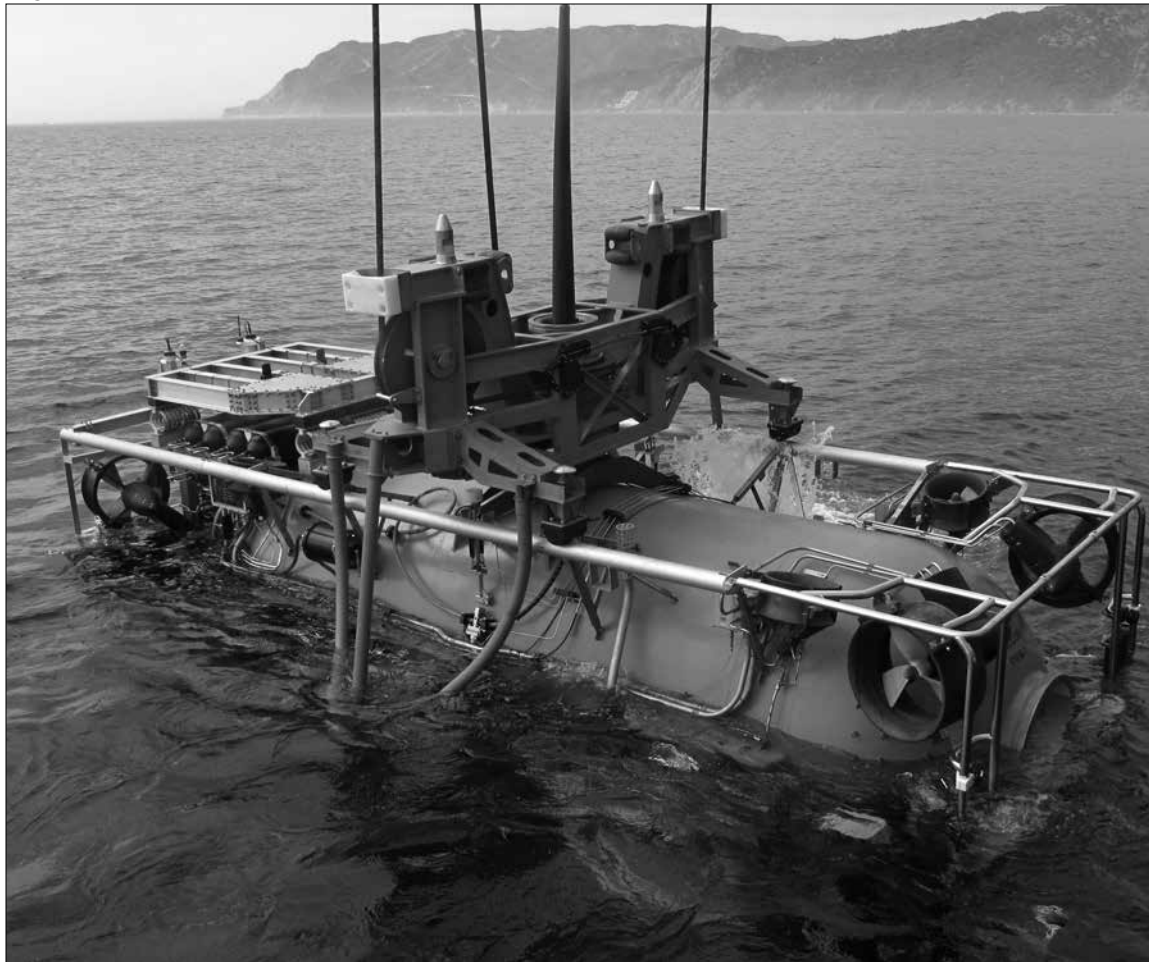
Between World War I and World War II, the use of the submarine as part of naval warfare increased and its role expanded, thus prompting the undertaking of various tests. The increasing number of submarines created an associated increase in the number of experimental and personnel qualifications, as well as an equitable loss of life during such experiments. One visionary submarine (and diving) officer assessed the potential for catastrophic situations with these new boats. Lieutenant Commander Charles B. Momsen foresaw a need to develop advanced rescue techniques based on his observations made as a lieutenant during submarine tours. He witnessed events that led to multiple deaths that could have been prevented if the appropriate tools had been invented and were made available. His vision was to adapt the use of a diving bell to allow for personnel rescue. The diving bell was reconfigured to allow divers to access sunken boats and rescue personnel trapped in the hull where they still had breathable air. The *U.S. Navy Diving Manual* references the historical concept of submarine rescue: “The Navy pushed for development of a rescue chamber that was essentially a diving bell with special fittings for connection to a submarine deck hatch. The apparatus, called the McCann-Erickson Rescue Chamber, was proven in 1939 when the USS *Squalus* [SS 192], carrying a crew of 50, sank in 243 fsw [feet sea water]. The rescue chamber made four trips and safely brought 33 men to the surface.”³⁴ Divers that accompanied and operated the bell used helium-mixed gas, which allowed them to conduct the rescue safely. The use of mixed gases was another innovation spearheaded by Momsen. The fact that such a rescue was successful created a counterbalance point; if more submarines are going to be traveling under the ice due to increased Arctic surveillance, then more submarine support needs to be accessible and functional under all conditions, including friendly nations ability to assist with support and rescue.

The sinking of the *Kursk* was tragic, but an act that could have been addressed in time if Russian leadership had allowed international partners the opportunity to save life at sea. The U.S. Navy and Norwegian Navy have capabilities for diving at the depth of the *Kursk* as well as a submarine rescue system designed for such a situation. This next generation of the deep submergence rescue vehicle (DSRV) was designed in response to the United State’s loss of its nuclear-powered submarine, the USS *Thresher* (SSN 593) in the 1960s. Like the *Kursk*, the *Thresher* lost all crewmembers, but the sinking was more catastrophic due to significant construction flaws and the depth of the water. Aside from the safety measures implemented during construction, procedures also were updated and trained to following the *Thresher*’s sinking. More so was the requirement for the DSRV to be developed as the modified diving bell has its depth limitations and still requires additional personnel to be in the water for operation. Today, the U.S. Navy’s Submarine Rescue Diving and Recompression System (SRDRS) is the primary rescue

³³ “The Day the Kursk Sank.”

³⁴ *U.S. Navy Diving Manual*, revision 6, SS521-AG-PRO-010 (Washington, DC: Naval Sea Systems Command, Department of the Navy, 2008), 1-28.

Figure 25. SRDRS



Source: Official U.S. Navy photo.

method, but it must be deployed from a ship with substantial deck space and a crane strong enough to lift the tethered hybrid remotely operated vehicle/compression chamber (figure 25).³⁵ Commander Christy Hagen, a spokesperson for the U.S. Navy’s Submarine Force, gives details of the rescue system: “

The SRDRS consists of the Atmospheric Dive Suit 2000 (ADS 2000)—manned, one-atmosphere dive suit that is used to inspect bottomed submarines and clear away debris that could cover an escape hatch, associated topside equipment and systems, and the PRM [pressurized rescue module] Falcon. [The] Falcon is a tethered, remotely-operated submersible that is launched and controlled from the deck of a surface ship and transfers up to 16 submariners from a disabled submarine per dive.³⁶

This highly capable system is what the U.S. Navy developed and deploys as its primary

³⁵ “New Submarine Rescue Asset Joins Fleet,” Navy.mil, 2 October 2008.

³⁶ Edward H. Lundquist, “U.S. Navy Submarine Rescue Diving and Recompression System (SRDRS) Mates with Russian Sub,” Defense Media Network, 10 June 2011.

means for submarine rescue around the world. Commander Hagen references related that “the U.S. SRDRS is kept in a fly-away status, ready to deploy on a moment’s notice. Based at the Deep Submergence Unit at the Naval Air Station in San Diego, Calif., SRDRS can deploy and be ready to mate with a disabled submarine anywhere in the world within 72 hours.”³⁷ The problem with the system being kept in a flyaway status means there has to be a lot of logistical coordination with the movement and deployment. Aircraft will be coordinated and a vessel with ample deck space and equipment to support and operate the SRDRS must be made available in the rescue location. That therein lies a prominent issue with using the SRDRS in the Arctic for submarine rescue. Currently, there is extremely limited icebreaker capacity in the U.S. and Canadian inventory with the required deck space or equipment that could traverse heavy ice water conditions. These requirements must be applied to the latest icebreakers being forged in Canadian shipyards and written into the U.S. Coast Guard contracts to correct this deficiency.

WORKING AS A TEAM

The United States realizes that it is not the sole military enforcer in the world and needs to strengthen ties to friendly nations that would be able to provide expertise in areas where the U.S. government is lacking. With regard to seeking Arctic warfare experts, the *U.S. Navy Arctic Roadmap* gives some guidance when discussing future considerations and challenges while working with our allies:

These challenges provide opportunities to cooperate with interagency partners and international allies, sharing limited resources to improve situational awareness and develop a Common Maritime Picture (CMP) of the Arctic Ocean. In conjunction with interagency and international partners, the Navy will seek to improve Maritime Domain Awareness (MDA), information sharing, and communications. Currently, Arctic MDA is assessed as adequate. However, as traffic and Regional activity rise in the coming decades, the Navy will seek to improve overall MDA capability. To build the ties of trust and confidence that underpin strong alliances and partnerships, it is essential to operate and train together. Multilateral training, operations, and exercises in the Arctic Ocean such as NORTHERN EAGLE and NANOOK will improve knowledge of the Region and provide a positive foundation for future missions.³⁸

It is important to note that the 2014 published *U.S. Navy Arctic Roadmap* states that currently the level of MDA in the Arctic is “adequate.” The *U.S. Navy Arctic Roadmap* assessed it as such because until recently the surface traffic has increased minimally due to sea ice, but the subsurface element has not changed. However, there should be a predictive increase in surveillance subsurface traffic as surface traffic will increase due to the higher number of available traversable sea passageways. Through bilateral exercises and information sharing, the United States will gain a better level of understanding how the respective forces operate in the environment, which in turn will give America a more accurate assessment of appropriate Arctic warfare.

The two exercises that the *U.S. Navy Arctic Roadmap* refers, specifically, take place in the summer months when sea ice is at its lowest. The United State’s closest geographic ally—Canada—understands the need for year-round training in the Arctic and demonstrates this competence on an annual basis through exercises, such as Operation Nanook, Operation Nunaliut, Operation

³⁷ Lundquist, “U.S. Navy Submarine Rescue Diving and Recompression System (SRDRS) Mates With Russian Sub.”

³⁸ *U.S. Navy Arctic Roadmap*, 16.

Northern Watch, etc. These multforce expeditionary exercises take place during different seasons to provide varied Arctic environments. This past winter, as part of Operation Nunaliut 2016, the Canadian Navy sent a dive team to Canadian Forces Station Alert, the northernmost installation in the world, to conduct diving operations under the ice. The design of the exercise was to practice Arctic expeditionary skills as well as show the world that Canada is serious about its sovereignty.³⁹ Aside from conducting inspection on freshwater pipes that supply the base, the dive team practiced cutting holes through eight feet of ice to access the sea for submarine search and rescue (SUBSAR).⁴⁰ The U.S. Navy needs to mirror the skills of our northern neighbors and can do so at a relatively inexpensive cost with information sharing and exercise participation. The U.S. Air Force, through the 109th Airlift Wing, Air National Guard, out of New York, participates in Operation Nunaliut by flying North America's only Lockheed C-130 Hercules capable of landing on sea ice. Canada is willing to open winter exercises to the United States and other partner nations, as they see the benefit of information sharing.

When considering that the Canadian clearance divers exercise submarine rescue under Arctic sea ice, the means and capability need to be fully understood. If required, submarine rescue in the High North is an agreement that the United States has with Canada that should the need to save life at sea, to include underwater, that Canada will be fully capable to respond and lend their assistance.⁴¹ It is a mandatory requirement that Canadian divers maintain the SUBSAR mission as part of their core competencies. Canada understands that the United States is the primary patroller of North America's waters and welcomes the support. The interesting item of note is that Canada's Coast Guard does have an icebreaker fleet, but limit their High North reach to only the summer months.⁴² Canada also has a limitation on the number and type of aircraft capable of landing on the sea ice. Furthermore, Canada does not have a submarine rescue chamber like that of the United States. The question then becomes, how would Canada complete the rescue of a submarine? This is more of a play on words as, in reality, it would be a recovery mission vice a rescue mission should Canada be asked to dive on the submarine. Even if the SRDRS were flown in by the 109th Airlift Wing out to the ice, there would be no crane or support vessel from which the chamber could be operated from. This needs to be understood as practicing with the SRDRS under ideal conditions is not adequately preparing the forces for the most common experienced conditions.

The SRDRS has been used in joint exercise with partner nations. Not only has the SRDRS been successful in design and demonstrations for U.S. submarines, but the international community also has benefited from such a capability: "As part of Bold Monarch 2011, the U.S. Navy's Submarine Rescue Diving and Recompression System's (SRDRS) Pressurized Rescue Module (PRM) Falcon successfully mated with the Russian Federation Navy's *Kilo*-Class submarine *Alrosa* (B-781). As a result, Falcon is now certified to mate with a submerged Russian submarine and be able to rescue submariners."⁴³ If this chamber had been around during the incident with the *Kursk*, lives could have been saved, given Russia's permission. But had the *Kursk*, or any submarine for that matter, been in the Arctic and trapped under the ice, the outcome would have

³⁹ LCdr Nicholas Oldfield, trip report, Operation Nunaliut 2016, Initial Planning Conference, Canadian Maritime Operations Group Five, MOG5: 3350-10, 26 October 2015.

⁴⁰ Lt Adrian Lalancette, RCN, UTM 03-16 Operation Nunaliut 2016, Fleet Diving Unit (Atlantic), Shearwater, Nova Scotia, Canada, 3 February 2016.

⁴¹ LCdr Stephan Julian, commanding officer, Canada's Fleet Diving Unit-Atlantic, discussion with author, 5 February 2014.

⁴² *Icebreaker Initiative Directive* (Ottawa: Canadian Coast Guard, 2015).

⁴³ Lundquist, "U.S. Navy Submarine Rescue Diving and Recompression System (SRDRS) Mates With Russian Sub."

been the same as if the SRDS was not in existence. The best international submarine rescue capability is only useable in ideal circumstances, and those circumstances would only then be applicable to the summer Arctic months, which are 3 out of the 12 of the year. As stated earlier, subsurface patrols are due to increase and are certainly not hindered by the harsher winter conditions. It would stand to reason that rescue capabilities should mirror the same limitations and expectations.

The *U.S. Navy Arctic Roadmap* does consider operating with allied forces currently running exercises in the region. However, the only mention to such an expeditionary reference may be found within the “Implementation Plan,” the final appendix of the *U.S. Navy Arctic Roadmap*. Naval Expeditionary Combat Command (NECC) is tasked to “develop a plan to be prepared to execute Arctic expeditionary operations in the near term,” and to determine the strategy for acquiring the equipment needed for Arctic operations.⁴⁴ Recently, the U.S. Navy participated in a multinational Arctic exercise in March (Ice Exercise, or ICEX 2016) and dove self-contained underwater breathing apparatus (SCUBA) under Arctic ice to test and evaluate authorized U.S. Navy equipment limitations. While this is a promising start, the exercise was still primarily submarine centric.⁴⁵ Even though NECC forces participated in ICEX 2016, they were more on trial to see what logistical support would be required for future deployments to the region. The U.S. Navy needs to address these same capabilities and become proficient in expeditionary warfare in the hostile Arctic environment. At one point, the United States was proficient and even advantageous in this planning. A prime example is the post WWII–Cold War collaboration between Norway and the United States.

After the end of WWII and the beginning of the Cold War, Norway and the United States identified common interests in the Arctic with regard to security and resources management. Norway, an Arctic nation, occupies a strategic geographic position that allows a military strength to patrol and enforce Russia’s northeastern border. Since the Cold War, Russia has had its northern nuclear submarine fleet operating out of the Kola Peninsula, as well as its nuclear missile silos.⁴⁶ Norway understands that in a war of attrition, they could not hold up to Russia, so they need to rely heavily on a strong NATO coalition and bilateral trust with the United States. The United States provided heavy artillery (relevant to the time) to be stored in isolated caves in Norway to be easily accessible in the event of northern European conflict. This equipment was enough surplus for a Marine expeditionary brigade (MEB). Norway would safeguard the equipment, as well as provide for half of the monetary compensation required to keep the equipment in good working order. The equipment was utilized for combined nation winter warfare proficiency training. The practice did get phased out when the Global War on Terrorism took precedence. The final physical use of these artillery stores was its physical relocation to Afghanistan for Operation Enduring Freedom (OEF). Since the withdrawal from Operation Iraqi Freedom and OEF, the United States is returning to training with NATO partners and re-engaging in European security.

The Marine Corps realized that the equipment stored in Norway and used in OIF and OEF needed to be modernized to meet the equipment upgrades of the Marine air-ground task force (MAGTF). So, in 2012, the Marine Corps addressed this shortfall with a completion date set for 2016.⁴⁷ To prepare a force to operate the upgraded equipment in winter environments,

⁴⁴ *U.S. Navy Arctic Roadmap*, 32.

⁴⁵ “U.S. Military Tests Arctic Operations,” CNN, 20 March 2016.

⁴⁶ MajGen Odin Johannessen, “Norway’s High North Strategy” (lecture, Marine Corps University, Quantico, VA, 26 January 2017).

⁴⁷ Christopher P. Cavas, “Cave-Dwellers: Inside the U.S. Marine Corps Prepositioning Program-Norway,” *Defense News*, 20 September 2015.

30 U.S. Marines participated in Operation Northern Response, a Norwegian led exercise, in 2015. The goal was collaboration and expansion upon expeditionary winter warfare, under the guidance of subject matter experts. The success of the exercise empowered a standing agreement of 300 U.S. Marines on a six-month rotation to be stationed back in the re-equipped caves to provide maintenance and continue their winter warfare training.⁴⁸ Major General Niel Nelson, commander of Marine Corps Forces Europe and Africa, said this new deployment will be known as “Marine Rotational Force Europe—and the first troops arriving as part of the rotation will be a reinforced infantry company from [Camp] Lejeune’s 1st Battalion, 2nd Marines.”⁴⁹ The greatest benefit will be the impartation of winter warfare knowledge to more U.S. ground troops. Another is improved gear maintenance and revision of applicable materials needed to continue the Arctic standby. This is an excellent beginning to “winterizing” a U.S. force. The U.S. Navy needs to involve their expeditionary forces: SEALs, Seabees, Navy divers, and explosive ordnance disposal (EOD) technicians in similar training due to the nature of the environment and the likely classifications of future encounters in the Arctic theater.

NECC forces are seeking opportunities to broaden their operating environment. For the first time, Navy EOD divers/technicians deployed to train under winter conditions. In early February 2017, a team of eight Navy EOD technicians participated in Exercise Arctic Specialist (EX AS17). The purpose of this exercise was to familiarize EOD technicians with the operating conditions in land and maritime conditions of the High North.⁵⁰ This exercise allowed divers to expose themselves to extremely cold conditions and gain familiarity in the very shallow water and shallow water mine-countermeasure (MCM) zones in cold weather conditions (figure 26). Aside from divers learning what dive gear and equipment they need to use in the environment, autonomous unmanned underwater vehicles (UUV) were also deployed for testing and evaluation.⁵¹ The team further participated in cardio conditioning for the rugged terrain by hiking mountains and conducting land navigation. The team also conducted small arms training to see how reaction times and target acquisition are different when geared for the cold (figure 27).

Figure 26. Divers during Exercise Arctic Specialist



Source: Official U.S. Navy photo.

⁴⁸ Johannessen, “Norway’s High North Strategy.”

⁴⁹ Hope Hodge Seck, “U.S. Marines to Arrive in Norway in First for New Unit,” *Military.com*, 9 January 2017.

⁵⁰ COMO Ole Morten Sandquist, Exercise Arctic Specialist 2017 Specifications, memo to Explosive Ordnance Disposal Mobile Unit EIGHT, MCM Detachment, 9 May 2016, hereafter Sandquist memo.

⁵¹ Sandquist memo.

Figure 27. Artic specialist ruck



Source: Official U.S. Navy photo.

The Norwegian EOD teams were enthusiastic to host their U.S. allies and share their expertise. Although this is a good start for exposing NECC forces to Arctic conditions, but it still does not address diving operations in deeper depths nor the potential rescue of personnel from a sunken submarine under thick ice. Ice diving, regardless of thickness is very technical in nature; and fits into the strategic sense of national security in that submarines are a strategic asset and therefore any means to keep submarines operating fits into the requirements for strategic national security.

RECOMMENDATIONS

To strengthen national security and maintain a state of readiness for future Arctic endeavors, the United States needs to first acquire means to maneuver at sea, beginning with icebreaking capabilities. U.S. House Representative Duncan D. Hunter (R-CA), who is the chairman of the House Transportation and Infrastructure Committee, believes that America is lacking in capability and capacity regarding U.S. icebreaking ships when compared to Russia. “Russia is working overtime to strengthen its Arctic presence while the U.S. is acting like a bystander and a nation without any similar strategic interests. With new icebreaking capability, we can exponentially strengthen our presence and guarantee year-round access for reasons of national security, commerce, and research.”⁵² These icebreakers will allow for further access to the areas not accessible during the ice-covered months with the current aged inventory of two icebreakers.

⁵² “Geostrategy: Russia Takes the Arctic Seriously, U.S. Has Only Two Icebreakers,” *World Tribune*, 20 February 2017.

The new icebreakers will require a deck space large enough to carry the SRDRS for submarine rescue response as discussed. However, the six planned icebreakers that the U.S. Coast Guard is developing are not expected to be in service in 2023. The Coast Guard is still trying to obtain funding and has reached out to the industry to design and develop medium and heavy icebreakers.⁵³ Representative Hunter must make his point apparent to the secretary of Homeland Security and the White House administration. But even with these icebreakers in U.S. inventory, there is still the tyranny of distance as there are no U.S. Arctic ports or bases.

The *U.S. Navy Arctic Roadmap* briefly considers what the requirements are for basing and seaports in the Arctic. Currently, there is little to no infrastructure in proximity to the passages to allow for quick rescue and or safe harbor in the event of a ship's mechanical or structural damage. Therefore, it would be in the best interests of Canada and the United States to establish such infrastructure in the region. A better understanding of the engineering requirements unique to this infrastructure could provide detailed methods in which to accomplish this build. For example, builds will have to take into account permafrost and how to work around the hardened layer. Webster's Dictionary defines *permafrost* as "a permanently frozen layer at variable depth below the surface in frigid [polar] regions of a planet." However, expanding on current infrastructure in the region one will note some of the requirements. Infrastructure needs to have large heated warehouses and docking stations so that any vessels that may transit the Northwest Passage or the Bering Strait may be able to port for repairs. Should those repairs be of a lengthy requirement, heated and enclosed dry docks may be required to prevent further damage to the ships from incoming ice or winter storms. In addition to more facilities to house and repair surface vessels, the region needs to construct more aviation facilities and airfields.

NORAD utilizes the early warning system of airborne assets to patrol the skies of the Arctic. Both Canada and the United States have the capabilities to put man or unmanned systems in the air, but those assets need to come from afar. For the United States, the major air installations come out of Alaska and Thule, Greenland. Thule is the most northern and capable base; Canada uses it as a staging and replenishment area for its northern-most installation/listening post in Alert. The transit time is lengthy as Thule Air Base is not centrally located. Having a localized command and control (C2) would be cost effective as well as provide timely decisions. Since NORAD is already an established, well operating combined command, this C2 can be a localized detachment of NORAD, with a similar binational manning and reporting. Creating a military installation and merging it into Canada-U.S. partnership would take some coordination and understanding between the two countries. Canada does not want to give up its Arctic sovereignty, but the Canadian government also realizes that without U.S. patrols in its territorial waters the country is at a security disadvantage. Building a North American Arctic security partnership will be vital to deterring aggression as well as provide timely responses to catastrophic situations. Cornwallis Island, located on the northern side of the Northwest Passage, should be considered as a potential location to establish an Arctic center hub. On Cornwallis Island, it is the town of Resolute that holds the most promise for such a multi-national installation.

The Arctic town of Resolute has a civilian airport that the Canadian Air Force (CAF) also utilizes, but currently there are not enough facilities and infrastructure to house large amounts of aircraft. Canada's Arctic Training Centre (ATC) consists of three buildings owned and operated by the CAF but are not part of a base. Arctic survival and Arctic warfare courses are held here for CAF and exercises are hosted on an annual basis. At the ATC, various gear is staged year-round for use in the region. There are limited numbers of snowmobiles and ATVs as required for

⁵³ "Geostrategy."

Arctic training and exercises. There are also a limited number of BV-200's, a two-cabin tracked vehicle holding up to 11 passengers for traveling on snow and ice. The ATC and the town of Resolute are centrally located along the Northwest Passage and free of sea ice in the summer months, meaning shipping will have access to and from the bay in the town of Resolute. This location has the potential to provide greater opportunities if it were to undergo an upgrade of technology and infrastructure. In addition to airframe and ground forces support in the Arctic, medical facilities should be invested for those persons requiring care, as they are currently minimal.

The medical facilities in the High North are lacking to say the least. Locals from Resolute fly eight hours to Iqaluit, Baffin Island, for routine medical care. The medical system of the government of Canada covers the transportation and treatment of personnel; however, it demonstrates the overall lack of medical care availability in the Arctic. The town of Resolute would be an ideal location to establish a medical center that could tend to community and military patients throughout the year, with appropriate medical staff support. The staff do not have to be permanently stationed there, but instead they could be deployed to the area comparatively to how both military forces do in support of combat operations in remote areas. The medical facility also would be able to offer more immediate medical support for locals and military alike, providing an alternative to medevac to Alaska, Thule, or Trenton. Proper infrastructure considerations must also be addressed when expanding medical facilities as previously discussed. The facility should be large enough and have appropriate recompression abilities to properly treat those rescued from sea. Any recompression chamber attached to one of the newly commissioned icebreakers would be fixed to the deck and only able to treat small numbers.

Arctic medical facilities need to be readily available across the region to allow for those needing recompression treatment, due to dive or flight decompression requirements. Per the *U.S. Navy Dive Manual*, a recompression treatment must begin as soon as possible, but must begin within six hours of reaching the surface (for omitted decompression).⁵⁴ This six-hour window from the diver's location means medical facility locations and manning need to be considered. The SRDRS is a recompression chamber, but it does have a limited physical capacity. Having an additional, separate chamber would provide treatment in massive casualties' scenarios, as well as a potential back up due to SRDRS equipment failure. Another reason for having a recompression chamber in the Arctic is for divers. Divers are used for not only submarine rescue or recovery, but also facility upkeep to underwater infrastructure. The ATC would like to have an Arctic Diving School as part of its training curriculum per Major Chris White, the commanding officer of the ATC at the time.⁵⁵ He understands that it is a requirement for all diving to have a recompression chamber and certified diving medical doctor on site. Currently, there is no such chamber in the area and divers assume the risk or bring their own chamber if logistics allow. Canada Clearance Divers do have a small, two-person chamber that they bring for all diving expeditionary deployments. The chamber can be broken down to portable components, as it has been demonstrated on numerous Operation Nunavut exercises, but requires multiple carries by the de Havilland DHC-6 Twin Otter planes that primarily run in the region. Furthermore, this system is not all-inclusive and must be assembled in a heated and controlled environment. While it is invaluable to smaller operations and exercises, its limited treatment space does not make it ideal for larger operations or rescues. Training in the Arctic environment will be key to sustaining and defending any national security interests with these new command elements, infrastructure, and capacity increases.

⁵⁴ *U.S. Navy Dive Manual*, 6-20.

⁵⁵ Maj Chris White, conversation with author, 9 January 2016.

Training does not need to be done by the U.S. forces alone. Through bilateral exercises and information sharing, the United States will gain a better level of understanding of how the respective forces operate in the environment, which in turn will give the United States a more accurate assessment of appropriate Arctic warfare. Multinational training has been previously addressed, with Canada and Norway being the two major partners for building an American Arctic force. However, when adding up the capacity of United States, Canada, and Norwegian assets, they still come short when compared to Russia. Therefore, it is essential to build and maintain relations not only with Arctic countries, but NATO countries along Russia's borders. If there were to be an incident (armed or unarmed), Russia would find itself facing a multinational coalition in the Arctic, spearheaded by the United States, the Dutch (Greenland), Norway, and Canada, while facing allied NATO nations in the south. The *U.S. Navy Arctic Roadmap* does a good job of stressing that America must build such relations to augment relations specifically in the Arctic.

CONCLUSION

The United States, as an Arctic nation, needs to understand the region in its entirety. Mankind has altered nature's equilibrium with its carbon footprint leading to global warming. This has altered the Arctic environment, making it more traversable and easier to obtain Earth's regional resources. These two occurrences will increase mankind's further intrusiveness into the Arctic region, causing a greater impact overall on the region's temperature and surroundings. This increase of multiple nations' presence in the region will lead to an exponential increase in sovereignty and security concerns. To prepare for Arctic operations, the U.S. Navy needs to properly self-assess and adequately prepare for contingencies to various degrees. The *U.S. Navy Arctic Roadmap* is a good start, but it falls short in assessing current Arctic responses to catastrophic situations, both armed and unarmed. The inability to rescue personnel from a sunken submarine trapped under Arctic ice is the first consideration the U.S. Navy must address. This deficit can be addressed by icebreaker capabilities and capacity; required infrastructure for sea, air, and land assets; localized command and control; training in the environment under all conditions; and expanding partnership capacity to deter aggression and provide response for most catastrophic situations that may occur. Leveraging friendly and partner nations will help shorten the timeline for such readiness achievements.

The conditions of the Arctic are harsh and unpredictable. If a human life hangs in the balance, be it military or civilian, all means and abilities should be made to save it. As a country, the United States has passed "the planning window" for future Arctic plans and defense, and now must address the lack of responsiveness, compared to our greatest Arctic competitor—Russia—and provide the Title 10 needs to U.S. naval expeditionary forces. By addressing U.S. policies regarding the Arctic region, strategies can be developed to strengthen national security while preparing for the Arctic's future endeavors.

Brothers in Arms

The Role of Belongingness in Military Suicide Prevention

by Major William R. Norcott, Royal Marines¹

INTRODUCTION

The rate of U.S. military suicide has been steadily increasing throughout the last decade.² Military suicide rates have historically been lower than those of the general population but, in 2008, the U.S. Army reported a rate higher than that of the civilian population for the first time since the Vietnam War; although this trend has thankfully begun to tail off, it has continued for certain branches of the U.S. military.³ Between 2005 and 2010, U.S. servicemembers “took their own lives at a rate of approximately one every thirty-six hours.”⁴ The problem is not only affecting active service military personnel; veterans are suffering too. The Department of Veterans Affairs estimates that 22 veterans die by suicide every day.⁵ These statistics are hard to believe. This issue is having a detrimental impact on the morale of servicemembers, veterans, and their families.⁶ It also has the potential to damage the “offer” of military service, thus impacting recruitment and public support for the armed forces; the implications for operational effectiveness are obvious. The U.S. government and Department of Defense (DOD) is already doing a great deal to tackle what has become an epidemic, but a more nuanced approach that caters for the unique needs of the military community is now required.

The interpersonal-psychological theory of suicide (IPTs) may hold the key to this nuanced approach. According to the IPTs, thwarted belongingness (i.e., the sense that one does not

¹ Maj Norcott is a distinguished graduate of MCU's Command and Staff College. This paper was nominated for the Col Bevan G. Cass Award for academic year 2016–17. For the purposes of this discussion, and based on Roy F. Baumeister and Mark R. Leary's 1995 belongingness theory, individuals have an active need for closeness and social belonging. Belongingness suggests that natural selection favors individuals who maintain close bonds with groups because the attachment provides security and facilitates reproduction. Those who are ostracized experience intense psychological distress and, as a result, the unpleasant emotions motivate them to repair the faulty relationships or encourage them to develop new, more rewarding relationships.

² Craig J. Bryan et al., “Understanding and Preventing Military Suicide,” *Archives of Suicide Research* 16, no. 2 (2012): 95–110, <https://doi.org/10.1080/13811118.2012.667321>.

³ Jeffrey Hyman et al., “Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population,” *American Journal of Public Health* 102, no. S1 (Supplement 1, 2012): 145, <https://doi.org/10.2105/AJPH.2011.300484>; and Michael D. Anestis et al., “Testing the Main Hypotheses of the Interpersonal-Psychological Theory of Suicidal Behavior in a Large Diverse Sample of United States Military Personnel,” *Comprehensive Psychiatry* 60 (2015): 78, <https://doi.org/10.1016/j.comppsy.2015.03.006>.

⁴ Margaret C. Harrell and Nancy Berglass, *Losing the Battle: The Challenge of Military Suicide* (Washington, DC: Centre for a New American Security, 2011), 1.

⁵ Erin P. Finley et al., “A National Cohort Study of the Association between the Polytrauma Clinical Triad and Suicide-Related Behavior among U.S. Veterans Who Served in Iraq and Afghanistan,” *American Journal of Public Health* 105, no. 2 (February 2015): 380, <https://doi.org/10.2105/AJPH.2014.301957>.

⁶ Harrell and Berglass, *Losing the Battle*, 10.

belong or feel accepted by others) is one of three components necessary for someone to die by suicide.⁷ Because military personnel are accustomed to uniquely high levels of belongingness that result in extreme drops or “troughs” following certain events, they are highly susceptible to feelings of thwarted belongingness, which can increase their vulnerability to suicide. With a focus on periods of increased vulnerability, military suicide prevention programs should harness the power of camaraderie to generate, maintain, and maximize belongingness to neutralize belongingness troughs.

This paper first will open with a literature review covering suicide theories and risk factors, belongingness and camaraderie, and military suicide prevention, before explaining IPTS. Second, it will examine five of the key risk factors associated with military suicide and investigate their relationship with belongingness. Third, it will analyze the military relationship with belongingness, before proposing a theory that suggests military personnel are more likely to experience extreme troughs in belongingness and be more susceptible to feelings of thwarted belongingness than their civilian counterparts. Fourth, it will assess existing military suicide prevention programs, with a focus on whether or not they tackle thwarted belongingness. The paper will conclude with recommendations for U.S. military suicide prevention and proposed areas of further research.

LITERATURE REVIEW

Suicide Theories and Risk Factors

The first tranche of literature reviewed focuses on suicide theories and risk factors, with particular attention to IPTS as the theory most applicable to the military, and the five risk factors that most pertain to military life. Thomas E. Joiner’s 2005 book, *Why People Die by Suicide*, is a primary source for the theories and factors associated with suicide. The book outlines the theories of suicide that precede Joiner’s own IPTS, explaining that the latter seeks to build upon as opposed to replace its predecessors.⁸ The book details the component parts of the IPTS and explains how they interact, before offering insight into the how and why of those susceptible to suicide. It concludes with recommended improvements to suicide prevention programs and suggestions for future research. *Why People Die by Suicide* is a primary source for understanding suicide and was written by an expert with personal and professional experience treating its causes.

A 2008 article on risk factors in returning combat veterans was one of the first tests of Joiner’s IPTS against a sample of veterans.⁹ This study presents an objective analysis of the IPTS and its components, before describing how U.S. Iraq and Afghanistan veterans were assessed for their levels of habituation to pain, perceived burdensomeness, thwarted belongingness, and propensity for suicidal behavior. Though the sample size was small, the results of this study support the notion that there is a link between habituation to pain, perceived burdensomeness, thwarted belongingness, and suicidal behavior. Thus, Brenner et al.’s study was an early indicator of the utility of IPTS in understanding suicide among U.S. Iraq and Afghanistan veterans.

Building on this 2008 study, Michael D. Anestis et al. tested the main hypotheses of IPTS against a large sample of U.S. military personnel. Their study (published in 2015) provides a useful introduction to U.S. military suicide and a clear description of the components of IPTS. Although the study relied entirely on self-reporting by the soldiers tested, its results suggest that perceived burdensomeness, thwarted belongingness and acquired the capacity for lethal

⁷ Thomas Joiner, *Why People Die by Suicide* (Cambridge, MA: Harvard University Press, 2005), 92–93.

⁸ Joiner, *Why People Die by Suicide*, 38.

⁹ Lisa Brenner et al., “A Qualitative Study of Potential Suicide Risk Factors in Returning Combat Veterans,” *Journal of Mental Health Counseling* 30, no. 3 (2008): 211–25, <https://doi.org/10.17744/mehc.30.3.n6418tm72231j606>.

self-harm (i.e., the three components of IPTS), which are all positively correlated to suicide risk.

The 2008 article “Suicide Incidence and Risk Factors in an Active Duty US Military Population” was a study that examined the risk factors associated with completed suicides across all U.S. active duty military personnel between 2005 and 2007. Including DOD data, this was the first study of its kind, and it confirmed that mental health issues, such as PTSD, depression, and previous suicide attempts, were strong risk factors for suicide. It also cited alcohol abuse as a significant risk factor for U.S. military suicide. The study did highlight that the suicide rates for the Marine Corps were lower than those of the Army. Hyman et al. suggests that this could be related to shorter tour lengths, but also might have something to do with differences in training or leadership.¹⁰

A 2014 study of military suicide risk factors, this time focused on veterans, “A National Cohort Study of the Association between the Polytrauma Clinical Triad and Suicide-Related Behavior among US Veterans Who Served in Iraq and Afghanistan” comes from Eric P. Finley et al. This study focused on the relationship between PTSD, traumatic brain injury, chronic pain, and suicide-related behavior, but also looked at the role of other risk factors using data from the Department of Veterans Affairs. Although this study did not consider the severity of conditions such as PTSD but simply whether they were present, it did reveal some interesting facts about the demographics of veterans likely to engage in suicide-related behavior, and confirmed the importance of substance abuse and depression as predictors of suicide-related behavior among veterans, particularly those with PTSD.¹¹

A number of studies look at specific risk factors for suicide in isolation. One from 2001 examines the role of previous suicide attempts in a study of repeated suicide attempts among European teenagers by A. Hultén et al.¹² By analyzing the behaviors of 1,264 15–19 year olds, Hultén et al. showed that “a history of previous attempted suicide was the most important independent predictor of repetition.”¹³ This paper will discuss this association in the context of belongingness and consider the implications for military suicide prevention.

Walter F. McDermott’s 2012 book, *Understanding Combat Related Post Traumatic Stress Disorder*, serves as a primary source for all things combat-related PTSD. McDermott is a combat veteran of Vietnam and clinical psychologist committed to the study and treatment of combat-related PTSD. His book provides a comprehensive understanding of combat-related PTSD, covering everything from the history of combat-related mental health issues, through the impact on veteran spouses, to the relationship between PTSD and suicide. In his chapter on PTSD and suicide, McDermott describes the strong relationships between PTSD and depression and depression and suicide.¹⁴ He also suggests psychotherapeutic approaches for the prevention of suicide.¹⁵ The book contains a chapter on social avoidance, which ties in directly with the concept of thwarted belongingness.

One of the clearest studies of the relationship between suicide and depression comes from

¹⁰ Hyman et al., “Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population,” 145.

¹¹ Erin P. Finley et al., “A National Cohort Study of the Association between the Polytrauma Clinical Triad and Suicide-Related Behavior among U.S. Veterans Who Served in Iraq and Afghanistan,” *American Journal of Public Health* 105, no. 2 (February 2015): 385, <https://doi.org/10.2105/AJPH.2014.301957>.

¹² A. Hultén et al., “Repetition of Attempted Suicide among Teenagers in Europe: Frequency, Timing and Risk Factors,” *European Child and Adolescent Psychiatry* 10, no. 3 (September 2001): 161.

¹³ Data was collected between 1989 and 1995 by seven different health centers taking part in a World Health Organization study on suicidal behavior. Hultén et al., “Repetition of Attempted Suicide among Teenagers in Europe.”

¹⁴ Walter F. McDermott, *Understanding Combat Related PTSD* (Jefferson, NC: McFarland and Company, 2012), 114, 127.

¹⁵ McDermott, *Understanding Combat Related PTSD*, 129.

the 2001 study by Yoshitomo Takahashi, “Depression and Suicide.” Takahashi provides a compelling introduction to the strong link between depression and suicide, stating that the suicide rate among people suffering from depression is “at least several dozen times higher than that of the general population.”¹⁶ He also alludes to the fact that most people suffering from depression visit a primary care physician as opposed to a psychiatrist, highlighting the importance of the role of primary care physicians in suicide prevention. This analysis has implications for military suicide prevention programs. Takahashi’s study also contains useful analyses of the relationships between previous suicide attempts and suicide and alcohol abuse and suicide.¹⁷

The link between alcohol abuse and suicide is alluded to in a number of studies but is focused on by Nahid Darvishi et al. in their 2015 research article, “Alcohol-Related Risk of Suicidal Ideation, Suicide Attempt, and Completed Suicide.” The study was the first to provide a pooled effect estimate of the relationship between alcohol abuse and suicide. By bringing together and analyzing the results of 31 studies of the association between alcohol and suicide, they concluded that alcohol use disorder “significantly increases the risk of suicidal ideation, suicide attempt, and completed suicide.”¹⁸ This finding has obvious implications for military suicide prevention efforts that will be explored later in this paper.

The fifth and final specific risk factor for military suicide to be covered in this paper is military culture (or certain aspects thereof). The 2012 paper “Understanding and Preventing Military Suicide” is an excellent analysis of unique features of military culture that have to be considered if suicide prevention efforts are to be successful. The authors assert that suicide prevention approaches used on the general population do not take the cultural differences between military personnel and civilians into account, which may be why they have not been successful in the past.¹⁹ The paper describes the military’s “warrior ethos” and explains how it can lead to “mental health stigma” that prevents people from seeking help with mental health issues when they require it.²⁰ Bryan et al. also allude to the protective and potentially destructive effects of military collectivism, which will be discussed in more detail later in this paper.²¹

Belongingness and Camaraderie

The next portion of literature for review is centered on belongingness and camaraderie. A good insight into belongingness in the military context is provided by Sebastian Junger’s 2016 book, *Tribe: On Homecoming and Belonging*. Junger is a journalist who spent time in the combat zones of the Balkans and Afghanistan embedded with both the Afghani Northern Alliance in the late 1990s and then the U.S. Army in one of the most dangerous parts of Afghanistan in 2007 and 2008. Through a combination of analyzing the observations of others and sharing his own unique personal experiences, Junger walks the reader through a deep exposure to the importance of belongingness as a key human psychological need and the challenges of homecoming after one has been part of a close-knit group somewhere away from home. His examples of the power of belongingness range from white Americans preferring to live with Native Americans,

¹⁶ Yoshitomo Takahashi, “Depression and Suicide,” *Journal of the Japan Medical Association* 44, no. 8 (2001): 360.

¹⁷ Takahashi, “Depression and Suicide,” 361–62.

¹⁸ For our purposes, the term *alcohol use disorder*, or AUD, refers to problem drinking that becomes severe. AUD is a chronic relapsing brain disease characterized by compulsive alcohol use, loss of control over alcohol intake, and a negative emotional state when not using. Nahid Darvishi et al., “Alcohol-Related Risk of Suicidal Ideation, Suicide Attempt, and Completed Suicide: A Meta-Analysis,” *Public Library of Science One* 10, no. 5 (2015): 1, <https://doi.org/10.1371/journal.pone.0126870>.

¹⁹ Craig J. Bryan et al., “Understanding and Preventing Military Suicide,” *Archives of Suicide Research* 16, no. 2 (2012): 96, <https://doi.org/10.1080/13811118.2012667321>.

²⁰ Bryan et al., “Understanding and Preventing Military Suicide,” 98–99.

²¹ Bryan et al., “Understanding and Preventing Military Suicide,” 99.

through people pulling together in times of war and natural disaster, to his own experiences of life-threatening combat. He also offers an insight into PTSD following his own diagnosis as a result of his time with the Northern Alliance.²² Junger does not really introduce new concepts in his book, but he does very effectively articulate the bipolar feelings of belongingness and social isolation associated with military life, thus emphasizing their importance and alluding to their implications for suicide prevention.

The Thomas E. Joiner et al. article also provides an excellent insight into the power of belongingness with a focus on its association with suicide rates among the general U.S. population. Their study was published in 2006, just after Joiner first proposed IPTS. On the basis that IPTS asserts that belongingness can prevent suicide, this study tested the hypothesis that sporting events, such as national football and hockey games, pull people together, thus satisfying their need to belong, and in turn reducing the risk of suicide. The results of three separate sub-studies concluded that people are less likely to die by suicide when their college football team is performing well, and national suicide rates dropped during both the “Miracle on Ice” hockey game in 1980, and Super Bowl Sundays in general.²³ The study concludes with an emphasis on prioritizing belongingness as a “suicide buffer,” which has obvious implications for military suicide prevention programs.²⁴

As a follow-up to the “pulling together” study, Van Orden et al. conducted a study that looked into suicidal ideation within college students and how it varies across semesters, relating to levels of belongingness. Their study report outlines IPTS but focuses on the concept of thwarted belongingness, emphasizing the importance of belongingness in suicide prevention. The report presents a hypothesis that belongingness levels within students are lower during summer semesters due to fewer extracurricular courses and sporting events. Results of self-report questionnaires completed by 309 students suggested that belongingness levels were lower and suicide ideation was more likely during the summer semester, thus supporting IPTS and emphasizing the importance of belongingness as a protective factor.

A more recent look at the relationship between belongingness and suicide ideation is provided by a 2015 study by Rachel A. Ploskonka and Heather L. Servaty-Seib.²⁵ Through the lens of IPTS, and with a focus on thwarted belongingness, Ploskonka and Servaty-Seib took a more multidimensional approach by examining the different interpersonal groups to which people (college students in this case) are connected. Using self-report surveys of 249 college students, they found family belongingness to be a uniquely strong as a protective factor against suicide ideation. This has implications for suicide prevention methods in military personnel, given the “family” dynamics military camaraderie creates.

The sense that a military person’s colleagues or peers are also his or her family is supported by the 2011 study conducted by Ramon Hinojosa and Melanie S. Hinojosa. By interviewing 20 Iraq and Afghanistan veterans, Hinojosa and Hinojosa revealed that veterans were desperate to hang on to their military friendships and essentially mourned the loss of their military families once they had left the Service.²⁶ The veterans interviewed also reported finding it difficult to

²² Sebastian Junger, *Tribes: On Homecoming and Belonging* (London: Fourth Estate-HarperCollins, 2016), 71–103.

²³ Thomas E. Joiner, Daniel Hollar, and Kimberly Van Orden, “On Buckeyes, Gators, Super Bowl Sunday, and the Miracle on Ice: ‘Pulling Together’ Is Associated with Lower Suicide Rates,” *Journal of Social & Clinical Psychology* 25, no. 2 (2006): 191, <https://doi.org/10.1521/jscp.2006.25.2.179>.

²⁴ Joiner, Hollar, and Van Orden, “On Buckeyes, Gators, Super Bowl Sunday, and the Miracle on Ice,” 194.

²⁵ Rachel A. Ploskonka and Heather L. Servaty-Seib, “Belongingness and Suicidal Ideation in College Students,” *Journal of American College Health* 63, no. 2 (2015): 81–87, <https://doi.org/10.1080/07448481.2014.983928>.

²⁶ Ramon Hinojosa and Melanie S. Hinojosa, “Using Military Friendships to Optimize Postdeployment Reintegration for Male Operation Iraqi Freedom/Operation Enduring Freedom Veterans,” *Journal of Rehabilitation Research & Development* 48, no. 10 (2011): 1145–58.

connect with civilians or integrate into civilian society, and they had a natural tendency to gravitate toward other veterans.²⁷ Hinojosa and Hinojosa allude to the effect that social isolation (or thwarted belongingness) has on mental well-being and conclude their study by recommending that veterans' military connections should be leveraged as part of their reintegration into civilian life. Though the sample number for this study was small, its findings further emphasize the importance of belongingness and camaraderie in maintaining the emotional well-being of military personnel and veterans.

Eli Saslow's 2014 *Washington Post* article "Ugh. I Miss It" was one of a series of articles examining the effects of the Iraq and Afghanistan wars on the U.S. troops involved. The article provides a compelling insight into the psychological challenges faced by an Army veteran from Afghanistan forced to retire due to injury as he attempts to make his transition into civilian life. Including direct quotations referring to the "brotherhood" between soldiers, such as "I just can't feel like I did with my brothers. I can't find anything to replace it," this article brings to life the premium placed upon camaraderie within the military world and the difficulty many ex-military servicemembers experience when trying to integrate into civilian life.²⁸ The article also touches on the importance of military personnel and veterans being able to connect with other current or former military personnel, highlighting the role of social media where other means of social connecting are unavailable. The concept of using social media to combat feelings of thwarted belongingness has implications for military suicide prevention programs.

Saul McLeod's short paper on Abraham Maslow's theory on hierarchy of needs (2016) is an excellent summary of Maslow's theories that includes an explanation of his original five-stage hierarchy from the 1940s and '50s, and the seven and eight-stage models developed in the 1960s and 70s. McLeod's summary further emphasizes the importance of belongingness as a fundamental psychological need that, in terms of human priority, sits just below basic physiological and safety needs (e.g., food, water, and security).²⁹ Maslow's hierarchy adds additional weight to the argument for maximizing belongingness as part of military suicide prevention efforts.

While books and articles focused solely on military belongingness and camaraderie are relatively few and far between, most if not all of the current military service and veteran websites provide a good sense of the role that belongingness and camaraderie play in military life. An example of such a website can be seen at CombatVeteranstoCareers.org that, on the subject of military brotherhood, includes such assertions as "upon signing the dotted line . . . one enters into the unparalleled brotherhood that is the United States military," and "there is no greater rapport than that shared amongst service members."³⁰ Visitors can find similar statements on the websites of the Service branches, which further highlights the importance of belongingness and camaraderie to the military, and adds to the suggestion that a focus on these concepts should provide the foundation for military suicide prevention.

U.S. MILITARY SUICIDE PREVENTION

The third and final collection of literature for review is focused on U.S. military suicide prevention, and a primary source for this topic comes from *The War Within: Preventing Suicide in the U.S. Military* by Rajeev Ramchand et al. This monograph (2011) was the result of the U.S. assistant secretary of defense for health affairs asking Rand's National Defense Research Institute to investigate military suicide epidemiology, identify suicide prevention best practices, examine sui-

²⁷ Hinojosa and Hinojosa, "Using Military Friendships to Optimize Postdeployment Reintegration."

²⁸ Eli Saslow, "Ugh. I Miss It," *Washington Post*, 19 April 2014, 3.

²⁹ Saul McLeod, "Maslow's Hierarchy of Needs," *Simply Psychology* (2016), 1.

³⁰ "As Defined in the Military: 'Brotherhood'," CombatVeteranstoCareers.org, 9 June 2014.

cide prevention efforts across the Services, and provide recommendations for improvements.³¹ Ramchand et al.'s work provides a comprehensive overview of the military suicide problem, including everything from a detailed description of military suicide epidemiology, through an articulation of best practices and different Service approaches to suicide, to recommendations for the future. Particularly useful is a summary of six "essential components of a comprehensive suicide prevention program," and a comparison of the effectiveness of the different Service approaches.³²

Another book focused solely on the issue of military suicide (self-proclaimed as the first of its kind) is *The Last and Greatest Battle* by John Bateson (2015). This book provides another excellent, all-encompassing look at the problem of military suicide, using numerous vignettes dating from the U.S. Civil War to the present day to bring the issue to life. Bateson provides a comprehensive introduction to military suicide, before covering such key issues as PTSD and the morality of killing, and an interesting debate on whether "blame" for suicide rests with the individual or the institution that has put them into the situation that has caused them to take their own life.³³ The book concludes with a series of recommendations for military suicide prevention, such as making efforts to reduce mental health stigma and maximizing social connectedness; the latter recommendation chimes with the key thrust of this paper and its emphasis on the importance of belongingness.

Mark A. Zamorski's 2011 paper, "Suicide Prevention in Military Organizations," is an examination of multinational military suicide prevention initiatives resulting from a study of database-trawled citations, articles, and reports (more than 70).³⁴ Following an outline of the epidemiology of military suicide, Zamorski highlights a number of key themes that feature within military suicide programs around the world, such as education and awareness programs, risk factor modification (e.g., targeting alcohol abuse), and overcoming barriers to care (e.g., stigma reduction).³⁵ The paper also includes an emphasis on the effectiveness of "comprehensive, community-based suicide prevention programs," citing the Air Force as having implemented such a program with impressive results.³⁶ Zamorski concludes with six priorities for future military suicide prevention; while the concept of thwarted belongingness is touched on within the main body of the paper, it does not feature within these recommendations.³⁷

Another analysis of military suicide prevention efforts, but this time focused purely on the U.S. military, is a 2011 report entitled *Losing the Battle: The Challenge of Military Suicide* by Margaret C. Harrell and Nancy Berglass. This report provides a good introduction to the problem of military suicide, alluding to the potential effects on recruitment and retention, before outlining the relationship between military service and suicide through the lens of IPTS. The brief then goes on to provide a very clear critique of specific aspects of the U.S. military's approach to suicide prevention, while providing recommendations for how shortcomings may be rectified (the importance of belongingness is alluded to within these recommendations).³⁸ The report concludes with an assertion that "America is losing its battle against suicide by veterans and ser-

³¹ Rajeev Ramchand et al., *The War Within: Preventing Suicide in the U.S. Military* (Santa Monica, CA: Rand, 2011), iii.

³² Ramchand et al., *The War Within*, 105–6.

³³ John Bateson, *The Last and Greatest Battle: Finding the Will, Commitment, and Strategy to End Military Suicides* (New York: Oxford University Press, 2015), 111.

³⁴ Mark A. Zamorski, "Suicide Prevention in Military Organizations," *International Review of Psychiatry* 23, no. 2 (April 2011): 174, <https://doi.org/10.3109/09540261.2011.562186>.

³⁵ Zamorski, "Suicide Prevention in Military Organizations," 175, 177.

³⁶ Zamorski, "Suicide Prevention in Military Organizations," 177.

³⁷ Zamorski, "Suicide Prevention in Military Organizations."

³⁸ Margaret C. Harrell and Nancy Berglass, *Losing the Battle: The Challenge of Military Suicide* (Washington, DC: Center for a New American Security, 2011), 4, 8.

vice members” and that “the time has come to fight this threat more effectively and with greater urgency.”³⁹

As part of the ongoing fight against military suicide, David A. Jobes et al. have proposed a new approach to military suicide prevention. Their 2012 article, “An Evidence-Based Clinical Approach to Suicide Prevention in the Department of Defense: The Collaborative Assessment and Management of Suicidality (CAMS),” provides an overview of the CAMS approach and assesses its utility as a military suicide prevention tool. Emphasis is placed upon the multidimensional and collaborative nature of CAMS, an approach that incorporates interpersonal factors and allows patients to be active participants in their own care, and become “coauthors” of their treatment plans.⁴⁰ The article also incorporates the results of two studies comparing the CAMS approach with two different regular approaches. While the sample sizes were relatively small (55 and 29, respectively), the results of the studies indicated that the CAMS approach was significantly more effective at reducing suicide ideation and general mental health symptom distress.⁴¹ Furthermore, the approach’s flexibility and simplicity may make it uniquely suitable for use with suicidal military personnel.⁴²

The *2020 Army Strategy for Suicide Prevention* is the U.S. Army’s 2012 capstone report for the articulation of its “strategic suicide prevention goals and objectives.”⁴³ Completely in step with the national strategy for suicide prevention, this document presents a suicide “Care Continuum,” which incorporates suicide prevention, intervention, and “postvention” (intervention conducted after suicide) methods and aligns them against the four strategic “directions” of the national strategy: “Healthy and empowered individuals, families, and communities; clinical and community preventive services; treatment and support services; and surveillance, research, and evaluation.”⁴⁴ After explaining how the U.S. Army strategy meshes with national strategy, this document goes on to list a series of goals, objectives, and detailed tasks (with accompanying timelines) for suicide prevention that fall out of the four aforementioned national directions. An assessment of the Army’s suicide prevention program will be covered later in this paper.

The U.S. Navy’s 2015 *Commanding Officer’s Suicide Prevention Program Handbook* is a clear, comprehensive, and user-friendly guide to suicide prevention for commanders. Having provided an introduction to the problem of military suicide and outlined the Navy’s policy on the matter, this handbook also uses a prevention, intervention, postvention framework, but this time broken into digestible sections (e.g., prevention is broken down into “establish a foundation, foster a supportive environment, build skills, and be prepared”).⁴⁵ The handbook equips the reader with numerous tools with which to tackle military suicide, ranging from checklists, through stigma-minimizing language, to confirmed protective factors. The Navy’s approach to suicide prevention will be assessed later in this paper.

Marine Corps Order (MCO) 1720.2 (2012) provides direction on the Marine Corps’ suicide prevention program from the Commandant of the Marine Corps to all of his subordinates. This

³⁹ Harrell and Berglass, *Losing the Battle*, 10.

⁴⁰ David A. Jobes, René Lento, and Katherine Brazaitis, “An Evidence-Based Clinical Approach to Suicide Prevention in the Department of Defense: The Collaborative Assessment and Management of Suicidality (CAMS),” *Military Psychology* 24 (2012): 606–7, <https://doi.org/10.1080/08995605.2012.736327>.

⁴¹ Jobes, Lento, and Brazaitis, “An Evidence-Based Clinical Approach to Suicide Prevention in the Department of Defense,” 618.

⁴² Jobes, Lento, and Brazaitis, “An Evidence-Based Clinical Approach to Suicide Prevention in the Department of Defense,” 620.

⁴³ *2020 Army Strategy for Suicide Prevention* (Washington, DC: Department of the Army, 2012), 8.

⁴⁴ *2020 Army Strategy for Suicide Prevention*, 9.

⁴⁵ *Commanding Officer’s Suicide Prevention Program Handbook*, OPNAV N171 (Washington, DC: U.S. Navy Suicide Prevention Branch, Department of the Navy, 2015), 2.

order frontloads the importance of stigma reduction, leadership, and camaraderie, before outlining a continuum of care comprising several elements that commanders are directed to use as a handrail for their own suicide prevention programs.⁴⁶ The order also gives specific suicide prevention tasks to all the component parts of the Marine Corps and incorporates details of questions to ask to determine suicide ideation and intent, checklists, and a glossary of terms in order to maximize understanding of the issue.⁴⁷ An assessment of the Marine Corps suicide prevention program will be made later in this paper.

The Air Force Suicide Prevention Program (2001) provides an introduction that incorporates baseline military suicide themes, such as mental health stigma and belongingness, outline epidemiological statistics, and risk and protective factors for suicide, before detailing 11 initiatives that form the backbone of Air Force suicide prevention efforts. The main body of the manual breaks each of these initiatives down by their importance, the actions required to implement them, and the expected results of those actions.⁴⁸ Though relatively dated, the manual has stood the test of time, with a few minor amendments made to the 11 initiatives (most recently in 2013).⁴⁹ The manual concludes with an assessment of the program's effectiveness since its inception in 1996. An assessment of the Air Force suicide prevention program will be made later in this paper.

THE INTERPERSONAL-PSYCHOLOGICAL THEORY OF SUICIDE (IPTS)

Thomas Joiner first introduced IPTS in 2005. Previously, theories of suicide focused on a person's desire to die by suicide without really considering whether they actually had the capacity to take their own life.⁵⁰ Joiner asserts that desire to die alone is not sufficient for someone to die by suicide; they must also have acquired the capacity to "enact lethal self-harm" (i.e., take their own life).⁵¹ Hence, his IPTS posits that three factors are required for a person to die by suicide: "thwarted belongingness," "perceived burdensomeness" (which together form a person's desire to die), and the acquired ability to enact lethal self-harm.⁵² According to Joiner, a person can only die by suicide if all three of these factors are occurring within them (figure 27).⁵³

Thwarted Belongingness

The first of the two components that form a person's desire to die is thwarted belongingness. This can be described as the sense that one does not "fit in," belong to any particular group, or feel connected to others.⁵⁴ Thwarted belongingness can have a significant detrimental impact on a person's emotional and psychological well-being, particularly as, according to American psychologist Abraham Maslow, belongingness sits just below basic physiological and safety needs on the priority list of human needs (figure 28).⁵⁵

According to Joiner, thwarted belongingness is the most identifiable, malleable, and therefore treatable of his three IPTS factors; although thwarted belongingness alone is not suffi-

⁴⁶ *Marine Corps Order 1720.2, Marine Corps Suicide Prevention Program (MCSP)* (Washington, DC: Headquarters Marine Corps, 2012), 2–3.

⁴⁷ *Marine Corps Order 1720.2*, 8, Enclosure 3.

⁴⁸ *The Air Force Suicide Prevention Program: A Description of Program Initiatives and Outcomes*, AFPAM 44-160 (Washington, DC: Department of the Air Force, 2001), 8.

⁴⁹ "The Air Force Suicide Prevention Program 11 Elements," AirForceMedicine.af.mil, 23 April 2013.

⁵⁰ Joiner, *Why People Die by Suicide*, 46.

⁵¹ Joiner, *Why People Die by Suicide*, 92–93.

⁵² Joiner, *Why People Die by Suicide*.

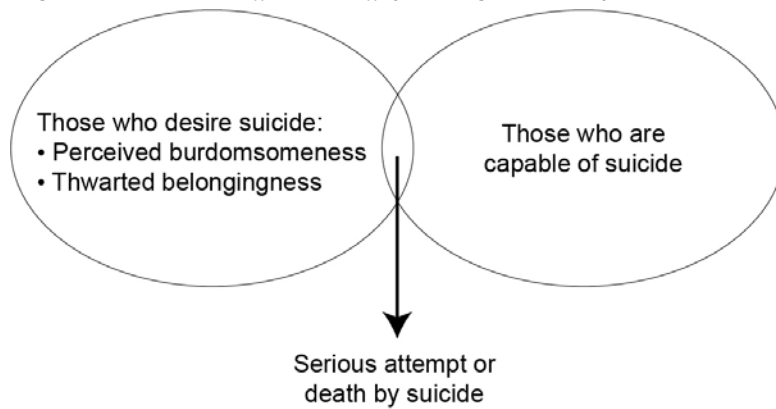
⁵³ Joiner, *Why People Die by Suicide*, 39.

⁵⁴ Joiner, *Why People Die by Suicide*, 120.

⁵⁵ McLeod, "Maslow's Hierarchy of Needs," 1.

cient for someone to take their own life, targeting and eliminating it specifically will prevent someone from dying by suicide, even if the other two factors are present.⁵⁶ An example of thwarted belongingness would be the feelings felt by an athlete who has trained, toured, and played with a particular team, before suddenly being dropped and therefore cut off from their teammates. In this case, the belongingness gained by being part of a cohesive whole has been deleted or thwarted, which can have a negative emotional and psychological impact on the person involved. This concept has implications for suicide prevention in the military, which is an institution built on the foundation of belongingness and camaraderie. The role of belongingness and camaraderie in the military will be examined later in this paper.

Figure 27. The interpersonal-psychological theory of suicide



Source: Joiner, *Why People Die by Suicide*, 138.

Perceived Burdensomeness

According to IPTS, the component that combines with thwarted belongingness to form a person's desire to die is perceived burdensomeness.⁵⁷ This state can be described as a sense that one is an unacceptable burden on others and does not add any value to society; indeed, someone experiencing perceived burdensomeness may feel that the benefits resulting from their death would outweigh the costs of the burden they place on others by being alive.⁵⁸ An example of perceived burdensomeness would be the feelings felt by a social worker who has spent their entire adult life helping others but then becomes ill, so ill that they are unable to assist others and are completely reliant on friends and family for their own care. Perceived burdensomeness can be applied in a military context; consider the war hero who fights for his country and to protect others, but suddenly becomes injured and reliant on his friends and family for survival. Although perceived burdensomeness is likely to be a key factor in military suicides, it is much less malleable than thwarted belongingness; for example, you cannot "uninjure" someone who has experienced life-threatening injuries that require ongoing third-party care, but you can make that person feel loved by and connected to others. It is partly for this reason that belongingness and thwarted belongingness will be the focus of this paper as an important concept for military suicide prevention.

Acquired Capacity to Enact Lethal Self-Injury

Thwarted belongingness and perceived burdensomeness combine within a person to create a sense of hopelessness or a desire to die, but according to Joiner, a third factor needs to be present for a person to die by suicide: the acquired capacity to take one's own life or to "enact

⁵⁶ Thomas E. Joiner, "Why People Die by Suicide" (presentation, University of Florida, Gainesville, FL, 2005), slide 66.

⁵⁷ Joiner, *Why People Die by Suicide*, 98.

⁵⁸ Joiner, *Why People Die by Suicide*, 97–99.

Figure 28. Maslow's hierarchy of needs



Source: McLeod, "Maslow's Hierarchy of Needs."

lethal self-injury."⁵⁹ This can be described in physical terms (e.g., access to a gun) but more importantly in emotional or psychological terms. The latter refers to someone overcoming the fear of pain or dying (i.e., quashing the natural human instinct for self-preservation). An example of acquired capacity for lethal self-injury would be the "immunity" to death acquired by a physician with emergency room experience who has spent a great deal of time around serious traumatic injuries and death; such an individual is not likely to fear death as much as the person who has al-

ways worked in an office and never been exposed to it. A military example would be the Marine who has killed and injured others, seen others die or be wounded, or maybe become wounded themselves; combining this exposure to death and injury with easy access to weapons and ammunition potentially provides the Marine with an acquired capacity to take their own life. This third factor also plays a part in military suicide but, while access to lethal means can be controlled to a certain extent, acquired psychological capacity for lethal injury is not very malleable (i.e., difficult to reverse). This is another reason for this paper's emphasis on thwarted belongingness and its importance for military suicide prevention.

Limitations of IPTS

IPTS does not appear to explain the motivations of someone who dies by suicide with the primary purpose of killing others (i.e., suicide bombers). While the argument could be made that extremist groups have been known to target vulnerable, socially unconnected individuals to use them as suicide bombers—and these individuals may well be experiencing feelings of thwarted belongingness and perceived burdensomeness—the theory does not account for all instances of suicide being used as a weapon. For example, take the man who is told that if he does not drive a car full of explosives into a security force checkpoint, terrorists will kill his wife and children. While it could be argued that the man in question has the acquired ability to enact lethal self-injury, it might be hard to justify that he has a desire to die; he might not want to die at all, but he is willing to sacrifice himself for his family. Arguably, a person who is willing to take their own life to save the lives of their family has a strong emotional or psychological bond with them and therefore the concept of thwarted belongingness does not really apply. Analyzing the factors associated with the motivations of suicide bombers sits outside the scope of this paper. Therefore, any reference made to suicide in this paper is in the con-

⁵⁹ Joiner, *Why People Die by Suicide*, 22.

text of its purpose being the death of the person who is actually performing the act of suicide.

To summarize, Joiner's IPTS is a theory of suicide that combines concepts comprising a person's desire to die with their actual capacity to perform lethal self-injury; in this respect (and to use Joiner's own words), his theory does not replace but "rests on the shoulders" of those that precede it.⁶⁰ Although it does not fully account for every instance of suicide, IPTS is one of the most empirically tested, applicable, and therefore credible theories of suicide. Given the interpersonal nature of the military, IPTS is also the most appropriate theoretical lens through which to look at the challenge of military suicide prevention. This paper does exactly that with a focus on belongingness, arguably the most powerful of Joiner's three IPTS components.

MILITARY SUICIDE RISK FACTORS AND THEIR RELATIONSHIP WITH BELONGINGNESS

This section will discuss five of the most pertinent risk factors for military suicide and analyze their relationship with belongingness. Implications for military suicide prevention will be covered later on in the paper.

Previous Suicide Attempts and Suicide Ideation

There are a number of risk factors associated with suicide but this paper will only focus on five of the most prevalent. The first of these is previous suicide attempts and suicide ideation (i.e., contemplating suicide), which are both known to be strong predictors of suicide. Hulten et al. demonstrated this via their study of attempted suicide among teenagers in Europe; according to their report, "attempted suicide is the best predictor of future suicide" and "repetition of attempts further increases the risk for suicide."⁶¹ Hyman et al. looked at this within the military context by conducting a study that analyzed suicide statistics for the entire U.S. active duty military populations of 2005 and 2007 with sample sizes of 2,064,183 and 1,981,810, respectively; they found both previous suicide attempts and suicide ideation to be strong predictors of suicide.⁶²

So what is the relationship between previous suicide attempts, suicide ideation, and belongingness? To give a military example, Anestis et al. tested the main hypotheses of IPTS using a sample of 934 U.S. military personnel, and found that "the interaction of thwarted belongingness and perceived burdensomeness predicted suicide ideation and . . . preparations for suicide;" and they also found that, when all three components of IPTS were combined, they "predicted prior suicide attempts."⁶³ Additionally, studies looking at the "pulling together" effects of national sporting events, and looking at the relationship between belongingness and suicide ideation in college students, show strong negative correlations between belongingness and suicide ideation, and belongingness and completed suicide.⁶⁴ Furthermore, anecdotal evidence suggests that individuals who have made previous suicide attempts or thought about suicide often describe a sense of thwarted belongingness (i.e., the sense that they do not fit in and feel socially isolated) as being at the front of their minds when they attempted or considered suicide.

In summary, an individual who has attempted or considered suicide in the past or is consid-

⁶⁰ Joiner, *Why People Die by Suicide*, 38.

⁶¹ A. Hultén et al., "Repetition of Attempted Suicide among Teenagers in Europe: Frequency, Timing and Risk Factors," *European Child and Adolescent Psychiatry* 10, no. 3 (September 2001): 161.

⁶² Hyman et al., "Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population," 138, 144.

⁶³ Anestis et al., "Testing the Main Hypotheses of the Interpersonal-Psychological Theory of Suicidal Behavior in a Large Diverse Sample of United States Military Personnel," 78–79.

⁶⁴ Joiner, Hollar, and Van Orden, "On Buckeyes, Gators, Super Bowl Sunday, and the Miracle on Ice," 179; Kimberly A. Van Orden et al., "Suicidal Ideation in College Students Varies across Semesters: The Mediating Role of Belongingness," *Suicide and Life-Threatening Behavior* 38, no. 4 (August 2008): 427, <https://doi.org/10.1521/suli.2008.38.4.427>; and Ploskonka and Servaty-Seib, "Belongingness and Suicidal Ideation in College Students," 81.

ering suicide now is likely to attempt suicide in the future. The good news is that belongingness can mitigate this risk.

Post-Traumatic Stress Disorder (PTSD)

PTSD is one of the strongest predictors of military suicide; veterans with PTSD are 33 percent more likely to die by suicide than those without it.⁶⁵ According to the aforementioned study by Hyman et al., PTSD is a strong predictor of military suicide; according to Finley et al., who studied suicide related behavior in more than 200,000 Iraq and Afghan veterans, “PTSD appears to predict increased suicide ideation in both veterans and non-veterans.”⁶⁶ Also significant, PTSD is a “major predictor” of whether or not someone is going to transition from just considering suicide to actually attempting it.⁶⁷

In terms of the relationship between PTSD and belongingness, guilt seems to be key. Guilt over actions taken in combat (e.g., taking a life) is known to be linked to PTSD, and this type of guilt can also be a primary contributor to a sense of thwarted belongingness within an individual who has returned from combat.⁶⁸ In this person’s mind, it is not possible for others to care about them because of the terrible things they have done, which in turn leads to social isolation.⁶⁹ According to a 2014 study into the treatment of veterans with PTSD, targeting this “self-hate” is crucial and therapists have an important role in quashing patients’ thwarted belongingness by helping them overcome their guilt and, in turn, allow themselves to be accepted by others.⁷⁰ Additionally, one of the most common manifestations of PTSD in veterans is a sense of hopelessness, to which thwarted belongingness is invariably a contributing factor.⁷¹ Thus, PTSD and thwarted belongingness can go hand in hand.

In summary, there is a strong positive correlation between PTSD and suicide, and guilt-related thwarted belongingness is often a manifestation of PTSD, which can be targeted with some success using initiatives that are designed to increase a person’s sense of belongingness.

Depression

Depression is the psychiatric diagnosis most commonly associated with suicide.⁷² One in six people with major depression die by suicide and the suicide rate among people suffering with depression is “at least several dozen times higher than that of the general population.”⁷³ This correlation is reflected within the military population; Hyman et al.’s study found depression to be a strong indicator of suicide within the active duty military populations of 2005 and 2007, and Finley et al. found there to be a strong association between depression and suicide within

⁶⁵ McDermott, *Understanding Combat Related PTSD*, 127.

⁶⁶ Hyman et al., “Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population,” 144; and Erin P. Finley et al., “A National Cohort Study of the Association Between the Polytrauma Clinical Triad and Suicide-Related Behavior Among U.S. Veterans Who Served in Iraq and Afghanistan,” 380.

⁶⁷ Edward A. Selby et al., “Overcoming the Fear of Lethal Injury: Evaluating Suicidal Behavior in the Military through the Lens of the Interpersonal-Psychological Theory of Suicide,” *Clinical Psychology Review* 30, no. 3 (April 2010): 5, <https://doi.org/10.1016/j.cpr.2009.12.004>.

⁶⁸ Selby et al., “Overcoming the Fear of Lethal Injury,” 9.

⁶⁹ Selby et al., “Overcoming the Fear of Lethal Injury.”

⁷⁰ Herbert Hendin, “An Innovative Approach to Treating Combat Veterans with PTSD at Risk of Suicide,” *Suicide and Life-Threatening Behavior* 44, no. 5 (October 2014): 586, <https://doi.org/10.1111/sltb.12135>.

⁷¹ Bret A. Moore and Walter E. Penk, eds., *Treating PTSD in Military Personnel: A Clinical Handbook* (New York: Guilford Press, 2011), 27.

⁷² *Depression and Suicide Risk* (Washington, DC: American Association of Suicidology, 2014), 1.

⁷³ Takahashi, “Depression and Suicide,” 360.

Iraq and Afghanistan veterans.⁷⁴ Additionally, in terms of suicide risk, depression is particularly dangerous when combined with PTSD, and exposure to combat is known to “elevate the symptoms of depression,” which further emphasizes its significance to the issue of military suicide.⁷⁵

Depression has a strong association with belongingness or lack thereof; it is known to cause difficulties with “loneliness and lack of connection,” and its strong association with “interpersonal dysfunction” often results in feelings of thwarted belongingness.⁷⁶ A 2011 study of 269 undergraduates by Collin L. Davidson et al. found a strong relationship between depression and thwarted belongingness, and their results highlighted the role of thwarted belongingness as the link between depression and suicide, which clearly supports the hypotheses of IPTS.⁷⁷ This implies that treatment programs for depression that focus on rectifying interpersonal dysfunction (i.e., increasing a person’s sense of belongingness) would have significant impact. Additionally, in their 2015 study of the relationship between belongingness and depression in military personnel, Craig J. Bryan and Elizabeth A. Heron found that “increased depression severity was significantly associated with low belonging,” and went on to conclude that “a sense of belongingness may protect service members from depression.”⁷⁸ There are clear implications here for military suicide prevention.

In summary, depression is strongly correlated to suicide risk, and thwarted belongingness is a key feature of depression that can contribute to suicide. Treatment programs for depression that target thwarted belongingness could be very successful.

Alcohol Abuse

Alcohol abuse is known to increase suicide risk, particularly in military circles; U.S. military analyses “consistently mention” it as a “significant risk factor” for suicide.⁷⁹ Nahid Darvishi et al. pooled the results of 31 studies of alcohol-related suicide from around the world and found there to be a strong positive correlation between alcohol abuse, suicidal ideation, suicide attempt, and completed suicide.⁸⁰ Most concerning, however, is the close link between alcohol abuse and other mental health issues, such as depression and PTSD. Finley et al. found that adding alcohol abuse to PTSD “significantly increases” the risk for suicidal ideation, and cite the fact that it is common to find alcohol in the blood of veterans who have died by suicide.⁸¹ Additionally, other studies have demonstrated that exposure to combat can increase the likelihood of alcohol abuse.⁸² These observations highlight the importance of alcohol abuse in understanding military suicide.

In terms of its relationship with belongingness, alcohol could be described as a “double-edged

⁷⁴ Hyman et al., “Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population,” 144; and Finley et al., “A National Cohort Study of the Association Between the Polytrauma Clinical Triad and Suicide-Related Behavior Among U.S. Veterans Who Served in Iraq and Afghanistan,” 384.

⁷⁵ Finley et al., “A National Cohort Study of the Association Between the Polytrauma Clinical Triad and Suicide-Related Behavior Among U.S. Veterans Who Served in Iraq and Afghanistan,” 384; and Selby et al., “Overcoming the Fear of Lethal Injury,” 5.

⁷⁶ Selby et al., “Overcoming the Fear of Lethal Injury”; and Collin L. Davidson et al., “Interpersonal Suicide Risk and Ideation: The Influence of Depression and Social Anxiety,” *Journal of Social & Clinical Psychology* 30, no. 8 (2011): 844, <https://doi.org/10.1521/jscp.2010.30.8.842>.

⁷⁷ Davidson et al., “Interpersonal Suicide Risk and Ideation,” 842, 851.

⁷⁸ Craig J. Bryan and Elizabeth A. Heron, “Belonging Protects against Postdeployment Depression in Military Personnel,” *Depression and Anxiety* 32, no. 5 (2015): 349, <https://doi.org/10.1002/da.22372>.

⁷⁹ Hyman et al., “Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population,” 144.

⁸⁰ Darvishi et al., “Alcohol-Related Risk of Suicidal Ideation, Suicide Attempt, and Completed Suicide,” 1.

⁸¹ Finley et al., “A National Cohort Study of the Association Between the Polytrauma Clinical Triad and Suicide-Related Behavior Among U.S. Veterans Who Served in Iraq and Afghanistan,” 384.

⁸² Selby et al., “Overcoming the Fear of Lethal Injury,” 5.

sword.” On one hand, alcohol consumed in moderation can help to break down social barriers, thus facilitating social interconnectedness and increasing belongingness; but on the other hand, if abused, it can lead to social isolation and therefore thwarted belongingness. It is a known fact that alcohol abusers often drive those closest to them away because of their reckless behavior; this has obvious implications for thwarted belongingness and the risk of suicide.⁸³ Alcohol treatment programs that include initiatives to mend these broken bonds and prove to individuals that support can be gained via social networks, as opposed to through the use of alcohol, could be powerfully effective. Thus, belongingness could play a key part in mitigating the harmful effects of alcohol abuse and its association with suicide.

In summary, alcohol abuse significantly increases the risk of suicide and is particularly dangerous when combined with PTSD and depression. Thwarted belongingness is a key feature of alcohol abuse that could be targeted as part of an effective treatment program.

Military Culture

Certain aspects of military culture have been identified as risk factors for suicide. The first of these aspects and perhaps the most important, often described as the “most significant barrier” to military personnel seeking help for psychological issues is “mental health stigma.” Although the situation is improving, many military personnel still view mental health issues as a sign of weakness; given the strong association between mental health issues and suicide, this has obvious implications for military suicide prevention. A second aspect of military culture that can be a risk factor for suicide is a “warrior ethos” that prevents military personnel from showing weakness and talking about their feelings, encouraging them to “soldier on” when they are facing difficulties. This can often lead to emotional suppression, which is known to be linked to suicide ideation and attempted suicide. A third aspect is collectivism that, although helpful for generating camaraderie and cohesion, can breed a distrust of “outsiders,” which in turn can lead to an aversion to seeking help from mental health professionals, even if their services are desperately required. These aspects of military culture can significantly impede suicide prevention efforts; countering them is key to success.⁸⁴

The concept of belongingness is linked to all of the above aspects of military culture. Indeed, it is largely the fear of thwarted belongingness that fuels mental health stigma, emotional suppression, and aversion to associating with outsiders, and links them together. Military personnel are generally afraid of mental health issues because they believe that suffering from a mental health issue will place them “outside of the group;” hence, the mental health stigma. Similarly, military personnel are generally afraid to show their emotions or talk about their feelings for fear of being ridiculed for being weak, and therefore, once again, being rejected from “the group.” Thirdly, associating with outsiders could be viewed as disloyal or suspicious by “insiders,” and therefore lead to rejection from the group and thwarted belongingness; hence, the military aversion to seeking professional help with mental health issues. Thankfully, these misperceptions are gradually being resolved, but they still exist in places and should be targeted as part of military suicide prevention efforts.⁸⁵

To summarize this section, certain aspects of military culture, namely mental health stigma, warrior ethos (leading to emotional suppression), and collectivism (leading to a distrust of outsiders), are known risk factors for suicide. They are all associated with misperceptions of thwarted belongingness, which has implications for military suicide prevention.

⁸³ Selby et al., “Overcoming the Fear of Lethal Injury.”

⁸⁴ Bryan et al., “Understanding and Preventing Military Suicide,” 97–99.

⁸⁵ Bryan et al., “Understanding and Preventing Military Suicide,” 97–98.

BELONGINGNESS AND CAMARADERIE IN THE MILITARY

Belongingness plays a key role in the military, where it can have a very positive effect. As a people-oriented, team-based organization, the Services place a high premium on belongingness, camaraderie, and cohesion, which are all cornerstones of military life. High levels of cohesion can act as a “buffer” against stress in both combat and noncombat situations, and can therefore provide military personnel with a “built-in” suicide prevention capability.⁸⁶ This is supported by the fact that the suicide rate for people undergoing basic military training is lower than that for people of an equivalent age within the general population.⁸⁷

The strong emphasis on social interconnectedness and camaraderie, and the brothers-in-arms bond that goes hand-in-hand with shared experiences of combat leads to a general sense of belongingness within military personnel that is arguably unparalleled in other walks of life; the military propensity for badges and tattoos that mark someone as being part of a particular group is testament to this unique level of identity and belongingness.⁸⁸

Belongingness Troughs

While it has its benefits, the exceptionally high sense of belongingness found in the military environment can be another double-edged sword. Because military personnel grow accustomed to extremely-high levels of belongingness, and their average, day-to-day belongingness levels are generally higher than those of their civilian counterparts, they have “further to fall” emotionally and psychologically, and therefore they fall harder when their belongingness levels drop for some reason.⁸⁹ The first part of the thesis of this paper is that these unique drops or troughs in belongingness that generally occur as a result of transitional events (e.g., return from deployment, retirement, or discharge) make military personnel highly susceptible to feelings of thwarted belongingness, which in turn can increase their vulnerability to suicide.

When we compare belongingness levels in the average military person with those of someone who works in a typical nonmilitary job, the data illustrates how belongingness levels may fluctuate in both lines of work, the extreme nature of belongingness troughs in military personnel, and the key events that could possibly lead to these troughs. Belongingness troughs represent periods of thwarted belongingness and potentially increased vulnerability to the threat of suicide.

While the average civilian may experience relatively small peaks and troughs in their day-to-day work, because of the high levels of belongingness experienced routinely by military personnel, including extreme peaks of belongingness resulting from the brothers-in-arms effect of military deployments, the average military person can experience huge drops in belongingness, which is why a sense of thwarted belongingness is so keenly felt. Belongingness troughs within servicemembers are characterized by an inability to connect with others outside of the military environment and a yearning to be back with military friends or colleagues.⁹⁰

Camaraderie as an Antidote to Thwarted Belongingness

The second part of the thesis of this paper is that military suicide prevention programs should target periods of increased vulnerability by using camaraderie as a source of belongingness to neutralize belongingness troughs. This is based on the fact that camaraderie is defined as “a

⁸⁶ Bryan et al., “Understanding and Preventing Military Suicide,” 99.

⁸⁷ Selby et al., “Overcoming the Fear of Lethal Injury,” 9.

⁸⁸ Selby et al., “Overcoming the Fear of Lethal Injury.”

⁸⁹ Harrell and Berglass, “Losing the Battle,” 2.

⁹⁰ Junger, *Tribe*, 91, 94, 96, 110.

spirit of familiarity and trust existing between friends,” which appears to be the perfect antidote to thwarted belongingness.⁹¹

Three facts combine to support this part of the thesis: first, camaraderie as a source of belongingness (or antidote to thwarted belongingness) is one of the cornerstones of military life and therefore readily available as a resource; second, thwarted belongingness is thought to be the most identifiable, malleable, and therefore treatable of the three components of the IPTS; and third, suicide can be mitigated by eliminating thwarted belongingness even if the other two IPTS components are present.⁹² All three of these facts support the suggestion that thwarted belongingness is the most important of the IPTS factors in the context of military suicide and should therefore be targeted most when it comes to military suicide prevention.

ASSESSMENT OF MILITARY SUICIDE PREVENTION PROGRAMS

U.S. Army Suicide Prevention Program

The Army’s suicide prevention program consists of a three-phase “Care Continuum” of prevention, intervention, and postvention, which is centered on increasing the emotional well-being of Army personnel.⁹³ This approach is dominated by two themes. First, Army suicide prevention efforts are based on a buddy system that encourages soldiers to look out for each other via a process called “Ask, Care, Escort” or ACE.⁹⁴ This process sees that soldiers ask after the well-being of their peers, care for them if necessary, and escort them to a source of professional help.⁹⁵ Second, the Army has recently instigated a more comprehensive approach to mental health preparedness via a multidimensional resilience program, of which suicide prevention is a branch.⁹⁶

U.S. Army suicide-prevention initiatives include awareness and training campaigns and “gatekeeper” training for the identification of those personnel at increased suicide risk; *gatekeeper* is the term used to describe someone responsible for recognizing signs of distress, confronting or caring for someone in distress, and “actively referring” them to a professional helper (i.e., following the ACE process).⁹⁷ Gatekeepers range from peers and commanders, through family members, to key figures such as chaplains.⁹⁸ The Army also attempts to address mental health stigma by locating mental health care in nontraditional settings (e.g., deployed forward within a theater of operations).⁹⁹ Limitations of the U.S. Army program and the role of belongingness will be discussed at the end of this section.

U.S. Navy Suicide Prevention Program

The Navy’s suicide prevention program consists of four elements: training, intervention, response, and reporting. These elements are underpinned by the philosophy that stress is a key risk factor for suicide that sits along a continuum. The Navy’s Stress Continuum Model uses clear and simple language to highlight “stress zones” and provide guidance on appropriate responses. The model asserts that, prior to experiencing a stressor, personnel should keep themselves ready by keeping fit, eating well, and relaxing. In the face of a stressor, the model encourages person-

⁹¹ *Collins English Dictionary, Complete and Unabridged*, 12th Edition (London: Harper Collins, 2014).

⁹² Joiner, “Why People Die by Suicide,” slide 66.

⁹³ *2020 Army Strategy for Suicide Prevention*, 9; and Ramchand et al., *The War Within*, 63.

⁹⁴ Ramchand et al., *The War Within*.

⁹⁵ Jane Gervasoni, “ACE Suicide Prevention Program Wins National Recognition,” Army.mil, 1 September 2010.

⁹⁶ Ramchand et al., *The War Within*, 63.

⁹⁷ Ramchand et al., *The War Within*, 106.

⁹⁸ Ramchand et al., *The War Within*.

⁹⁹ Ramchand et al., *The War Within*, 108.

nel to react to recover and build resilience by getting enough sleep and talking to a trusted person. The next stress zone of the continuum is the injured zone, for which the purpose is to begin healing by talking to a counselor or medical professional. The final zone of the continuum is the one in which a person becomes ill; here, the model asserts that the focus should be on getting help in the form of medical treatment. The model also reflects the fact that the responsibility for care varies across the continuum, with unit leaders responsible for the prepare zone, individuals, friends, and family members responsible for the reacting and injured zones, and caregivers taking most of the responsibility when a person becomes ill.¹⁰⁰

U.S. Navy suicide prevention initiatives include awareness and training campaigns and the use of gatekeepers for the identification of personnel at risk of suicide.¹⁰¹ Akin to the Army's ACE scheme, the Navy uses "Ask, Care, Treat" or ACT, which encourages naval personnel to enquire about their peers' well-being, care for them if required, and "treat them like a family member," ensuring they get professional help if necessary.¹⁰² The Navy also focuses on mental health stigma reduction through the "It's Okay to Speak Up when You're Down" campaign, and the provision of behavioral health care in nontraditional settings.¹⁰³ Limitations of the U.S. Navy program and the role of belongingness will be discussed at the end of this section.

U.S. Marine Corps Suicide Prevention Program

The Marine Corps' approach to suicide prevention is one of early identification and intervention, based on a sense of community and commitment to others.¹⁰⁴ Themes that play to a Marine's sense of duty are used liberally. For example, Marines are compelled not to view suicide prevention as a single activity. They are told that helping others in distress is "a duty, not an option" and "consistent with Marine Corps ethos and values," and they are directed that "peer-to-peer leadership should be encouraged."¹⁰⁵ A manifestation of this community approach is the Marine Corps' equivalent to ACE or ACT—"Recognize, Ask, Care, Escort" or RACE.¹⁰⁶ The addition of "recognize" highlights the Marine Corps' emphasis on being able to identify whether someone is in distress without having to ask them first.

U.S. Marine Corps suicide prevention initiatives include awareness and training campaigns, and the use of gatekeepers for the identification of those at risk via the RACE scheme.¹⁰⁷ Another key aspect of the Marine Corps' program is that it has a good history of training and developing behavioral healthcare providers with respect to the assessment and management of suicide risk.¹⁰⁸ The Marine Corps also has invested significant time and effort into understanding the concept of resilience, with a focus on the balance between pursuing Corps ideals of excellence and realistic judgment.¹⁰⁹ According to Frank Tortorello et al. from the Translational Research group at the Marine Corps' Center for Advanced Operational Culture Learning, "failure in this balancing act can lead to self-denigration or self-destruction," which has obvious implications

¹⁰⁰ *Commanding Officer's Suicide Prevention Program Handbook*, 5, 8; and Ramchand et al., *The War Within*, 68.

¹⁰¹ Ramchand et al., *The War Within*, 106.

¹⁰² MC Teresa J. Frith, USN, "New Navy Program Encourages to 'ACT' to Prevent Suicide," Navy.mil, 4 December 2006.

¹⁰³ *Commanding Officer's Suicide Prevention Program Handbook*, 18; and Ramchand et al., *The War Within*, 106.

¹⁰⁴ Ramchand et al., *The War Within*, 79.

¹⁰⁵ *MCO 1720.2*, 2.

¹⁰⁶ B. Niegel, "Suicide Prevention: Recognize, Ask, Care, and Escort Program," DODLive.mil, 18 September 2012.

¹⁰⁷ Ramchand et al., *The War Within*, 106.

¹⁰⁸ Ramchand et al., *The War Within*, 108.

¹⁰⁹ Frank Tortorello et al., "CAOCL-TECOM Resilience Research Project" (unpublished study, Center for Advanced Operational Culture Learning, Marine Corps University, 21 August 2013), 5.

Table 3. Elements of the U.S. Air Force suicide prevention program

1	Leadership involvement
2	Addressing prevention through professional military education
3	Guidelines for commanders: use of mental health services
4	Unit-based preventive services
5	Wingman culture
6	Investigative interview policy
7	Post-suicide response (postvention)
8	Integrated delivery system (IDS) and community action information board (CAIB)
9	Limited privilege suicide prevention program (increased confidentiality for patients at risk of suicide who are undergoing legal action)
10	Commander's consultation assessment tool
11	Suicide event tracking and analysis

Source: "The Air Force Suicide Prevention Program 11 Elements."

for suicide prevention.¹¹⁰ Limitations of the Marine Corps program and the role of belongingness will be discussed at the end of this section.

U.S. Air Force Suicide Prevention Program

The Air Force suicide prevention program is considered to be the example of best practice, having achieved impressive suicide reduction results since its inception in 1996.¹¹¹ It is centered on a leadership-driven, multifaceted, community-based approach that consists of 11 elements (table 3). The application of these elements is predicated on the fact that individuals at risk of suicide exhibit warning signs, and that "intervention at an early stage lowers risk and results in improved outcomes."¹¹² The fact that a number of nonmilitary suicide prevention programs have been modeled on the Air Force's approach is testament to its effectiveness.¹¹³

Like the other Service programs, the Air Force suicide prevention program includes awareness and training campaigns and initiatives to reduce mental health stigma.¹¹⁴ While the Air Force's "wingman culture" is akin to the buddy or gatekeeper approaches of the other Services, the Air Force's approach to identifying personnel at high risk of suicide is more one of monitoring the "aftermath of high-risk events."¹¹⁵ This relies on an investigative interview approach that sees individuals who appear to be in distress "released only to their commander, first sergeant, or supervisor."¹¹⁶ What makes the Air Force program stand apart from that of the other Services is its emphasis on sustainment via train-the-trainer packages for behavioral healthcare providers, and extensive implementation and self-monitoring.¹¹⁷ Indeed, studies of the Air Force program have shown that the sustainment of support to and ongoing monitoring of suicide prevention

¹¹⁰ Tortorello et al., "CAOCL-TECOM Resilience Research Project."

¹¹¹ Kerry L. Knox et al., "The U.S. Air Force Suicide Prevention Program: Implications for Public Health Policy," *American Journal of Public Health* 100, no. 12 (December 2010): 2457, <https://doi.org/10.2105/AJPH.2009.159871>.

¹¹² Knox et al., "The U.S. Air Force Suicide Prevention Program," 2457.

¹¹³ Ramchand et al., *The War Within*, 74.

¹¹⁴ Ramchand et al., *The War Within*, 106.

¹¹⁵ Ramchand et al., *The War Within*, 107.

¹¹⁶ Ramchand et al., *The War Within*.

¹¹⁷ Ramchand et al., *The War Within*, 108; and Knox et al., "The U.S. Air Force Suicide Prevention Program," 2457.

initiatives is fundamental to its success; “reductions in suicide rates cannot be simply maintained by virtue of a program’s inherent momentum.”¹¹⁸ Limitations of the U.S. Air Force program and the role of belongingness will be discussed at the end of this section.

Military Suicide Prevention Programs and the Role of Belongingness

All of the aforementioned Service suicide prevention programs allude to the importance of belongingness as a protective factor against suicide, but some place more emphasis on it than others. For example, while the Navy’s *Commanding Officer’s Suicide Prevention Handbook* specifically lists “a strong sense of community and belonging” and “strong connections with family and friends” as protective factors against suicide, the other three Services only mention this implicitly via their buddy, peer-to-peer, and wingman initiatives.¹¹⁹ None of the programs really hammer home the power of belongingness as a protective factor, nor do they explain the destructive nature of thwarted belongingness. Given the aforementioned empirical evidence for strong interrelationships between belongingness, thwarted belongingness, and suicide risk factors, and the hypothesized phenomenon of belongingness troughs, this appears to be a significant omission. To reiterate one of the thrusts of this paper, thwarted belongingness is the most important factor relating to military suicide, principally because military personnel are more susceptible to it than their civilian counterparts. Targeting it should therefore be at the forefront of military suicide prevention.

The emphasis placed on key transitional events (e.g., return from deployment, permanent change of station [PCS], medical discharge, and retirement) as causes of thwarted belongingness, and therefore potential vulnerability to suicide, varies between the four programs examined. For example, while the Navy specifically urges its commanding officers to be more vigilant when their sailors experience “career or personal transitions” and the Marine Corps has directed that personnel are to remain in their unit for a minimum of 90 days following a deployment to maintain their social support networks, the Army has been criticized for allowing its people to PCS too soon after a deployment and the Air Force program does not appear to highlight likely periods of increased vulnerability to suicide at all.¹²⁰ Additionally, none of the programs talk in detail about the transition from military to civilian life, which is a known period of increased vulnerability. The danger of this is that potentially vulnerable people “fall between the cracks” of military and veteran institutions as they transition from one to the other, particularly in light of the fact that mental healthcare programs do not always transcend state boundaries.¹²¹ To reiterate the secondary thrust of this paper, military suicide prevention programs should target periods of increased vulnerability by using camaraderie as a source of belongingness to neutralize belongingness troughs.

CONCLUSIONS

While current military suicide prevention programs generally allude to the importance of belongingness or thwarted belongingness and the existence of periods of increased vulnerability, they do not sufficiently emphasize the gravity of these concepts and how they interrelate. Military suicide prevention programs have come a long way in the last decade and a significant amount of time and effort has gone into understanding and combating the issue of military suicide; however, a more nuanced approach that is tailored to the unique needs of the mil-

¹¹⁸ Knox et al., “The U.S. Air Force Suicide Prevention Program,” 2463.

¹¹⁹ *Commanding Officer’s Suicide Prevention Program Handbook*, 18.

¹²⁰ *Commanding Officer’s Suicide Prevention Program Handbook*, 6; and Harrell and Berglass, “Losing the Battle,” 4.

¹²¹ Harrell and Berglass, “Losing the Battle.”

itary community is now required. The key themes of this paper are summarized as follows:

1. Because they are accustomed to uniquely high levels of belongingness that result in extreme drops or troughs following significant transitional events, military personnel are highly susceptible to feelings of thwarted belongingness, which can increase their vulnerability to suicide.
2. Camaraderie as a source of belongingness is the perfect antidote to thwarted belongingness; it should be used to neutralize belongingness troughs.
3. Thwarted belongingness is the most identifiable, malleable, and therefore treatable of the three components of IPTS.
4. Suicide risk can be mitigated by eliminating thwarted belongingness, even if the other two IPTS components are present.
5. Thwarted belongingness is the most important factor relating to military suicide and should therefore be targeted most when it comes to military suicide prevention.

Recommendations for U.S. Military Suicide Prevention

Based on the above themes, the overarching recommendation for U.S. military suicide prevention is that programs should target belongingness troughs and their associated periods of increased vulnerability by using camaraderie to generate belongingness where it does not already exist, maintain it where it does, and maximize it where it is being maintained.

A recommended way of generating belongingness where it does not already exist is enhancing the buddy system (or other Service equivalents) to ensure that it includes periods when personnel are away from the military environment. The buddy system as it stands is effective while military personnel are together and able to look out for each other, but its effectiveness drops as soon as people step outside the protective “bubble” of the military. This applies to periods of extended leave, being away from one’s parent unit through illness or injury, or, and perhaps most importantly, when military personnel transition out of the military and into the civilian world. Everyone, particularly veterans, should be assigned a buddy and part of their duty should be to maintain a strong personal connection with that individual. Clearly, not everyone would get along, which would have to be considered on a case-by-case basis, but this approach would deliver the dual benefit of providing everyone with someone to watch over them, and the sense of duty and purpose that goes hand in hand with being responsible for the well-being of another person.

In addition to in-depth education and training on the concepts of belongingness and thwarted belongingness, and their respective protective and destructive powers, buddies should also be made aware of the key transitional events that are likely to generate belongingness troughs and therefore periods of increased vulnerability. There is still much to learn on the psychological impact of these transitional events (particularly the transition from military to civilian life), but everyone should be educated as to the importance of being particularly attentive to their buddy during such periods of transition.¹²²

Commanders, managers, supervisors, and mental healthcare providers also should be directed to reach out to their subordinates or patients on a regular basis, particularly when they are away from the military environment. Simple gestures like text messages, particularly during periods of vulnerability, can greatly assist in preventing someone experiencing a sense of thwarted belongingness; studies have shown that “even the smallest amount of contact can reduce the risk

¹²² James L. Pease, Melodi Billera, and Georgia Gerard, “Military Culture and the Transition to Civilian Life: Suicide Risk and Other Considerations,” *Social Work* 61, no. 1 (January 2016): 84, <https://doi.org/10.1093/sw/swv050>.

of suicide.”¹²³ To maximize the protective effect of this “reaching out,” civilian support providers should be taught about the idiosyncrasies of military culture to assist them with building a rapport with both active duty and former military personnel.¹²⁴ Additionally, particular care and attention should be given to those individuals who have attempted suicide in the past or those who are struggling with suicide ideation, PTSD, depression, and alcohol abuse.

Once a sense of belongingness has been established, the next step is to work hard to maintain it. As already alluded to, the momentum of a suicide prevention initiative alone is not sufficient for its sustainment, and the same goes for belongingness; belongingness-generating activities must be maintained to keep their protective effects at sufficient levels. A recommended way of achieving this is through organized social events, which can be easier said than done and getting buy-in from others is sometimes difficult. However, if the first stage of establishing belongingness has been done well, people will have a natural desire to come together and there is anecdotal evidence to suggest that, particularly in the veteran community, people are often desperate to connect with other servicemembers or veterans.¹²⁵ Linking back to the enhanced buddy approach, buddies should be responsible for encouraging each other to attend these social events, having been well educated about the positive, protective effects they can generate. Financial cost (e.g., travel expenses) may be an issue for some; wherever possible, funds should be made available to enable people to attend these functions.

Social media is an excellent way of maintaining social connectedness when people are unable to physically be together for some reason. While due diligence must be paid to the security risks associated with the military’s use of social media, it should be leveraged as a virtual camaraderie tool for generating belongingness whenever face-to-face interaction is not possible. There is anecdotal evidence to suggest that, for some veterans, social media is the only way in which they are able to stay in touch with their military friends; indeed, for some of them, connecting with their former colleagues in this way is the “closest thing they have to a community.”¹²⁶

Once a high level of belongingness has been established and maintained, the next objective of a comprehensive suicide program should be to enhance or maximize that level of belongingness. One way to do this might be to encourage healthy competition or rivalry between established social groups. In the military environment, this could mean intergroup competitions or tournaments (e.g., between platoons in the Army), and in the veteran context, it could mean the same thing but between different branches or divisions of the various veteran institutions that exist. As already alluded to, an effective yet simple way of increasing a person’s sense of belongingness is via symbols, such as badges or mottos. In the military context, these are likely to be present already, but they might not be as common in the veteran environment. The combination of strong symbolism with healthy rivalry between groups can increase belongingness to a high level, which in turn could have a protective effect against suicide risk.

Getting an individual’s personal community involved in efforts to protect them from suicide, maximizing the degree to which they feel that they belong can be very effective. Leveraging support from multiple levels of society via awareness campaigns and establishing a strong community network is known to reduce suicide rates.¹²⁷ Similarly, there is strong evidence to suggest that involving other military personnel or veterans in an individual’s suicide prevention plan, particularly those who are already friends with the individual at risk, can pay dividends. Accord-

¹²³ Harrell and Berglass, “Losing the Battle,” 8.

¹²⁴ Pease, Billera, and Gerard, “Military Culture and the Transition to Civilian Life,” 84.

¹²⁵ Saslow, “Ugh. I Miss It,” 4.

¹²⁶ Saslow, “Ugh. I Miss It,” 5.

¹²⁷ Zamorski, “Suicide Prevention in Military Organizations,” 177.

ing to Hinojosa and Hinojosa, “military friendships may be important during post-deployment reintegration and may be an important clinical resource for helping veterans transition into civilian society.”¹²⁸ This again illustrates the importance of maximizing belongingness.

If taken at face value, none of the methods suggested above appear to be particularly groundbreaking. However, the critical message is that a focus on maximizing belongingness and minimizing thwarted belongingness must be paramount for all military suicide prevention programs. The protective effects of belongingness and the destructive effects of thwarted belongingness must be emphasized as part of all suicide awareness, training, and education initiatives; their power should not be underestimated. Understanding the emotional and psychological effects of transitional events, such as returning home from deployment, PCS, medical discharge, and retirement, is also crucial. Targeting these periods of increased vulnerability using camaraderie as a source of belongingness is key to success.

Suggested Areas for Further Research

It appears that suicide rates within the general U.S. population during and after previous periods of conflict (e.g., World War I and II) are relatively well known, but statistics surrounding the rates within the military population do not seem to be available. These statistics would reveal whether we are facing a normal phenomenon in the post Iraq and Afghanistan era or an unprecedented epidemic.

A study into the role of public support may also reveal useful and interesting results. Because they were unpopular conflicts, did the wars in Vietnam, Iraq, and Afghanistan generate more victims of suicide due to reduced social connectedness between military and civilian personnel causing thwarted belongingness in military personnel? In other words, were the suicide rates comparatively low among World War I and II veterans because they were “worshipped” for protecting their country, which meant that they were less likely to experience belongingness issues?

Finally, on the subject of hero worship, the general public tends to put military personnel on a pedestal and expect a great deal from them. While this can have a positive effect (e.g., increasing pride in service, sense of duty, and belongingness), does it also set them up for failure when they leave the military environment, thus making them even more susceptible to feelings of thwarted belongingness and possibly suicide?

¹²⁸ Hinojosa and Hinojosa, “Using Military Friendships to Optimize Postdeployment Reintegration for Male Operation Iraqi Freedom/Operation Enduring Freedom Veterans,” 8.

Irregular Warfare in Homeland Defense Do the Small States Need Special Operations Forces Reserve?

by Major Attila Krezinger, Hungarian Defence Forces¹

“Competent SOF cannot be created after emergencies occur.”²

In recent years, the world has witnessed the reemergence of an aggressive Russia, one that never really accepted that she lost her influence on the former Soviet Union’s territory and satellite states when the Soviet Union collapsed. The Soviet Union’s most important defense strategy was to keep the West far from her border, which failed in 2004 when the Baltic states became NATO members and brought the Atlantic Alliance to Russia’s doorsteps.³ Russia started to worry that more former Soviet Union countries would choose closer ties to the West and NATO instead of staying under the influence of Russia. This fear seemed to materialize when Ukraine started the process of joining the European Union (EU) and NATO. In the long run, it led to Russian aggression against Ukraine in 2014. Long before the Ukrainian conflict, however, Russia had already started its campaign against the pro-Western former Soviet states. These countries, such as Latvia, Lithuania, and Estonia, have been feeling continuous pressure, especially from Russia’s aggressive information operations campaigns, economic maneuvers, and cyberattacks. The critical role of these elements is best described in the 2010 Russian military doctrine, which emphasizes the importance of the information operations prior to any military actions “in order to achieve political objectives without the utilization of military force.”⁴ Russia used this method against Ukraine as well. In 2014, Russia used hybrid warfare tactics in eastern Ukraine, causing confusion and conflict; meanwhile, Russia was able to annex Crimea in a short period of time without fighting a war.⁵ This method that Russia employed in Ukraine was not new, as it is deeply rooted in old Soviet doctrine. According to James Q. Roberts, “The original Soviet Red Army doctrine was intended for employment on conventional battlefields. The purpose of Maskirovka 2.0 is a bit different in that it is being used to achieve peacetime illegal political and geographic gains while staying below the threshold that would trigger any direct military

¹ Maj Krezinger is a graduate of MCU’s Command and Staff College. This paper won the Brig A. W. Hammett Award for academic year 2015–16.

² *2016 Fact Book: United States Special Operations Command* (MacDill AFB, FL: U.S. Special Operations Command, 2016), 56.

³ While most consider this alliance the long-standing military partnership between the United States and Europe (i.e., NATO), for Europeans, it points more toward the European Union.

⁴ *The Military Doctrine of the Russian Federation* (Moscow: President of the Russian Federation, 2010), 29.

⁵ Jan Joel Andersson, *Hybrid Operations: Lessons from the Past* (Paris: European Union Institute for Security Studies, 2015), 1.

response from the West.”⁶ Russia used Maskirovka 2.0 effectively against Ukraine in 2014 and brought the rest of the world’s attention to the new threat of hybrid warfare. In addition, another security concern has arisen recently — ISIS. The terrorist group’s rapid expansion and success in the Middle East has reenergized the European countries thinking about their territorial security and homeland defense as well.

In the same year as the Ukrainian conflict, ISIS’s success in Iraq and Syria triggered major migration flows to Europe. Hundreds of thousands of refugees arrived in Eastern European countries seeking asylum in the richer Western European countries. These countries were not prepared to control so large a number of refugees on the borders and, as a result, the entry of refugees to the West was uncontrolled for a while. ISIS used and is still using the refugee flow to infiltrate more terrorists into Europe.⁷ It has already conducted and will plan and carry out terrorist attacks later in Europe using the infiltrated terrorists.⁸ Europe also fears that the westerners fighting alongside ISIS in the Middle East who are now arriving back to their home countries will plan and conduct terrorist attacks. To keep the West fearful, ISIS has been using information operations continuously; and to demonstrate its strength, ISIS executed coordinated terrorist attacks on European soil in 2015.

It has become obvious that the European countries have to worry about both Russia’s “New Generation Warfare”—hybrid warfare—and the ISIS terrorist threat. NATO and the EU, as the most important international organizations with many European members, are working on concepts and plans to counter the hybrid threats and are eager to find the solution against the ISIS advance and its terrorist attacks. Since 2003, NATO and EU member states have mainly focused on Afghanistan and Iraq; however, the current threats show that it is time now to switch their attention back to their homeland defense. Although Russia’s hybrid warfare against Ukraine lacked a defined armed attack, Russia was and will be prepared for a full-scale military occupation, if necessary. The possibility of fighting against terrorist groups in their homeland also creates new challenges for the European countries’ defense systems. These challenges are especially difficult for small countries with limited financial, law enforcement, and military capabilities. They have to find a way to prepare and fight against both hybrid warfare and terrorist attacks on their own. Facing these new threats requires more than just weapons and forces, but military capabilities will remain crucial parts of the small nations’ response. One of the most important military tools is Special Operations Forces (SOF). These specialized units are highly trained both in irregular warfare, one of the most important elements of the Russian hybrid warfare strategy and in counter terrorism operations. Special Operations Forces understand how to conduct irregular warfare, which is most important in fighting against irregular forces in the early phase or against large occupying forces in the latter phase of a hybrid conflict. Since most of the small Eastern European countries started building their SOF capability only 10–15 years ago, the size of the available professional forces is very small, in most cases approximately a battalion-size element. Because of the importance of these forces in the modern conflict environment, it is crucial to further develop their capabilities and better integrate them into national defense plans. One way to do that is to develop and utilize Special Operations Forces reserves as a national irregular force to fight against the hybrid threat, a larger occupying power, and potentially terrorism.

⁶ James Q. Roberts, *Maskirovka 2.0: Hybrid Threat, Hybrid Response* (Tampa, FL: Joint Special Operations University Press, 2015), 2.

⁷ *Syrian Refugee Flows: Security Risks and Counterterrorism Challenges* (Washington, DC: Homeland Security Committee, 2015), 2.

⁸ Guillaume Lasconjarias and Jeffrey A. Larsen, eds., *NATO’s Response to Hybrid Threats*, Forum Paper 24 (Rome: NATO Defense College, 2015), 288.

DEFINITIONS

To establish a framework, it is necessary to understand the basic definitions that will be used through this paper. It is necessary to discuss the Special Operations Forces' tasks and the definition of irregular warfare. There are multiple diverse definitions for the same terms in different U.S. Services' and NATO's doctrines. There are some terms that are not defined in NATO doctrine, and there are several differences between U.S. and NATO doctrines. For example, the principal tasks of the Special Operations Forces are different for NATO and for the United States. According to the NATO's *Allied Joint Doctrine for Special Operations* (AJP-3.5), military assistance, direct action, and special reconnaissance are the principal tasks for the special operations forces. The U.S. Joint publication for *Special Operations* (JP 3-05) states that "direct action, special reconnaissance, countering weapons of mass destruction, counterterrorism, unconventional warfare (UW), foreign internal defense, security force assistance, hostage rescue and recovery, counterinsurgency, foreign humanitarian assistance, military information support operations, and civil affairs operations as the core tasks for the Special Operations Forces."⁹ The United States' JP-1, the *Doctrine for the Armed Forces of the United States*, defines *irregular warfare* (IW) as a "violent struggle among state and non-state actors for legitimacy and influence over the relevant population(s). The strategic point of IW is to gain or maintain control or influence over, and the support of, a relevant population."¹⁰ NATO doctrine does not define *unconventional warfare*, and the term *irregular activity* is used only in reference to the adversary's activity.¹¹ Although NATO countries ratify NATO doctrine, they still have the freedom to develop their own doctrine and own way to employ their forces. Since most of the European countries' Special Operations Forces were trained by U.S. Special Operations Forces, they understand and use the American terms, definitions, and core tasks in their doctrines. For example, one of the principal tasks of the Hungarian and the Estonian Special Operations Forces is to conduct unconventional warfare in combination with the NATO SOF principal tasks.

For this discussion, the U.S. Joint publications' terms, definitions, and SOF core tasks will be used with two exceptions: the definition of hybrid warfare and counterunconventional warfare. Neither hybrid warfare nor counterunconventional warfare are defined in the U.S. Joint publications or in NATO doctrine. Hybrid and counterunconventional warfare are relatively new terms. The United States Army Special Operations Command's *Counter-Unconventional Warfare White Paper* states that "the counter-unconventional warfare is a strategy encompassing a whole-of-government approach to synchronize the pillars of irregular warfare to integrate joint, interagency, intergovernmental, and multinational partner efforts against adversary unconventional warfare activities."¹² For hybrid warfare, *The Military Balance 2015*'s definition will be used, which describes the hybrid warfare as "sophisticated campaigns that combine low-level conventional and special operations; offensive cyber and space actions; and psychological operations that use social and traditional media to influence popular perception and international opinion."¹³

CASE STUDIES

In order to examine the utility of the development and employment of Special Operations Forc-

⁹ *Special Operations*, JP 3-05 (Washington, DC: JCS, 2014), X.

¹⁰ *Doctrine for the Armed Forces of the United States*, JP-1 (Washington, DC: JCS, 2013), I-6.

¹¹ *Allied Joint Doctrine for Counterinsurgency*, AJP-3.4.4 (Brussels, Belgium: NATO, 2011).

¹² *Counter-Unconventional Warfare: White Paper* (Fort Bragg, NC: U.S. Army Special Operations Command, 2014), 40.

¹³ "Editor's Introduction: Complex Crises Call for Adaptable and Durable Capabilities," *Military Balance*, 11 February 2015, 8.

es reserves as a national irregular force in small nations, this paper will present two case studies. The first case study will demonstrate how the irregular warfare methods played an important role in defending Yugoslavia and how a relatively small irregular force could exhaust the will of a more powerful occupying force. The second case study will describe the characteristics of Russia's New Generation Warfare—hybrid warfare—and how Russia used irregular warfare methods to reach her goal.

Tito's Partisan Operations in Yugoslavia

Throughout its history, the Balkans were occupied for centuries by its neighbor countries and other empires, such as the Romans and the Turks. Since the occupying powers always left troops to control the population, the Balkan people's only chance to resist against the occupying forces was to use irregular warfare methods. The mountainous terrain gave an advantage to conduct guerrilla operations and also made difficult the counter operations for the regular forces.

Yugoslavia was established right after World War I from the states of Slovenes, Croats, and Serbs. It was a relatively young nation full of ethnic and national differences when the Axis powers occupied it on 6 April 1941. Yugoslavia was strategically important for Germany because it provided raw materials for the German war machine and, most important, it served as the major lines of communication between Germany, the Middle East, and North Africa. After the Axis powers defeated the Yugoslavian Army, resistance movements became organized. One of the resistance movements was a Communist partisan group led by Josip Broz (a.k.a. Tito). At the beginning of the war, Tito's fighters' operations were limited, mostly due to the lack of the weapons and equipment. They conducted small-scale sabotage operations against the occupation forces and against the native security forces, mostly to harass the troops. At the end of 1941, Tito had about 15,000 fighters, mostly still without weapons. Most of the partisans' weapons and ammunition were obtained from attacks on Serbian police posts and German convoys. Tito's forces obtained food from local supporters and from attacks on local villages friendly to the occupation forces. Unfortunately, the partisans not only fought against the occupiers, but also against other resistance movements, predominantly because of the different ethnicity and political goals. The main opposition was between Tito's partisans and Serbian Colonel Dragoljub Mihailovic's Chetniks. In the early phase of the war, the Chetniks benefitted from British support, meanwhile Tito's forces had to face the lack of any the external support. Mihailovic's belief in "live and let live" later led the Chetniks to provide information to the Germans about the partisan forces and the shift of the British external support to Tito's partisans.¹⁴ The reason behind his belief and actions was that Mihailovic realized the fight against the Axis powers caused more suffering for the Serb population, meanwhile the anti-Axis operations did not bring the desired effect. Mihailovic was also afraid that after the war the Communist partisans would take over Yugoslavia, leaving the Serbs in the minority. To weaken Tito's strength, Mihailovic provided information to the Nazis about Tito's forces.

The continuous harassment and the success of the partisan operations made the Germans take the threat seriously and launched counteroperations against Tito's partisan forces. The initial small-scale operation against the partisans was ineffective. Burning the homes of the suspected supporters and executing the partisan hostages led the local population to provide more recruits and support to the partisans. The demolition of bridges, railroads, and roads, cutting telegraph and phone wires, and the continuous attack on German convoys in 1941 seriously affected the German's raw material supply and supply routes. The annihilation of mining areas

¹⁴ John Arquilla, *Insurgents, Raiders and Bandits: How Masters of Irregular Warfare Have Shaped Our World* (Lanham, MD: Ivan R. Dee, 2011), 207.

around Bor caused the loss of almost a month's supply of copper for the German war machine.¹⁵ Since keeping the resupply routes open and raw materials flown was critical for the German war industry, the Axis powers had to pull out forces from other fronts and deploy them to Yugoslavia to protect the lines of communication and the industrial facilities. Responding to the partisan threat, Germany sent more than 100,000 troops to hunt down the partisans in 1942, whose numbers doubled in 1943. Germany tried different methods to defeat the partisans besides the conventional encirclement operations. In 1943, Germans set up a network of strongpoints and employed units to sweep the area around the strongpoint. These units also served as a quick reaction force for the strongpoints. These small, heavily armed forts were placed at important railroad and road junctions, tunnels, bridges, and also at industrial installations that were potential partisan targets.¹⁶ Since the strongpoint system did not bring the desired result, the Germans also deployed the *Jagdkommando* (hunter force), which was designed to search for and destroy the partisan forces.¹⁷ When the operation required, the *Jagdkommando* dressed in civilian clothes and used local collaborators who could speak the native language to help mask their identity. Although the relatively small *Jagdkommando* was successful in small-scale operations, it did not have a major impact on Tito's operations, whose force's strength was now more than 150,000 fighters. The last German operation against Tito was launched in May 1944. In Operation *Rösselsprung* (Knight's Gambit), Germany dropped battalion-size elite units on Tito's headquarters at Dvar, Yugoslavia.¹⁸ Although approximately 6,000 partisans were killed and Tito's headquarters was captured in this operation, Allied air support to the partisans forced the Germans to withdraw. By late 1944, Tito reorganized his forces from the downfall and started receiving British support. Tito's partisans, with the British support, pushed the Germans to the north, and on 30 October 1945, with the assistance of the Soviet Red Army, the partisans liberated Belgrade, Serbia.

Although the Axis powers quickly defeated the Yugoslav Army in 1941 and had all the advantages of the numerical, technical, and air superiority, they were not able to find an effective solution to defeating Tito's irregular partisan forces. The partisans' chance to win against a large occupying force were very little, but they succeeded. The key aspects of that success were the preexisting organizational framework, disposition of the partisan force, popular support, and the effectively used irregular tactics.¹⁹

What facilitated the quick buildup of the network and the start of the effective operation of Tito's irregular resistance movement was the preexisting organizational framework.²⁰ In 1937, Tito became the leader of the Communist Party of Yugoslavia. He continued building the party's secret cells until the Germans occupied Yugoslavia. By that time, the Communist Party had widespread membership all over the country. As John Arquilla stated, the party's network was "highly useful during the years of resistance to the Nazis."²¹

One of the most important key aspects of Tito's success was, as Walter Laqueur described, that "Tito had realized that the strength of the partisan movement lay in its dispersal."²² The partisans' dispersal was one of the main reasons that the German operation did not have much effect

¹⁵ *German Antiguerrilla Operations in the Balkans, 1941–1944*, CMH Pub 104-18 (Fort McNair, DC: Center of Military History, 1954), 23.

¹⁶ *German Antiguerrilla Operations in the Balkans*, 47.

¹⁷ *German Antiguerrilla Operations in the Balkans*, 48.

¹⁸ *German Antiguerrilla Operations in the Balkans*, 65.

¹⁹ Sandor Fabian, *Irregular Warfare: The Future Military Strategy for Small States* (North Charleston, SC: CreateSpace, 2015), 223.

²⁰ Fabian, *Irregular Warfare*, 223.

²¹ Arquilla, *Insurgents, Raiders and Bandits*, 205.

²² Walter Laqueur, *Guerrilla: A Historical and Critical Study* (Boston, MA: Little Brown, 1976), 217.

on Tito's forces. Although there were multiple attempts to encircle and hunt down the partisans, the Nazis were not able to cause vast effect because they could only defeat a small part of the partisan forces. The dispersal also provided the possibility for the cross-country recruitment, as well as wide-ranging knowledge and situational awareness about the enemy and environment.

In addition to the elements described above, popular support was vital as well. The food and supplies that the population provided were key for the partisans, especially at the beginning of the war, when Tito's forces did not have British support. The population provided not only the basic needs for the partisans, but also the most important asset for the irregular operations: intelligence. As Alexander Ratcliffe described, "the backbone of all partisan activities was the intelligence services."²³ Reliable real-time information was key for planning and executing the irregular operations.

The main purpose of Tito's irregular tactics, such as sabotages, raids, and ambushes, was to paralyze the Axis powers' operations by disrupting its supply, harassing its troops, and causing as much harm to them as possible. Tito mostly employed his units in small formations, no larger than company- or battalion-size, to remain flexible and less detectable. The basic partisan rule was to attack at night or in the last hour of daylight so in case of any mission failure they could escape.²⁴ The carefully selected targets were observed and reported by the local populace, mitigating the risk of detection.

Using irregular warfare tactics, Tito's partisan forces were able to effectively resist and later push out of the country the much larger number of Nazi troops. Although most of the time irregular forces are not able to defeat a larger conventional enemy on their own, they are capable of causing serious damage, imposing their will, and influencing enemy operations. Tito's success was one of the historical examples where the irregular forces defeated a much larger enemy without major external support.

Russia's New Generation Warfare—Hybrid Warfare

The origin of Russia's New Generation Warfare dates back to the 1920s, when the Soviet military developed *maskirovka* (deception warfare). *Maskirovka*'s main purpose was to prevent the enemy from discovering Soviet intentions by misleading them about the goal, purpose, and timing of an operation. The Soviet Union used *maskirovka* many times during the Cold War. James H. Hansen described "the Soviets practiced extensive *maskirovka* during the Cuban missile crisis in 1962 and also before their move into Czechoslovakia in 1968."²⁵ The new *maskirovka*, as Roberts G. James defined *maskirovka 2.0*, is designed to permit Russia to reestablish (by force when necessary) its sphere of influence in the near abroad.²⁶ Russian military thinkers refer to hybrid warfare as the New Generation Warfare.²⁷

In 2013, General Valery Gerasimov, chief of the Armed Forces of the Russian Federation, described the changes in the character of armed conflicts. According to Gerasimov, the New Generation War uses advanced technologies and employs multiple actors with a combination of conventional and unconventional methods. New Generation Warfare, instead of concentrating on an open-armed conflict, will use the political, diplomatic, and economic means, combined

²³ Alexander Ratcliffe, *Partisan Warfare: A Treatise Based on Combat Experience in the Balkans* (Munich: Historical Division Headquarters, U.S. Army, Europe, 1953), 13.

²⁴ Ratcliffe, *Partisan Warfare*, 19.

²⁵ Sharad S. Chauhan, *Inside CIA: Lessons in Intelligence* (New Delhi: APH Publishing, 2004), 230.

²⁶ Roberts, *Maskirovka 2.0*, 2.

²⁷ S. G. Chekinov and S. S. Bogdanov, "The Nature and Content of a New-Generation War," *Military Thought, A Russian Journal of Military Theory and Strategy*, no. 4 (2013): 12.

Table 4. Phases of Russia's New Generation War

No Open Armed Conflict	Open Armed Conflict
<p>First Phase: nonmilitary asymmetric warfare that includes information, moral, psychological, ideological, diplomatic, and economic measures as part of a plan to establish a favorable political, economic, and military set-up.</p> <p>Second Phase: special operations to mislead political and military leaders by coordinated measures carried out by diplomatic channels, media, and top government and military agencies by leaking false data, orders, directives, and instructions.</p> <p>Third Phase: intimidation, deceiving, and bribing government and military officers, with the objective of making them abandon their service duties.</p> <p>Fourth Phase: destabilizing propaganda to increase discontent among the population, boosted by the arrival of Russian bands of militants, escalating subversion.</p> <p>Fifth Phase: establishment of no-fly zones over the country to be attacked, imposition of blockades, and extensive use of private military companies in close cooperation with armed opposition units.</p>	<p>Sixth Phase: commencement of military action, immediately preceded by large-scale reconnaissance and subversive missions. All types, forms, methods, and forces, including special operations forces, space, radio, radio engineering, electronic, diplomatic, and secret service intelligence, and industrial espionage.</p> <p>Seventh Phase: combination of targeted information operation, electronic warfare operation, aerospace operation, continuous air force harassment, combined with the use of high precision weapons launched from various platforms, such as long-range artillery, and weapons based on new physical principles, including microwaves, radiation, nonlethal biological weapons.</p> <p>Eighth Phase: roll over the remaining points of resistance and destroy surviving enemy units by special operations conducted by reconnaissance units to spot which enemy units have survived and transmit their coordinates to the attacker's missile and artillery units; fire barrages to annihilate the defender's resisting army units by effective advanced weapons; airdrop operations to surround points of resistance; and territory mopping-up operations by ground troops.</p>

Source: Janis Berzins, "Russia's New Generation Warfare in Ukraine: Implications for Latvian Defense Policy," *Journal of Military Operations* 2, no. 4 (2014): 4.

with other methods of warfare, such as cyber, information, and psychological. Gerasimov also emphasized the significance of the clandestine employment of the paramilitary, insurgent, and SOF in the New Generation Warfare. In the same year, two Russian military scholars, Sergei G. Chekinov and Sergei Bogdanov, explained Gerasimov's proposal in a more detailed study. Janis Berzins outlined their concepts for New Generation War into eight phases (table 4).

The new warfare's main battlefields are the minds. Its main objective is to cause fear and confusion in the enemy's military and civil population through the basic layout of the warfare (e.g., economic pressure, political instability) and by reinforcing it with an effective psychological and information campaign. In every situation, the operation's objectives and end state are different. Russia reached its political objective in Ukraine without launching an open offensive

attack and employing higher phases of New Generation Warfare. The phases are not carved in stone, and the composition of the phases or their sequence could change; some of them could go simultaneously. Russia will not attempt to employ phase six or above to stay below the threshold that would trigger any direct military response from the West.

Some methods that Russia used against Ukraine had been already used against other countries in the 1990s, such as Moldova in 1989–92, Georgia in 1989–93, and Lithuania in 1990–91. Russia learned a lot from these previous operations and, as Victor Morris stated, “Russia is further developing its nonlinear war practices by pursuing a Master’s Degree in Ukraine.”²⁸ Russia in each case employed economic pressure and sanctions, political destabilization, information warfare, and cyberattacks. A Stratfor report described the pattern used against these countries, which “broadly consist[ed] of three categories: the organization of ethnic Russian or pro-Russian social and political groups and movements; the deployment or support of informal or unofficial security forces in key areas; and finally the launching of formal military operations.”²⁹

At the beginning of the operation, Russia’s shaping actions concentrated on exploiting her economical influence; using information and cyber warfare; strengthening and supporting separatist, antigovernment movements and government officials; fueling religious and ethnic tension among the population; and establishing contacts with and mobilizing organized crime groups to put pressure on the targeted country. Russia also issued passports to ethnic Russians to be able to claim later on that the government was intervening in the defense of her citizens.

When the shaping occurred and Russia prepositioned its forces under the cover of a military exercise, unmarked SOF units appeared in the country. In 1991 in Lithuania, Russia used SOF soldiers dressed in civilian clothes during a demonstration against the government to generate the occupation of the parliament. In 2014 in Crimea, Russia employed unmarked SOF troops, or “little green men” or “polite people.”³⁰ The unmarked soldiers were equipped with Russian weapons. They blocked the military and police barracks and occupied key government buildings to prevent Ukrainian counteractions. At the same time, organized demonstrations arose all over the country. Some of the protesters were armed and showed signs of military skills. Later, the protesters took over public administration and media buildings that were key for taking the federal government. The protesters and “polite people” also claimed during the whole operation that they were locals who were not satisfied with the central government of Kiev. Russia officially denied that Russian troops took part in the events.

During the operation, the nonmilitary means and the Special Forces’ unconventional activities dominated, but the conventional military also had a key role. The earlier prepositioned conventional forces on the borders were posing the threat of a massive conventional attack. As this paper already stated, Russia’s goal was to reach its end state without using open armed conflict, but was prepared and willing to use if necessary. The concentrated and continuous information campaign was key to reinforce the fear and confusion and to lower the morale and will of the security forces and the civilian population to resist.

The Russian Special Forces’ unconventional mission in Crimea was complex. First, they sealed off police and military bases and cut the lines of communication. Their strict rules of engagement and their skill in handling the population were critical to avoiding the escalation of resistance and armed conflict with Ukrainian security forces. Second, they instigated, took part

²⁸ Victor R. Morris, “Grading Gerasimov: Evaluating Russian Nonlinear War through Modern Chinese Doctrine,” *Small Wars Journal* (September 2015): 2.

²⁹ “Putting Russia’s Crimean Intervention in Context,” *Stratfor*, 12 April 2014.

³⁰ The term *little green men* refers to the color of the uniform of the unmarked soldiers during the operation in Crimea. Roger McDermott, “Myth and Reality—A Net Assessment of Russia’s ‘Hybrid Warfare’ Strategy since the Start of 2014 (Part Two),” *Eurasia Daily Monitor* 11, no. 185 (2014).

in, and controlled the demonstrators to occupy key governmental, administrative, and media buildings key to taking control of the local government.

Without a doubt, the deployment of the Russian Special Forces was as important in the operation as was the employment of the “soft power” or the conventional forces. The lessons learned, beside the tactics, techniques, and procedures, are that Russia transformed her “door-kicking” Special Forces to thinking, highly disciplined unconventional warfare-capable forces.³¹ As retired Russian Army General Makhmut A. Gareev noted, “the lessons learned highlights the use of smaller elite rapid reaction forces as part of a wider campaign to achieve strategic objectives.”³²

In 2014, Russia’s successful annexation of Crimea and the operation in Eastern Ukraine demonstrated that a country could reach its ultimate goal without launching an open, armed attack. Most of NATO’s Eastern European members’ national defense strategy relies on the belief that the NATO will defend them and guarantee their sovereignty in case of an armed attack. However, because NATO’s Article 5 states that the collective defense will only occur when one or more of the NATO members are under armed attack, the characteristics of Russia’s New Generation Warfare, as described above, may prevent any intervention from the Atlantic Alliance. These small countries must prepare to develop capabilities, countermeasures, and a more self-sufficient national defense strategy to defend themselves without NATO’s help. As a NATO Defense College report also states, the “first response to hybrid warfare must come from the nation threatened.”³³

IRREGULAR WARFARE IN HOMELAND DEFENSE

To determine what the small states in Europe need to focus on while developing their future national defense strategy, two questions must be answered. First, what kind of war will these states be fighting in the future? This question is hard to answer. But taking a look at the past might provide some starting points. Sebastian Gorka stated that “80 percent of all war since Napoleon has been irregular or unconventional.”³⁴ The characteristics of the twenty-first century conflict suggest that the trend will continue in the near future and conflicts will be dominated by irregular warfare.³⁵ Russia’s hybrid warfare, China’s unrestricted warfare, and Iran’s Quds Forces are all employing irregular warfare to reach their goal, as are terrorist groups.

Second, what capabilities and organizations are needed to counter these threats? The Iraq and Afghanistan examples show that although the Coalition forces employed a large number of conventional fighters on the ground, they were unable to successfully counter the threats presented by irregular forces. Today’s trend toward using irregular warfare does not mean the end of conventional forces or warfare. Rather, conventional and irregular warfare coexist.³⁶ For instance, the Russian conventional forces’ presence on the Ukrainian border was as important to Russia’s success in 2014 as was the deployment of Russian Special Forces. As the two case studies show, the employment of an irregular force against a relatively larger force could have a significant effect on the opposing forces and their operations.

³¹ Charles Bartles, “The Significance of Changes in Russia’s Military Doctrine,” *OE Watch* 5, no. 6 (May 2015): 9.

³² Roger McDermott, “The Kremlin, the General Staff and Unlocking Future Warfare Capabilities,” *Eurasia Daily Monitor* 11, no. 84 (May 2014).

³³ Julian Lindley-French, *NATO and New Ways of Warfare: Defeating Hybrid Threats* (Rome: NATO Defense College, 2015). 11.

³⁴ Bill Gertz, “Russia, China, Iran Waging Political Warfare, Report Says,” *Washington (DC) Free Beacon*, 25 November 2014.

³⁵ Arquilla, *Insurgents, Raiders and Bandits*, 12.

³⁶ Arquilla, *Insurgents, Raiders and Bandits*, 8.

Special Operations Forces Reserve in Homeland Defense

Will Special Operations Forces win the war against the irregular threat and terrorism? The answer is likely no. As this paper already stated, an effective fight against hybrid threats and terrorist organizations requires more than just weapons and forces. It requires a whole-of-government approach using diplomatic, informational, military, and economic means; however, the most important military tools are Special Operations Forces. The SOF's core tasks by doctrine contain four out of five principal irregular warfare operations: unconventional warfare (UW), foreign internal defense, counterinsurgency, and counterterrorism.³⁷ Special Operations Forces are designed, trained, and equipped to operate and fight against an irregular threat. For instance, after the Russian annexation of Crimea, Ukraine used its regular army instead of Special Forces against the masked soldiers, which was Kiev's main mistake. As Heidi Reisinger and Alexander Golts stated in their study, "The task would have required Special Forces prepared for combat in urban areas, not regular forces, who would not be able to make effective use of armored vehicles, artillery or air strikes."³⁸

Most of the Eastern European countries' SOF capability is young, and the size of the available professional forces is very small. In most cases, it is only a battalion. Since Special Operations Forces are crucial assets in the modern conflict environment, even NATO and the EU require more SOF units for their missions from the contributing nations. The Eastern European countries, to fulfill their NATO and EU commitments, usually deploy their Special Operations Forces units in NATO missions (Iraq, Afghanistan) and contribute their troops to NATO Response Forces and other EU missions (EU Battle Group). When the countries take seriously their commitment to fulfill their NATO and EU commitments, it means that there will be always ODAs or ODBs in deployment, and some will always be preparing for either deployment or NATO, EU, or national exercises.³⁹ This burden is a heavy one for the small countries and also a difficult planning consideration. How can they rapidly mobilize and redeploy their Special Operations Forces in a case of any conflict like the annexation of Crimea, which lasted only a few days, especially given the fact that the early use of Special Operations Forces would have been critical to prevent the annexation?

The proposed SOF reserve forces would be an active reserve force whose main mission is to provide a capable force against a country's external and internal threats by conducting unconventional warfare, counterunconventional warfare, and counterterrorism operations as a part of the country's national defense strategy. The SOF reserve units would rarely deploy outside the country, and therefore would always be available for their primary mission of homeland defense. The SOF reservists would need to be well-trained, experienced individuals who speak several foreign languages and who are adaptive, capable of critical thinking, and have served as active duty Special Operations Forces. The ODA's area of operations would be designated by the country's threat assessment, for instance, around critical infrastructures, borders, capital, large cities, and territories where the targeted minorities live. In short, these forces would operate in areas considered most likely to face either terrorist activity or unconventional forces. The ODA member's housing will be in the ODA's designated area of operations (AO), in relatively close vicinity to each other, but dispersed enough to provide the ODA broad regional familiarity. Since operators would live with the population and be part of the community, they would devel-

³⁷ *Special Operations*, X.

³⁸ Lasconjarias and Larsen, *NATO's Response to Hybrid Threats*, 129.

³⁹ ODA stands for *Special Forces Operational Detachment Alpha*, or the NATO term for Special Operations Task Force Unit; ODB stands for *Special Forces Operational Detachment Beta*, or the NATO term for Special Operations Task Force Group.

op regional familiarity and situational awareness in their AO. The ODA members would keep their mission-essential weapons and equipment at home, ensuring quick reaction and free access to the equipment in case of the blockade of military and police bases, as occurred in Crimea. Since these units would already be in the area, they would be the first responders to the threat, the first intelligence source in the early phase of the conflict, and the organizers and initiators of the population's resistance.

Building a SOF reserve capability is a long process. The countries need to establish a system to leverage the Special Operations Forces reserve in their human resource management strategy. It will be especially difficult for those countries that do not have an early military retirement program. These countries must develop a system to build up this capability. The countries with early retirement programs could employ retired SOF soldiers in their reserve units, thus making the standup of such a force quicker. The SOF reserve, to be an effective tool in the war against the irregular threats, must have a standing Special Operations Command (SOCOM) that also has the understanding of irregular warfare and is prepared and trained for this task.

Since the war against the irregular threats and terrorism requires a whole-of-government approach, the countries' SOCOM has a critical role to provide the link between the reserve units and other government agencies; to collect and disseminate information; and to command, control, synchronize, and deconflict the special operations with the conventional and law enforcement headquarters and units. In case of emergency, the SOCOM commander must have the authority to activate the SOF reserve units and also to command and control the special operations in and outside the country. The SOCOM must have the capability and authority to send liaisons to the law enforcement and military intelligence headquarters to collect and disseminate timely intelligence. The other critical capability of the SOCOM is to reach or have military and civilian databases of reservists, former or retired military-age persons, and interpreters.

Counterunconventional and Hybrid Warfare

As a result of Russia's aggression against Ukraine in 2014, the importance of developing a strategic concept and capabilities for counter hybrid warfare will increase in the future. Alongside with the development of the whole-of-government approach, it is necessary to utilize the countries' SOF capability as part of a holistic approach. Since Russia is using unconventional forces and tactics in the hybrid warfare early phases, one of the best weapons against them is an unconventional force organized, trained, and equipped to defeat them. Having a Special Operations Forces reserve will provide more benefit to this fight, including a highly trained, always available force; a local, undercover presence that could provide timely information and organize resistance; and quick reaction time, regional knowledge, and situational and cultural awareness.

Domestic Counter Terrorism Operations

The recent ISIS successful terrorist attacks in Europe, the fact that more terrorists have infiltrated into Europe with the refugees, and the return of the foreign fighters to their home countries shows that terrorist attacks are imminent threats to the European countries. Counterterrorism is also an area where SOF reserve units could bring capabilities to this fight. The SOF reserve can provide defense support of civil authorities, including support to prepare for, prevent, protect against, and respond to terrorist attacks.⁴⁰

Special Operations Forces reserve forces are able to provide counterterrorism-specific train-

⁴⁰ *Counterterrorism*, JP-3-26 (Washington, DC: JCS, 2014), VIII.

ing for law enforcement units and offer advice and assessments about the vulnerabilities of the existing physical security system at critical infrastructures and key governmental buildings. In case of high threat against critical infrastructures (e.g., nuclear reactor or other key facilities), a SOF reserve could provide assistance to the law enforcement units in the protection of key facilities. Although in most of Eastern European countries during peacetime the above-mentioned tasks are still the law enforcement's tasks, some changes in the countries' legislation would allow the deployment of Special Operations Forces reserve as a support of the law enforcement units' counterterrorism operations. Another possible employment of the SOF reserve is to provide response units to terrorist attacks. For instance, a SOF reserve unit or units assigned to the capital AO would be able to react quickly in a case of terrorist attacks and help the police in either preventing terrorist attacks, capturing terrorist or protecting high-value targets.

Unconventional Warfare against an Occupying Force

Although an open, armed offensive operation is the most unlikely scenario, it is still a threat. If Russia is not able to reach its goal with other means, the government is prepared to launch a full-scale armed attack against the target country. Since the small Eastern European countries have only limited military capabilities compared to Russia, they will not be able to stop troops at the border. The SOF reserve troops would be an excellent force to start building up guerrilla forces and conducting unconventional warfare against the occupying country. As Tito's partisan operations show, unconventional warfare against an occupation power could be effective. As Henry Kissinger stated, given the odds between the guerrilla and conventional force, "the guerrilla wins if he does not lose. The conventional army loses if it does not win."⁴¹ After World War II, U.S. Army Special Forces' initial focus also was in Europe to raise partisan forces in case of a war with the Soviet Union.⁴² The SOF reserve, in case of open armed conflict, could start building up the guerrilla forces and conducting unconventional warfare against the occupying power while the active SOF units could operate in the enemy's rear. In addition, using the proposed Special Operations Forces reserve for this mission will provide the following advantages:

- a well-trained, always available force;
- a local, undercover presence that could provide timely information, organize and train a guerrilla force, and conduct operations against the enemy;
- regional knowledge and situational and cultural awareness;
- foreign- and English-speaking soldiers would make the linkup and cooperation with the allied forces easy; and
- the ability to conduct peacetime training of conventional military reservists for guerrilla warfare.

RECOMMENDATIONS

Although this paper does not define the future size of the countries' Special Operations Forces reserve capabilities, the size should be based on the available active SOF size and the countries' threat analysis and should taking into the consideration that "competent SOF cannot be created after emergencies occur."⁴³

Those countries that have legislation restricting the use of military force during peacetime

⁴¹ Henry A. Kissinger, "The Vietnam Negotiations," *Foreign Affairs* 48, no. 2 (January 1969): 38–50, <https://doi.org/10.1080/00396336908440951>.

⁴² Donald A. Carter, *The U.S. Army before Vietnam, 1955–1965*, CMH Pub 76-3 (Fort McNair, DC: Center of Military History, 2015), 48.

⁴³ *2016 Fact Book*, 56.

should take into consideration the benefits of deploying military forces, especially Special Operations Forces, in a case of terrorist attack or against irregular forces in hybrid warfare. After the Paris terror attacks in 2015, France deployed military forces to reinforce law enforcement. In 2015, Hungary changed the law to be able to deploy military forces to reinforce law enforcement units in dealing with the refugee flow.

The initiation of changes and update in NATO doctrine is necessary. NATO doctrine lacks such terms as unconventional and irregular warfare. NATO choice to define these terms should also assign the unconventional warfare and counterterrorism as principal tasks for NATO Special Operations Forces. In the recent security environment, unconventional warfare and counterterrorism became important for all NATO members, such as the Hungarian and Estonian Special Operations Forces (who are using) and Norwegian Special Operations Forces (who are planning to use) unconventional warfare as a principal task of their Special Operations Forces.⁴⁴

Some countries already have Special Operations Commands. To really benefit from the SOF reserve system, countries who will use this system must have or establish a Special Operations Command.

CONCLUSION

There are two major recent security challenges the West is facing right now. Russia's New Generation Warfare and the ISIS terrorist threat have brought back Western attention to homeland defense. NATO and the EU both took steps to deter and react to these threats collectively, but because Russia's hybrid warfare design may prevent any alliances' intervention, NATO members should take steps to develop capabilities and plans to be able to defend themselves. As a NATO Defense College study suggests, it is the member states' responsibility to first respond to these threats.⁴⁵

The SOF reserve system is an essential element of the whole-of-government approach, which is why it is necessary to start building the system today to be effective in the near future. The SOF reserve system will not work without either the active Special Operations Forces or a standing Special Operations Command. SOCOM is the key strategic organization that will plan, install, and implement the smaller countries' SOF capabilities into the countries' national defense strategy and plan. SOCOM also will provide the command and control element and the link with other national and international interagencies, intelligence services and headquarters. The SOF reserve system complements the countries' SOF capabilities, which are relatively small especially in the Eastern European countries. This system will give more flexibility and options to deploy the active units. While the reserve elements would focus on the homeland defense, the active Special Operations Forces could focus on the enemy rear.

The proposed SOF reserve system is only a tool in the whole-of-government toolbox. The Special Operations Forces reserve will not win the war by themselves against hybrid warfare, occupying force, or against the terrorism; but as a national irregular force, it will be an effective tool in the countries' national defense strategy for fighting against the hybrid threat, a larger occupying power, and terrorism.

⁴⁴ Espen Berg-Knutson and Nancy Roberts, eds., *Strategic Design for NORSOF 2025* (Monterey, CA: Naval Postgraduate School, 2015), 32.

⁴⁵ Lindley-French, *NATO and New Ways of Warfare*, 11.

Violent Video Games and the Marine Corps Some Perspectives

by Sergeant Major Christopher J. Lillie, USMC¹

The debate on violent video games encouraging ill effects on adolescents has plagued America for more than a decade. On 20 April 1999, Eric D. Harris and Dylan B. Klebold executed an attack on Columbine High School in Colorado, killing 13 and wounding more than 20 people, before taking their own lives. In the article “Violent Video Games Promote Violence,” Bill Korach relates the Columbine tragedy to video games, stating that “one possible contributing factor is violent video games. Harris and Klebold enjoyed playing the bloody, shoot-'em-up video game *Doom*, a game licensed by the U.S. military to train soldiers to effectively kill.”² Evidence to prove the military licensed the game *Doom* is vague. The game did, however, inspire the Marine Corps to develop a modified variant of the game, titled *Marine Doom*, used for virtual reality training.³

The United States military does use video games to attract the youth of America. According to Jeremy Hsu’s article “For the U.S. Military, Video Games Get Serious,” the U.S. Army licenses the video game *America’s Army* as an official recruiting tool.⁴ *America’s Army* was designed as an entertainment based marketing tool rather than a virtual reality training mechanism. Virtual reality simulators have benefits to military training, whereas violent video games create a false sense of reality, inadequately represent combat, and promote unethical actions, generating a challenge for future leaders.

Virtual reality simulators are designed to enhance the capability and proficiency of warfighters through repetitious actions performed in a replicated environment. The Marine Corps utilizes the Indoor Simulated Marksmanship Trainer to increase marksmanship proficiency, just as other branches employ simulators designed toward their mission.⁵ The author of “Virtual Reality,” an article published in *Sea Power*, states that “the Navy is taking advantage of simulators to train new crops of Sailors to be proficient at operating a ship before ever stepping onboard.”⁶ The military utilizes virtual reality simulators as an inexpensive means to achieving the most realistic training possible. Unlike virtual reality simulators, violent video games portray a false sense of a realistic environment.

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² Bill Korach, “Violent Video Games Promote Violence,” *Report Card*, December 2012.

³ “Doom Goes to War,” *Wired*, 1 April 1997.

⁴ Jeremy Hsu, “For the U.S. Military, Video Games Get Serious,” *Live Science*, 19 August 2010.

⁵ For more on this topic, see Matthew L. Schehl, “Marines’ New Virtual Marksmanship Trainers Are Set to Hit the Fleet,” *Marine Corps Times*, 10 April 2016.

⁶ D. P. Taylor, “Virtual Reality: Real World Military Application,” *Sea Power* 56, no. 12 (December 2013): 12–13.

Video games depicting combat environments produce an unrealistic reality to players who have not experienced the physical, emotional, and physiological effects of war. As Hsu discusses the video game *America's Army*, he states that "very few games have the ambition to convey both physical carnage and mental anguish of warfare."⁷ In essence, the young American who played combat-style video games has already formed a preconceived notion of violence and war. If that young American decides to enlist, and has the opportunity to experience true combat, they will realize that the video games represented a false reality of the situation on the ground.

Just as video games generate a false reality, they also misrepresent combat environments. Although technology has advanced video game graphics to a level of almost visual realization, the actual combat situation is exaggerated at best. War-based video games create situations where the player respawns after death, has unlimited ammunition, possesses enhanced physical capabilities, and uses unconventional weaponry. The representation of inflicted wounds in video games are gruesomely animated. The actual carnage of an improvised explosive device or 107mm rocket detonation on a vehicle filled with Marines is far more horrific than what you could imagine. These are fallacies that misrepresent combat.

Another misrepresentation of combat is the exclusion of elements that truly exist, such as boredom and the fog of war. In the article "3 Reasons Why War is A Bad Topic for Video Games," author John Brindle shows that "war is 95% boredom and 5% terror."⁸ Brindle goes on to describe how video game developers manipulated the term *fog of war* into a physical object. He states, "Videogames have taken the phrase 'fog of war' and turned it into a cute mechanical metaphor, a simple black mist to be swept away as we advance."⁹ Developers design video games to sell an experience, a misconstrued experience in which gamers operate in unrealistic environments with limited consequences.

In reality, consequences exist in combat and war environments. Gamers play for entertainment and, in video games, anything goes. In reality, laws of armed conflict and rules of war exist. Video games have the potential of promoting unethical actions that can carry over to wartime situations. In the article "Violent Video Games and the Military: Recruitment, Training, and Treating Mental Disability," author John Derby states that "some games allow users to simulate such heinous events as stalking and raping women and girls, torture, school shooting sprees, ethnic cleansing, and urinating on corpses."¹⁰ Unfortunately, the military has seen and experienced these same heinous acts of unethical behavior during the past few years.

Young gamers seeking a future in the military have exposure to these unethical acts early in their life, which compromises their moral compass. *The Washington Times* published an article by Jonathan Soch titled "Human Rights Advocates, Military See Violent Video Games as Teaching Tool," which discusses how a group of speakers assembled to discuss how to incorporate video games into the military. Colonel Kurt Sanger, a Marine Corps judge advocate and law instructor was part of that panel of speakers. The focus of the panel and the discussion, as stated by Soch, was to determine "how video games could be redesigned to address issues like the Law of Armed Conflict and standards of international humanitarian law."¹¹ Without a change of this nature, violent video games will continue to promote negative unethical behavior for the future warfighters of America.

⁷ Hsu, "For the U.S. Military, Video Games Get Serious."

⁸ John Brindle, "3 Reasons Why War Is a Bad Topic for Video Games," *Gameranx*, 25 April 2013.

⁹ Brindle, "3 Reasons Why War Is a Bad Topic for Video Games."

¹⁰ John Derby, "Violent Video Games and the Military: Recruitment, Training, and Treating Mental Disability," *Art Education* 67, no. 3 (2014): 19–25.

¹¹ Jonathan Soch, "Human Rights Advocates, Military See Violent Video Games as a Teaching Tool," *Washington (DC) Times*, 19 April 2015.

Violent video games create a challenge for the leaders of tomorrow who are entrusted with training and developing U.S. servicemembers. The video gaming empire will continue to grow and exist. Technology will improve graphics and realization. The lance corporal and corporal of today will face this challenge in the future as video gamers enter the Service with the expectation of combat as a real-life video game experience.

The future leaders of the Marine Corps will be challenged with incorporating virtual reality simulators designed to enhance capabilities and with negating the misconceptions of violent video games. The challenge lies with promoting non-action-based simulation that replicate reality, represent combative situations, and incorporate ethical behavior while erasing the ill effect implemented from video games.