AVOIDING STRATEGIC MISCALCULATION

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WHY THE U.S. ARMY MUST PREPARE TO FIGHT LARGE SCALE COMBAT OPERATIONS IN A CHEMICALLY CONTAMINATED ENVIRONMENT

A Policy Approach Aimed at Building a Better Framework to Ensure the U.S. Army can Fight and Win on a Future Chemically Contaminated Battlefield

INTRODUCTION TO THE PROBLEM:

In the last 20 years, the U.S. Army has developed, trained, and refined its ability to conduct chemical, biological, radiological, and nuclear (CBRN) operations in a counterinsurgency (COIN) and counterterrorism (CT) environment. Today, following two decades of combat operations in Afghanistan and the Middle East, the U.S. Army, and the Department of Defense (DoD) are rapidly pivoting away from COIN and CT and returning to an era that is dominated by readiness for Large Scale Combat Operations (LSCO). As the U.S. Army makes this strategic shift, it must prioritize new policy, doctrine, resources, and training to deter, compete, fight, and win against China as a pacing challenge and Russia as an acute threat. To complicate this challenge, the U.S. Army also faces two persistent threats, North Korea, and Iran. All four of these actors possess chemical weapons or the knowledge and capability to produce them. As the U.S. Army conducts its strategic transition, leaders must not ignore adversary capabilities or their interest in exploiting U.S. Army vulnerabilities.

It is likely that China, Russia, and Iran are willing to ignore long standing chemical weapons treaties and exploit U.S. Army CBRN vulnerabilities to win during Multi-Domain Operations (MDO). Challenging assumptions that the 1997 Chemical Weapons Convention multilateral treaty will prevent strategic, acute, and persistent threat actors from using chemical weapons, this article argues for a policy approach that promotes prioritization of U.S. Army chemical preparedness above current levels and offers six broad recommendations for implementation.

Opposite: The Combat Support Training Exercise 91-18-01 taking place at Fort Hunter Liggett, California during July 2018 brings various support units from across the country (and from other countries as well) to work together on various scenarios. (Photo by Cynthia McIntyre, Fort Hunter Liggett Public Affairs Office)

A FATALLY FLAWED PREMISE:

The prolific essayist and mathematical statistician Nassim Nicholas Taleb likes to say that “Things always become obvious after the fact.”[1] However, as this article argues, there are also times when transitions are identifiable, definable, and therefore require changes to policy and doctrine. This policy perspective contends that U.S. Army faces one of these transition periods now. Therefore, the U.S. Army must reassess what future land warfare looks like when faced with strategic, acute, and persistent threat actors who possess, or may possess CBRN programs and capabilities.

The U.S. Army, and the greater DoD relies on an assumption that its adversaries will abide by the 1997 Chemical Weapons Convention, a legally binding international disarmament and non-proliferation treaty that outlawed chemical weapons use during war.[2] Such a premise is fatally flawed and must be reexamined. As strategic, acute, and persistent threat actors take steps to exploit U.S. Army chemical readiness vulnerabilities, U.S. Army leaders must act. As the world’s premier land combat force, the U.S. Army can lead in preparing to fight and win in a chemically contaminated environment. Through deliberate decisions, crafted policy, and bold action, the U.S. Army should develop a stronger response framework to adversary chemical weapons use. This framework will not only help deter adversaries from using chemical weapons, but it also increases U.S. Army Soldier confidence and provides key capabilities allowing the U.S. Army to fight and win. To set conditions for further analysis and help decision-makers understand the magnitude of the threat, it is important to provide examples of recent adversaries’ efforts to exploit gaps in U.S. Army chemical training and readiness.

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UNDERSTANDING THE THREAT ENVIRONMENT:

The U.S. Army and the DoD face numerous chemical weapons challenges from adversaries that either possess, or are suspected to possess, chemical weapons capabilities.[3] The four key actors discussed are China, Russia, North Korea, and Iran. Throughout this article, China is considered a strategic U.S. competitor and U.S. pacing challenge, while Russia, in light of actions in Ukraine, is understood to pose an acute threat to U.S. interests.[4] Additionally, North Korea and Iran are determined to be persistent U.S. threats.[5] Much of the categorical threat language used in this article is from the 2023 Office of the Director of National Intelligence Threat Assessment,[6] the 2022 National Defense Strategy,[7] as well as the recently released 2023 Department of Defense Strategy for Countering Weapons of Mass Destruction.[8]

Throughout the persistent, long running war in Syria,[9] it is assessed that chemical weapons have been used by the Syrian government 50 times since the start of the conflict.[10] Even as a member of the Chemical Weapons Convention, Syria persistently withholds information on its chemical weapons program, stockpiles, and weapons use.[11] Sadly, Russia, an acute threat[12] and rival of the U.S., supports Syria's use of chemical weapons[13, 14] while also developing and employing its own chemical weapons capabilities. In its own use of prohibited chemical weapons, Russia has conducted at least three[15] assassination attempts and continues to undermine international chemical weapons norms.[16] While it is possible that there are undocumented accounts of Russian chemical use, two alleged events stand out, though Russia denies both.[17] The first is the 2018 poisoning of Sergei Skripal and his daughter Yulia in the United Kingdom. Both Skripals were poisoned by a Novichok nerve agent known to have been developed by the Soviet Union.[18] By design, Novichok weapons are intended to be more toxic and are considered fourth-generation chemical weapons developed under a former Soviet program called "Foliant."[19] Again, in August 2020, Russia is accused of attempting to assassinate Russian opposition leader Alexei Navalny using the Novichok chemical weapon.[20] It is probable that Russia has observed the atrophy in the U.S. Army's ability to operate in a chemically contaminated environment. To exploit this vulnerability, Russia realigned its CBRN forces[21] and is conducting training to fight in LSCO and chemically contaminated environments.[22, 23] Today, Russia likely views chemical contamination as a condition on the battlefield that, when employed strategically on constrictive, canalizing terrain, provides conditions for force overmatch.

China, the U.S.'s strategic competitor and pacing challenge,[24] is believed to maintain a smaller scale, covert CBRN program.[25] While publicly available information on China's chemical programs are difficult to find, it is nevertheless assessed as a rival who continues to refine and develop its chemical capabilities.[26] A November 2021 DoD report stated, "Based on available information, the United States cannot certify that the People's Republic of China has met its obligations under the Chemical Weapons Convention."[27] The report noted significant and growing concerns over China's "research of pharmaceutical-based agents (PBAs) and toxins with potential dual-use applications."[28]

Although Iran is not considered a U.S. strategic rival, and instead falls into the category of persistent threat,[29] a potential Iranian chemical program must be considered. Currently, the U.S. and international community have largely avoided definitive, public conclusions on an Iranian chemical weapons program. However, in 2007, an Intelligence Community report held that "Iran maintains the capability to produce chemical weapon agent in times of need and conducts research that may have offensive applications."[30]

A final, but important non-strategic rival and persistent threat to the U.S. is North Korea.[31] As noted by U.S. Army Field Manual 3-11, North Korea "maintains a robust CBRN program that threatens the Republic of Korea and surrounding countries."[32] Within North Korea's spectrum of CBRN capabilities, chemical weapons are assessed to play a central role. As the only country of four discussed here who is not a party to the Chemical Weapons Convention, North Korea denies it has any chemical weapons.[33]

The international community assesses that North Korea in fact has a robust chemical capability and therefore must be of strategic concern to U.S. Army leaders.

One primary reason for this concern is that there are at least 30,000 U.S. Army Soldiers stationed in South Korea (this number does not include U.S. military families).[34] Current unclassified estimates believe that North Korea possesses "2,500-5,000 tons, including mustard, phosgene, blood agents, sarin, tabun and V-agents (persistent nerve agents)."[35] While North Korea's stockpile of chemical weapons is not assessed to be growing, North Korea's chemical weapons can be delivered "using a variety of conventional shells, rockets, aircraft, and missiles."[36] It is known that North Korea also "manufactures its own protective suits and detection systems for chemical warfare"[37] and North Korean forces are "prepared to operate in a [chemically] contaminated environment; they train regularly in chemical defense operations."[38]

Critically important for U.S. Army leaders to reflect upon is recent discussions of a U.S. conflict with North Korea. In an article from February 2018 that captures the tension, journalist Yochi Dreazen notes that during a conversation with retired U.S. Navy Admiral James Stavridis and former Under Secretary of Defense for Policy Ms. Michèle Flournoy, the situation was bleak. During the interview, Stavridis said "there was at least a 10 percent chance of a nuclear war between the U.S. and North Korea, and a 20 to 30 percent chance of a conventional conflict that could kill a million people or more."[39] After numerous other interviews, Dreazen concluded, "There is a genuine risk of a war on the Korean Peninsula that would involve the use of chemical, biological, and nuclear weapons…[where] millions would die."[40] In June 2018, Pentagon leaders admitted that the force was not ready for LSCO in a chemically contaminated environment. At that time, previously unreported Pentagon audits surfaced that indicated the U.S. Army "lacked sufficient medical countermeasures, protective gear and technology to identify so-called chem-bio agents, [and] troops are insufficiently trained, manned and equipped for such a fight."[41] Echoing these concerns, Andrew Weber, a former head of the Pentagon's chem-bio defense programs said "We are definitely under-invested in countering North Korea's chemical and biological threats."[42]

U.S. ARMY CHEMICAL READINESS AS A STRATEGIC MODEL:

This policy approach argues that current U.S. Army chemical readiness does not match the adversary threat, nor is it likely to keep pace with a rising threat. The following policy recommendations are an attempt to provide a forward-leaning approach to support the U.S. Army's ability to fight and win in a chemically contaminated environment. If these recommendations are implemented successfully, and chemical readiness increases, the policy approach could be expanded or scaled to address other force vulnerabilities in nuclear and biological readiness.

To better prepare the Army for LSCO in a chemically contaminated environment, U.S. Army leadership must continue to prioritize investment in chemical readiness. Currently, the U.S. Army is in the early stages of implementing Army Campaign Plan Objective 10B which aims to significantly enhance readiness across all aspects of CBRN. Designed as a seven-year plan, 10B "will increase lethality, survivability, and readiness of maneuver formations to deter WMD use and, if necessary, operate in a CBRN environment during large scale combat operations."[43] Using the Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) framework, the U.S. Army has developed specific Enhancements that are anticipated to significantly enhance CBRN readiness by 2030. To ensure a comprehensive approach, 10B's 30 distinct enhancements and four cross-cutting efforts, including Proof of Concept effort, Pilot, Army Service Component Commands CBRN readiness, and Public Affairs Guidance, each improve important aspects of Army readiness.[44] To date, the U.S. Army has conducted a successful proof of concept demonstration with an Armored Brigade Combat Team and plans to run a pilot program of additional 10B Enhancements in 2024.

Although the Chemical Readiness as a Strategic Model approach in this article was written as a separate and distinct perspective from ongoing 10B Enhancements, many of the recommendations are overlapping and complementary to what the U.S. Army is already implementing. In that spirit, the following recommendations for U.S. Army chemical readiness should be viewed as complimentary and reinforcing to the focus of Objective 10B. Fundamentally, both approaches argue that the U.S. Army needs to increase its overall readiness to fight in a CBRN environment during LSCO.

As a first step to increasing readiness, U.S. Army leaders must address the risks inherent in trusting that strategic, acute, and persistent threat actors will follow accepted international norms prohibiting chemical weapons use. As outlined previously, China, Russia, and Iran are all signatories of the Chemical Weapons Convention. Taking a realistic and pragmatic

approach, this article believes that U.S. adversaries are likely to abandon and break chemical weapons treaties during future LSCO. As discussed previously, it is not hard to find examples where threat actors are upending chemical weapons international norms. To ensure readiness for such destabilizing actions on future battlefields, the U.S. Army must act now as readiness takes time, money, and a deliberate approach to ensure success. Here, success comes from the following: Leader Prioritization, Threat Focused Training, Specialized Funding, and Rapid Equipment Fielding.

Leader Prioritization:

For the U.S. Army Chemical Readiness as a Strategic Model to find success, U.S. Army senior leadership must be actively involved at the outset and subsequently remain engaged. While often undervalued, senior leader prioritization sets the tone for the U.S. Army and results in a trickle-down effect to all subordinate echelons and commanders. Starting with the Army Chief of Staff, involvement could take the form of senior leader symposiums and discussions of changing U.S. Army priorities. An example of such an event was a Center for Strategic and International Studies discussion where the Army Chief of Staff outlined the U.S. Army's priorities.[45] Another excellent forum where U.S. Army senior leaders can highlight the importance of chemical readiness could be through a reissue of the Army Chief of Staff's "Army Multi-Domain Transformation Paper (2021)." Such documents, while not doctrine, provide strategic guidance to subordinate echelons and commanders. The Army Chief of Staff is best positioned to be a catalyst of change to ensure that the U.S. Army is prepared for chemical threats and successfully implements chemical readiness as a strategic model.

Threat Focused Training:

Once senior U.S. Army leaders have prioritized the threat and determined that the Army must pivot toward increased chemical readiness, the next step is to draft training guidance and develop a proof of concept model. While training guidance will likely be initiated by the strategy, plans, and policy section in the headquarters of the U.S. Army, this article recommends that the U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency (USANCA) continue to be a focal point for Counter-WMD and CBRN issues. As recognized by the ongoing Objective 10B efforts, USANCA possesses the requisite talent and experience to help the Army reorient toward preparing to fight and win in a chemically contaminated environment. The draft training guidance should enable maneuver formations at echelon, to conduct operations in LSCO at speed and range against adversaries who possess chemical weapons. The endstate of the training guidance should be a maneuver force who can operate in a chemical environment with speed and lethality.

To test the newly developed training guidance, the Army Chief of Staff should select a Brigade Combat Team (BCT) that is preparing to start its training cycle. This approach strongly recommends that the selected BCT is assigned to participate in a persistent presence and deterrence rotation to either the U.S. European Command (USEUCOM) or U.S. Indo-Pacific Command (USINDOPACOM) theater. The BCT should be provided with updated, chemical readiness focused, training guidance and resources such as specialized instruction and training that is theater chemical threat specific. All soldiers in the BCT must understand that the purpose of their rotation is to serve as a proof of concept for the U.S. Army on how it should train its force to fight and win in a chemically contaminated environment. Providing guidance and a clear endstate to all soldiers helps them understand the importance of their mission and will strengthen unity of purpose resulting in a better outcome.

Upon completion of individual soldier chemical training at their home station, the selected BCT should spend roughly 30 days at the National Training Center (NTC) or the Joint Readiness Training Center (JRTC). This training venue allows commanders and their units to integrate home station chemical readiness training throughout the entire 30-day Combat Training Center scenario. To ensure that the BCT's leadership and all subordinate leaders understand the intent of this training rotation, the Army Chief of Staff should speak with the BCT leadership either in-person or via a virtual engagement. Not only does this add critical emphasis, but it also provides BCT leaders with the ability to ask questions and gain clarity on the importance of chemical readiness for the maneuver force. A key aspect the Army Chief of Staff should highlight to the entire BCT leadership is that they expect and want to see failure during training. This failure-based learning model provides leaders at all levels the freedom and flexibility to test new ideas and experiment with new techniques. By supporting this model, the Army Chief of Staff encourages the innovation and creativity that is required to build readiness in complex and hard problems. With the proper framing of the chemical problem, the Army Chief of Staff can provide subordinate commanders the level of comfort needed to truly develop unique solutions

to survive, fight, and win on a chemically contaminated battlefield. Without senior leader encouragement, the culture of the U.S. Army is frequently fearful of failure, thus limiting overall LSCO readiness.[46, 47]

Upon completion of the NTC or JRTC rotation, the BCT would transition its forces to the forward theater where it is assigned to act as a deterrent and persistent presence force. While in theater, the BCT would be assigned to the theater U.S. Army commander who would provide specific chemical training aligned against that theater's threat actor. Having just completed 30 days of training in the U.S. focused on conducting combat operations in a chemically contaminated environment, the BCT must continue to train doing similar tasks while forward. During the rotation, the BCT should be prepared to participate in multinational exercises that showcase the BCT's increased chemical readiness, not only to U.S. allies and partners, but also to strategic, acute, and persistent threat actors. Through deliberate messaging and employment of new skills, the BCT not only encourages allies and partners to increase their chemical weapons readiness, but also deters adversaries from using chemical weapons on the battlefield. Using one BCT as a deliberate, proof of concept, the U.S. Army notifies its adversaries that use of chemical weapons no longer provides overwhelming advantage. Because U.S. Army forces are now proven to be capable of fighting and winning in a chemically contaminated environment, this can help deter use of chemical weapons. It remains possible that U.S. Army proven competency, developed through rigorous training, could shift adversaries back toward abiding by Chemical Weapons Convention prohibitions.

Specialized Funding and Rapid Equipment Fielding:

While leadership prioritization and threat focused training guidance are likely to be low-cost endeavors, the training and resources required for a proof of concept BCT will increase costs. To address this funding requirement, the U.S. Army should seek to increase topline funding by a an estimated $1 million for each rotational unit that is assigned to deploy to the USEUCOM or USINDOPACOM theater.[48] Although not a precise estimate of increased chemical preparedness costs, the suggested $1 million per BCT was derived from current costs associated with ongoing CBRN readiness efforts in support of the approved Campaign Plan for 2030, Objective 10B.[49]

Identifying overall FY 2024 costs associated with rotational BCTs proved difficult, however, FY 2021 costs were approximately $690 million for a non-rotational, Active-Component Armored Brigade Combat Team (ABCT) and $580 million for a non-rotational, Active-Component Infantry Brigade Combat Team (IBCT).[50] Using the FY 2021 estimates, the additional $1 million for chemical preparedness per non-rotational BCT is an estimated total of $691 million for an ABCT and $581 million for an IBCT. In his detailed, 2017 analysis, John Deni estimates that rotational BCTs cost roughly $1.2 billion per brigade (assuming a nine-month rotation).[51, 52] Using John Deni's 2017 estimates and adding the recommended $1 million for chemical preparedness, the cost per rotational BCT would be roughly $1.201 billion. Of note, these numbers have not been adjusted for inflation and are likely higher.

In order to help pay for this increase, the $1 million per rotational BCT for chemical preparedness could be reallocated internally, or funded through the already existing European Deterrence Initiative (EDI)[53] and the Pacific Deterrence Initiative (PDI).[54] While EDI and PDI have traditionally been used to fund rotational units once they arrive in theater, EDI and PDI could be amended to authorize some home station training, specifically focused on mitigating strategic and acute actor CBRN threats in the European, Asian, and other theaters. Current FY 2024 EDI is at $3.6 billion[55] and is aimed at enhancing "cooperation with Eastern European countries and to deter Russia on their flank."[56, 57] The FY 2024 PDI is at $9.1 billion[58] and is meant to improve the U.S. "posture in the region, both with direct investments in DoD capabilities and by strengthening partnerships to counter China."[59] Both initiatives are ideally suited for the requested increase in chemical preparedness spending as they focus on China as a pacing challenge and Russia as an acute threat actor.

While costs associated with rotational BCTs are admittedly small, an increase of $1 million per BCT would provide critical resources to bolster unit chemical training, equipment, and overall readiness. Additionally, the funding could be used to cover costs related to chemical equipment wear and tear, as well as rapid fielding of equipment and novel solutions generated from BCTs working with theater Army elements and alongside allies and partners. Returning to the idea of a proof of concept and model for future CBRN readiness, $1 million per BCT could lay a foundation to bolster capabilities in areas beyond chemical readiness. Taking a long-term view, after chemical readiness is achieved

across the U.S. Army, the added funding could support efforts to mitigate other aspects of the CBRN threat spectrum, specifically nuclear and biological threats.

Taken together, leader prioritization, threat focused training, specialized funding, and rapid equipment fielding as this framework described, seeks to develop chemical readiness as a strategic model. Through careful observation and assessment of the BCT's planning, training, and performance, U.S. Army leaders can assess how the U.S. Army should approach chemical readiness in LSCO. Additionally, by collecting data and performance metrics through the entire proof of concept model, the entire U.S. Army can determine the validity of the approach which will likely increase subordinate commander buy-in at echelon and greater positive outcomes initially for chemical, and later for overall CBRN readiness.

RECOMMENDED APPROACH AND SUGGESTED IMPLEMENTATION STRATEGY:

To ensure successful implementation of this policy approach, the U.S. Army must take the following steps.

Implementation Step 1 – Reassess the Threat and Inform Commanders at all Echelons (Immediate and Iterative Process):

The U.S. Army must update and accurately assess the increasing threat posed by strategic, acute, and persistent threat actors who possess and are assessed to possess chemical weapons. A proper understanding of threats and vulnerabilities is foundational to ensuring that action is taken to better prepare the U.S. Army to fight and win in a chemically contaminated environment. Current U.S. intelligence professionals must prepare an accurate, even if unpopular, intelligence picture on the U.S. Army's adversaries and their abilities to exploit force vulnerabilities. This updated intelligence picture provides U.S. Army leaders with the details they require to request additional resources, support, and emphasis for U.S. Army chemical readiness.

Implementation Step 2 – Build a Common Operating Picture (Persistent):

As U.S. Army leadership, specifically the Chief of Staff of the U.S. Army, becomes aware of the dire threat that chemical weapons pose to U.S. Army forces in LSCO, they must act. As the key decision-maker for this Army-wide change, the Army Chief of Staff must champion the recommendations suggested in this policy approach. Starting with senior leaders in the U.S. Army, the Army Chief of Staff should convene and chair an advisory group. Not only would this provide needed gravitas, but it also ensures that the message and concerns are clear to senior leaders. Included in this advisory group are the Secretary of the Army; Director, Strategy, Plans and Policy; Director of U.S. Army Operations, Readiness, and Mobilization; Director of U.S. Army Force Management; and the USANCA Director, to only name a key few. Ensuring that senior U.S. Army leaders understand, not only the U.S. Army's lack of chemical readiness, but also the Army Chief of Staff's intent and vision, supports more efficient organizational change.

The U.S. Army staff must also begin to engage subordinate commanders and leaders through classified and unclassified engagements. In the past, U.S. Army leadership has used numerous methods to include drafting new strategies, white papers, safety standdowns,[60] Army force wide emails, as well as virtual workshops, and sensing sessions. To implement this policy approach, the following is recommended:

- Establish a virtual discussion and forum with key U.S. Army leaders and push access to the discussion across the force for widest distribution. This virtual discussion could take the form of a teleconference that is live and recorded for all Combatant Commands.

- Reissue the Army Chief of Staff's Army Multi-Domain Transformation Paper (2021) with updates to the chemical threat and actions the U.S. Army will take that are in line with the policy recommendation presented here.

- Provide the U.S. Army force with an unclassified, one page document that explains the plan, vulnerabilities, reasons for concern, and provides a clear and concise timeline with milestones for implementation. This document should be distributed across the force through the enterprise email system.

- Schedule quarterly touchpoints and discussions that highlight progress, challenges, and new ideas and solutions. Send notes and due outs from each meeting to the force through the enterprise email system. Frequent updates from senior leaders not only help inform the force, but they also strengthen overall accountability.

Implementation Step 3 – Provide Updated Training Guidance (Within Six Months):

The U.S. Army staff should help inform updated training guidance and provide the Director of U.S. Army Force Management with a proof of concept model for a USEUCOM or USINDOPACOM BCT entering its training cycle. New training guidance must be threat specific and encourage subordinate commanders at echelon to employ the failure-based learning model. The failure-based learning model runs counter to Army culture and will need to be championed by the Army Chief of Staff and senior leaders to gain traction.[61, 62] Leveraging the failure-based learning model, subordinate commanders can be applauded for taking bold and creative action during training to better understand and prepare for the extremely difficult and complex scenario where an enemy uses a chemical weapon. Collectively, U.S. Army senior leaders must provide subordinate commanders with the flexibility to think resourcefully and develop unique solutions to survive, fight, and win on a chemically contaminated battlefield.

Implementation Step 4 – Secure Funding for Proof of Concept (Within 12 Months):

To ensure success, the U.S. Army must secure funding for its proof of concept model. As recommended in this policy approach, the amount of $1 million should be allocated to a U.S. Army BCT that can act as a model for future training and chemical readiness efforts. The amount of $1 million could at first be reallocated and aligned internally within the U.S. Army budget to ensure that the proof of concept BCT is paid for rapidly. The U.S. Army FY 2024 budget is roughly $185.5 billion[63,64] and there is room for adjustments and reallocation of funds if justified appropriately.[65] Once the BCT completes its home station training, a rotation at a U.S. Army Combat Training Center, a deployment to USEUCOM or USINDOPACOM, and a theater level exercise, the U.S. Army can move forward with requests for permanent funding of future chemical readiness efforts through earmarked funds within EDI[66] and PDI.[67]

Implementation Step 5 – Test Concept and Capture Results (Within 18 Months):

A crucial step in efforts to prepare the U.S. Army for LSCO in a chemically contaminated environment is the meticulous capture of results from the proof of concept BCT. This article recommends that information on how the BCT plans, trains, and performs is captured using qualitative and quantitative methods. Qualitative information is, "the process of collecting, analyzing, and interpreting non-numerical data, such as language,"[68]

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and this will provide the framework for how the BCT preforms. Quantitative information is the internal detail and nuance of the BCT's performance and "involves the process of objectively collecting and analyzing numerical data to describe, predict, or control variables of interest."[69] Both of these methods and measures when combined provide U.S. Army leaders and commanders with a clear understanding of the cost and benefits associated with prioritizing chemical readiness and allocating additional funds to each rotational BCT.

The first proof of concept BCT should be a unit that is preparing to enter the start of its training cycle. The unit should be informed in clear, concise language why it was selected, and the importance of its efforts as a model and proof of concept for the U.S. Army. This approach recommends that the Army Chief of Staff speak directly with the brigade leadership or the entire brigade formation if appropriate. It is recommended that U.S. Army provide dedicated observer controllers[70] and data scientists,[71] who are specifically trained to capture data and information on a unit's training and performance. These key enablers should be embedded with the unit throughout home station training as well as during subsequent training events. An excellent example for how the U.S. Army should collect this information is the methodology behind the data collection for the Army Combat Fitness Test.[72] Critically important to this effort is the BCT's Combat Training Center rotation either at the National Training Center or the Joint Readiness Training Center where it will validate the effectiveness of its home station chemical readiness training and the impact of any additional resources it was provided. Finally, a key for successful implementation is the BCT's participation in a theater, large-scale, multinational training event. This will not only provide additional, theater threat specific training, it is a reminder to U.S. allies and adversaries that the U.S. Army is taking active and deliberate steps to prepare for and deter chemical weapons use in LSCO. This article promotes that observable, proven chemical readiness can influence an adversary's decision-making, deny benefit, and ultimately help deter the use of chemical weapons.

Implementation Step 6 – Establish Enduring Readiness (Within 24 Months):

Following the above implementation steps provides the U.S. Army with a deliberate and systematic approach to fixing a vulnerability and strengthening combat readiness. By collecting data and performance metrics through the entire proof of concept model, the U.S. Army can determine the validity of this recommended policy approach. Based on the results provided through qualitative and quantitative data analysis, the U.S. Army can determine if the results from the proof of concept BCT justifies a request to Congress for permanent funding and equipment.

While the goal for this policy approach is implementation as described above, reality requires a brief examination of several obstacles. First, each policy and funding decision entails a tradeoff in an increasingly finite resource environment. The Army Chief of Staff and U.S. Army leaders continually face a barrage of competing requirements that include ever expensive innovative technology. These requirements, coupled with rising inflation, could be prohibitive to the additional funds requested by the policy approach. Additionally, the U.S. Army remains challenged by short time horizons for senior leaders. Often at senior, decision-maker levels, U.S. Army leaders are only in their assigned roles for two through four-year periods. As noted by the implementation timeline discussed previously, the Army Chief of Staff might make the strategic decision to increase U.S. Army chemical readiness, but it is unlikely that they will be in position to see it through. Such frequent shifts in senior leadership are often accompanied by shifts in priorities. Changes in personalities and priorities pose a risk to this policy approach's completion and the development of the proof of concept model. A final obstacle to consider is flawed or unfavorable qualitative and quantitative data. If the policy approach is not successful, or the recommended approach does not prove to be effective, there is a risk to future efforts to prepare the U.S. Army to fight and win in chemically contaminated environments. Flawed data and/or a poorly executed plan decreases U.S. Army chemical readiness while adversary chemical weapons threats are likely to adapt and multiply.

Going forward, if this policy approach proves successful, the U.S. Army should seek to conduct a similar process to mitigate risks in other aspects of the CBRN threat spectrum. At the end of 24 months, if the U.S. Army is better prepared to fight in a chemically contaminated environment, U.S. Army leaders should consider a similar approach to address nuclear and biological warfare vulnerabilities across the force. Using the framework for chemical readiness as a springboard, the U.S. Army is already well on its way to improving readiness in subsequent CBRN areas of concern.

CONCLUSION AND FINAL THOUGHTS:

Today, the U.S. Army faces an important and strategic decision on how it will tackle vulnerabilities that have emerged over two decades of COIN and CT operations in Afghanistan and the Middle East. The U.S. Army Cold War era chemical readiness is not available to deter strategic, acute, and persistent threat actors who either have chemical weapons or plan to develop and use them during LSCO. The choice facing U.S. Army leaders is how the Army should plan, train, and equip itself to reduce vulnerabilities, deter adversaries, and ensure that it is prepared to fight and win the Nation's wars.

One of the main purposes of this policy analysis is to question assumptions that U.S. adversaries will abide by international norms and chemical weapons prohibitions. Additionally, this policy article seeks to provide leaders and decision-makers with a thoughtful policy approach for consideration. While this policy approach was written separately from the U.S. Army's ongoing Campaign Plan 2030, Objective 10B efforts, it should be seen as complementary and not competing. Both approaches understand that the U.S. Army must become better trained, manned, and equipped to fight in a CBRN environment and that increasing chemical readiness promotes lethality and survivability while also deterring WMD use. The task is now to take the information provided here and weigh it against other options, costs, and priorities. As a former Army Chief of Staff acknowledged during a March 2022 discussion of U.S. Army Priorities, each decision must be carefully weighed as "every decision is a tradeoff."[73]

In closing, ongoing world events such as the 2022 Russian invasion of Ukraine[74] make it difficult for critics of the recommendations provided here to discount the need for the U.S. Army focus on chemical readiness for LSCO. While the U.S. has so far refrained from committing ground forces to the Russia-Ukraine war, if the U.S. Army did become involved in combat, they would be facing a chemically armed actor who has repeatedly disregarded Chemical Weapons Convention prohibitions and trained to use chemical weapons on the battlefield. Now more than ever, the U.S. Army should consider this policy approach and establish a deliberate plan using the outlined implementation steps to not only prepare to

fight and win in a chemically contaminated environment, but also establish a strategic model for chemical readiness that can be expanded in the future to encompass nuclear and biological force readiness. In an adage as old as time, and attributed to many, it is frequently said that "Armies prepare to fight their last war, rather than their next war."[75] Today, the U.S. Army has a unique opportunity to flip the script and prepare for, while also deterring, chemically armed adversaries from using chemical weapons on the U.S. Army or its allies.[76] ■

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