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THESIS

**AZIMUTH CHECK: ENVISIONING U.S. ARMY
SPECIAL FORCES IN THE NEXT PEER WAR**

by

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**AZIMUTH CHECK: ENVISIONING U.S. ARMY SPECIAL FORCES IN THE
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ABSTRACT

U.S. Army Special Forces are adept at accomplishing their core tasks, often within the cooperation and competition realms of the conflict continuum, and against less-than-peer adversaries. Their methods, skills, and capabilities may be insufficient to complete the same tasks against a peer competitor during armed conflict; some tasks may need to be accomplished differently, and new ones may need to be developed. As the Department of Defense re-directs its focus on great power competition in the midst of an increasingly complex operating environment, this study explores how Special Forces could contribute to defeating a great power adversary in large-scale combat operations between 2030–2050. After describing a future operating environment based on a synthesis of national-level future studies and providing an analysis of historical Special Forces missions that highlight a peer competitor focus, this study presents observations from a ready-to-use Table Top Exercise scoped toward Special Forces operating against a peer competitor in armed conflict. The study offers an analysis of the TTX observations by presenting a DOTmLPF and War Fighting Functions crosswalk meant to highlight potential capability gaps within U.S. Army Special Forces. It then concludes by presenting recommendations centered on transforming leadership and education practices as well as exploring new concepts and doctrine within U.S. Army Special Forces to better prepare the regiment for war against a peer.

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LIST OF ACRONYMS AND ABBREVIATIONS

A/C	Aircraft
A2/AD	Anti-access/area-denial
ADA	Air defense artillery
ADM	Atomic Demolition Munition
AI	Artificial Intelligence
APOD	Aerial port of debarkation
ARSOF	Army Special Operations Forces
BSB	Brigade Support Battalion
C2	Command and control
CBRNE	Chemical, biological, radiological, nuclear, and high-yield explosives
CI	Counter-intelligence
CJTF-R	Combined Joint Task Force – Russia
COIN	Counter-insurgency
CP	Command post
DF	Direction-finding
DoD	Department of Defense
DOTmLPF-P	Doctrine, Organization, Training, material, Leadership, Personnel, Facilities, and Policies
EMP	Electro-magnetic pulse
EUCOM	Europe Command
EW	Electronic warfare
FORCEPRO	Force protection
GCHQ	Government Communications Headquarters
GRU	Main Intelligence Directorate of the Armed Forces of the Russian Federation
HHB	Headquarters and Headquarters Battery
HHC	Headquarters and Headquarters Company
HUMINT	Human intelligence
IAD	Integrated air defense

IO	Information operations
IP	Internet protocol
ISR	Intelligence, surveillance, and reconnaissance
IVO	In vicinity of
JCET	Joint Combined Exchange Training
KIA	Killed in action
MANPADS	Man-portable air defense system
MDTF	Multi-Domain Task Force
MISO	Military Information Support Operations
MLRS	Multiple-launch rocket system
NATO	North Atlantic Treaty Organization
NSA	National Security Agency
NSS	National Security Strategy
ODG	Operational Detachment – Golf
OGA	Other government agencies of the United States of America
OSS	Office of Strategic Services
PAX	Personnel and equipment
ROMO	Range of military operations
RSE	Regional Support Element
SAM	Surface-to-air missile
SFODA	Special Forces Operational Detachment – Alpha
SIGINT	Signals intelligence
SOF	Special Operations Forces
SP	Self-propelled
SPOD	Sea port of debarkation
SSMs	Surface-to-surface missiles
TTPs	Tactics, techniques, and procedures
TTX	Table Top Exercise
UAS	Unmanned aerial system
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command
UW	Unconventional Warfare

EXECUTIVE SUMMARY

A. PURPOSE

This study explores the role of U.S. Army Special Forces in a future peer-level war and is intended for leaders who recruit, train, sustain, retain, force-provide and command Special Forces soldiers. It is meant to inspire those same leaders to reflect, consider and prepare for such an eventuality and accomplishes this by exposing potential capability gaps, highlighting critical implications and presenting recommendations to better prepare the force for such a war.

Key Elements

- A synthesis of national-level future studies 2030–2050
- Observations from a ready-to-use Table Top Exercise for staffs or detachment-level training
- Capability gap analysis by DOTmLPP-P and Warfighting Function Crosswalk

B. BACKGROUND

U.S. Army Special Forces are adept at accomplishing their core tasks, often within the cooperation and competition realms of the conflict continuum, and against less-than-peer adversaries. Methods, skills and capabilities needed to complete the same tasks against a peer competitor during armed conflict have likely waned, some tasks may need to be accomplished differently, and new ones may need to be developed. As the Department of Defense re-directs its focus on great power competition in the midst of an increasingly complex operating environment, this study aims to fill a gap in defense literature that explores and addresses how Special Forces will contribute to defeating a great power adversary in large-scale combat operations in a future war.

C. THE WAY AHEAD

This study emphasizes a prudent approach to the study and preparation of future warfare and avoids an alarmist tone while encouraging similar efforts take place. It does not advocate sweeping changes or re-directions for the Special Forces Regiment based on the possibility of a great power war. Contrarily, it focuses on the least likely but most dangerous eventuality. In this case, the research highlighted that the skills and capabilities that U.S. Army Special Forces provide will still be valuable in a large-scale war, but the way they provide them may change. Studies like this one may encourage innovation, initiate challenging conversations and spark professional debate to identify those changes while illuminating problems before they are encountered on the battlefield. Doing so may avoid unnecessary losses while increasing the possibility of victory in a war the United States must win.

D. FINDINGS AND RECOMMENDATIONS

Observations from a Table Top Exercise written and facilitated by the authors, and which places Special Forces teams in a denied area against Russia, were categorically binned using the Warfighting Functions.¹ Each observation was then applied across the elements of the DOTmLPF-P framework, creating a crosswalk meant to identify implications for U.S. Army Special Forces and highlight potential capability gaps. Two consistent and thematic trends appeared throughout the study and directly inspired the authors' recommendations, which aim to prepare U.S. Army Special Forces for war against a great power adversary. (See Table, next page.)

¹ The Table Top Exercise was completed as part of a Naval Postgraduate School Wargame Applications course and was determined by the NPS Institutional Review Board to not constitute Human Subjects Research as found by HSR Determination dated 28 February 2017. No Personally Identifiable Information was obtained by the players for the exercise.

Trend	Recommendation	Rationale	What capabilities are required to accomplish this? What actions can be taken now to prepare?
1. A need to explore and develop new Special Forces concepts and doctrine that describe how units will fight <u>against a peer</u> in the future operating environment that will be <u>more complex than today</u> . (page 70)	1. Findings in the study suggest a greater emphasis within concepts, doctrine and training should be placed on the conduct of <u>Unconventional Warfare in dense urban areas</u> .	Urbanization and increasingly capable sensors, precise and lethal weapons force elements to hide in the complex terrain of cities. The same advancements make traditional SF <u>rural safe-havens untenable</u> and directly affect <u>how SF will survive and achieve UW tasks</u> (recruit, train, organize, employ) with partners	
	2. Distinct attention to concepts, doctrine and training is needed, which emphasize the creation and mending of networks <u>during conflict</u> and <u>after they are disrupted or destroyed</u> .	In a <u>peer-level fight</u> , <u>SF should expect portions of the human infrastructure established prior to conflict</u> to be disrupted or destroyed by capable adversaries before arriving on the battlefield. Networks and relationships with partners created in phase zero will likely remain critical to most SF missions and will <u>need to be mended during the conflict</u> .	
2. <u>Adaptation in methods, tools and approaches in leadership</u> , professional education and development is needed for Special Forces personnel to <u>cope and thrive in environments that will challenge traditional methods</u> in these areas (page 72).	1. More senior leaders should <u>expect decisions typically made at higher levels to be made at lower ones</u> while <u>re-calibrating their own metrics for risk perception</u> and degrees of delegating authority. Every effort should be made to develop and prepare more junior leaders to assume greater responsibility while improving decision-making acumen and judgment at levels commensurate with battalion commanders and above.	An increasingly complex battlefield will make human decisions surrounding lethal fires, risk perception and managing strategic relationships more difficult. The speed, depth, lethality and disaggregated nature of the <u>future battlefield will demand leaders who can make better decisions faster than what is required today</u> .	
	1. <u>Deliberately explore future war</u> . Training and professional development exercises (like the TTX and similar efforts) that challenge traditional approaches and missions frequently conducted since 9/11, and include complex problems against forces with capabilities equal to our exceeding those of the U.S. should be common place within Special Forces Groups and other similar units.	Staffs and detachments conducting scenario-based training offers a cost-effective means to train for unlikely but dangerous scenarios and can identify problems that may elude leaders who are already busy with day-to-day requirements. Exploring plausible future scenarios cultivates an inquisitive mentality that defies the mantra that tomorrow will look like today and may help identify leaders who excel in complex environments while mitigating those who do not.	

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I. INTRODUCTION

A. BACKGROUND TO THE PROBLEM

United States Army Special Forces are adept at accomplishing their principal tasks (Figure 1), often within the cooperation and competition realms of the conflict continuum (Figure 2), and against less-than-peer adversaries.

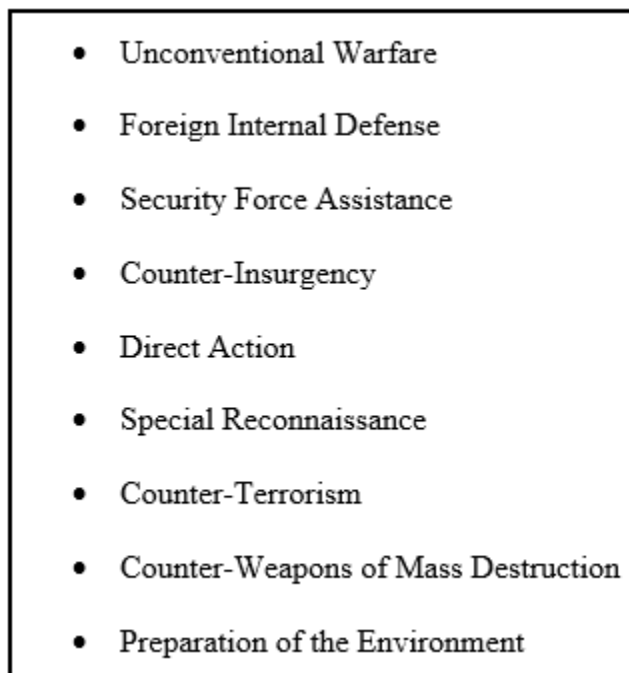
- 
- Unconventional Warfare
 - Foreign Internal Defense
 - Security Force Assistance
 - Counter-Insurgency
 - Direct Action
 - Special Reconnaissance
 - Counter-Terrorism
 - Counter-Weapons of Mass Destruction
 - Preparation of the Environment

Figure 1. U.S. Army Special Forces Principal Tasks. Source: Field Manual 3-18 Special Forces Operations (2014).²

² U.S. Army TRADOC, *Field Manual 3-18, Special Forces Operations* (U.S. Army TRADOC, May 2014), https://armypubs.army.mil/epubs/DR_pubs/DR_c/pdf/web/fm3_18.pdf.

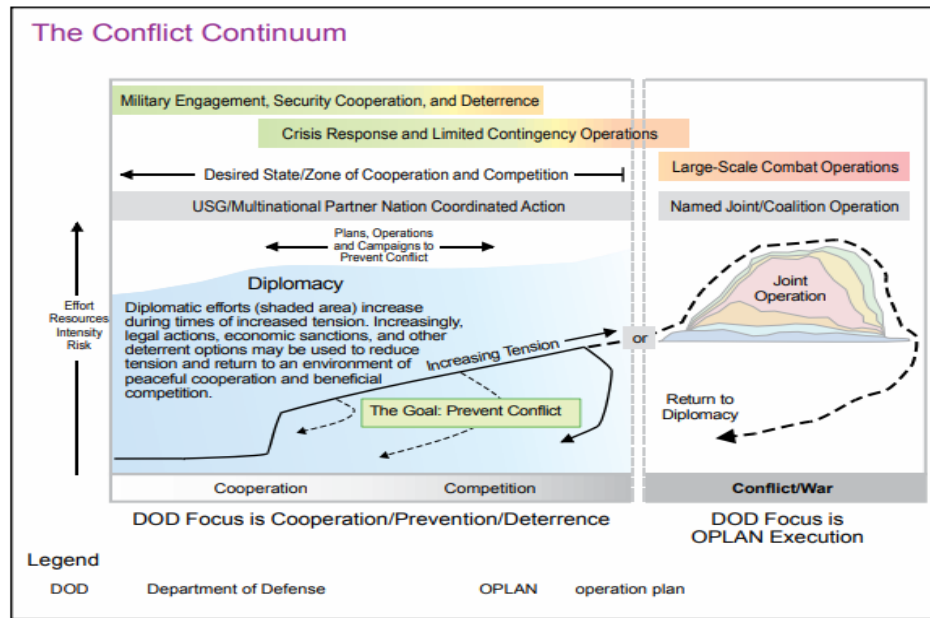


Figure 2. Conflict Continuum. Source: Joint Publication 3-0 Joint Operations (2017).³

The skills and capabilities needed to complete the same tasks against a great power adversary have not been similarly tested by U.S. Army Special Forces. Some tasks may need to be accomplished differently and new ones may need to be developed. With a re-invigorated focus on great power competition with Russia and China and a future environment that will likely see long-range precision strike weapons, advanced sensors, cyber, electronic, and space-based capabilities, it is prudent for U.S. Army Special Forces to analyze their role in Large-Scale Combat Operations with a great power adversary in the near future.

Appropriately scoping this study necessitates describing two fundamental variables, Large-Scale Combat Operations and great powers. Joint Publication 3-0, Joint Operations describes Large-Scale Combat Operations as consisting of combat typically carried out within the framework of campaigns and operations to “achieve national strategic objectives or protect national interests.”⁴ The focus of this study is squarely on

³ Joint Chiefs of Staff, *Joint Publication 3-0 Joint Operations* (Joint Chiefs of Staff, January 17, 2017), http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_0_20170117.pdf.

⁴ JCS, *Joint Operations*.

the clash of armed forces on the right side of the conflict continuum outlined above and describes war in which combatants employ an array of methods and all elements of national power. Adopted from a 2018 Center for Strategic and International Studies report, “~~Avoiding~~ Coping with Surprise in Great Power Conflicts,” this study will use the term great power adversary. Cancian defines a great power adversary as a country that “can compete with the United States in multiple warfighting domains..., endanger fundamental U.S. national security goals, and threaten devastation to the U.S. homeland and way of life.”⁵

1. Great Power Wars

The National Intelligence Council’s report, *Global Trends: Paradox of Progress*, posits that the period of U.S. dominance that followed the end of the Cold War is fading.⁶ So too are the circumstances that, following World War II, mitigated the risk of another great power war among nation-states.⁷ Heightened degrees of geopolitical competition and disagreements on international norms and values have eroded an era of stability.⁸ For example, China’s economic growth and development coupled with its increasingly capable military, and Russia’s revisionist approach to its interests in Europe could plausibly create conditions “in which great power competition erupts into war.”⁹ Thus, as the U.S. military prepares for the future, it is prudent to contemplate Large-Scale Combat Operations against a great power adversary, even if that adversary may choose or prefer smaller-scale

⁵ Mark F. Cancian, “~~Avoiding~~ Coping with Surprise in Great Power Conflicts” (CSIS, Center for Strategic and International Studies, February 2018), 13, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180227_Cancian_CopingWithSurprise_wAppen_Web.pdf?0rD0fcMI7gGXNLM1AYJWoVsNT_xSxOiu.

⁶ National Intelligence Council, *Global Trends: Paradox of Progress* (Washington, D.C.: National Intelligence Council, 2017), <https://www.dni.gov/files/documents/nic/GT-Full-Report.pdf>, ix.

⁷ National Intelligence Council, *Global Trends*.

⁸ Frank Hoffman, “The Contemporary Spectrum of Conflict: What Is War?,” *2016 Index of U.S. Military Strength* (blog), accessed July 17, 2018, <https://index.heritage.org/military/2016/essays/contemporary-spectrum-of-conflict/>.

⁹ Frank Hoffman, “The Continuum of Contemporary Conflict” (Washington, D.C.: National Defense University, n.d.); Dean Cheng, “America Needs a Comprehensive Strategy for Countering China’s Expanding Perimeter of National Interest” (Washington, DC: Heritage Foundation, April 28, 2015), <https://www.heritage.org/asia/report/america-needs-comprehensive-strategy-countering-chinas-expanding-perimeter-national>.

operations.¹⁰ This is true primarily for two reasons. First, on the far right of the conflict continuum (see Figure 2), war and Large-Scale Combat Operations pose the largest consequences.¹¹ Though not inevitable, Large-Scale Combat Operations may nevertheless arise under conditions of an increasingly multipolar international power system, which best describes the environment the United States is now entering.¹² Furthermore, as former presidential advisor and strategic studies scholar Colin Gray suggests, the reemergence or renewed awareness of non-traditional conflict that is increasingly prevalent today does not necessarily displace the danger of older modes of war.¹³

2. The Future Operating Environment

Between the years 2030 and 2050, long-range weapons, advanced sensors, space and cyber tools will likely alter the character of the battlefield. Lower-cost precision strike weapons will be increasingly lethal, with faster cycles of action and counteraction. Combined arms fighting will expand to include electronic, cyber, and other effects and alter the character of war, or the way wars are fought.¹⁴ The United States' defense establishment is preparing for this new battlefield, acknowledging that its current priorities and doctrine require significant alterations to keep pace with countries like Russia and China.¹⁵

The U.S. military's admission that its priorities and doctrine need modification to address great power adversaries, combined with the increasing likelihood of a great power war as described above, exposes the need to explore possible futures and alternative concepts that allow the U.S. military to maintain advantage over its adversaries.

¹⁰ Cancian, "Avoiding Coping with Surprise in Great Power Conflicts."

¹¹ Hoffman, "Continuum of Contemporary Conflict."

¹² National Intelligence Council, *Global Trends*; Hoffman, "Continuum of Contemporary Conflict."

¹³ "Foresight into 21st Century Conflict: End of the Greatest Illusion?," Foreign Policy Research Institute, accessed July 18, 2018, <https://www.fpri.org/article/2016/09/foresight-21st-century-conflict-end-greatest-illusion/>; Colin S Gray, *Another Bloody Century: Future Warfare* (London: Phoenix, 2006).

¹⁴ Chief of Staff of the Army's Strategic Studies Group Cohort V, "Reconnaissance-Strike Battle: An Operational Concept for High-End War 2030–2050 (DRAFT)," June 16, 2017.

¹⁵ Department of Defense, "2018-National-Defense-Strategy-Summary.Pdf," 2018, <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

Emphasizing this point, General Joseph Dunford, the Chairman of the Joint Chiefs of Staff stated in 2016: “We’re already behind in adapting to the changed character of war today in so many ways.”¹⁶ Preparing for this adaptation of warfighting is difficult at best and could be dangerous at worst. In 2017, Professor Lawrence Freedman, a world-renowned military analyst, highlighted just how difficult predicting the future can be and notes how rarely the United States has accurately projected future war.¹⁷ Predicting the proverbial “black swan” is oxymoronic and by definition impossible.¹⁸ It is also not the intent of this study. Yet the U.S. military cannot afford to wait for events to unfold before considering and developing means to address them. As Dr. Andrew Krepinevich, a well-known defense analyst, explains, the DoD “must make decisions today on what military capabilities will equip America’s fighting forces decades from now.”¹⁹ To that end, analyzing U.S. Army Special Forces’ role in this future environment is a worthy effort and can help its leaders make better decisions in an uncertain world.²⁰

3. Acknowledging and Adapting

The Joint Force, spurred by actions of revisionist states, has largely acknowledged the potential change in the character of war and that the current conflicts in which the United States finds itself today bear little resemblance to a great power war. The 2018 National Defense Strategy outlines a complete paradigm shift in the Defense Department’s missions, regional priorities and the way it “does business.”²¹ Acknowledgment of this

¹⁶ “Gen. Dunford’s Remarks at the National Defense University Graduation,” Joint Chiefs of Staff, accessed July 18, 2018, <http://www.jcs.mil/Media/Speeches/tabid/3890/Article/797847/gen-dunfords-remarks-at-the-national-defense-university-graduation.aspx>.

¹⁷ Lawrence Freedman, *The Future of War: A History*, 2017, https://nls.ldls.org.uk/welcome.html?ark:/81055/vdc_100049066097.0x000001; Hoffman, “Continuum of Contemporary Conflict.”

¹⁸ Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable*, 2nd ed., Random Trade (New York: Random House Trade Paperbacks, 2010).

¹⁹ Andrew F. Krepinevich, *7 Deadly Scenarios: A Military Futurist Explores War in the Twenty-First Century* (New York: Bantam Books, 2009).

²⁰ Peter Schwartz, *The Art of the Long View: Paths to Strategic Insight for Yourself and Your Company*. (St Leonards, N.S.W.: Australian Business Network, 1996).

²¹ Department of Defense, “2018-National-Defense-Strategy-Summary.Pdf.” Herein, the U.S. Secretary of Defense acknowledges the U.S. military strategic advantages are eroding and directs a shift in defense priorities to “revisionist powers” and the way the defense department “does business.”

shift is also evident in current DoD and service-level efforts to create new operational and functional concepts that acknowledge tasks such as counterinsurgency as lesser-included to great power wars. Of critical importance to U.S. Special Operations Forces (SOF), these concepts also call for SOF to operate within the enemy's Deep Fires Areas, specifically relying on their ability to operate beyond the practical reach of conventional forces.²²

While similar efforts to address this potential future environment of great power competition exist within U.S. Special Operations Command (USSOCOM) and Army Special Operations Forces (ARSOF), a closer look reveals gaps in research, concepts, and doctrine. Specifically, because ARSOF sees itself operating mainly within cooperation and competition on the conflict continuum (see Figure 2) and by optimizing itself for this approach, it largely overlooks Large-Scale Combat Operations against these same adversaries. Instead, the future the special operations community describes for itself is increasingly “gray” and current SOF literature advocates that its forces are the preeminent choice for this space.²³ This study does not aim to disagree with this assessment, nor join in the debate of whether the “gray zone” is a new paradigm or, as pointed out by defense analyst John Arquilla, merely an unnecessary and flawed attempt at “a fresh definition for war in this era.”²⁴ Instead, this study intends to highlight and explore the knowledge and capability gaps left exposed as ARSOF adopts this approach. As the several authors of “Seeing Gray in the Next World War” predict, “[w]hat is often overlooked in the

²² U.S. Army TRADOC, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century* (US Army TRADOC, October 2017), http://www.arcic.army.mil/App_Documents/Multi-Domain-Battle-Evolution-of-Combined-Arms.pdf.

²³ Joseph Votel et al., “Unconventional Warfare in the Gray Zone,” National Defense University Press, January 2016, <http://ndupress.ndu.edu/Publications/Article/643108/unconventional-warfare-in-the-gray-zone/>; Philip Kapusta, “The Gray Zone,” *Special Warfare* 28, no. 4 (October 2015): 19–25. Authors of “Unconventional Warfare in the Gray Zone” define the Gray Zone as a space in the peace-conflict continuum characterized by intense political, economic, informational and military competition more fervent in nature than normal steady-state diplomacy, yet short of conventional war. The authors suggest that SOF are the preeminent force in the Gray Zone, or the space between peace and war. Kapusta states “Traditional war might be the dominant paradigm of warfare, but gray zone challenges are the norm.”

²⁴ John Arquilla, “Perils of the Gray Zone: Paradigms Lost, Paradoxes Regained,” *PRISM: A Journal of the Center for Complex Operations* 7, no. 3 (May 2018): 118–28.

contemporary rush to highlight gray zones is that these intense competitions often lead to conventional war. There is an inherent escalation potential in gray zones.”²⁵

Toward that end, the SOF community’s emphasis on actions within gray zones that precede Large-Scale Combat Operations may lead to unintended consequences. For example, cognitive dissonances and organizational biases within the U.S. Army Special Forces community regarding operations in “cooperation” and “competition” against great power adversaries may leave gaps in operational concepts, doctrine and capabilities needed to conduct tasks within Large-Scale Combat Operations against those same foes.

In total, the national defense documents and future defense studies referenced in this chapter and in Chapter II acknowledge a growing risk of war with a great power in a challenging future environment. Yet, current SOF documents fail to sufficiently address the role or implications for U.S. Army Special Forces during Large-Scale Combat Operations, instead focusing on indirect activities to prevent and deter an overt confrontation by describing actions taken before Large-Scale Combat Operations occur. Indeed, there is value in focusing on the latter; as strategist Colin Gray notes, the strategic utility of SOF today exists in its ability to achieve disproportionate effects relative to the size of the force, often in the space below the threshold of war.²⁶ However, the same can be said for the former, as this utility can also be applied during war. Consequently, analyzing U.S. Army Special Forces’ role during Large-Scale Combat Operations warrants deeper exploration, as a tacit acknowledgment of its eventuality does little in the way of preparing for one.

B. PURPOSE AND METHODOLOGY

This study aims to provide insight on how U.S. Army Special Forces might contribute to defeating a great power adversary in Large-Scale Combat Operations in 2030–2050. Specifically, it will explore how armed conflict with a great power in that future environment will shape U.S. Army Special Forces principal tasks. Examining this is

²⁵ Neil Hollenbeck and Benjamin Jensen, “Seeing Gray in the Next World War,” *War on the Rocks*, February 21, 2017, <https://warontherocks.com/2017/02/seeing-gray-in-the-next-world-war/>.

²⁶ Colin S. Gray, *Explorations in Strategy* (Westport, CT: Praeger, 1998).

beneficial as the study may provide insight into: education for conventional and SOF commanders on possible characteristics of future conflicts, development of a U.S. Army Special Forces operating concept for Large-Scale Combat Operations, interoperability with conventional forces and their operating concepts and Doctrine, Organization, Training, materiel, Leadership, Personnel, Facilities and Policies (DOTmLPP-P) considerations for U.S. Army Special Forces.

To analyze the role of U.S. Army Special Forces in a future great power war means delving into the unknown. Research and discussion of the future is inherently controversial, as the future is not fully knowable. Yet, it is also worth the risk of thoughtful, deliberate exploration as the benefits outweigh the costs. Deliberate, intentional thinking about the future and the U.S. military's role within it is necessary if U.S. Army Special Forces and other units are to maintain and gain competitive advantages in an increasingly competitive world. To that end, the authors constructed and executed a seminar wargame, specifically a Table Top Exercise (TTX), with over thirty conventional and SOF players, using futuristic scenarios based on an analysis of future reports and global trends. The TTX was completed as part of a NPS Wargame Applications course and enabled the authors to explore and collect data regarding multiple U.S. Army Special Forces tasks, among different scenarios, all during Large-Scale Combat Operations with a great power adversary.²⁷

C. FINDINGS AND RECOMMENDATIONS

To arrive at the final recommendations of this study, the players' observations from the TTX were categorically binned utilizing the eight elements of combat power, commonly referred to as warfighting functions. Each observation was then applied across the elements of the DOTmLPP-P framework, essentially conducting a crosswalk meant to identify implications for U.S. Army Special Forces and highlight potential capability gaps (Table 1 in Chapter IV). While the crosswalk identified both narrow and broad

²⁷ The Table Top Exercise was completed as part of a Naval Postgraduate Wargame Applications course and was determined by the NPS Institutional Review Board to not constitute Human Subjects Research as found by HSR Determination dated 28 February 2017.

implications, it also revealed two consistent and thematic trends that directly inspired the authors' recommendations, which aim to prepare U.S. Army Special Forces for Large-Scale Combat Operations against a great power adversary.

The first trend highlights a need for further exploration of new U.S. Army Special Forces concepts and doctrine, which describe how units will fight in the future environment described throughout this study. Specifically, the study recommends further exploration into the conduct of Unconventional Warfare within a dense urban environment. Advancements in adversary sensing and fires capabilities compounded with complex urban terrain will likely directly affect the way U.S. Army Special Forces recruits, organizes and employs partner forces and make traditional rural safe havens untenable. Lastly, the study recommends an increased emphasis on creating and mending human infrastructure networks during war, as players in the TTX relied almost exclusively upon these networks to survive, sustain and maneuver.

The second trend focuses clearly on implications that challenge traditional paradigms within the leadership and professional education realms within the U.S. Army Special Forces. The study recommends new approaches and offers several implications for how soldiers and leaders can prepare to cope with, and thrive in challenging environments that will likely yield limited communications, degraded situational awareness, and disaggregated maneuver elements at levels not seen today.

Lastly, this study encourages leaders to prepare themselves and their units for war by challenging the traditional belief that tomorrow will look like today. To that end, this study challenges leaders to incorporate seminar wargames and tabletop exercises similar to the one used in this study to uncover more implications, highlight potential capability gaps and train subordinate leaders and staffs on methods and tools to address complex problems.

D. CONCLUSION

This study's research may help to fill the knowledge and capability gaps identified above for several reasons. Primarily, despite the lower relative probability of Large-Scale Combat Operations occurring against a great power in the near future, the U.S. Army

Special Forces community should recognize that in the event it happens, they will not solely operate on the periphery in semi-permissive environments. Instead, as described in current U.S. Army operating concepts, U.S. Army Special Forces will likely be tasked to operate and survive in highly-contested areas against foes with capabilities equal to or exceeding those of the United States. The potential for U.S. Army Special Forces to be tasked with these, and other missions during Large-Scale Combat Operations should instill a strong desire to analyze and study how they would accomplish them without incurring unacceptable and avoidable losses.

In this first chapter, the authors provided background information to the problem and identified key knowledge gaps this study aims to fill. In Chapter II, the authors provide a literature review that analyzes the Future Operating Environment and explores the historical roles of U.S. Army Special Forces upon its inception. Chapter III includes a description of the research methodology centered on the future-based TTX and presents key findings and observations (Appendix U.S. Army Special Forces 2035 Table Top Exercise). In Chapter IV, the authors provide recommendations to the U.S. Army Special Forces community and present several implications for U.S. Army Special Forces.

II. LITERATURE REVIEW

A. PURPOSE

This chapter provides context regarding the knowledge and capability gaps discussed in Chapter One, specifically the lack of emphasis currently placed on U.S. Army Special Forces' role in conducting Large-Scale Combat Operations against great power adversaries. The authors first explore U.S. Army Special Forces' initial purpose and early operations, then merge several notable future studies to provide a consumable forecast, and finally, examine the various stakeholders' approaches to addressing these future forecasts. Analyzing U.S. Army Special Forces' early operations exposes the unit's true design, which ultimately was to provide unique capabilities for use against a great power adversary during Large-Scale Combat Operations. Having highlighted the historical role of U.S. Army Special Forces in this context, a synthesis of prominent future studies is offered that indicates a rise in great power competition and emphasis is placed upon potential military and battlefield implications. Lastly, the authors offer a critical analysis of the current future-based documents and operational concepts that further exposes the dearth of insight regarding U.S. Army Special Forces in Large-Scale Combat Operations against a great power.

B. U.S. ARMY SPECIAL FORCES: A HISTORICAL PERSPECTIVE

1. Special Forces' Original Purpose

On June 19, 1952, Colonel Aaron Bank, after years of lobbying alongside Brigadier General Robert McClure and Colonel Russell Volckmann for the creation of a special operations unit, activated and assumed command of 10th Special Forces Group (Airborne).²⁸ Based on special operations conducted by the Office of Strategic Services (OSS) in World War II, "the unit's wartime mission was to develop, organize, train, equip, and direct anti-Soviet resistance forces in Eastern Europe in the event of war with the

²⁸ Aaron Bank, *From OSS to Green Berets: The Birth of Special Forces* (New York: Pocket Books, 1987), 187–88.

[Union of Soviet Socialist Republics].”²⁹ Indeed, the focus on orchestrating resistance activity rings true throughout U.S. Army Special Forces’ history. Yet, another key part of the mission statement that seems to have faded from history, is the focus on the unit’s role during a major war with the Soviet Union. The ultimate purpose behind Colonel Bank’s new creation was to infiltrate into a denied area and operate against a great power adversary during Large-Scale Combat Operations.³⁰ Certainly, the U.S. Army did not expect the unit to fight conventionally, as evident by the mission statement, but the demand for their niche capabilities in such a conflict was clear.

Critical to the success of these early Special Forces pioneers was their clear articulation of Special Operations Forces’ unique capabilities. In particular, their ability to achieve significant impact at a strategic level with minimal resources during wartime.³¹ While many World War II-era regular Army officers believed special operations was a sideshow, the facts gathered from OSS operations proved otherwise. They highlighted the ability of special operations to provide critical information, divert enemy forces, degrade enemy lines of communication, and attack the enemy’s morale.³² In the decades that followed its inception, Special Forces continued to grow and, while the mission set expanded to include tasks such as Counterinsurgency and Counter-terrorism, the emphasis on the unit’s role during a great power war never wavered, best evidenced by their early plans and operations.

2. Early Special Forces’ Plans and Operations

Examining U.S. Army Special Forces’ plans, training, and operations during the Cold War illustrate the importance the unit placed on maintaining its ability to operate against a great power adversary. Two notable examples are the development of the Green Light teams and the activities of Detachment-A (“Det-A”) in Berlin, Germany. Special

²⁹ Thomas K. Adams, *U.S. Special Operations Forces in Action: The Challenge of Unconventional Warfare* (London: Frank Cass, 1998), 54.

³⁰ James Stejskal, *Special Forces Berlin: Clandestine Cold War Operations of the U.S. Army’s Elite, 1956–1990* (Oxford: Casemate Publishers, 2017), 10.

³¹ Bank, *From OSS to Green Berets*, 172–73.

³² Stejskal, *Special Forces Berlin*, 4.

Forces maintained both missions throughout the Cold War, despite its high operational tempo, expansion of its principal tasks, and conflicts throughout Southeast Asia and Central and South America.

a. PROJECT GREEN LIGHT

During the 1950s, the U.S. military began experimenting with the notion of employing tactical nuclear weapons throughout its formations, which ultimately led to the development of one of U.S. Army Special Forces' unique tasks: Project Green Light.³³ After testing nuclear artillery rounds, rockets, and even recoilless rifles, the U.S. Army eventually found advantages in utilizing the unique capabilities of U.S. Army Special Forces to deliver and employ the man-portable Atomic Demolition Munition (ADM), also known as the "backpack nuke."³⁴

As the U.S. intelligence community identified potential targets for tactical nuclear strikes, it became clear that traditional means of delivery, such as aircraft or rockets, would not reliably neutralize many of the selected targets.³⁵ However, U.S. Army Special Forces retained the ability to infiltrate into these denied environments and reliably employ the weapon system on the right target at the right time. Not every Group received this tasking, those who were, assigned one detachment per company to the mission. The training and certification process was strenuous with no tolerance for error.³⁶ The "Green Light teams" developed procedures to deliver the ADMs via land, air, and sea using "ratline," free fall, and underwater methods.³⁷ The teams also went to great lengths to test their communication equipment's capabilities and survivability under the arduous conditions caused by the proximity of a nuclear detonation. Lastly, the Green Light teams emphasized training on surviving and operating within a denied environment with little support, as each

³³ Alex Wojcicki, "Green Light: The Weapon We Never Used," in *Special Forces, the First Fifty Years : The United States Army Special Forces 1952–2002*, United States Army Special Forces 1952–2002 (Tampa, FL: Faircount LLC, 2002), 320–21.

³⁴ Wojcicki, 321.

³⁵ Wojcicki, 321.

³⁶ Wojcicki, 321.

³⁷ Wojcicki, 323.

detachment expected to be behind enemy lines for an unknown period following their ADM employment. Despite these challenges, U.S. Army Special Forces excelled during the annual exercises and inspections, thus maintaining the mission set for almost thirty years.³⁸ Some contribute the very survival of U.S. Army Special Forces to the ADM mission. The project's relevancy in potentially crippling the Soviets in the initial stages of war ultimately outweighed the Army's attempts to eliminate Special Forces during the downsizing that followed the Vietnam War.³⁹

Mention of Project Green Light may conjure imaginings of kamikaze-style suicide missions or perhaps even disbelief that the U.S. government ever contemplated such a high-risk operation. Yet, the mission was real and remained a vital part of U.S. Army Special Forces for almost three decades. This cognitive gap that exists between contemporary and Project Green Light-era U.S. Army Special Forces members highlights the deliberate approach required to prepare for Large-Scale Combat Operations against a great power adversary. It can also help expose U.S. Army Special Forces' potential capability gaps for such a task and should move the community to prepare for operating in this type of war.

b. DETACHMENT-A

On June 17, 1953, anti-Communist-government protests erupted across Soviet-controlled East Germany, particularly in East Berlin, surprising both the United States and Soviet governments.⁴⁰ The Soviets reacted swiftly with military action to quell the uprising against the German Democratic Republic government. The United States government, despite broadcasting propaganda implying otherwise, failed to assist the protestors in their rebellion against communism. Tensions rose as the likelihood of war increased. The U.S. military emphasized the importance in delaying the Soviet advance in Europe in the early stages of a war, as this facilitated the transportation of U.S. reinforcements to the European continent.⁴¹ To assist in this delaying action, in November of 1955, six U.S. Army Special

³⁸ Wojcicki, 322–23.

³⁹ Wojcicki, 322.

⁴⁰ Stejskal, *Special Forces Berlin*, 1–2.

⁴¹ Stejskal, 15.

Forces teams formed Detachment-A and deployed to Berlin, to operate under the U.S. Commander of Berlin.

Detachment-A's mission upon the outbreak of war was to sabotage vital targets within East Berlin and then transition to Unconventional Warfare operations with local guerrillas in East Germany in order to delay the movements of Warsaw Pact forces.⁴² Two of the six teams planned to operate inside the Berlin Wall area, while the remaining four teams planned to operate outside of the city, with each one assigned specific boundaries.⁴³ The composition of these teams required considerable thought, as Det-A would operate clandestinely among the local population. At the time, this task was not as insurmountable as it might seem today. The U.S. Army Special Forces was formed for this exact mission. As a result of the Lodge Act, which enabled recruitment of foreign nationals to enlist in the U.S. Army to receive U.S. citizenship in return, the 10th Special Forces Group retained several soldiers of Eastern European and German descent who joined Detachment-A.⁴⁴

During its 35-year existence, "Det-A" developed detailed target folders, conducted reconnaissance in East Berlin and East Germany, prepared to arm and organize resistance forces, emplaced weapons and equipment caches, and even participated in the ADM mission set.⁴⁵ While the focus was always on Unconventional Warfare in a general sense, in 1981, the Supreme Allied Commander in Europe, General Bernard Rogers, made Strategic Intelligence Collection and Target Acquisition the unit's top priority.⁴⁶ General Rogers made it clear that Det-A was in a unique location and possessed special capabilities that would enable them to provide near real-time information about Warsaw Pact forces' movements and intentions, while still maintaining Unconventional Warfare as a follow-on task.⁴⁷

⁴² Stejskal, 26–27.

⁴³ Stejskal, 196.

⁴⁴ Stejskal, 19.

⁴⁵ Stejskal, 27, 35, 55–59.

⁴⁶ Stejskal, 196.

⁴⁷ Stejskal, 196.

Project Green Light and Detachment-A were challenging mission sets aimed at achieving strategic objectives. The idea of operating behind the Iron Curtain against the Soviet Union was a daunting one, yet U.S. Army Special Forces was ready to execute both missions for over three decades. Similar to U.S. Army Special Forces teams tasked with the ADM mission, “Det-A” was also tasked to conduct a myriad of secondary requirements, including but not limited to counter-terrorism (which included assistance to Operation EAGLE CLAW, the attempted rescue of hostages in Iran), Foreign Internal Defense, vulnerability assessments, and even Vietnam rotations.⁴⁸ These additional, short-notice tasks demanded attention, yet U.S. Army Special Forces always balanced them with their primary requirement of standing ready to operate against the Soviet Union during Large-Scale Combat Operations. It was evident that while they understood that it was more likely they would be called to conduct a counter-terrorism mission than fight World War III, the relative consequences of not being prepared for the latter were more severe.

C. ENVISIONING THE FUTURE OPERATING ENVIRONMENT

The risk of conflict, including interstate conflict, will increase during the next two decades [2017-2037] due to evolving interest among major powers, ongoing terrorist threats, continued instability in weak states, and the spread of lethal and disruptive technologies.

—National Intelligence Council’s *Global Trends*, 2017

1. Purpose

This section describes a possible future operating environment between 2030–2050 by exploring four separate categories: technology, international relations, state governance, and military implications. Through the compilation of several prominent futures studies, this literature review presents a different reality from what the U.S. military has become accustomed to since the end of the Cold War. Analyzing alternative futures enables the U.S. military to take measures to address potential capability gaps in its forces, equipment, operating concepts, and doctrine.

⁴⁸ Stejskal, 271–72.

2. Summary

The rate of technology invention, the degree to which the international system becomes more multipolar, and the ability of states to manage increasingly complex governing challenges will determine the Future Operating Environment between 2030–2050.⁴⁹ The speed and degree of convergence of these three trends will determine when, where, why and how great powers use force.⁵⁰ Technologies such as Artificial Intelligence (AI), autonomous systems, and increasingly lethal weapons with extended ranges will make surviving and operating in this sensor-rich future environment difficult. Cyber, space and long-range fires capabilities will expand the battlefield.⁵¹ Russia and China, with access to these technologies, will likely challenge U.S. interests globally as absolute power diffuses and regional conflict becomes more abundant. Governments, already burdened by climate change, resource competition, migration and demographic trends will struggle for legitimacy and security. This increase in government instability is more likely to stress the international system, creating higher demands for stability and security operations.⁵² Moves from great revisionist powers, similar to recent efforts by Russia in Ukraine and China in the South China Sea, will likely strain the U.S. military as each move may demand the U.S. government’s attention and require counter-moves. In total, conflict in and among states is more likely.

3. Technology

The rapid development of new technologies such as advanced computing, Artificial Intelligence, autonomous systems, additive manufacturing, and alternative energies, coupled with the proliferation of low-cost interconnected current technologies, may fundamentally disrupt the entire U.S. military organization. Though the rate of invention

⁴⁹ Joint Force Development, “Joint Operating Environment 2035 The Joint Force in a Contested and Disordered World,” July 14, 2016, <http://www.jcs.mil/Doctrine/Joint-Concepts/JOE/>; Chief of Staff of the Army’s Strategic Studies Group, “The Character of Warfare 2030-2050: Technological Change, the International System, and the State,” July 12, 2016. Though many factors contribute to the future operating environment between 2030–2050, they can be appropriately binned into these three categories.

⁵⁰ CSA Strategic Studies Group, “Character...2050.”

⁵¹ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

⁵² CSA Strategic Studies Group, “Character...2050.”

of new technologies is disputed, the unequal distribution of these technologies is likely to cause conflict as governments develop new ways to incorporate them into forms of fighting (i.e., innovation).⁵³ Many sources note the development of AI may be the single most disruptive technology between 2030–2050 to the extent that it has implications in so many other areas.⁵⁴ A 2013 report from McKinsey and Company, a global management and consulting firm, identified the most likely disruptive technologies as:

- **Mobile Internet** Increasingly inexpensive and capable mobile computing devices and Internet connectivity;
- **The Internet of Things** Networks of low-cost sensors and actuators for data collection, monitoring, decision making, and process optimization;
- **Advanced robotics** Increasingly capable robots with enhanced senses, dexterity, and intelligence used to automate tasks or augment humans;
- **Autonomous and near-autonomous vehicles** Vehicles that can navigate and operate with reduced or no human intervention;
- **Next-generation genomics** Fast, low-cost gene sequencing, advanced big data analytics, and synthetic biology (“writing” DNA);
- **Energy storage** Devices or systems that store energy for later use, including batteries;
- **3D printing** Additive manufacturing techniques to create objects by printing layers of material based on digital models;
- **Advanced materials** Materials designed to have superior characteristics (e.g., strength, weight, conductivity) or functionality;
- **Renewable energy** Generation of electricity from renewable sources with reduced harmful climate impact.⁵⁵

⁵³ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

⁵⁴ CSA Strategic Studies Group, “Character...2050.”

⁵⁵ James Manyika et al., “Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy | McKinsey & Company,” accessed February 15, 2018, <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies>. Technologies, terms and definitions pulled directly from McKinsey report.

4. International System

Prominent futures studies view the international system--defined as a system composed of states that shapes how, when, where, and why armed conflict occurs--on a spectrum with optimistic and pessimistic poles.⁵⁶ As captured in the Chief of Staff of the Army's Strategic Studies Group's research on the character of warfare in 2030–2050, integrated and cooperative relations represent more optimistic views while fragmented and competitive ones lie on the other end of the scale.⁵⁷ The Atlantic Council's forecast, "Envisioning 2030: U.S. Strategy for the Coming Technology Revolution," claims the United States is likely to be in a privileged position and maintain significant global influence relative to other great powers, yet will no longer be hegemonic due to the rise of regional competitors.⁵⁸ The study goes on to say rising regional hegemons will use their growing influence to shape their respective regions while protecting them from outsiders, escalating risk of conflict. While reports claim that India, Indonesia, Japan, Nigeria, South Africa, and Brazil have potential to become poles in the future system, the "4+1" threat is the most prevalent throughout the reports (Figure 3).

⁵⁶ CSA Strategic Studies Group, "Character...2050."

⁵⁷ CSA Strategic Studies Group, "Character...2050."

⁵⁸ Atlantic Council, "Envisioning 2030: U.S. Strategy for the Coming Technology Revolution," Atlantic Council, accessed February 15, 2018, <http://www.atlanticcouncil.org/publications/reports/envisioning-2030-us-strategy-for-the-coming-technology-revolution>; CSA Strategic Studies Group, "Character...2050."; National Intelligence Council, *Global Trends*.

The “4+1” Threat

- **Russia** can be considered our “pacing threat,” and will be our most capable potential foe until the 2035 timeframe. It will remain a key adversary through 2050.
- **China** is rapidly modernizing its armed forces and investing heavily in readiness and technological research. Its rapid development means that it likely will surpass Russia as our pacing threat sometime prior to 2035.
- **North Korea** lacks the capabilities of Russia or China, but its large but outdated military, its credible ballistic missile force, expanding cyber capabilities, and nuclear capabilities make it a significant regional threat through 2025-2030.
- **Iran** through 2025-2030 represents a non-nuclear regional hegemon, but is likely to develop nuclear weapons sometime prior to 2035. Its geography and mastery of hybrid conflict involving proxies, coupled with ambitious military reforms means it is likely that Iran remains a key concern to 2035.
- **Radical Ideologues and Transnational Criminal Organizations** like ISIS, al-Qa’ida, Lebanese Hizballah, or Latin American drug cartels and other groups which will sprout up in reaction to the unfolding OE will remain difficult and capable threats through 2035, and probably beyond. Although individual groups will rise and fall, radical ideologues and transnational criminal organizations will be able to match terrorism and insurgency with increasing access to commercially available technologies and connections to nation states and criminal elements to remain viable.

*From The Operational Environment and the Changing Character of Future Warfare by Training and Doctrine Command (TRADOC) G2 (2017)

Figure 3. The “4 + 1” Threat⁵⁹

5. State Governance

The nation-state in the world of 2030–2050 will likely remain the power broker and primary actor in the international system, but any given country may be weaker domestically and globally than it is today.⁶⁰ Power is diffusing from the state as immense challenges of aging societies, urbanization, resource inequality, climate change, religious and ethnic tensions compete for finite resources and attention (Figure 4). Meanwhile, governments will compete for power with super-empowered individuals, mega-corporations, and transnational criminal organizations who use violent and non-violent means to achieve their ends and who are further enabled by technology to organize quickly and cheaply. Strained state systems and security apparatuses will struggle to govern as

⁵⁹ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare,” accessed January 30, 2018, http://www.arcic.army.mil/App_Documents/The-Operational-Environment-and-the-Changing-Character-of-Future-Warfare.pdf.

⁶⁰ CSA Strategic Studies Group, “Character...2050.”; National Intelligence Council, *Global Trends*.

demographic trends in more wealthy nations lead to an increasingly graying population stressing national budgets while less wealthy states become increasingly young, urban and angry.⁶¹ These ingredients will likely increase intrastate conflict and increase the number of failed or weakened states placing an increased demand for those who can export support and security.

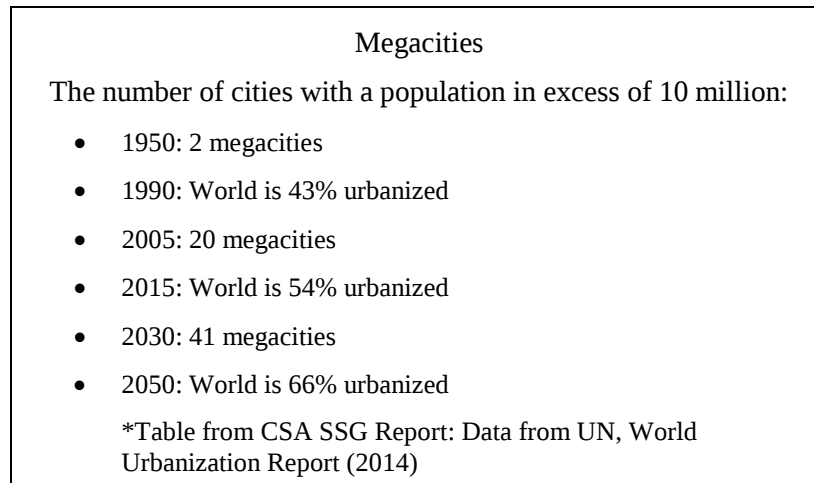


Figure 4. U.N. World Urbanization Report⁶²

6. Military Implications

There is a growing consensus among prominent futures studies that significant discontinuities in the character of warfare are approaching rapidly.⁶³ Certain military implications of these trends is aptly captured in the excerpt below from the Army's preeminent futures wargame Unified Quest in 2016.

Sensors are ubiquitous, multi-domain and capable of discreetly and accurately locating and targeting any and everything moving in the battlespace. Similarly, advances in lethal, smart weapons systems, mostly autonomous, and munitions enable precision, real-time, effective attack and

⁶¹ Futures Directorate, *2015 Marine Corps Security Environment Forecast* (Futures Assessment Division, 2015), <http://www.mcwl.marines.mil/Portals/34/Documents/2015%20MCSEF%20-%20Futures%202030-2045.pdf>; National Intelligence Council, *Global Trends*; CSA Strategic Studies Group, "Character...2050."

⁶² CSA Strategic Studies Group, "Character...2050."

⁶³ David Fastabend, "An Advanced Engagement Battlespace: Tactical, Operational and Strategic Implications for the Future Operational Environment | Small Wars Journal," accessed April 20, 2018, <http://smallwarsjournal.com/jrnl/art/advanced-engagement-battlespace-tactical-operational-and-strategic-implications-future>.

destruction of discrete targets in all domains throughout the battlespace. Integrating these sensor / shooter combinations will be holistic, integrated mission command systems that ensure real-time situational understanding, decision making and execution, much of which will be autonomous.

—Jim Greer⁶⁴

Put simply, advanced military capabilities will likely shape the battlefields of 2030–2050. Military power and shaping will likely rest on the proliferation of nuclear weapons, ballistic missiles, and precision-strike technologies, all enhanced by cyber capabilities.⁶⁵ Increasingly, combined arms fighting will expand to include electronic, cyber and other effects.⁶⁶ Due to increased connectivity, battlefield events will affect the global information environment even faster than they do today. A premium will be placed on the fight for information while survival and victory will go to those who understand and act faster.⁶⁷ Some have labeled events on this future battlefield as “Advanced Engagements,” which can be described as:

- “... **compressed in time**, as the speed of weapon delivery and their associated effects accelerate enormously;
- ... **extended in space**, in many cases to a global extent, via precision long-range strike and interconnectedness, particularly in the information environment;
- ... **far more lethal**, by virtue of ubiquitous sensors, proliferated precision, high kinetic energy weapons and advanced area munitions;
- ... **routinely interconnected** – and contested -- **across the multiple domains** of air, land, sea, space and cyber;

⁶⁴ Jim Greer, “Multi-Domain Battle Concept Paper - Breaking Out of Paralysis: Huttier Tactics in 2050,” Unpublished Paper, 2016.

⁶⁵ CSA Strategic Studies Group, “Character...2050.”

⁶⁶ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

⁶⁷ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

- ... **interactive across the multiple dimensions of conflict**, not only across every domain in the physical dimension, but also the cognitive dimension of information operations, and even the moral dimension of belief and values.”⁶⁸

Innovation--the addition of new technologies into ways of fighting--will be paramount as adversary capabilities will pose significant challenges to U.S. efforts as dominance in any domain may no longer be feasible. Disruptive technologies, or technologies so advanced that U.S. doctrine is re-shaped to take full advantage, will arrive at varying speeds and densities (Figures 5 and 6).⁶⁹

Potential Game Changers through 2035

Evolutionary technologies that, if matured and fielded, can provide a decisive edge over an adversary unable to match the capability or equal the capacity.

- Advanced ATGM & MANPADS - Proliferate more rapidly than Active Protection systems develop, putting armored vehicles and helicopters at risk
- Robotics – 40+ countries develop military robotics with some level of autonomy
- Space – 50+ nations operating in space. Increasingly, congested and difficult to monitor. PNT at risk
- Chemical Weapons – Nontraditional agents developed to defeat detection and protection capabilities
- Camouflage, Cover, concealment, Denial & Deception (C3D2) – Creates uncertainty and challenges multi-discipline intelligence
- Cannon/Rocket Artillery – Long-range artillery, hardened GPS munitions defeat jamming. Point air defense defend against PGM
- Missiles – Developed for greater range and improved accuracy using inertial guidance
- Computing/Cyber – Human-Computer interaction is transformed. Processing power increases exponentially. Big Data and Quantum Computing

*From The Operational Environment and the Changing Character of Future Warfare by Training and Doctrine Command (TRADOC) G2 (2017)

Figure 5. U.S. Army Projections of “Game Changers” through 2035⁷⁰

⁶⁸ Fastabend, “An Advanced Engagement Battlespace”

⁶⁹ CSA Strategic Studies Group, “Character...2050.”

⁷⁰ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare.”

Potential Game Changers through 2050

- Laser and Radio Frequency Weapons – Scalable lethal directed energy which can counter aircraft, UAS, Missiles, Projectiles, Sensors and Swarms
- Swarms – Leverage autonomy, robotics, and artificial intelligence to generate “global behavior with local rules” for multiple entities – either homogeneous or heterogeneous teams.
- Rail Guns and Enhanced Directed Kinetic Energy Weapons (EDKEW) – Non-explosive electromagnetic projectile launchers provide high velocity/high energy weapons.
- Energetics – Provides increased accuracy and muzzle energy.
- Synthetic Biology – Engineering and modification of biological entities has potential weaponization.
- Internet of Things – Linked internet “things” create opportunity and vulnerability. Great potential benefits already found in developing U.S. systems also create a vulnerability.
- Power – Future effectiveness depends on renewable sources and reduced consumption.

*From The Operational Environment and the Changing Character of Future Warfare by Training and Doctrine Command (TRADOC) G2 (2017)

Figure 6. U.S. Army Projections of “Game Changers” through 2050⁷¹

D. ADDRESSING THE FUTURE

Acknowledging this future operating environment and the potential implications for U.S. national security, President Donald J. Trump released the 2017 National Security Strategy (NSS), with a focus on renewing the military’s competitive advantages, promoting innovation, and revitalizing the defense industrial base.⁷² The document boldly names the “revisionist powers of China and Russia,” describing them as challengers in multiple domains attempting to undermine the United States, its allies, and its values.⁷³ The NSS calls for the Department of Defense to “develop new operational concepts and capabilities to win without assured dominance in air, maritime, land, space, and cyberspace domains.”⁷⁴ The 2018 National Defense Strategy follows a similar theme, stating boldly that the DoD is “emerging from a period of strategic atrophy” and stepping into a world where “[i]nter-state strategic competition...is now the primary concern in U.S. national

⁷¹ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare.”

⁷² Donald Trump, *National Security Strategy* (Washington, DC: White House, 2017), <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

⁷³ Trump, *NSS*.

⁷⁴ Trump, *NSS*.

security.”⁷⁵ The document goes on to call the Joint Force to match the new reality of “strategic competition, rapid dispersion of technologies, and new concepts of warfare.”⁷⁶

Thus, in efforts reminiscent of past doctrinal adaptations such as AirLand Battle, Army After Next and Force XXI, senior U.S. Defense officials, including the Chief of Staff of the Army, have directed internal assessments to address the U.S. military’s viability in a future conflict.⁷⁷ These directed initiatives include the development of new operational concepts, doctrine, future studies, an invigorated research and development community and a new U.S. Army Futures Command that will oversee U.S. Army modernization efforts.⁷⁸

To keep pace with the changing character of war and address new challenges, the U.S. Army develops new concepts that are meant to drive change across large organizations and within complex bureaucracies. Conceptual change in the way the U.S. military fights wars precedes doctrinal development, a requirement to formally address new military problems stemming from evolving adversary capabilities and complexities associated with the future operating environment and a morphing geopolitical landscape. The precedent of U.S. Army doctrinal change to address new environments and challenges is evidenced in recent history by the evolution of its flagship manual *Operations*, which has been re-written nine times since 1975.⁷⁹ Today, the United States again finds itself on the cusp of complex

⁷⁵ Department of Defense, *National Defense Strategy* (Washington, DC, 2018), <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

⁷⁶ Department of Defense, *NDS*.

⁷⁷ Defense Advanced Research Project Agency, “The Army After Next,” October 1996, http://usacac.army.mil/cac2/csi/docs/Gorman/06_Retired/02_Retired_1991_99/17_97_DARPA_ForAAN_1May.pdf; “Force XXI OPERATIONS TRADOC Pamphlet 525-5” (US Army TRADOC, August 1, 1994), http://webapp1.dlib.indiana.edu/virtual_disk_library/index.cgi/4240529/FID3171/ACDOCS/PAPERS/B004.PDF; “FM 100-5: Operations, 1982. :: Obsolete Military Manuals,” accessed February 7, 2018, <http://cgsc.cdmhost.com/cdm/ref/collection/p4013coll9/id/48>.

⁷⁸ “Statement by LTG Murray, LTG Anderson, LTG Ostrowski and MG Dyess Before the Subcommittee on Airland Committee on Armed Services United States Senate on Army Modernization,” February 7, 2018, https://www.armed-services.senate.gov/imo/media/doc/Murray-Anderson-Ostrowski-Dyess_02-07-18.pdf.

⁷⁹ Benjamin Jensen, *Forging the Sword: Doctrinal Change in the U.S. Army* (Stanford, California: Stanford Security Studies, an imprint of Stanford University Press, 2016). Re-written twice since the publication of Jensen’s book.

changes within the future operating environment that will affect the way it deters potential adversaries, and ultimately fight wars.

The 2018 Army Operating Concept and attendant 2017 Multi-Domain Battle concepts address the future operating environment directly by providing a robust intellectual foundation and operational framework to guide and drive future force design and development.⁸⁰ More importantly, they both acknowledge an elevated risk of war with a great power and describe how the Army, as part of the Joint Force will operate against great power adversaries in war between 2020–2040. Necessarily, these concepts describe how Army forces operate across the full Range of Military Operations (ROMO), and thoughtfully describe how U.S. forces will operate on a complex battlefield against an adversary with capabilities equal to, or exceeding those of the United States. The Army Operating Concept also adds special operations to its core competencies, which previously listed only wide area security and combined arms maneuver. That special operations was added as a core competency is indicative of the dynamic and unique contributions they can provide the Joint Force throughout the ROMO and should move the special operations community to study their potential roles in future conflicts more closely. In fact, both documents highlight certain roles where special operations' capabilities would be especially effective against great power adversaries in the future, and within the new operational framework the concepts convey.⁸¹

To contribute to the Army Operating Concept, U.S. Army Special Operations Command (USASOC) issued its operating concept in the same year (2014) that provided the conceptual foundation for special operations as a U.S. Army core competency by emphasizing its two pillars: special warfare and surgical strike.⁸² The newer USASOC

⁸⁰ U.S. Army TRADOC, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century*; U.S. Army TRADOC, *TRADOC Pamphlet 525–3-1 The U.S. Army Operating Concept Win in A Complex World*, accessed January 26, 2018, <http://www.tradoc.army.mil/tpubs/pams/tp525-3-1.pdf>.

⁸¹ Multi-Domain Battle highlights SOF for use in the enemy's deep fire area and especially in a counter-Unconventional Warfare role against enemy proxies, insurgents and stay-behind forces. Though Multi-Domain Battle does not state Counter-Unconventional Warfare, it is implied. It also calls for increased collaboration and interdependence with conventional forces to achieve cross-domain effects in a sensor-rich precision strike, lethal environment.

⁸² US Army Special Operations Command, *ARSOF Operating Concept 2022*, September 26, 2014, <http://www.soc.mil/Assorted%20Pages/ARSOF%20Operating%20Concept%202014.pdf>.

2035 and USSOCOM operating concepts highlight SOF's unique capabilities and contributions to the Joint Force with its primary focus on indigenous approaches, precision targeting, influence and crisis response operations.⁸³ Similar to the Army Operating Concept and Multi-Domain Battle, the special operations documents also acknowledge a complex future operating environment and the growing possibility of overt confrontation with a great power. However, they focus more closely on actions and activities to prevent and deter hybrid conflicts short of all-out war, as opposed to explaining their role within one. This is true for two primary reasons. One, SOF's structure, core activities, and traditional roles are optimized for, and often achieved through, indirect methods using niche capabilities, as opposed to the decisive action akin to conventional forces. Two, though the possibility of a direct clash or Large-Scale Combat Operations with a great power in the future exists, and perhaps is escalating, it is not acknowledged as the most likely scenario. To that end, SOF must prepare for missions they are likely going to be asked to do. By nature, though, emphasis in one direction assumes risks and vulnerabilities in the other, even if the relative odds of occurrence are assessed to be low.

E. CONCLUSION

The fusion of the futures studies presented above suggests there may likely be a significant shift away from today's character of war. Instead, the studies project a world in which great power competition and the probability of Large-Scale Combat Operations between great powers is elevated. Granted, while the likelihood of great power war is forecast to increase, it does not stand as the most likely reality; yet, it remains the most dangerous. Thus, key national-level documents are providing new guidance and the Joint Force is experimenting with new concepts. The U.S. Army Special Forces can do the same. Studying Cold War-era U.S. Army Special Forces operations certainly helps one understand the historical roles that Special Forces used to fill in the event of Large-Scale Combat Operations against a great power; however, further efforts are required. When

⁸³ US Army Special Operations Command, *United States Army Special Operations Command Campaign Plan 2035*, May 4, 2017, <http://www.soc.mil/Assorted%20Pages/USASOC%20CAMPLAN2035%20Final.pdf>; USSOCOM, *SOCOM 2035 Commander's Strategic Guidance* (USSOCOM, March 7, 2016); Director, FMD SOCOM, *Special Operations Forces Operating Concept*, February 1, 2016.

faced with complex problems in a changing future environment, such as the one presented in this study, few approaches generate innovative concepts and new ideas better than the proven method of the wargame.

III. METHODOLOGY

It's tough to make predictions, especially about the future.

—Yogi Berra, 1972 Baseball Hall of Famer

A. PURPOSE

In this chapter, the authors outline the research methodology, describe the development and execution of the U.S. Army Special Forces 2035 Table Top Exercise, and present the observations derived from the TTX (see Appendix U.S. Army Special Forces 2035 Table Top Exercise). Key components of the methodology discussed in this chapter include a brief history on wargaming and its benefits, to include advantages gained by utilizing innovative scenarios, as well as the development process for synthesizing future reports and employing a facilitated TTX. Through the design, development, and execution of a TTX, this research aims to provide insight into how U.S. Army Special Forces will contribute to defeating a great power adversary in Large-Scale Combat Operations in 2035. Specifically, how will conflict with a great power in this described future environment shape U.S. Army Special Forces' principal tasks in the future?

B. WARGAMING AND SCENARIOS

Looking into this future is challenging. However, the difficulty in looking ahead does not excuse the military professional from considering the demands of future war. As the ultimate guarantor of the safety and security of the United States, the Joint Force must simultaneously adapt and evolve while neither discounting nor wishing away the future reality of strife, conflict, and war.

—Vice Admiral Kevin D. Scott⁸⁴

⁸⁴ Kevin D. Scott, "Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World" (Joint Chiefs of Staff, Washington, D.C., 2016).

This section outlines the history of wargaming and its benefits, and describes the methodology for developing the Table Top Exercise and its scenarios, which ultimately yielded the findings and recommendations outlined in Chapter IV.

1. Wargaming: A Brief History

A wargame is a simulation of a realistic scenario framed around a specific problem set within a given context that is ultimately designed to raise the awareness of decision-makers about the constraints and principles of war.⁸⁵ It has consistently provided military leaders with a cost-effective platform to identify capability gaps, encourage innovation, and test new ideas.⁸⁶ Military history is filled with wargames; prominent among them is Sun Tzu's game *Wei Hai* (Encirclement), which challenged players to develop new ways to gain a positional advantage against their opponents.⁸⁷ Wargaming became increasingly valuable throughout history as militaries faced evolutionary, and sometimes revolutionary, advances in warfighting concepts as technology matured and militaries struggled to incorporate new variables into the way they fought. Those who did this often ensured better odds of victory on the battlefield. Wargaming can be traced back to 19th century Prussia with games such as *Kriegsspiel* (Wargame), developed by Prussian Lieutenant von Reisswitz to identify new tactics and maneuvers in response to a sudden rise of massive armies and the new concept of total war.⁸⁸

Starting in 1858, German Field Marshal Helmuth von Moltke the Elder used wargaming to train his staff and develop new ways of fighting after recognizing a potential shift in the character of war triggered by larger battlefield formations, movement of forces

⁸⁵ Francis McHugh, *Fundamentals of War Gaming*, 3rd ed. (Newport, RI: Naval War College, 2011), 2; Peter Perla, *The Art of Wargaming: A Guide to Professionals and Hobbyists* (Annapolis, MD: Naval Institute Press, 1990), 9.

⁸⁶ James Miller, "Gaming the Interwar: How Naval War College Wargames Tilted the Playing Field for the U.S. Navy During World War II" (Army Command and General Staff College, 2013), 84, <http://www.dtic.mil/get-tr-doc/pdf?AD=ADA599136>.

⁸⁷ Perla, *The Art of Wargaming*, 16.

⁸⁸ Miller, "Gaming the Interwar," 11.

by rail, and rapid-firing artillery.⁸⁹ American military leaders of World War I also discovered wargaming's advantages for testing new concepts when the American Expeditionary Force used map exercises to develop means to overcome the static nature of the Western Front.⁹⁰ During the technologically disruptive years in the interwar period, wargaming became particularly useful as militaries around the globe considered how to incorporate innovations such as radar, sonar, wireless communications, aircraft carriers, aviation, and others into their ways of fighting.⁹¹

Today, the U.S. military continues to utilize wargames to study, anticipate and prepare for the challenges the future battlefield will likely present. Drawing from on-going Army initiatives such as *Unified Quest*, and its SOF complement, *Silent Quest*, among others, the TTX captures the lessons learned and best practices from these initiatives designed to challenge traditional approaches and uses of U.S. Army Special Forces.

2. Scenarios and Their Utility

You must spend time hunting for surprises [otherwise] it is difficult not to come up with the obvious.

—Kees Van der Heijden, Professor of Strategic Management⁹²

Crafting scenarios is not about predicting the future. The scenarios presented in this study are not expected to come to pass exactly as described. Instead, scenarios are more about identifying problems and risks rather than solutions. The real utility lies in their ability to help military planners reduce the risks inherent in their work.⁹³ Another important aspect to developing credible scenarios is the ability to describe the future operating

⁸⁹ Benjamin Jensen, "Next War: Wargaming the Changing Character of Competition and Conflict," *The Strategy Bridge*, March 31, 2017, <https://thestrategybridge.org/the-bridge/2017/3/27/next-war-wargaming-the-changing-character-of-competition-and-conflict>.

⁹⁰ Jensen, "Next War."

⁹¹ Bob Work and Paul Selva, "Revitalizing Wargaming Is Necessary to Be Prepared for Future Wars," *War on the Rocks*, December 8, 2015, <https://warontherocks.com/2015/12/revitalizing-wargaming-is-necessary-to-be-prepared-for-future-wars/>.

⁹² Kees Van der Heijden, *Scenarios: The Art of Strategic Conversation*, 2nd ed. (Chichester, West Sussex; Hoboken, NJ: John Wiley & Sons, 2005), 59.

⁹³ Krepinevich, *7 Deadly Scenarios*. p. 16

environment with sufficient analytical rigor that helps the players envision the environment in which they are fighting. This endeavor is enormous as difficulty and complexity compound as the range of the forecasts lengthen. Yet, when designed correctly, scenarios help to identify and acknowledge risks and potential surprises, ultimately helping to narrow the range of uncertainty where possible. They can also identify areas of advantage for belligerents and highlight potential hedges or strategic options that could enable swift course adjustments should the U.S. military encounter a vastly different security environment.⁹⁴

Crafting a compelling vision of an emerging conflict environment's key characteristics can provide persuasive justification for change. This vision can also provide a basis for questions such as "Are U.S. Army Special Forces prepared to operate against a peer-level adversary in war?" and "Should U.S. Army Special Forces reorient itself or change the way it accomplishes its missions in such a war?" Absent such a vision that is often used in wargames, TTXs and the scenarios within them, senior leaders are likely to focus on meeting demands of existing threats, especially in times of persistent conflict as the United States is now experiencing.⁹⁵ Coupling this likelihood with typical default vision that "tomorrow will look like today" highlights the usefulness of the U.S. Army Special Forces 2035 TTX and the importance of humbly analyzing the role of Special Forces against a great power adversary.

C. DESIGNING THE "U.S. ARMY SPECIAL FORCES 2035 TABLE TOP EXERCISE"

In this section, the authors describe the design of the U.S. Army Special Forces 2035 Table Top Exercise that led to the observations outlined at the end of this chapter. The Table Top Exercise was completed as part of a NPS Wargame Applications course and was determined by the NPS Institutional Review Board to not constitute Human Subjects Research as found by HSR Determination dated 28 February 2017. Designing a TTX with sufficient analytical rigor that asks the right questions, derives meaningful

⁹⁴ Krepinevich, *7 Deadly Scenarios*, 10.

⁹⁵ Krepinevich, *7 Deadly Scenarios*, 10.

insights, and is capable of withstanding professional scrutiny by players and readers alike, required months of research, brainstorming and playtesting. The authors utilized the five phases of designing a wargame captured in Figure 7.

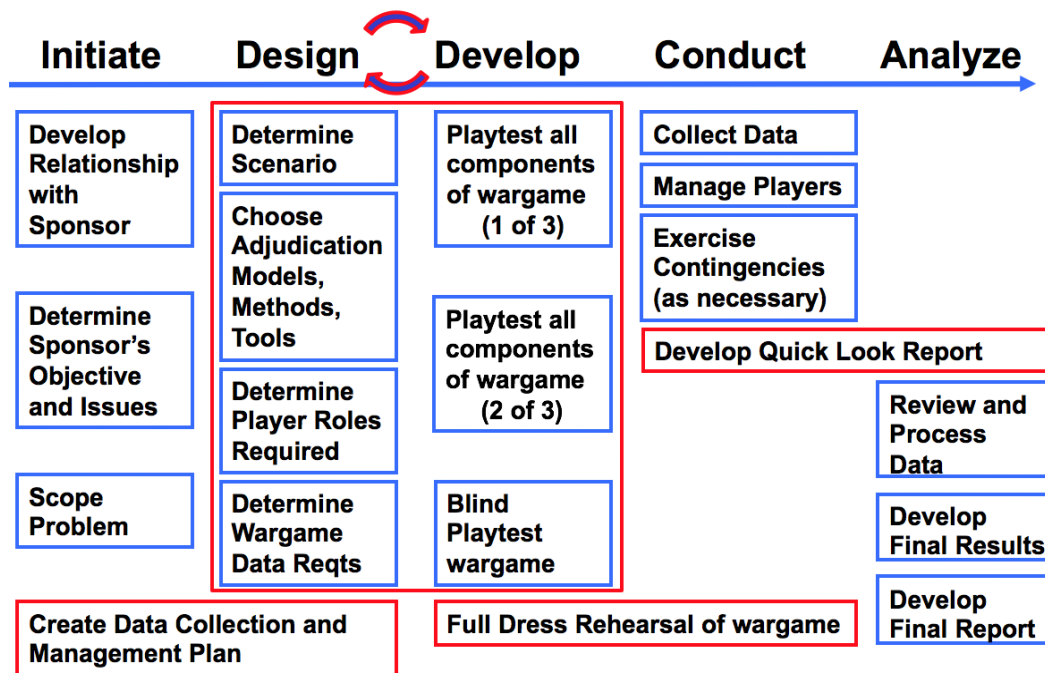


Figure 7. Design and Conduct of a Wargame⁹⁶

The authors also sought counsel from a wide body of experts whose research lie in SOF, futures, research methodology and wargaming. Both authors also obtained the certifications as wargaming apprentices to add rigor and credibility to the design and implementation of the TTX. This deliberate effort was meant to ensure the research questions were scoped appropriately and that the methodology selected would ultimately yield useful answers to those questions while avoiding previous mistakes. The Army Futures Study Group, USSOCOM J7, Marine Corps Warfighting Lab, National Defense University and select senior SOF leaders were among those most helpful to crafting the research questions and the TTX.

⁹⁶ Jeffrey Appleget, "Wargaming Planning Checklist: Five Phases of Wargame Planning," (Lecture Material, Naval Postgraduate School, Monterey), May 2018.

1. Scoping the Problem

The Table Top Exercise objective was to analyze U.S. Army Special Forces' role in Large-Scale Combat Operations against a great power adversary. To ensure the objective was scoped appropriately and that it would yield useful answers in support of this objective, the authors considered key constraints that shaped the design and development of the TTX. The authors used United States Army Special Forces as a research scoping mechanism to avoid addressing the entire USSOCOM or ARSOF enterprises. U.S. Army Special Forces, like other SOF inherently operate in Joint, Interagency, Intergovernmental and Multinational environments and in support of Joint Force Commander and Ambassador efforts. When necessary, the TTX would recognize other SOF by name, but the focus of the research remained squarely on U.S. Army Special Forces.

The Table Top Exercise consisted of one full day of play conducted at the Naval Postgraduate School campus, and included two scenarios. Each scenario was played for approximately three hours, followed by a one-hour plenary session. Additional constraints served as scoping mechanisms in that the scenarios would remain within armed conflict against a great power adversary, occur within the future operating environment (2030-2050), and focus solely on the role of U.S. Army Special Forces. Lastly, TTX was held at the unclassified level to allow for the inclusion of international players, who proved invaluable to the conduct and results of the TTX.

2. Developing the Scenarios and the Future Operating Environment

The scenarios used in this study took place during 2035 and described how future events might come to pass, and what might be their ensuing implications. The year 2035 was selected because it is far enough into the future to get beyond the Program Objective Memorandum and the current programs of record outlined in the Future Years Defense Program.⁹⁷ This was done to avoid organizational and cultural biases that may sway

⁹⁷ "DoDI 5000.02 11-02-2017," accessed July 19, 2018, <https://www.dau.mil/guidebooks/Shared%20Documents%20HTML/DoDI%205000.02.aspx>.

thinking.⁹⁸ Simultaneously, this helps avoid the business-as-usual and stay-the-course mentality that “assumes tomorrow will be only slightly different than today.”⁹⁹

The scenarios utilized in the Table Top Exercise are not meant to be predictive or prescriptive; rather, they were intended to identify and highlight potential changes in the operating environment and highlight challenges for which a military must prepare.¹⁰⁰ The authors developed a future operating environment after examining key geopolitical, military-technical, demographic, social, economic and environmental trends from respectable reports which included: The National Intelligence Council’s Global Trends, the Chief of Staff of the Army’s Strategic Studies Group future report, the 2015 Marine Corps Security Environment Forecast, the U.S. Army’s Training and Doctrine Command’s G2 Mad Scientist Initiative.¹⁰¹ A second critical aspect to the future operating environment report was a robust analysis of the belligerent’s future military capabilities, in this case, Russia. By combining respected government, academic, think tank and industry reports that analyzed Russia’s military investments with the future operating environment reports

⁹⁸ “DoDI 5000.02 11-02-2017.”

⁹⁹ Krepinevich, *7 Deadly Scenarios*, 11.

¹⁰⁰ Krepinevich, *7 Deadly Scenarios*, 10.

¹⁰¹ CSA Strategic Studies Group, “The Character...2050”; National Intelligence Council, *Global Trends*; Manyika et al., “Disruptive Technologies”; Atlantic Council, “Envisioning 2030”; John C. Chambers, Satinder K. Mullick, and Donald D. Smith, “How to Choose the Right Forecasting Technique,” *Harvard Business Review*, July 1, 1971, <https://hbr.org/1971/07/how-to-choose-the-right-forecasting-technique>; David E. Johnson, “The Challenges of the ‘Now’ and Their Implications for the U.S. Army,” Product Page, 2016, <https://www.rand.org/pubs/perspectives/PE184.html>; Michael G. Vickers and Robert C. Martinage, *The Revolution in War* (Center for Strategic and Budgetary Assessments Washington, DC, 2004); Paul R. Norwood, Benjamin M. Jensen, and Justin Barnes, “Capturing the Character of Future War,” *Parameters* 46, no. 2 (2016): 81; Kimberly Amerson and Spencer Meredith III, “The Future Operating Environment 2050: Chaos, Complexity and Competition | Small Wars Journal,” accessed July 26, 2017, <http://smallwarsjournal.com/jrnl/art/the-future-operating-environment-2050-chaos-complexity-and-competition>.

aforementioned, plausible scenarios were designed with the intention of drawing out military implications, specifically for U.S. Army Special Forces.¹⁰²

Both scenarios examined tasks at the tactical level of war, mindful that all tasks could have operational and strategic implications and were in support of a strategy. Russia played the great power adversary for two primary reasons. First, open source data on Russian doctrine and way of war was not lacking. Additionally, obtaining data from wargames designed and facilitated by the U.S. military, academia and think tanks proved as useful templates for the U.S. Army Special Forces 2035 TTX. The second reason hinges on the time available for playing. Reducing cognitive friction for the players while creating a scenario that was plausible and easy to understand in one rapid reading was critical. To that end, the designers believed the players could envision a great power war against Russia much easier than one with China.¹⁰³ This is not inconceivable given the significant amount of resources the United States devotes to NATO and the emphasis on counter-Russian activities the United States has maintained since the end of World War II. Additionally, while joint SOF units would not be incorporated into the TTX for scoping purposes, the scenarios would include significant host nation SOF units and resistance elements as well as interaction with conventional forces. This would facilitate data collection on interoperability and enable the authors to draw out phase zero implications in the findings.

To adequately prepare the players for participation in a future-based Table Top Exercise, the facilitators developed a “Road to War” that incrementally walked the players into the future. The “Road to War” led into both scenarios. The first focused on traditional Special Reconnaissance task in support of Joint Force Entry operations, while the second

¹⁰² Defense Intelligence Agency, “Russia Military Power Report 2017.Pdf,” accessed July 19, 2017, <http://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Russia%20Military%20Power%20Report%202017.pdf>; Elsa B. Kania “Strategic Innovation and Great Power Competition,” The Strategy Bridge, accessed February 5, 2018, <https://thestrategybridge.org/the-bridge/2018/1/31/strategic-innovation-and-great-power-competition>; Elsa B. Kania, “Battlefield Singularity: Artificial Intelligence, Military Revolution, and China’s Future Military Power” (Center for a New American Security, November 2017), March 3, 2018, <https://www.cnas.org/publications/reports/battlefield-singularity-artificial-intelligence-military-revolution-and-chinas-future-military-power>; Vickers and Martinage, *The Revolution in War*.

¹⁰³ The authors chose to focus the scenarios on great powers, two of the most powerful militarily being Russia and China. Although North Korea and Iran are in the “4+1” threat construct, they are not viewed as “peer” competitors.

focused on Unconventional Warfare in a highly contested urban environment. To create the most dangerous scenarios, U.S. Army Special Forces elements were placed in positions of tremendous disadvantage in regards to location, personnel, and available combat power, similar to the circumstances facing Special Forces teams outlined in Chapter Two (see Appendix U.S. Army Special Forces 2035 Table Top Exercise for complete “Road to War” and scenarios).

3. Methods and Tools

The two major styles of wargames are system and seminar. While system wargames can generate quantitative data on specific weapon systems or capabilities, they are unable to properly capture new concepts or ideas formed by operating within a complex, abstract future operating environment. To obtain this type of qualitative data, seminar-style wargames are often used, which at its most basic form is a facilitated discussion, yet can also become large, complex, and vastly coordinated enterprises, such as the Army’s *Unified Quest* series currently ongoing today.¹⁰⁴

The authors selected a seminar-style wargame, specifically a Table Top Exercise, to draw out new concepts and ideas for U.S. Army Special Forces operating in the future operating environment against a great power. While the TTX would ultimately resemble a fluid dialogue among the facilitators and the players, the players were required to fill out Data Collection Tables to capture implications on the warfighting functions and Unconventional Warfare tasks throughout the respective scenarios (Tables 1 and 2). Specifically, the Data Collection Tables would capture implications for how the warfighting functions or Unconventional Warfare tasks would be achieved within the scenario, any associated risk, required capabilities, and “Phase Zero” implications (see Appendix U.S. Army Special Forces 2035 Table Top Exercise for complete maps and Data Collection Tables presented to players).

¹⁰⁴ Perla, *The Art of Wargaming*, 175–76.

Table 1. Scenario One Data Collection Table

Warfighting Function	How Would You Apply		Required Capabilities	Greatest Risks	Phase 0 Implications
Mission Command					
Movement and Maneuver					
Intelligence					
Fires					
Sustainment					
Protection					

Table 2. Scenario Two Data Collection Table

UW Tasks	How Would You	Required Capabilities	Greatest Risks	Phase 0 Implications
Recruit				
Organize				
Train				
Employ				
C2				
Enhance FORCEPRO and CI Measures				
Establish Non-Standard Stocks				
Synchronize Effects with OGAs, JTF, other partners				
Employ MISO to delegitimize/ legitimize				
Infiltrate Additional Personnel				

4. Player Selection

The authors recruited a wide range of players including field grade Army, Navy, and Air Force Special Operations Forces officers; conventional Army, Navy, and Air Force personnel with European Command experience; and allied and partner special operations officers from the Scandinavian and Baltic regions. Each player was carefully selected based

upon operational experience and his or her capacity to share creative ideas in a fluid environment. No Personally Identifiable Information was obtained from the players during execution of the TTX. One facilitator and one data collector were assigned to each team, all of whom were certified Wargame Apprentices and/or Operations Research Analyst. The facilitators ensured the players maintained focus on the TTX objective and would focus the discussion to answer specific information requirements derived during the development process. The data collectors captured information requirements outlined in the Data Collection Management Plan, as well as digitally recorded all concepts, ideas, comments, and disagreements to ensure redundancy. Ultimately, the TTX consisted of 17 players carefully broken into two teams to effectively double the recordable observations. Each team was given the exact scenarios and TTX materials. The teams are listed below:

- Team 1:
 - Facilitator: U.S. Army Special Forces Major (*Certified Wargame Apprentice)
 - Data Collector: U.S. Marine Corps Major (*Certified Wargame Apprentice; Operations Research Analyst)
 - Players:
 - 3 x U.S. Army Special Forces Majors;
 - 1 x U.S. Army Special Forces Colonel;
 - 1 x Professor of International Relations;
 - 1 x U.S. Air Force Special Operations Command Major (pilot);
 - 1 x U.S. Army Information Operations Major;
 - 1 x Norwegian SOF Major;
 - 1 x Finnish SOF Lieutenant Colonel;
 - 1 x Romanian SOF Major.

- Team 2:
 - Facilitator: U.S. Army Special Forces Major (*Certified Wargame Apprentice)
 - Data Collectors: 1 x U.S. Navy SEAL Lieutenant; 1 x U.S. Army Special Forces Major (both *Certified Wargame Apprentices)
 - Players:
 - 3 x U.S. Army Special Forces Majors;
 - 1 x U.S. Navy SEAL Lieutenant Commander;
 - 1 x U.S. Navy Intelligence Lieutenant Commander;
 - 1 x U.S. Air Force Lieutenant Colonel (Air Battle Manager);
 - 1 x Estonian SOF Major.

5. Playtests

Critical to the design and development of any wargame is the inclusion of playtests and full-dress rehearsals. With the individual components of the game complete, the playtest aims to integrate all of the pieces into a coherent functioning system.¹⁰⁵ Specifically, these rehearsals test the players, facilitators, products, timeline, and data collection plans.¹⁰⁶ Two playtest occurred utilizing players closely resembling those used on the day of execution. Additionally, the authors conducted one full-dress rehearsal one week prior to the TTX to validate the changes made following the earlier playtests. The playtests allowed the facilitators and data collectors to refine products, rehearse methods for data collection, and, ultimately, stand prepared to execute the TTX.

¹⁰⁵ David DellaVolpe et al., *War Gamers' Handbook: A Guide for Professional War Gamers* (Newport, RI: Defense Automated Printing Service, 2013), 38.

¹⁰⁶ DellaVolpe et al., 38–39.

6. Execution of the TTX

Players received a read-ahead packet one week before the Table Top Exercise that included the TTX rules, 2035 Future Operating Environment report, “Road to War” and two scenarios, totaling 33 pages. Additionally, the day before execution, players received a two-hour in-brief that covered the TTX rules, road to war and two scenario overviews. The facilitators hosted a question and answer session after the in-brief to clarify any issues and ensure each participant’s preparedness for the TTX on the following day.

On the day of the wargame, the two teams were placed in separate planning rooms and began the first scenario immediately. Both teams were given the exact same scenarios, depicted on large laminated slides affixed to tables. The teams received two maps, but the use of the Internet was encouraged to assist in terrain analysis, demographic data, and infrastructure research. As concepts and ideas emerged from the players, the facilitator assisted in extracting the desired information by encouraging use of the Data Collection Tables provided to each team. Often, this required exploring certain courses of action in depth before moving on to others, and occasionally, circling back to previous ones. Specifically, the Data Collection Tables captured information on how the warfighting functions or Unconventional Warfare tasks would be achieved within the scenario, any associated risk, required capabilities, and “Phase Zero” implications. Additionally, the data collectors assisted the facilitators in keeping the teams focused on the mission, issues, and sub-issues outlined in the Data Collection Management Plan. Facilitators also answered questions posed by the team members or gave assumptions to allow the teams to continue idea development and prevent stalling. After the allotted 3 hours and 15 minutes, the teams transitioned into the second scenario and followed the same procedures listed above.

Following completion of both scenarios, the teams met together for a one-hour plenary session led by the facilitators. The first half of the plenary session confirmed the findings of each team and captured additional insights potentially missed during the TTX. In the second half of the plenary, the facilitators presented the players with questions that focused more closely on the challenges of U.S. Army Special Forces operating in such a complex future operating environment. The answers from the players provided additional data that focused on some of the intangible factors that emerge during Large-Scale Combat

Operations, such as the constant balance of risk versus reward, the comfort levels of commanders with little control over his or her elements, and the cognitive challenges that exist while operating in a denied environment. Following the TTX, the authors analyzed the data from the Data Collection Tables, Data Collection Management Plan, and plenary session to present the observations in the following section.

7. Player Observations

In this section, the authors will present the observations from seventeen players during the U.S. Army Special Forces 2035 Table Top Exercise. The authors placed each observation into one of eight categories represented by the elements of combat power, doctrinally referred to as the warfighting functions.¹⁰⁷ The elements of combat power serve as a recognizable intellectual framework within the military. Planners use them to organize tasks and systems, united by a common purpose, to accomplish missions.¹⁰⁸ Another important factor in selecting a framework to present the findings was consistency in methodology and analysis. To address this, the players received tables organized by the warfighting functions to help conceptualize the military implications of the scenario and aid in data collection during the TTX.

Not all player and facilitator observations had similar components or structure, as the authors deliberately created Data Collection Tables for the teams that allowed flexibility to ensure all ideas, concerns, and questions were captured. Some observations were questions while others were specific concerns or recommendations. Regardless of makeup, they were thematically placed into a particular function according to their warfighting characteristics. For example, a player's observation noting the level of difficulty in controlling and communicating with disparate fire support elements or aircraft could categorically be placed into the functions of Fires or Mission Command. That same player could then offer a suggestion, such as a certain piece of technology, to address the

¹⁰⁷ Department of the Army, *Army Doctrine Publication 3-0: Unified Land Operations* (Washington, DC: Government Printing Office, 2011). Six of the eight elements of combat power are referred to as the warfighting functions. Information and Leadership are the two remaining elements.

¹⁰⁸ "Department of the Army, *Army Doctrine Publication (ADP) 3-0: Unified Land Operations* (Washington, DC: Government Printing Office 2011)."

previously identified challenges and aid in mission execution. While some observations had implications across multiple functions, the authors did not duplicate them nor place them into more than one function. Finally, the observations herein are directly from the players as they navigated the military problems represented by worse case scenarios. Their observations do not necessarily reflect the current state of the U.S. Army Special Forces community or recommendations for the current or future force. However, based off the player observations, it is possible to extract and analyze implications to help prepare for such worse case scenarios. This analysis and the ensuing recommendations are found in the next chapter.

a. Mission Command

Observations regarding the Mission Command function are divided into two sub-categories: 1) Mission Command between U.S. Army Special Forces Detachment and Higher Headquarters and 2) Mission Command internal to the U.S. Army Special Forces Detachment and its partners. Prevalent observations in both sub-categories included an increased emphasis on trust between elements during periods of infrequent or no communications; creation and comprehension of commanders' intent; and tools and technologies to enable communications in a contested electromagnetic spectrum environment. Specific observations from the players include:

1) Mission Command between U.S. Army Special Forces Detachment and Higher Headquarters

- Expressed concern over higher headquarters' capacity to trust detachments' ability to plan and execute missions on truncated timeline and without frequent communications.
- U.S. Army Special Forces should expect to fight and survive with mission command systems disrupted, decentralize decision-making and remove intermediaries between units.
- Need for strict communication windows and contingencies in case windows are missed.

- Need for versatile tools and methods to communicate with higher headquarters with low probability of intercept and low probability of detection.
- Request of thorough intent from higher headquarters during initial mission tasking to mitigate future communications that may elevate risk to mission and risk to force.

2) Mission Command internal to the U.S. Army Special Forces Detachment and its partners

- Trust between the detachment and its partners and their network was paramount to avoid compromising the purpose of the mission.
- How do you rapidly vet new partners and their networks? What tools and methods are most useful?
- Need for clandestine, mesh network to enable communication between dispersed detachment members and their partners. For example, players frequently discussed devices that could send encrypted orders and messages via multiple pathways such as WIFI, Global System for Communication (GSM) or traditional frequencies used in standard military radios.
- General acceptance among players that the adversary will maintain the capability to disrupt or suppress some parts of a mission command network all of the time and all critical parts of a network some of the time. These effects are finite and will have limitations with regard to time and space.
- What is the right balance between high-tech vs. low-tech solutions for communications and what are the trade-offs by picking one vs. the other? For example, exquisite high-tech systems may enable quicker understanding up and down and across echelons, but may also be more

vulnerable. Contrarily, low-tech, more rudimentary methods are slower and may degrade situational awareness at all levels but may be less vulnerable to intercept or detection.

- Need for extensive tradecraft to send and receive orders and information.

b. Movement and Maneuver

- All movement by United States personnel into and within the area of operation was deemed so “high-risk” that detachment members only changed locations when absolutely necessary.
- Freedom of maneuver, especially in urban areas, was restricted due to adversary presence and sensor networks. This made the traditional task of Unconventional Warfare difficult to achieve and led to the following observations: What are implications, challenges and opportunities of conducting Unconventional Warfare in an urban environment? Specifically, what are the implications for recruiting, training and organizing resistance movements within urban areas? What tools or methods can be leveraged by U.S. Army Special Forces or their partners to overcome the challenges? What impact will the cyber domain have in the training, recruiting and organizing of resistance elements if the traditional, rural Guerrilla-Base is no longer viable due to the adversary’s sensors and fires capability?
- To address the difficulty and associated risks of physically maneuvering on the battlefield, players discussed the use of disseminated “how-to” videos or audible soundtracks to aid in the recruitment, training and employment of resistance elements since in-person activities incur significant risk to force and risk to mission. Examples include: how to use weapon systems, how to conduct reconnaissance or similar tasks, how to perform surveillance, how to cyber-hack, how to conduct sabotage, etc.

This observation was directly inspired by Steinbeck's *The Moon is Down*.¹⁰⁹

- U.S. Army Special Forces relied on partner forces and networks to execute all tasks that required physical exposure due to lack of ability to blend into the local environment (ability to speak local languages, physical appearances).
- If U.S. personnel maneuvered, numbers were kept at a maximum of 2–3 persons to reduce their signature against adversary forces and sensors.
- United States military vehicles maintained by detachments were hidden and never used in order to lower signature.
- Ability to move long distance to conduct missions was severely degraded due to increased exposure time.
- U.S. personnel reliant on local means of transportation or pre-positioned stocks to maneuver.

c. Intelligence

- Players requested intelligence support from higher headquarters on Russian S-500s. Request included photographs, capabilities, crew information, set-up/break-down times and procedures and common operation practices. How would the detachment receive this data in a contested environment?
- Players felt the detachments lacked the ability to rebuild the human and physical infrastructure after severe degradation by the adversary. Vetting potential assets and recruits in a denied urban environment proved difficult as the traditional means to conduct these types of activities were disrupted

¹⁰⁹ John Steinbeck, *The Moon Is Down* (Viking Press, 1942).

by a capable foe with robust counterintelligence and special operations forces. This observation led to the following questions: How do detachments mend, build and expand networks that are disrupted or destroyed by the adversary while in a denied environment during Large-Scale Combat Operations? How quickly can a network be re-created? How can U.S. Army Special Forces leverage tools or methods to expedite the creation of a network?

- What are the implications if detachments are unable to receive specific intelligence support from higher headquarters? Specifically, when they are tasked to identify specific targets or carry out raids, sabotage or other combat operations?
- What are the counter-intelligence considerations and implications given the capabilities of Russian Special Operations Forces and Intelligence agencies?
- Players desired the following capabilities: mask themselves against facial recognition and similar technologies throughout urban areas, saturate enemy sensors with false-hits or spoofs, hack into local closed-circuit cameras and temporarily disrupt power or local services to specific locations for small periods of time to enable operations.
- How are the identities of the detachments members and their partners protected from an adversary's intelligence organizations?
- Players viewed the detachments as an information collection platform in the joint collection plan and requested detailed priority information requirements.
- Large quantities of low-cost, locally procured/fabricated unmanned sensors played a role in most courses of action.

d. Fires

- U.S. vehicles armed with rockets and heavy weapons were not used.
- Lack of available fires and fire dominance impacted players' risk calculus and perception and led to the following observations: What are the implications of forward detachments in a denied area without access to direct fire support? How does a dearth of fires impact risk perception in higher echelons, as well as at the detachment level?
- Non-standard fires capabilities available to U.S. forces in a denied area may have implications across other warfighting functions such as movement and maneuver, survivability and protection.
- Players were reliant on partner forces' fires capabilities and flipped the traditional paradigm of U.S.-provided fire support upside down. This highlighted the following observations made by the foreign national and U.S. players alike: At what point does the presence of U.S. Army Special Forces become more of a liability than an asset if they are unable to bring fire power to bear as demonstrated in the U.S. wars in Vietnam, Iraq, Afghanistan and Syria? Do the non-fires capabilities that U.S. Army Special Forces provide overshadow their inability to employ fires in a denied environment?

e. Sustainment

- Players were reliant on partner forces to keep them sustained by acquiring either local or pre-positioned stocks that would require significant upkeep and replenishment in phase zero operations. Items in caches and stockpiles would need to be the most up-to-date in terms of available technology, lethality, and user-interface.
- Additive manufacturing for replacement parts, sensors and tools was prevalent throughout both scenarios.

- Players frequently mentioned an increased demand for typical SOF enablers such as mechanics, communicators, cyber experts and led to discussions on a phenomenon that the players called “the rise of the enabler.”

f. Protection

- Protection and survivability against adversary counter-intelligence agents and capable detection methods was prominent in the exercise.
- How do U.S. Army Special Forces protect their cyber and signal infrastructure from intrusion against adversaries with capabilities equal to or exceeding their own?
- What methods can U.S. Army Special Forces use to disguise themselves, equipment or their emissions to avoid being compromised?
- Players used the phrase “hiding in the noise” to refer to using local existing communications and infrastructure to avoid detection by adversary forces looking for U.S. Army Special Forces elements who may operate systems not commonly found in the area, increasing the risk of intercept or detection.
- The relative importance of armor and other active protection measures to that of passive protection (dispersion, cover, concealment, clutter and camouflage) may be more important to enhance the protection and survivability for U.S. Army Special Forces operating with limited support.
- Decoys to deceive and to clutter the battlefield with false emissions will be important capabilities to enhance protection, survivability and maneuver by frustrating the adversary’s ability target and track.
- Due to the adversary’s advanced cyber, electromagnetic and other tools, force protection for U.S. Army Special Forces and their partners was a

chief concern throughout the scenario and impacted other warfighting functions such as movement and maneuver, mission command and sustainment.

g. Information

- Operating and competing in the information environment can give U.S. Army Special Forces asymmetric advantages when outnumbered and isolated from support. Specifically, leveraging social media to coerce, disrupt and influence populations will be an important capability.
- U.S. Army Special Forces detachments and their headquarters must be adept at managing uncertainty better than the adversary to understand and act faster in the information environment. Capabilities and requisite authorities at the lowest levels will enable detachments to be first in the information environment as opposed to reactionary.
- Increasing the adversary's uncertainty while minimizing that of the United States and its partners will place information related activities such as Military Deception, Military Information Support Operations at the center of military plans as opposed to an afterthought or lesser included to traditional military operations such as raids and reconnaissance.

h. Leadership

- The demands represented in the scenario will place a premium on leaders who can manage vast amounts of information and endure the likely stress present when operating in a denied environment against a peer adversary.
- In an environment where a detachment is likely to be more disaggregated, a demand arises for more leaders capable of making decisions commensurate with those of an experienced detachment commander or operations sergeant.

IV. ANALYSIS, RECOMMENDATIONS, AND CONCLUSION

Without a dynamic body of theory, an army will follow current doctrine until it experiences ... an “extinction event” — a catastrophic failure. The purpose of theory is to change current doctrine through intellect rather than the bloody empiricism of extinction.

—Robert Leonhard¹¹⁰

A. PURPOSE

This final chapter begins by presenting the analysis of the observations outlined in the previous chapter, which were analyzed by addressing the elements of Doctrine, Organization, Training, materiel, Leadership, Personnel, Facilities and Policies (DOTmLPF-P) and their implications for U.S. Army Special Forces. Next, recommendations for the U.S. Army Special Forces community are presented to help address the gap in literature and practices that address the role of Special Forces in a war with a great power. The study concludes by re-visiting this knowledge gap and highlights the importance of closing it by encouraging efforts such as this study, and others with similar aims.

B. ANALYZING THE TTX OBSERVATIONS AND THE IMPLICATIONS FOR SPECIAL FORCES

The scenarios used in the Table Top Exercise were crafted to extract and identify the implications for and potential capability gaps within U.S. Army Special Forces as the players navigated the military problems presented. It is important to consider here that the observations and ensuing analysis were resultant strictly from the observations derived from scenarios within the TTX and are not intended to be taken out of the context of U.S. Army Special Forces operating against a great power in Large-Scale Combat Operations. More specifically, the scenarios centered on U.S. Army Special Forces addressing a Russia-based problem and thus led to Russia-based solutions considering adversary

¹¹⁰ Robert R. Leonhard, *Fighting by Minutes: Time and the Art of War* (Westport, Conn: Praeger, 1994).

capabilities, culture, terrain, and other variables used to assess adversaries and the operational environment. At the same time, it is also wise to recognize that certain implications derived from this study could span across different military units, adversaries and the entire conflict continuum.

The Joint Force conducts DOTmLPF-P analysis, which pertains to the eight non-materiel elements in solving warfighting capability gaps.¹¹¹ The Chairman of the Joint Chiefs of Staff Instructions 3170.011 and Defense Acquisition University defines the eight elements as:

- Doctrine: the way we fight (e.g., emphasizing maneuver warfare, combined air-ground campaigns).
- Organization: how we organize to fight (e.g., divisions, air wings, Marine-Air Ground Task Forces).
- Training: how we prepare to fight tactically (basic training to advanced individual training, unit training, joint exercises, etc.).
- materiel: all the “stuff” necessary to equip our forces that do not require a new development effort (weapons, spares, test sets, etc., that are “off the shelf” both commercially and within the government).
- Leadership and education: how we prepare our leaders to lead the fight (squad leader to 4-star general/admiral - professional development).
- Personnel: availability of qualified people for peacetime, wartime, and various contingency operations.
- Facilities: real property, installations, and industrial facilities (e.g., government-owned ammunition production facilities).
- Policy: DoD, interagency, or international policy that impacts the other seven non-materiel elements.¹¹²

¹¹¹ Joint Staff J-8, “Chairman of the Joint Chiefs of Staff Instruction CJCSI 3170.011,” January 23, 2016, http://www.jcs.mil/Portals/36/Documents/Library/Instructions/3170_01a.pdf?ver=2016-02-05-175022-720. The big “M” in Material denotes a new development effort that requires use of the Defense Acquisition System while little “m” denotes equipping forces with off the shelf or existing materials. Little “m” are the preferred solutions concerning time and resource commitments.

¹¹² Joint Staff J-8.

This study does not offer a formal and comprehensive Capabilities Based Assessment, or “study that investigates DoD warfighting capabilities, identifies capability gaps and precedes DOTmLPF-P change recommendations.”¹¹³ The scope (Large-Scale Combat Operations) and unit of focus (U.S. Army Special Forces) in this study are much narrower than the entire Joint Force operating along the entire conflict continuum. However, the structure that DOTmLPF-P provides offers a familiar framework to military professionals and serves as an appropriate categorization tool to present the analysis of the observations from the TTX. To remain consistent with the tables filled out by the players during the exercise and the observation categories outlined in the previous chapter, the authors conducted a DOTmLPF-P and warfighting function cross-walk. This process added depth to the analysis by drawing out the DOTmLPF-P implications across all of the warfighting functions that added focus and specificity when identifying the implications, potential capability gaps and ensuing recommendations for the U.S. Army Special Forces community.

The following three tables illustrate the crosswalk and represent the thought process undergone by the authors when conducting the analysis. Some intersections of DOTmLPF-P elements and warfighting functions are redundant and are redacted from the table to avoid confusion or duplicative analysis. Similarly, some elements of DOTmLPF-P were combined to produce a single category (Leadership & Education and Intelligence & Information) while others were eliminated (Policy and Facilities) due to the scope of study or inadequate observations from the TTX. Similar to the observations in the previous chapter, not all implications fit precisely into one category. Some implications may have a narrow application while others could spread across several warfighting functions. The inherent value in the tables is not the method of categorization, but rather the conceptual thought process of understanding the implications for U.S. Army Special Forces operating against a peer. While they are meant to provoke thought and encourage the development of solving potential capability gaps, they also highlight areas where U.S. Army Special Forces should sustain and re-enforce existing methods, policies and tactics.

¹¹³ Joint Staff, “DOTmLPF-P Analysis.”

Table 3. DOTmLPF-P and Warfighting Function Crosswalk

WARFIGHTING FUNCTIONS	IMPLICATIONS					
	Doctrine	Organization	Training	material	Leadership & Education	Personnel
Mission Command <u>Characteristics:</u> • Rapid decision-making • Imperfect • Ambiguous • Decentralized • Complex	• Reexamine Special Forces command architectures' ability and efficacy to control operations in a denied environment • Test current interoperability of command responsibility and relationships amongst and within U.S. military, U.S. interagency, host nation military, and partner and allied SOF to measure effectiveness and efficiency and identify vulnerabilities	• Explore efficiency, effectiveness, and vulnerabilities of Special Forces command architecture and task organization from detachment to Group-level for Large-Scale Combat in denied environments	• Emphasize decentralized decision-making at every level (training, garrison, and operational) • Encourage faster decision-making with imperfect information • Develop junior soldiers to lead, manage, and synchronize larger and more complex resistance formations and networks	• Utilization of a communications system specifically designed to operate in denied environment (e.g. clandestine mesh network) is critical • Integration of both high and low tech systems (COTs, GOTs, or SOCOM acquisition) is critical to ensure redundant communication	• Encourage and incentivize decentralization and low-level decision-making • Test current risk management against scenario and explore new approaches for risk perception, management, and mitigation • Thorough commander's intent and expectations are critical to minimize confusion and empower fast decision-making	• Resilient soldiers which demonstrated levels of maturity, cunning and guile beyond their years, and could operate in prolonged, austere, violent, isolated and stressful environments were critical • Place a premium on trust and integrity throughout the organization that applies to all levels of leadership • Personnel with ethnic, cultural characteristics similar to ones encountered in the areas of operation are valuable
Movement & Maneuver <u>Characteristics:</u> • Disaggregated • Rigorous cost-benefit analysis • Reliance on speed, stealth, camouflage, and deception as opposed to combat power overmatch • Nonstandard • Limited range	• Research alternate means of SF infiltration into denied environments with emphasis on non-standard ground/water movement • Test traditional Unconventional Warfare tasks (e.g. recruit, organize, train) in dense-urban, denied environments • Digital maneuvering preferred over physical maneuvering	• Smaller elements than commonly seen today proved necessary to survive • Task organization optimized for low-signature activities and reconnaissance-like missions rather than traditional kinetic operations (raids, ambushes, etc.) due to high risk to force	• Training emphasis on small (1-3 man) elements • Incorporate dispersion, camouflage, and deception into all training and operations • Educate leaders and formations on adversary capabilities regarding area denial systems, doctrine, and counter-intelligence tactics	• Traditional military modes replaced by lower signature methods • Capabilities to deceive, disrupt, and confuse adversary incorporated in movement and maneuver • Capabilities to enhance endurance, range, and load carrying capacity of operators useful	• Battlefield rewards leaders who best manage, integrate, visualize, and employ teams which are disaggregated yet capable of massing effects in time and space	

WARFIGHTING FUNCTIONS	IMPLICATIONS					
	Doctrine	Organization	Training	material	Leadership & Education	Personnel
Intelligence & Information <u>Characteristics:</u> • Rapid collection, exploitation, analysis, and dissemination • Proactive vs reactive: being 'first' matters in the information environment	• Increasing adversary's uncertainty while minimizing our own will place information operations activities (Military Deception, Military Information Support Operations) at the center of military plans, as opposed to an afterthought	• Traditional bottom-up approach challenged due to isolation of forward units • Greater coordination between military and interagency intelligence required for unity of effort against peer adversary	• Advanced Special Operations and Human Intelligence training critical • Counter-intelligence, specifically considering adversary SOF and intelligence apparatus, measures paramount to survival • Invest more into interagency programs to expand SF capabilities (Preparation of the Environment)	• Special Forces having the capability to exploit social media, electronic, and cyber is critical • Integration of multipurpose sensors to provide enhanced situational awareness and aid in operations (minimize exposure, add clutter to the battlefield, spoofing)	• Special Forces leaders must manage uncertainty better than an adversary to understand and act faster; sacrifice understanding at higher levels to gain speed at lower levels • Leaders need the ability to manage data, which is high in volume, velocity, and variability ('big data')	• See above
Fires <u>Characteristics:</u> • Increased lethality • Long range precision strike capability • Faster cycles of action • Integrated sensor-to-shooter networks	• Consider implications of Special Forces' degraded ability to bring significant fires to bear on behalf of allied forces to achieve U.S. objectives • U.S. military's ability to bring fires to bear is contested and can no longer be accomplished at will	• Expand Special Forces' capabilities to bring effects to bear ('digital Unconventional Warfare', local hacking, social media exploitation, Signals Intelligence) without relying on enablers	• Understand partner nation fires capabilities to fill the gaps in U.S. fires capabilities in contested and denied environments	• Research 'Human-on-the-Loop' target acquisition and prosecution (automated system that is supervised and sometimes changed by a human)	• Battlefield conditions may demand the traditional targeting cycle be flattened, ultimately collapsing decision-action cycles • Explore how a dearth of fires impacts risk perception in higher and lower echelons	

WARFIGHTING FUNCTIONS	IMPLICATIONS					
	Doctrine	Organization	Training	material	Leadership & Education	Personnel
Protection <u>Characteristics:</u> - Emissions management - Deception, denial & camouflage vs armor	- Special Forces achieves protection by implementing speed, camouflage, deception, concealment, and cover, rather than more traditional forms (armor, firepower) - Management of Special Forces' digital and electronic footprint is critical	Adversary's ability to thwart the principle of mass, should incline Special Forces to operate more disaggregated (smaller elements, more distributed) at all levels as a means to achieve protection	- Increased reliance on partner networks, infrastructure, and capabilities to protect the presence of Special Forces in a denied environment - Expect to fight with systems disrupted, as the adversary will maintain the ability to disrupt some systems all of the time and critical parts of systems some of the time	- Seek out enhanced means of camouflage to disrupt facial recognition software, thermal optics, etc. - Capabilities to protect soldiers from adversary sensors and cyber intrusion (facial recognition, optics, thermal, etc.) are critical	Leaders must manage and expect adversary capabilities will challenge traditional calculus of risk to force vs risk to mission (many missions will likely require significant risk to force at a level not commonly seen today)	See above
Sustainment <u>Characteristics:</u> 'plug-in' capable with partners - Common vs exquisite balance - Scavenge vs routine	- Capability for non-standard logistics critical for Special Forces in denied environments - Access to pre-positioned stocks and caches are required to enable Special Forces and partners in denied environments	Acknowledgment that capabilities traditionally executed by enablers may be unavailable to isolated Special Forces elements (mechanics, communicators, advanced medical personnel)	Emphasize and incorporate the creation, management, and maintenance of support mechanisms and networks during training (ammo, fuel, water, supplies)	- Capabilities such as Additive Manufacturing may help fill sustainment gaps for Special Forces in denied environments - Equip ODAs to allow for local procurement/scavenging (balance exquisite vs common systems)	Leaders required to manage partners and networks to enable Special Forces sustainment and survivability in denied environments	

C. RECOMMENDATIONS

Several thematic trends surfaced throughout the research phase, the Table Top Exercise development process, player observations in Chapter III and the implications for U.S. Army Special Forces outlined in Table 3 above. It is from these trends that the recommendations are derived and conveyed to ultimately better prepare U.S. Army Special Forces for operating against a peer adversary. The first trend centers around a need to explore and develop U.S. Army Special Forces concepts and doctrine that describes how units will fight in the environment described throughout this study. The second trend focuses on aspects of leadership and professional education and development, which may need to adapt to enable U.S. Army Special Forces personnel to cope and thrive in environments that will challenge traditional methods and approaches in these areas. Many other observations and implications captured in this study surrounding select technologies, policy issues and tactics can and should drive further research and aim to fill gaps in U.S. Army Special Forces' warfighting capabilities. However, doctrine and leadership deserve distinct emphasis as they have numerous implications across these same areas and many others.

1. **Expand Concepts, Doctrine and Training to account for Principal Tasks during Large-Scale Combat Operations**

New concepts and doctrine are meant to drive change across large organizations and within complex bureaucracies. This is best evidenced by doctrine's position as the first element in DOTmLPP-P due to its implications across all the others. The gap in concepts and doctrine addressing U.S. Army Special Forces in great power wars was revealed in beginning of this study and the findings highlighted the need for it to be addressed. More specifically, more thought and detail are needed that address actions taken during these wars as opposed to before them, where U.S. Army Special Forces often feel more comfortable and are arguably optimized for.¹¹⁴

¹¹⁴ See Chapter II: Literature Review to see how current literature weighs SOF actions before as opposed to during war.

a. Unconventional Warfare in Dense Urban Areas

The findings in the study suggest a greater emphasis should be placed on the conduct of Unconventional Warfare in dense urban areas. Operating effectively in dense urban areas will become increasingly important as global demographic trends indicate increased urbanization across the globe. Millions of people connected by low-cost technologies will make unrest cheap and pose significant governing challenges, increasing rates of conflict but also creating opportunities that U.S. Army Special Forces may capitalize on. Advances in sensing and fires capabilities are likely to make traditional, rural U.S. Army Special Forces safe-havens such as guerrilla bases or resistance training areas untenable. Meanwhile, forces on both sides will use complex terrain within cities to hide and survive. Increasingly capable adversarial counter-intelligence and counter-SOF capabilities, which will dwarf current capabilities employed by those faced in Iraq and Afghanistan, will pose significant challenges to U.S. Army Special Forces who are not accustomed to dealing with these threats. Concepts, doctrine and training for how U.S. Army Special Forces will recruit, train, organize and employ resistance networks (underground, auxiliaries and guerrillas) need to account for this shift. This was best demonstrated during the Table Top Exercise as the proliferation of connected, low-cost sensors in urban areas coupled with a highly capable enemy frustrated the players' ability to conduct even the simplest Unconventional Warfare tasks. Additionally, players found maneuver, sustainment and simple survival tasks riskier than they are today.

b. Creating and Mending Networks after They Are Disrupted

Distinct attention should be paid to concepts, doctrine, and training to account for the ability to create and mend human infrastructure networks during a war. These networks are likely to remain critical to most U.S. Army Special Forces operations, take time to build, and are often created before a war breaks out. These same networks will likely be disrupted or severely compromised by capable foes even before U.S. Army Special Forces detachments arrive on the battlefield. They will also need to be re-created for U.S. Army Special Forces to achieve effects disproportionate relative to the size of the force, the staple and mantra of the regiment since its inception in 1952. Players conducting Unconventional

Warfare and Special Reconnaissance during the TTX demonstrated this as they relied extensively, and at times, exclusively on networks for sustainment, maneuver and mission command activities. Once these networks were compromised, the players encountered significant challenges completing their missions and were forced to conceive new ways to re-build vital networks faster than is typically required before taking any other action.

2. Equip Leaders to Cope and Thrive

U.S. Army Special Forces has rigorous processes to assess and select personnel who can operate in extreme conditions under duress. Equally rigorous training prepares them to achieve strategic military objectives not suitable for other units. This same ethos will be even more important in a war with a great power as battlefield complexities compound, making human decisions surrounding increasingly lethal fires, risk perception and managing strategic relationships more difficult. The disaggregated, lethal, remote and unforgiving nature of the future battlefield will demand leaders and soldiers who can make better decisions faster than is typically required today.

a. Expect Decisions Typically made at Higher Levels to be made at Lower Ones

Every effort should be made to develop and prepare junior leaders to assume higher levels of responsibility and demonstrate decision-making acumen commensurate with higher levels within the chain of command. Senior leaders should encourage and incentivize wise and prudent initiative among junior leaders while judiciously assessing those who demonstrate similar traits during training. At the same time, senior leaders may also need to re-calibrate their own metrics for risk perception and degree of delegation of authority to keep pace with the disaggregated nature of future operations against a peer. This was best captured in the TTX as players struggled to determine which level of command would be required to approve certain decisions or assume risk while competing against a dynamic and capable adversary in a degraded communications environment.

The adage about commanders demanding more-perfect information or intelligence before deciding, while a disgruntled, impatient subordinate fails to understand the bigger picture and just awaits his orders is not new in warfare. Soldiers throughout history have

struggled with the same issue. Yet, the character of the future fight, as experienced in the TTX, seemed to exacerbate the consequences of tactical leaders delaying their decisions by deferring to seek approval higher up the chain of command. The illusion of enhanced situational awareness that current technology promulgates and mission command systems rely upon, failed to quell this lingering matter, all the while raising the same issues that soldiers and commanders have wrestled with for so long.

The speed, depth, and lethality of the battlefield as demonstrated in the TTX, removed the accustomed luxuries of unbroken communications and ample time to gain operational clarity, forcing commanders and units into unfamiliar and uncomfortable situations. Examples from the TTX that placed teams at positions of tremendous disadvantage, saw players deliberating several scenarios: Can a detachment commander refuse, alter or choose a partner force if the ones that were pre-selected proved insufficient, unwilling or incapable? Which level of command is authorized to approve lethal or devastating effects if the risk to force and civilian life and infrastructure is assessed to be extremely high? This question compounded during the TTX as the detachments were operating in four disaggregated elements forcing junior detachment members to make decisions typically made by team, company or even battalion commanders. In the case of the Special Reconnaissance scenario, which demanded teams locate a key adversary rocket system, teams deliberated for over an hour on how to balance the risk to mission versus risk to force paradigm as the cost of accomplishing the mission put the lives of the entire detachment and their partners in jeopardy. These examples recorded in the TTX are not intended to be a proverbial game of “what-if” to attack the mental acuity of U.S. Army Special Forces leaders. However, they highlight real conversations among field grade U.S. Army Special Forces officers placed in trying circumstances and can help assess the mentality of command decisions and risk perception of leaders within the community. These examples can also help identify opportunities where adaptation and advancements in decision-making chains could be made.

b. Deliberately Explore Future War

Training and professional development exercises like the TTX and similar efforts, which challenge traditional approaches to missions frequently conducted since 9/11, should be made commonplace among U.S. Army Special Forces Groups and other similar units. These scenarios should include complex problems against forces with capabilities equal to or exceeding those of the US. Being laden with endless requirements for today's problems diminishes the capacity of leaders within U.S. Army Special Forces to think and prepare for strategically important missions that likely will not resemble the ones currently undertaken by the regiment. Exploring plausible future scenarios cultivates an inquisitive mentality that defies the mantra that tomorrow will look like today and can help yield meaningful results.

Ready-to-use scenarios such as the one in the Appendix, and other similar efforts should be adopted for two principle reasons. First, staffs or detachments conducting scenario-based training offers a cost-effective means to train for unlikely but dangerous scenarios and can identify problems that may elude leaders who are already busy with day-to-day requirements. For example, the TTX used to create data for this study cost zero dollars and took one duty day. Meanwhile, one hundred percent of the TTX participants stated that this was their first time experiencing a seminar-style wargame or exercise that focused on special operations forces in peer-level fight. Nearly all the players gained a new perspective on a great power war and are now armed with simple tools to prepare themselves and their future units for such an eventuality. Second, the conventional elements of the Joint Force, which often require "big M," or, Material solutions that incur exorbitant financing and years to pass through the defense acquisition systems, most SOF-specific problems encountered in this TTX could be partially mitigated with non-material solutions (specifically concepts and leadership/education modifications). In the same vein, these efforts can help identify leaders who excel in challenging scenarios while mitigating those who do not.

D. CONCLUSION

This study conveyed that efforts to better understand U.S. Army Special Forces' role during Large-Scale Combat Operations against a great power are worthy of deliberate exploration and thought. The supporting efforts, which make that understanding possible, are also important for two chief reasons. First, current concepts and doctrine addressing a future great power war call on U.S. Army Special Forces to achieve key military objectives in dangerous and denied areas against highly capable foes. Second, though not the most likely or desired scenario, this study argued that the likelihood of a great power war is increasing. Simultaneously, the operating environment is becoming more complex as the United States government grasps that it is competing in an increasingly multipolar world. Competitors in this future environment will likely have military capabilities equal to or exceeding those of the United States and create multiple dilemmas across all five domains (air, sea, land, cyber, space) where the United States has not typically been opposed on a peer-level.¹¹⁵ Fighting and winning this type of war will require efforts not seen by the United States since World War II, and will likely demand the capabilities that U.S. Army Special Forces and other similar units provide, making them central to strategic military plans. The cost and consequences of this war will likely be larger relative to missions like counterinsurgency and counterterrorism, which dominate United States foreign affairs today and force national and military leaders to devote most resources to them. These premises should instill a strong desire within U.S. Army Special Forces to understand the associated risks and requirements this type of war would demand and move the community to be ready for such an eventuality. They should also provoke SOF and non-SOF senior leaders to understand the capabilities that U.S. Army Special Forces provide as well as the ones they do not, or ones better suited for other units.

This study emphasizes a measured and analytic approach to the study of and preparation for future warfare. It does not advocate for sweeping changes or re-directions for the U.S. Army Special Forces regiment writ large based on the possibility of a great

¹¹⁵ Joint Force Development, "Joint Operating Environment 2035- The Joint Force in a Contested and Disordered World," 34.

power war and avoids an alarmist tone. Contrarily, it focuses on the least likely but most dangerous eventuality and is meant to drive thought on a narrow but dangerous problem. Research and perspectives from incubators or members of a group who are outside of the formal hierarchies and able to engage in speculation and exploring different ways to solve new problems can be key ingredients in gaining and maintaining advantages in a competitive world.¹¹⁶ In this case, the research highlighted that the skills and capabilities that U.S. Army Special Forces provides will still be valuable to the United States in a future war, but the way they provide them may change. Studies like this one should encourage innovation, initiate challenging conversations and spark professional debates to identify those changes while illuminating problems before they are encountered on the battlefield. Doing so may avoid unnecessary losses while increasing the likelihood of victory.

¹¹⁶ Jensen, *Forging the Sword*. In his book, Jensen uses the terms incubators to describe a key ingredient for creating new ideas that eventually become doctrine. The authors of the study are incubators in that they are members of the Special Forces community but currently outside tactical chains of command.

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APPENDIX. U.S. ARMY SPECIAL FORCES 2035 TABLE TOP EXERCISE

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A.I. SCHEDULE

5 June (Reed Hall 201/202)

1300-1500 Table Top Exercise In-Brief/Introductions/Questions

6 June (Reed Hall 201/202)

0830 Arrive

0830 – 0900 Overview / Questions

0900-1215 Scenario One

-----Working Lunch-----

1215-1530 Scenario Two

1530-1630 Plenary Session

1630- UTC Social at Trident Room

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A.II. TABLE TOP EXERCISE RULES AND CONSIDERATIONS

1. The scenarios are meant to explore the role of U.S. Army Special Forces in armed conflict, not explore deterrence, or phase zero options, though implications for both will likely arise from the exercise. They represent plausible, but not likely scenarios.
2. Accept the scenarios for what they are. Do not fight them (i.e., “This would never happen...,” “NATO/US would never allow that....”)
3. Tactical problems are presented as a means to extract ideas and generate data. We are after your ideas, not your ability to plan a specific course of action.
4. Try to remain on the tasks given to you in the scenarios, avoid rabbit holes that eat away time. Your group facilitator will assist in this, please listen to them.
5. No group leaders. Each group will nominate a group recorder, though several members could/should be writing/sketching at any time. A designated data collector will be assigned to each team, but they are recording specific data in addition to the tables provided.
6. Chatham House rules apply. We will record ranks and provide overviews on military backgrounds, but no names will be utilized when the findings are published. No data or ideas provided during the exercise will be attributable to you.
7. Rank is irrelevant. Be a team player.
8. Feel free to use the materials provided to brainstorm, record, sketch or test your ideas.
9. The exercise is set in 2035. Technological, geopolitical and social trends and predictions are important to understanding this future operating environment but are ultimately unknowable.
10. Push the limits of what you think is technologically possible, (Techno-optimist vs. Techno-pessimist) but try not to incorporate single points of failure.
11. Push the limits of what you think is physically, culturally, morally and legally possible/permissible, because our adversaries do.
12. No official breaks, coffee and food will be provided throughout the day. Go to the restrooms as needed.

13. Use of personal devices are permitted but please minimize use. Feel free to use to conduct a quick search, but it should not be necessary.

A.III. SPECIAL FORCES IN THE BALTICS: 2035

A. PURPOSE

The purpose of this Table Top Exercise (TTX) is to provide insight on how U.S. Army Special Forces might contribute to fighting a great power adversary in Large-Scale Combat Operations in 2030–2050. Specifically, it will explore how armed conflict with a great power in that future environment will shape U.S. Army Special Forces principal tasks. Current U.S. Army Special Forces principal tasks, as listed in Field Manual 3–05, are as follows: Unconventional Warfare, Foreign Internal Defense, Security Force Assistance, Counter-Insurgency, Direct Action, Special Reconnaissance, Counter-Terrorism, Counter-Weapons of Mass Destruction, and Preparation of the Environment.

The Table Top Exercise’s future operating environment, summarized in Section B, is a synthesis of prominent, rigorous, and insightful forecasts that describe plausible future worlds and their ensuing military implications. The scenario, embedded in this future operating environment, focuses on a Baltic scenario set in 2035 against Russia, and does not aim to explore the most likely scenario, but the most dangerous. While U.S. Army Special Forces are optimized and prepared for activities executed during cooperation and competition, this TTX is designed to explore the role of U.S. Army Special Forces during Large-Scale Combat Operations against a great power adversary.

B. FUTURE OPERATING ENVIRONMENT- 2035

The risk of conflict, including interstate conflict, will increase during the next two decades [2017–2037] due to evolving interest among major powers, ongoing terrorist threats, continued instability in weak states, and the spread of lethal and disruptive technologies.

—National Intelligence Council’s *Global Trends*, 2017

1. Purpose

This section describes a possible future operating environment between 2030–2050 by exploring four separate categories: technology, international relations, state governance, and military implications. Through the compilation of several prominent futures studies, this literature review presents a different reality from what the U.S. military has become

accustomed to since the end of the Cold War. Analyzing alternative futures enables the U.S. military to take measures to address potential capability gaps in its forces, equipment, operating concepts, and doctrine.

2. Summary

The rate of technology invention, the degree to which the international system becomes more multipolar, and the ability of states to manage increasingly complex governing challenges will determine the Future Operating Environment between 2030–2050.¹¹⁷ The speed and degree of convergence of these three trends will determine when, where, why and how great powers use force.¹¹⁸ Technologies such as Artificial Intelligence (AI), autonomous systems, and increasingly lethal weapons with extended ranges will make surviving and operating in this sensor-rich future environment difficult. Cyber, space and long-range fires capabilities will expand the battlefield.¹¹⁹ Russia and China, with access to these technologies, will likely challenge U.S. interests globally as absolute power diffuses and regional conflict becomes more abundant. Governments, already burdened by climate change, resource competition, migration and demographic trends will struggle for legitimacy and security. This increase in government instability is more likely to stress the international system, creating higher demands for stability and security operations.¹²⁰ Moves from great revisionist powers, similar to recent efforts by Russia in Ukraine and China in the South China Sea, will likely strain the U.S. military as each move may demand the U.S. government's attention and require counter-moves. In total, conflict in and among states is more likely.

¹¹⁷ Joint Force Development, "Joint Operating Environment 2035 The Joint Force in a Contested and Disordered World," July 14, 2016, <http://www.jcs.mil/Doctrine/Joint-Concepts/JOE/>; Chief of Staff of the Army's Strategic Studies Group, "The Character of Warfare 2030–2050: Technological Change, the International System, and the State," July 12, 2016. Though many factors contribute to the future operating environment between 2030–2050, they can be appropriately binned into these three categories.

¹¹⁸ CSA Strategic Studies Group, "Character...2050."

¹¹⁹ CSA Strategic Studies Group Cohort V, "Reconnaissance-Strike Battle"

¹²⁰ CSA Strategic Studies Group, "Character...2050."

3. Technology

The rapid development of new technologies such as advanced computing, Artificial Intelligence, autonomous systems, additive manufacturing, and alternative energies, coupled with the proliferation of low-cost interconnected current technologies, may fundamentally disrupt the entire U.S. military organization. Though the rate of invention of new technologies is disputed, the unequal distribution of these technologies is likely to cause conflict as governments develop new ways to incorporate them into forms of fighting (i.e., innovation).¹²¹ Many sources note the development of AI may be the single most disruptive technology between 2030–2050 to the extent that it has implications in so many other areas.¹²² A 2013 report from McKinsey and Company, a global management and consulting firm, identify the most likely disruptive technologies as:

- **Mobile Internet** Increasingly inexpensive and capable mobile computing devices and Internet connectivity;
- **The Internet of Things** Networks of low-cost sensors and actuators for data collection, monitoring, decision making, and process optimization;
- **Advanced robotics** Increasingly capable robots with enhanced senses, dexterity, and intelligence used to automate tasks or augment humans;
- **Autonomous and near-autonomous vehicles** Vehicles that can navigate and operate with reduced or no human intervention;
- **Next-generation genomics** Fast, low-cost gene sequencing, advanced big data analytics, and synthetic biology (“writing” DNA);
- **Energy storage** Devices or systems that store energy for later use, including batteries;
- **3D printing** Additive manufacturing techniques to create objects by printing layers of material based on digital models;
- **Advanced materials** Materials designed to have superior characteristics (e.g., strength, weight, conductivity) or functionality;

¹²¹ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

¹²² CSA Strategic Studies Group, “Character...2050.”

- **Renewable energy** Generation of electricity from renewable sources with reduced harmful climate impact.¹²³

4. International System

Prominent futures studies view the international system—defined as a system composed of states that shapes how, when, where, and why armed conflict occurs—on a spectrum with optimistic and pessimistic poles.¹²⁴ As captured in the Chief of Staff of the Army’s Strategic Studies Group’s research on the character of warfare in 2030–2050, integrated and cooperative relations represent more optimistic views while fragmented and competitive ones lie on the other end of the scale.¹²⁵ The Atlantic Council’s forecast, “Envisioning 2030: U.S. Strategy for the Coming Technology Revolution,” claims the United States is likely to be in a privileged position and maintain significant global influence relative to other great powers, yet will no longer be hegemonic due to the rise of regional competitors.¹²⁶ The study goes on to say rising regional hegemonies will use their growing influence to shape their respective regions while protecting them from outsiders, escalating risk of conflict. While reports claim that India, Indonesia, Japan, Nigeria, South Africa, and Brazil have potential to become poles in the future system, the “4+1” threat is the most prevalent throughout the reports (Figure A.1).

¹²³ Manyika et al., “Disruptive Technologies.” Technologies, terms and definitions pulled directly from McKinsey report.

¹²⁴ CSA Strategic Studies Group, “Character...2050.”

¹²⁵ CSA Strategic Studies Group, “Character...2050.”

¹²⁶ Atlantic Council, “Envisioning 2030: U.S. Strategy for the Coming Technology Revolution,” Atlantic Council, accessed February 15, 2018, <http://www.atlanticcouncil.org/publications/reports/envisioning-2030-us-strategy-for-the-coming-technology-revolution>; CSA Strategic Studies Group, “Character...2050.”; National Intelligence Council, *Global Trends*.

The “4+1” Threat

- **Russia** can be considered our “pacing threat,” and will be our most capable potential foe until the 2035 timeframe. It will remain a key adversary through 2050.
- **China** is rapidly modernizing its armed forces and investing heavily in readiness and technological research. Its rapid development means that it likely will surpass Russia as our pacing threat sometime prior to 2035.
- **North Korea** lacks the capabilities of Russia or China, but its large but outdated military, its credible ballistic missile force, expanding cyber capabilities, and nuclear capabilities make it a significant regional threat through 2025–2030.
- **Iran** through 2025–2030 represents a non-nuclear regional hegemon, but is likely to develop nuclear weapons sometime prior to 2035. Its geography and mastery of hybrid conflict involving proxies, coupled with ambitious military reforms means it is likely that Iran remains a key concern to 2035.
- **Radical Ideologues and Transnational Criminal Organizations** like ISIS, al-Qa’ida, Lebanese Hizballah, or Latin American drug cartels and other groups which will sprout up in reaction to the unfolding OE will remain difficult and capable threats through 2035, and probably beyond. Although individual groups will rise and fall, radical ideologues and transnational criminal organizations will be able to match terrorism and insurgency with increasing access to commercially available technologies and connections to nation states and criminal elements to remain viable.

*From The Operational Environment and the Changing Character of Future Warfare by Training and Doctrine Command (TRADOC) G2 (2017)

Figure A.1. The “4 + 1” Threat¹²⁷

5. State Governance

The nation-state in the world of 2030–2050 will likely remain the power broker and primary actor in the international system, but any given country may be weaker domestically and globally than it is today.¹²⁸ Power is diffusing from the state as immense challenges of aging societies, urbanization, resource inequality, climate change, religious and ethnic tensions compete for finite resources and attention (Figure A.2). Meanwhile, governments will compete for power with super-empowered individuals, mega-corporations, and transnational criminal organizations who use violent and non-violent means to achieve their ends and who are further enabled by technology to organize quickly and cheaply. Strained state systems and security apparatuses will struggle to govern as demographic trends in more wealthy nations lead to an increasingly graying population

¹²⁷ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare,” accessed January 30, 2018, http://www.arcic.army.mil/App_Documents/The-Operational-Environment-and-the-Changing-Character-of-Future-Warfare.pdf.

¹²⁸ CSA Strategic Studies Group, “Character...2050.”; National Intelligence Council, *Global Trends*.

stressing national budgets while less wealthy states become increasingly young, urban and angry.¹²⁹ These ingredients will likely increase intrastate conflict and increase the number of failed or weakened states placing an increased demand for those who can export support and security.

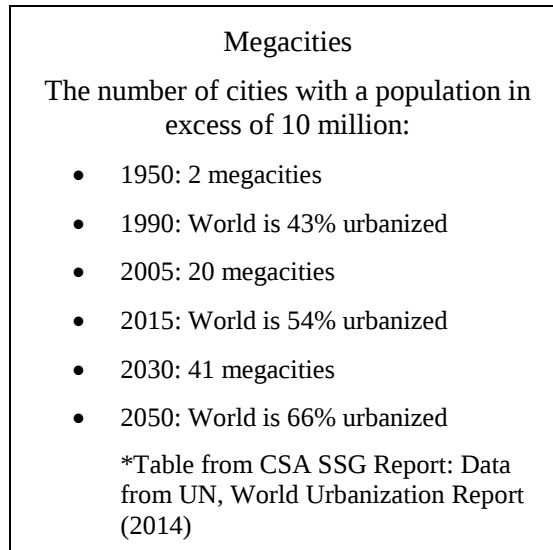


Figure 2. U.N. World Urbanization Report¹³⁰

6. Military Implications

There is a converging consensus among prominent futures studies that significant discontinuities in the character of warfare are approaching rapidly.¹³¹ Certain military implications of these trends is aptly captured in the excerpt below from the Army's preeminent futures wargame Unified Quest in 2016.

Sensors are ubiquitous, multi-domain and capable of discreetly and accurately locating and targeting any and everything moving in the battlespace. Similarly, advances in lethal, smart weapons systems, mostly

¹²⁹ Futures Directorate, *2015 Marine Corps Security Environment Forecast* (Futures Assessment Division, 2015), <http://www.mcwl.marines.mil/Portals/34/Documents/2015%20MCSEF%20-%20Futures%202030-2045.pdf>; National Intelligence Council, *Global Trends*; CSA Strategic Studies Group, "Character...2050."

¹³⁰ CSA Strategic Studies Group, "Character...2050."

¹³¹ David Fastabend, "An Advanced Engagement Battlespace: Tactical, Operational and Strategic Implications for the Future Operational Environment | Small Wars Journal."

autonomous, and munitions enable precision, real-time, effective attack and destruction of discrete targets in all domains throughout the battlespace. Integrating these sensor / shooter combinations will be holistic, integrated mission command systems that ensure real-time situational understanding, decision making and execution, much of which will be autonomous.

—Jim Greer¹³²

Put simply, advanced military capabilities will likely shape the battlefields of 2030–2050. Military power and shaping will likely rest on the proliferation of nuclear weapons, ballistic missiles, and precision-strike technologies, all enhanced by cyber capabilities.¹³³ Increasingly, combined arms fighting will expand to include electronic, cyber and other effects.¹³⁴ Due to increased connectivity, battlefield events will affect the global information environment even faster than they do today. A premium will be placed on the fight for information while survival and victory will go to those who understand and act faster.¹³⁵ Some have labeled events on this future battlefield as “Advanced Engagements,” which can be described as:

- “... **compressed in time**, as the speed of weapon delivery and their associated effects accelerate enormously;
- ... **extended in space**, in many cases to a global extent, via precision long-range strike and interconnectedness, particularly in the information environment;
- ... **far more lethal**, by virtue of ubiquitous sensors, proliferated precision, high kinetic energy weapons and advanced area munitions;
- ... **routinely interconnected**—and contested—**across the multiple domains** of air, land, sea, space and cyber;

¹³² Jim Greer, “Multi-Domain Battle Concept Paper - Breaking Out of Paralysis: Huer Tactics in 2050,” Unpublished Paper, 2016.

¹³³ CSA Strategic Studies Group, “Character...2050.”

¹³⁴ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

¹³⁵ CSA Strategic Studies Group Cohort V, “Reconnaissance-Strike Battle”

- ... **interactive across the multiple dimensions of conflict**, not only across every domain in the physical dimension, but also the cognitive dimension of information operations, and even the moral dimension of belief and values.”¹³⁶

Innovation—the addition of new technologies into ways of fighting—will be paramount as adversary capabilities will pose significant challenges to U.S. efforts as dominance in any domain may no longer be feasible. Disruptive technologies, or technologies so advanced that U.S. doctrine is re-shaped to take full advantage, will arrive at varying speeds and densities (Figures A.3 and A.4).¹³⁷

Potential Game Changers through 2035	
<i>Evolutionary technologies that, if matured and fielded, can provide a decisive edge over an adversary unable to match the capability or equal the capacity.</i>	
Article I.	Advanced ATGM & MANPADS - Proliferate more rapidly than Active Protection systems develop, putting armored vehicles and helicopters at risk
Article II.	Robotics – 40+ countries develop military robotics with some level of autonomy
Article III.	Space – 50+ nations operating in space. Increasingly, congested and difficult to monitor. PNT at risk
Article IV.	Chemical Weapons – Nontraditional agents developed to defeat detection and protection capabilities
Article V.	Camouflage, Cover, concealment, Denial & Deception (C3D2) – Creates uncertainty and challenges multi-discipline intelligence
Article VI.	Cannon/Rocket Artillery – Long-range artillery, hardened GPS munitions defeat jamming. Point air defense defend against PGM

Figure A.3. U.S. Army Projections of “Game Changers” through 2035¹³⁸

¹³⁶ Fastabend, “An Advanced Engagement Battlespace”

¹³⁷ CSA Strategic Studies Group, “Character...2050.”

¹³⁸ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare.”

Potential Game Changers through 2050

- Laser and Radio Frequency Weapons – Scalable lethal directed energy which can counter aircraft, UAS, Missiles, Projectiles, Sensors and Swarms
- Swarms – Leverage autonomy, robotics, and artificial intelligence to generate “global behavior with local rules” for multiple entities – either homogeneous or heterogeneous teams.
- Rail Guns and Enhanced Directed Kinetic Energy Weapons (EDKEW) – Non-explosive electromagnetic projectile launchers provide high velocity/high energy weapons.
- Energetics – Provides increased accuracy and muzzle energy.
- Synthetic Biology – Engineering and modification of biological entities has potential weaponization.
- Internet of Things – Linked internet “things” create opportunity and vulnerability. Great potential benefits already found in developing U.S. systems also create a vulnerability.
- Power – Future effectiveness depends on renewable sources and reduced consumption.

*From The Operational Environment and the Changing Character of Future Warfare by Training and Doctrine Command (TRADOC) G2 (2017)

Figure A.4. U.S. Army Projections of “Game Changers” through 2050¹³⁹

C. ROAD TO WAR

Beginning in 2019, determined to follow through on campaign promises, President Donald Trump gradually reduced the U.S. military presence within Syria and Iraq, leaving a minimal footprint consolidated in Iraq and Turkey. As the U.S. withdrew from the Syrian conflict, Russia, bolstered by what it perceived to be a strategic victory, vowed to reinvigorate its efforts to “protect ethnic Russian and Slavic populations from Islamic extremists, Western influence, and corruption.” Russian meddling in the 2020 U.S. presidential elections surpassed what occurred in 2016 and the resulting fallout all but severed what was left of the strained relationship between the United States and Russia. Unperturbed, the Russians continued to seed discontent in the United States by exploiting domestic issues and inciting nationwide protests. Simultaneously, President Vladimir Putin ordered the modernization of the Russian military with a target completion date of 2030. While the United States maintained its “Look East” policy toward China, Russia noticed and took advantage.

¹³⁹ U.S. Army TRADOC G2, “The Operational Environment and the Changing Character of Future Warfare.”

In 2028, civil society groups within Russia launched a movement seeking to rebuild the “tsarist” state. The union movement, fueled by state-sponsored media, corrupt business leaders, and other nefarious elements linked to the Russian government, grew rapidly and saw a resurgence in the Soviet-era mindset of the Russian people. Minsk immediately fell victim to the movement’s influence and Russia quickly forced a political union with Belarus, absorbing the state. Additionally, places like Odessa, which resisted Russian intervention and sought protection by leaning westward during the 2014 Ukraine crisis, found themselves amid rampant corruption. Odessa became a beacon for the pro-Russian movement, a “lesson that was learned the hard way” that reinforced the movement’s claims that siding with the west only led to corruption, moral bankruptcy, and an unjust society. After the annexation of Odessa, the Russians gradually absorbed political influence that reached westward across southern Ukraine, all the way to the Transnistria region in eastern Moldova.

The international community, awakened by outcries from Romania, Moldova, Poland, and the Baltic states, responded. On the surface, the pro-Russian movement appeared non-violent and therefore left little for the international community to do. However, the newly elected U.S. President, wanting to show his resolve, stated that further incursions by Russia into sovereign nation’s borders would be met with a response. As the rhetoric between the two leaders grew increasingly hostile, the world once again found itself teetering on the edge of war. NATO felt the press of time and the U.S. military began looking earnestly at the possibilities of defending a NATO ally against a Russian invasion by invoking Article V. Reminiscent of 2015, the U.S. military sent rotational forces to Poland, increased equipment and ammunition depots in Europe, and reinvigorated its commitment to NATO allies. In addition to two Armor Brigades, the United States deployed a Multi-Domain Task Force (MDTF) to northeast Poland to pre-emptively deny Russia’s ability to launch long-range precision strike munitions, intelligence surveillance reconnaissance (ISR), and disrupt the integrated air defense system in Kaliningrad. The Baltic countries readdressed defensive plans and prepared their armed forces for mobilization. The NATO Response Force was placed on alert. But Russia, having tested the resolve of Europe and the United States, made no additional moves to incite further

international reaction. Six years later, in 2034, although the political environment returned to normalcy, U.S. forces maintained a continuous presence in Poland.

The Latvian crisis began in 2035. The Latvian banking system collapsed as a result of bad loans to Russian banks connected to organized crime syndicates. As the economic crisis erupted and unemployment rose, attacks on ethnic Russians occurred amidst violent protests, resulting in several deaths on both sides. The Russian government immediately promised protection for all ethnic Russians in the Baltic region. Exploiting the opportunity, Russian “trolls” saturated media outlets with phony stories; cyber-attacks compromised the Latvian infrastructure, and Latvian military and civilian communications experienced intermittent problems and random power surges. Russian forces began massing on the border and “little green men” appeared in eastern Latvia. Reports on social media showed trains that originated in Russia stopping in Latvia to offload heavy equipment. Mortar fire rained down on the Riga airport, roadblocks were established at the major river crossings, and chaos erupted at the port with reports of remote vehicles and missiles firing from hidden shipping containers sinking multiple Latvian patrol boats and merchant ships. The air lines of communication quickly became contested as surface-to-air missiles (SAMs) brought down multiple Latvian aircraft. The self-proclaimed Orthodox Christian Brigade sabotaged approximately 30% of the Latvian military equipment at key military depots and seized television stations to control any broadcasting. The Latvian land and air defense forces deployed to defensive positions to conduct area defense, but were quickly overwhelmed by highly effective irregular troops with significant ISR and indirect fire support originating from Russia. The Orthodox Christian Brigade supported by “irregular units” established checkpoints along the river dividing Riga while T-14 tanks began to enter the city. It soon became clear to the neighboring NATO countries that this was a deliberately planned Russian invasion of Latvia with the use of “irregular units” meant to buy time. Unfortunately, it was too late for the rest of the Baltic countries.

In less than 24 hours, Russian conventional forces also moved west into Lithuania from former Belarus, securing lines of communication, major infrastructure, and entering the cities of Vilnius and Kaunas. Simultaneously, forces moved west across Estonia, securing Tallinn, and secured the land-bridge to Kaliningrad. Within 48 hours, the world

witnessed the execution of the Russians' military exercise "Zapad 17" that occurred in 2017 and simulated a shock attack against NATO. Russia immediately claimed it rescued ethnic Russians across the Baltic region, and restored order on behalf of the Baltic people. Predicting a fait accompli, Russia immediately exported the narrative that it had acted legitimately and that a war over the Baltic territories was not in anyone's best interest.

As predicted, the U.S. military and NATO had little time to react. As the North Atlantic Council attempted to hold an emergency meeting at the beginning of the crisis, Russian forces were already driving toward Riga and Tallinn. The Very High Readiness Joint Task Force consisting of 5,000 troops supported by air, sea, and special operations forces, began pre-deployment preparations but were unable to deploy before Riga and Tallinn were isolated by Russian forces. The larger NATO Response Force of about 30,000 troops also began mobilizing, but found itself slowed by Russian cyber-attacks on European civilian and military infrastructure. Even individual soldiers reported compromised personal bank accounts, social media phishing attacks, and threats directed toward themselves and their families on social media. United States and NATO Ballistic Missile Defense, consequence management, and strategic mobilization plans were triggered. Additionally, concerns over a limited nuclear exchange emerged and were quickly followed by panic across the United States and Europe as social media posts of questionable origin claimed an imminent Russian first strike with nuclear weapons. While cyber-attacks reached across the globe, the stock market began to plummet, and altercations began to occur over food, fuel, and water.

While the armed forces of Estonia, Latvia, and Lithuania attempted to defend against the onslaught, each country's national civilian defense force activated and began to fight. While Russian forces easily targeted the uniformed armed forces, the different national militias, armed through prepositioned stocks of man-portable air defense systems (MANPADS), anti-tank mines, anti-tank rockets, small arms, and advanced sensors, created numerous problems for the Russian lines of communication, logistics, and maneuverability. While the Russians isolated the major cities, captured infrastructure, and established major supply routes within Baltic region, these areas were far from secure. The

Russians faced frequent attacks by partisan forces throughout the Baltics and implemented effective counter-insurgency (COIN) and counter-unconventional warfare (C-UW) tactics.

At the time of the Russian incursion, the majority of U.S. forces were stationed in Poland. The U.S. military maintained one Multi-Domain Task Force and two Armored Brigades in Poland. These forces immediately received guidance to assist Poland in reinforcing its northern and eastern borders, but not to engage Russian forces unless fired upon. Additionally, four U.S. Army Special Forces Operational Detachments – Alpha (SFODAs) were forward deployed in Lithuania and Latvia at the time of the Russian incursion. The SFODAs and their partners reduced their signatures to survive, but were able to maintain communications with their headquarters in Stuttgart, Germany. These SFODAs, after continuous rotational deployments to the Baltics for the past 20 years, had established strong networks within the Baltic countries. Over the years, “go-to-ground” plans, safe houses, caches, area assessments, and target packets were developed and disseminated among NATO SOF and partisan forces. New technology and Tactics, Techniques, and Procedures were implemented along the way. In contrast to the hopes of Russia, the North Atlantic Council was decisive and invoked Article V, deciding to mobilize forces against Russia to reestablish the status quo.

In the last 18 years, the U.S. military has made significant advancements in:

- The benefit of more dispersed, autonomous small units
- The criticality of mobile anti-access/area denial (A2/AD) “bubbles” of dominance, temporary in time and space, when under adversary overmatch A2/AD spheres
- Semi-autonomous supply delivery and robotic supplementation to the lowest levels for logistics support, allowing small units to range further
- Counter-drone unmanned aerial system (UAS) that can eliminate targeting and ISR drone systems

- Enhanced communications that allow direct sensor-to-shooter links and encrypted communications from the lowest tactical level to formation level
- Soldier lethality, protection and survivability (small arms, optics, munitions, concealment)

A.IV. SCENARIO 1: ENABLE JOINT FORCE ENTRY / SPECIAL RECONNAISSANCE

It has been 100 days since the Russian incursion into Estonia, Latvia and Lithuania. Having met little resistance, conventional Russian forces are now predominantly conducting static security around key infrastructure such as government facilities, strategic APOD/SPODs, while SOF and other specialized units are conducting counterinsurgency and influence operations in populated and rural areas against resistance forces. A robust integrated air defense system across the entire region with mobile fire units and long-range fire systems provides ample defensive and offensive fires. Russia maintains air and sea superiority though coalition aircraft have penetrated the airspace using advanced stealth-sensor platforms in an attempt to map the Electromagnetic Spectrum, and sometimes conducting limited strikes. The Baltics are considered denied territory to U.S. and coalition forces though 100% of the territory is not under complete control by the Russians. Most of the host nation conventional military capabilities were immediately destroyed in the initial days of battle, however, unconventional resistance from mainly host nation special operations forces and irregular civil defense groups are spread throughout the region and maintain limited ability to conduct sabotage, reconnaissance and other similar tasks, though they are under constant threat. While on Joint Combined Exchange Training events, four SFODAs were forced into hiding to reduce signature, survive and report. Meanwhile, U.S. and coalition forces have built up combat power in Germany and Poland as they plan to initiate major offensive combat operations in 30 days to return the situation to the status quo.

Enabling sufficient ground and air combat power staged in Poland to maneuver north toward Riga and Tallinn requires complex phased operations to establish temporary windows of opportunity to conduct key military operations (tested since 2018) due to Russia's dominance in both short, medium and long-range fires and early warning systems (anti-access area denial). Several of these "island-hopping" campaigns have enabled coalition forces to maneuver as far as they have to the eastern Polish border.

High-level policy negotiations in the last 100 days have resulted in the following conditions:

- Russian forces will not operate across the border with Poland
- Coalition forces will not operate across the border with Kaliningrad
- No use of CBRNE

A. MILITARY OBJECTIVES

As coalition ground and air forces prepare to cross the Lithuanian border, a Multidomain Task Force (MDTF) has been ordered to establish a temporary lodgment IVO Klaipeda Lithuania on D-Day (30 days from now), to place effects on key targets including major headquarters, fire batteries and other sensors, conduct limited IO and cyber operations to enable ground and air forces to begin moving north the same day. National assets and another Poland-based MDTF can positively identify, range and affect Russian fire systems and sensors in the vicinity of Kaliningrad to facilitate the infiltration. However, the coalition has been unsuccessful in positively identifying the Russian SAM and other ground-based long-range fires systems in vicinity of Klaipeda due to their advanced camouflage and deception techniques. The MDTF plans to infiltrate a small advance party via three C-17 sorties into Klaipeda to establish a temporary lodgment, but only after the enemy systems have been found and destroyed with coalition fires. In addition to requesting continued support from national assets, the CJTF-R commander has requested the U.S. Army Special Forces teams facilitate Joint Force Entry by locating a S-500 battery last seen in vicinity of Klaipeda. All national, JTF and SOF assets are available for request.

B. YOUR MISSION

1. Situation

Your TTX team represents the U.S. Army Special Forces team closest to Klaipeda. You have been behind enemy lines for 100 days mainly trying to avoid detection and survive since the Russians invaded the Baltics during your JCET. Your personnel, weapons and equipment (see Order of Battle) remain intact but are distributed to reduce signature. Moving around is high risk, but possible. Over half of your partner Lithuanian SOF company have been KIA, others are alive and in hiding, conducting limited sabotage

operations with their remaining stocks. Your team and the three others in the Baltics have mostly been reporting Russian activity to EUCOM headquarters when possible, though all communications runs a high risk of intercept and detection. You also advise the Lithuanian SOF and civil defense groups in their operations, as they activated their irregular defense plans 100 days ago. Limited kinetic strikes from resistance forces against soft Russian targets have been effective in the tactical sense, but have been met with severe counterattacks and harsh population control measures. Russian Counter-UW tactics have been very effective eliminating over 75% of the human infrastructure in vicinity of Klaipeda. Your most recent message from your headquarters is as follows:

2. Guidance

You have 30 days to locate a S-500 battery in vicinity of Klaipeda in order to enable targeting by coalition fires. Your efforts will enable the MDTF to infiltrate, with the main conventional assault following shortly afterwards.

*Of note: Roughly 25% of the population in Klaipeda is ethnic Russian. In total, 1/3 of the city are Russian sympathizers. Robust Counterintelligence and Counter-UW efforts aided by advanced electronic eavesdropping from GRU/Spetznaz is effective. Conventional units conduct routine patrols, flash checkpoints and periodic raids of resistance strongholds though the main effort is to win the support of the populace. The city's essential services, Internet and commerce sector is fully operational, though likely monitored and influenced by the Russians.

3. Instructions

There may be several ways to accomplish the mission. After brainstorming and deliberation, select one option and consider the implications of the warfighting functions using the table. Repeat the process for the next option. Your facilitator will help with this but will not develop Courses of Action.

C. SCENARIO ONE TABLE

Warfighting Function	How Would You Apply	Required Capabilities	Greatest Risks	Phase 0 Implications
Mission Command				
Movement and Maneuver				
Intelligence				
Fires				
Sustainment				
Protection				

D. ORDER OF BATTLE

1. Russia

LAND:

IVO Klaipeda:

- Motorized Rifle Brigade “Mikhail Kutuzov”: 4,200 troops augmented with T-14s, T-15s tanks, 2S19 Msta 152 mm SP howitzers, Verba SAMs, ZALA drones
- Attack/Lift Squadron (-) “Boris Vorobyov”: 24 x Kamov Ka-50/52 attack helos with sufficient lift to transport 1 infantry company in one turn.
- Spetsnaz Battalion (-) “Alexander Chernyshyov”: 300 troops in light vehicles, Verba SAMs, ZALA drones
- S-500 Battery: 8 launch vehicles, 1 CP truck, 3 radar trucks

Russian artillery units can fire conventional, cluster, anti-armor, localized EMP, and parachute EW rounds. Russian rocket launchers can fire conventional, localized EMP, parachute EW, and thermobaric rounds. Russian T-14 and T-15 vehicles have active defenses against anti-tank missiles and 35% can be optionally manned. Russian SOF light vehicles are extremely maneuverable, equipped with localized SIGINT capability and have radio direction finding capability and have mastered tipping/queuing TTPs with their organic ZALA drones that are capable of carrying a 20kg payload.

AIR:

Russian Expeditionary Aerospace Force West:

- Fighter Squadron “Anatoly Kornukov”: 24 x Sukhoi PAK FA stealth fighters
- Fighter-Bomber Squadron “Vladimir Mikhaylov”: 24 x Sukhoi Su-34 fighters-bombers

- Bomber Squadron “Aleksandr Zelin”: 24 x Tupolev Tu-22M
- Attack Squadron “Boris Vorobyov”: 24 x Kamov Ka-50/52 attack helicopters
- Drone Squadron “Golden Horde”: 24 x Sukhoi/KRET attack/EW UASs

Russian fighters and bombers carry K-77 radar-guided missiles, K-74 heat-seeking missiles, laser- and satellite-guided bombs, thermobaric bombs, Kh-35 anti-ship missiles, and Kh-58 anti-radiation missiles. Not all air platforms are available 100% of the time in the airspace over the Baltics, as range and fuel considerations still exist. However, ground units can request support during operations.

SEA:

Russian Baltic Sea Flotilla:

- 3 x Battlecruiser Pyotr Velikiy, with 2 x 130 mm guns, 20 heavy anti-ship missiles, 268 air defense missiles, heavy torpedoes, anti-submarine rockets, 3 x ASW helicopters
- 3 x Destroyer Admiral Ushakov, with 4 x 130 mm guns, 8 Moskit SSMs, 24 Shtil SAMs, AK630 guns, 533 mm torpedoes
- 3 x Frigate Admiral Gorshkov, with 4 x 130 mm guns, 8 Kh-35 SSMs, 32 Tor SAMs, AK-630s, 533 mm torpedoes
- 3 x Attack submarine Krasnoyarsk, with 650 mm & 533 mm torpedoes, Onix and Kalibr SSMs

Russian ships are known to carry unidentified robotic submersibles in the torpedo tubes, and armed rotocraft drones in their aircraft hangars.

SPACE:

Anti-satellite capability from domestic Russian launch facilities

CYBER:

Fancy Bear Cyber Brigade, with offensive and defensive capabilities

2. Coalition

LAND:

In Lithuania and Latvia:

4 x U.S. Army Special Forces ODA's: The U.S. Army Special Forces elements maintain the following force posture:

- Equipped with highly maneuverable all-terrain vehicles armed with rockets and SAMs.
- Advanced communications equipment including stealth IP, and chameleon-like ability to hide in the noise to minimize jamming and DF
- Limited additive manufacturing (3D printing) capability though raw materials are scarce
- Exoskeletons (1/per man) for dismounted operations
- Organic UAS capability

Lithuanian SOF: (Sustained heavy casualties during the invasion before disaggregating to avoid being destroyed)

- 1 Bn equivalent (300 pax)
- Roughly 20 pax partnered with your ODA
- Small teams of Lithuanian SOF maintain some contact with NATO HQ and are equipped with small arms, anti-armor, mortars, light tactical vehicles

Lithuanian Civilian Defense Force: (Divided into region units ~15,000 pax total)

- Capable of massing groups ranging from 3–50 pax in various locations

- Roughly 200 IVO Klaipeda conducting their day to day jobs and avoiding detection

Irregular defense group typically armed with small arms, anti-armor, anti-personnel mines, anti-tank mines, mortars, variety of small tactical transport vehicles. Increased engagement in the region with U.S. and NATO SOF since 2018 has enhanced their irregular war fighting capabilities and added new tools to their arsenals such as sensors, clandestine network formations (safe houses, caches, personnel recovery, reconnaissance) and SAMs.

U.S. Army Special Forces Group: ~2500 PAX (Stuttgart, GE)

- 1x HHC, 3x Line Battalions, 1x Special Warfare Battalion, 1x Support Battalion
- 1x Crisis Response Element (2x troops/6x ODAs), 54x ODAs (48x line ODAs), 12x ODGs, 1x RSE

The ODA is still the main operational element within U.S. Army Special Forces, though technological and training advancements have expanded their capabilities to include: 100% Military Freefall qualified, digital language translators, small-scale additive manufacturing, organic ISR to include small autonomous air and ground systems used for sensors, sustainment. Exoskeletons and human performance enhancements enable long movements and sustenance. The most influential advancements have been made within the electro-magnetic spectrum enabling clandestine communications, limited spoofing and deception operations and tactical jamming capabilities.

Multidomain Task Force: Personnel ~2500 (Warsaw, Poland)

- 1xHHB, 1x ADA Bn, 1x MLRS Bn, 1x Rotary Wing Bn, 1x BSB, 1x EW Detachment
- Mobility: Rotary Wing A/C
- Armament: Patriot, MLRS, Avenger

The MDTF is a composite entity formed to defeat adversary Anti-Access, Anti-Denial systems. It is a regimental-sized element with fires, information, and cyber capabilities, with the potential to be used as both offensive and defensive weapons. This concept became a permanent entity within the U.S. military arsenal approximately 10 years ago and has varied in sized over the years given the constant evolution in technology. This entity is deployed and employed as the initial effort to defeat systems, then to have follow-on forces flow into theater once select enemy systems are defeated. The main effort of this entity is its cyber capability, which can effectively defeat many of the electronic-based systems that most of the world's military is dependent upon. Additionally, its social media capability that offers predictive analysis provides target direction and development.

AIR

Allied Air Expeditionary Force

- 12 FGR4s Typhoons (RAF) with Brimstones and Paveway IV
- 24 F-35As; 4 x KC-46As; 12 KC-130Js
- The 404 Air Expeditionary Wing will be equipped with MQ-1, C-17, MC130, and CV-22 aircraft, while the 457 Air Expeditionary Group will be equipped with A-10, AC-130, B-1, B-2, B-52, F-15, & F-22 aircraft.

US Army Aviation Group Eagle Gollum (Warsaw, Poland)

- 6 x MH-47s, 12 x UH-60s, 6 x AH-64s with 20 mm guns and Hellfires, 12 x MQ-1C Gray Eagles with Hellfires

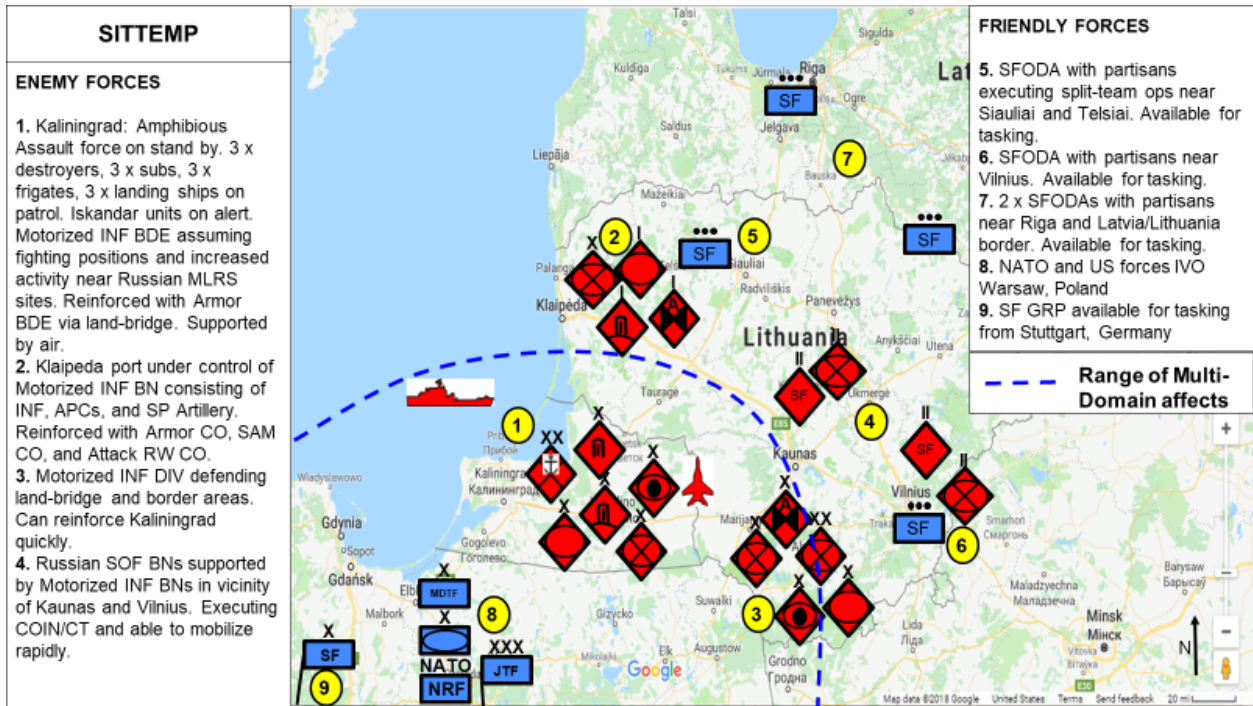
SPACE

Commercial surge capability from SpaceX: small-satellite launch-on-command

CYBER

Offensive and defensive cyber teams from U.S. 2nd Army, NSA and GCHQ

E. SCENARIO ONE PRODUCTS



A.V. SCENARIO 2: UNCONVENTIONAL WARFARE IN RIGA

It has been 30 (D+60) days since the coalition forces pushed the Russians across the Lithuanian border. Russia maintains control of Kaliningrad, Latvia and Estonia. Russia and NATO suffered heavy casualties during major combat operations in Lithuania. Currently, no conventional coalition forces operate in Latvia with the Russians reciprocating similarly in regard to Lithuania. Fierce conventional fighting has stalled as political back channels indicated a possible Russian tactical nuclear escalation if the fight pushed into Latvia. The National Security Council through the Secretary of Defense and Joint Chiefs of Staff are requesting EUCOM and the JTF develop alternative strategies for militarily pressuring the Russians without escalating to nuclear exchange.

Meanwhile, Russia continues to lobby the international community for support as they maintain that the Baltics is their sovereign territory. The United States, NATO and the international community condemn Russia's revisionist actions, though are forced to recognize Russian immense military power in the region. However, slowing NATO's counter-attack came at a high cost militarily and politically for Russia as this unexpected war came during a massive domestic economic downturn due to collapse of currency, increased bond yields and domestic unrest.

Mounting political pressure abroad and domestically spurs the Russian president to secure Latvia quickly, appeasing his nationalist constituency and showing Russian might on the international stage. United States and coalition intelligence estimate that the Russians have 12–18 months to pacify scattered resistance pockets in Latvia before they lose prestige at home and abroad. Riga is central to their pacification strategy. Key infrastructure such as government facilities, APODs/SPODs are protected though the focus is winning the populace through information operations, crushing resistance uprisings, and conducting counter-unconventional warfare operations. Robust IADs and operational fires stretch countrywide and the entire country is designated "denied" by coalition military planners.

Unwilling to accept Russia's claim of the Baltics and looking for a new strategy that avoids nuclear war and expedites Russian withdrawal, the U.S. government has

designated Unconventional Warfare as the strategic option. *Key to this is making the Russian military occupation of Riga untenable.* Surviving in what is essentially a “no-man’s land,” U.S. Army Special Forces and their partners operating in the region for six months have collapsed to Riga, as rural areas leave them too vulnerable. Teams are largely disaggregated and “hiding in the noise” as adversary advanced sensors and robust Counterintelligence networks attempt to locate them. Significant challenges for the teams have been in their ability to sustain, organize, build up and employ, as well as other U.S. Army Special Forces principal tasks such as Direct Action and Special Reconnaissance against military targets. Though no conventional forces are present, forward U.S. Army Special Forces teams, their partners and several interagency teams have the full weight of the U.S. and coalition governments behind them.

A. YOUR MISSION

1. Situation

Your TTX team represents one of the two SFOD-As currently operating within Riga. You have been placed in charge of planning, coordinating, and executing the UW campaign in Riga and have full authority over all USSF within the city. Your SFOD-A has survived for six months behind Russian lines, adapting quickly and learning to maneuver, communicate, and sustain in a denied environment. During the coalition offensive into Lithuania, your Detachment, NATO SOF partners, and resistance members were able to develop, refine, and apply TTPs to successfully delay enemy reinforcements and harass enemy Lines of Communication, although it came at the loss of your senior 18E Communication Sergeant. Conventional fighting stalled near the Latvian border as the Russians threatened the use of tactical nuclear weapons. With a significant decline in kinetic combat operations in Latvia and having expended a majority of the pre-positioned ammunition and weapon stocks, your SFOD-A was directed to reduce its signature, retrograde toward Riga, and begin establishing networks. Since infiltrating Riga, your SFOD-A now operates in four separate teams, often co-located with NATO SOF, and occasionally other resistance members, living across multiple different safe sites within the city limits. Numerous pockets of resistance members, ranging anywhere from 1–4 people,

are scattered throughout the city. Your SFOD-A and its partners have established mechanisms to ensure basic sustenance, limited force protection, and rudimentary communications techniques.

2. Guidance

You are to conduct Unconventional Warfare within Riga to make the Russian military occupation of the city untenable, eventually forcing a Russian military withdrawal.

*Of note: The daily operations and infrastructure for the city of Riga continue to function with limited to moderate Russian military oversight. While trade and port activities were shut down during the first 100 days of the conflict, these activities recently returned to a level of normalcy. Minimal population control measures are employed to increase Russian chances of pacification; however, the Russians have temporarily utilized stricter methods in response to insurgent activity. The population of Riga is made up of 55% Latvian, 35% ethnic Russian, and 10% other.

*U.S. Army Special Forces and other government agencies activities north of the border is clandestine and non-attributable after the Russians threatened a tactical nuclear response. This has implications on U.S. Army Special Forces' ability to leverage operational fires, sustainment and other warfighting functions originating outside Latvia.

3. Instructions

Given what you know about the future operating environment, the Situational Template and threat capabilities **discuss and brainstorm** how you would achieve the UW tasks while filling out the table. Be sure to include all elements of a resistance as you develop ideas (Underground, Auxiliary and Guerillas). See table on next page.

Fill out as many tasks as you can. If you get stuck, move on. It does not have to be done in order.

*Orders of Battle and capabilities below table, as well in the printed slides provided

B. SCENARIO TWO TABLES

UW Tasks	How Would You	Required Capabilities	Greatest Risks	Phase 0 Implications
Recruit				
Organize				
Train				
Employ				
C2				
Enhance FORCEPRO and CI Measures				

UW Tasks	How Would You	Required Capabilities	Greatest Risks	Phase 0 Implications
Establish Non-Standard Stocks				
Synchronize Effects with OGAs, JTF, other partners				
Employ MISO to delegitimize/legitimize				
Infiltrate Additional Personnel				

C. ORDER OF BATTLE

1. Russia

- Two (2) Motorized Rifle Brigade “Mikhail Kutuzov”: 4,200 troops augmented with T-14s, T-15s tanks, 2S19 Msta 152 mm SP howitzers, Verba SAMs, ZALA drones
- One (1) Spetsnaz Brigade “Alexander Chernyshyov”: 1,000 troops in light vehicles, Verba SAMs, ZALA drones
- Attack/Lift Squadron (-) “Boris Vorobyov”: 24 x Kamov Ka-50/52 attack helos with sufficient lift to transport 1 infantry company in one turn.

Russian forces conducting COIN, specifically the Spetsnaz and GRU elements, utilize a combination of SIGINT, HUMINT, social media exploitation, sensors, and ISR to counter resistance elements. While Russian Armor and Motorized Infantry are restricted to main roads, the Spetsnaz and GRU elements can utilize light tactical vehicles, civilian vehicles, and/or rotary wing platforms to rapidly locate, isolate, and destroy resistance elements. Russian artillery units can fire conventional, cluster, anti-armor, localized EMP, and parachute EW rounds. Russian rocket launchers can fire conventional, localized EMP, parachute EW, and thermobaric rounds. Russian T-14 and T-15 vehicles have active defenses against anti-tank missiles and 35% can be optionally manned. Russian SOF light vehicles are extremely maneuverable, equipped with localized SIGINT capability. They have become proficient at radio direction finding and have mastered tipping/queuing TTPs with their organic ZALA drones that are capable of carrying a 20kg payload.

2. Coalition

2 x U.S. Army Special Forces ODAs are disaggregated: The U.S. Army Special Forces elements maintain the following force posture:

- Equipped with highly maneuverable all-terrain vehicles with active protection; armed with rockets and SAMs though their ammunition stores

are nearly depleted. Vehicles hidden, rarely used as they are easily targeted if detected

- Advanced communications equipment including stealth IP, and chameleon-like ability to hide in the noise to minimize jamming and DF
- Limited additive manufacturing (3D printing) capability though raw materials are scarce

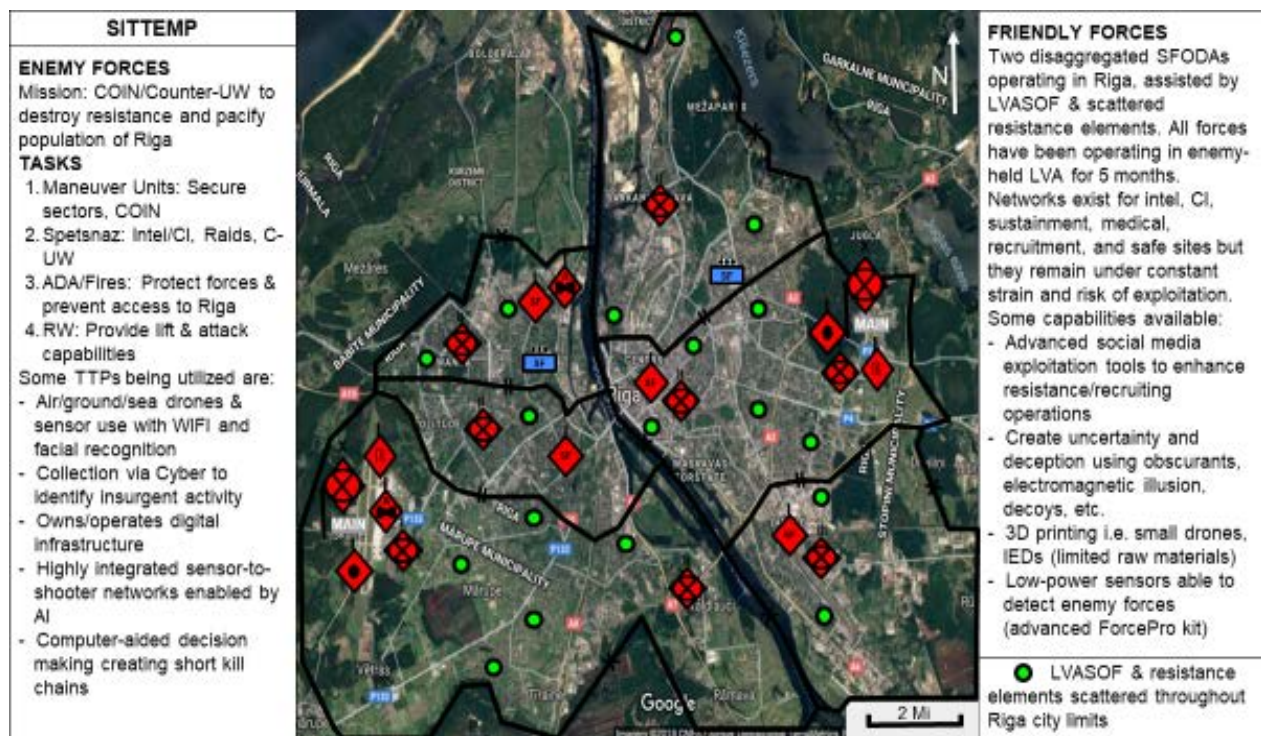
Interagency elements: Present within Riga; however, minimal coordination and exact composition unknown

Latvian SOF and Guerilla Fighters within the Riga Metropolitan Area: 300–500

- Capable of massing up to 50 fighters

Irregular defense group typically armed with small arms, antiarmor, anti-personnel mines, anti-tank mines, mortars, variety of small tactical transport vehicles and civilian vehicles. Increased engagement in the region with U.S. and NATO SOF since 2018 has enhanced their irregular war fighting capabilities and added new tools to their arsenals such as sensors, clandestine network formations (safe houses, caches, personnel recovery, reconnaissance) and SAMs.

D. SCENARIO TWO PRODUCTS



Riga Order of Battle

ENEMY FORCES

- Two (2) Motorized Rifle Brigade "Mikhail Kutuzov": 4,200 troops augmented with T-14s, T-15s tanks, 2S19 Msta 152 mm SP howitzers, Verba SAMs, ZALA drones
- One (1) Spetsnaz Brigade "Alexander Chernyshev": 1,000 troops in light vehicles, Verba SAMs, ZALA drones
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Russian forces conducting COIN, specifically the Spetsnaz and GRU elements, utilize a combination of SIGINT, HUMINT, social media exploitation, sensors, and ISR to counter resistance elements. While Russian Armor and Motorized Infantry are restricted to main roads, the Spetsnaz and GRU elements can utilize light tactical vehicles, civilian vehicles, and/or rotary wing platforms to rapidly locate, isolate, and destroy resistance elements.

FRIENDLY FORCES

- Two SFOD-As equipped with: highly maneuverable ATVs with active protection (vehicles hidden, rarely used due to detection) armed with rockets and SAMs; ammunition stores nearly depleted; advanced communications equipment including stealth IP, and chameleon-like ability to hide in the noise minimizing jamming and DF; limited additive manufacturing (3D printing) capability though raw materials are scarce
- Latvian SOF and resistance elements within Riga Metropolitan area number 300-500 but only capable of mustering up to 50 fighters
- Interagency elements are present within Riga; however, minimal coordination and exact composition unknown

Irregular defense group typically armed with small arms, antiarmor, anti-personnel mines, anti-tank mines, mortars, variety of small tactical transport vehicles. Increased engagement in the region with US and NATO SOF since 2018 has enhanced their irregular war fighting capabilities and added new tools to their arsenals such as sensors, clandestine network formations (safe houses, caches, personnel recovery, reconnaissance) and SAMs.

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