



The Operational Environment (2021-2030):

Great Power
Competition,
Crisis, and Conflict



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Foreword

Two years have passed since the publication of TRADOC Pamphlet 525-92, *The Operational Environment and the Changing Character of Warfare*, which presented the Operational Environment (OE) in terms of an increasingly contested battlespace dominated by new technologies and new approaches to warfare. It highlighted the need for a multi-domain approach to a developing threat, and allowed us to examine our own assumptions about warfare, force design, and capabilities requirements. In many ways, this OE was a guidepost for the Army's historic modernization efforts that have been underway for the past several years.

But the OE is not static. Dramatic discontinuities, particularly the COVID-19 pandemic and its effects, are fundamentally reshaping the OE in ways we did not foresee two years ago. The need to contain and recover from the pandemic has strained military budgets, complicated established ties between nations, as well as altered perceptions of the role of governments and the viability of the existing international order. More predictably, our key potential adversaries have embarked on their own modernization efforts designed specifically to overcome the United States. As we often are reminded, our adversaries have a vote. Focusing on the two main pacing threats, it is clear that both China and Russia are revolutionizing their approaches to warfare and have been working to create the forces they need to carry them out. First, they seek to “win without fighting” by dominating the Competition and Crisis spaces using whole-of-government approaches and the ability to control the information space. Second, they intend to use stand-off capabilities to prevent the Army and its Joint and Combined Partners from effectively maneuvering. This effort will be broad, starting in the Homeland, which is no longer a sanctuary, and will stretch across the global commons to the theater of operations.

In designing a force to achieve these goals, much attention is given to the new capabilities and technologies that our adversaries are developing. However, they are doing much more than this. Our pacing threat adversaries recognize that there are three pillars to the Army's post-DESERT STORM dominance:

- 1) That we are the best equipped;**
- 2) That we have the best trained Soldiers and leaders; and**
- 3) That we are the best at maneuver warfare.**

Our adversaries are not just thinking in terms of matching us in materiel, but also in terms of people and approaches to warfare. They are challenging each and every one of these pillars, which for many in the Army have become cherished truisms.

This OE assessment is vitally important to every member of the Army team because it shows how far we still need to go. It shows that the dominance that we achieved is not a fact of life, but is instead a contest in which we engage each day. Our adversaries are challenging us across doctrine, organizations, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) and are working to erode our traditional areas of strength. This document asks us all a central question: “Are we doing enough fast enough” in the face of our adversaries' modernization? Are we working not only to bring the best equipment into the force, but also to recruit, train, and develop the world's best Soldiers and leaders and provide them with a dynamic doctrine to prevail in Competition, Crisis, or Conflict? The answer will be a resounding “yes” if we keep this question in mind as we work together each day to meet these challenges. We cannot rest on our laurels, but must instead enter the arena and leave our jersey in a better place each and every day.

WINNING MATTERS. PEOPLE WIN. VICTORY STARTS HERE!



Key Judgments

This document is intended to build on the OE analysis found in TRADOC Pamphlet 525-92, *The Operational Environment and the Changing Character of Warfare*. While that document focused heavily on OE conditions, namely on the development of new technologies and their impact on warfare, it paid less attention to the activities of our potential Pacing Threats. Furthermore, although it referenced pandemics as a possible threat to the Homeland, the impacts of the COVID-19 pandemic on the OE represent a significant shock to the system that required new analysis. This context is addressed in Chapter 1 to introduce readers to the need for this assessment.

Chapter 2 presents the activities of our two Pacing Threats, China and Russia, and their efforts to develop and modernize their militaries and to focus on prevailing in Competition, Crisis, and Conflict against the United States.



Soldiers participating in a Russian Army contest. Source: Creative Commons/Mil.ru

- While the United States was engaged in counterinsurgency operations in Iraq and Afghanistan, our adversaries studied us and determined that the best way to defeat the United States is to **win without fighting**.
- If it comes to Conflict, our adversaries want to use **stand-off capabilities** to separate the United States population internally, separate the elements of the Joint Force, and separate us from our allies and partners.
- Our Pacing Threats will contest us in every domain and across the diplomatic, information, military, and economic spheres in **Competition, Crisis, and Conflict**.
- While the United States invested in equipment and capabilities for the counterinsurgency fight, our Pacing Threat adversaries invested in capabilities that provide them with a degree of **overmatch** in a few key areas.
- **Russia and China are global powers.** Russia is our most experienced Pacing Threat, while China is our most technologically sophisticated Pacing Threat. China has either surpassed, or will soon surpass, Russia as our dominant Pacing Threat.
- Technology among peer and near-peer competitors will be roughly equivalent; the side with the **best people and the best approach** to Competition, Crisis, and Conflict will have the advantage.

Chapter 3 focuses on the COVID-19 pandemic, and most importantly, on its impact on the OE in terms of the power dynamic between the United States, China, and Russia. It offers four potential alternative futures—called worlds—to consider the impact of the pandemic in terms of Competition, Crisis, and Conflict.

- The **Status Quo Reprieve** world represents a continuation of the pre-COVID-19 OE with little real change resulting from the pandemic. This means our Pacing Threats will continue to develop their capabilities along a steady track to become true near peers around 2030.
- The **Relative Advantage** world postulates a future in which the impacts of the pandemic on the United States, China, and Russia are relatively equal, but the centralized organization and economies of our Pacing Threats allow them to focus more on defense than a general recovery as in the United States. In this case, the OE speeds up, and China and Russia pose a significant challenge by 2025-2028. We view this as the **most likely outcome**.
- The **most dangerous outcome** is the **Mind the Gap** world, in which our adversaries recover quickly, while the United States craters. Under these conditions, our adversaries' modernization programs rocket forward, posing a direct challenge to the United States in the next few years.
- Finally, the **best case outcome** is the **New Renaissance** world, in which the U.S. ability to innovate allows it to recover more quickly, while our adversaries struggle. This allows the United States to outpace its rivals across the diplomatic, information, military, and economic spheres.

Chapter 4 provides a deeper insight into the impact of our adversaries' modernization efforts, which directly challenge the key pillars of the U.S. Army's post-DESERT STORM dominance in the land power domain.

- Our dominance rested on **three assumptions**:
 - We are the best equipped Army in the world;
 - We have the best trained Soldiers and the most dynamic leaders; and
 - Our ability to conduct maneuver warfare is unmatched.
- This dominance rested on efforts the Army made **across doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy**.
- While there is much focus on the materiel aspects of our adversaries' modernization efforts, **materiel advantage may be fleeting**.
- Our adversaries understand this and **are contesting us across the other factors that deal with human capital**; these advances may be more long-lasting.
- Most notably, our adversaries have conceived of new **approaches to warfare**, namely Russian "New Generation Warfare" and Chinese "intelligentized warfare"; hold **large-scale exercises** designed to practice these approaches and to improve their force; developed **new combat training centers**; and are designing new **professional military education** that aims to create a culture of learning.
- As our adversaries modernize and the OE possibly accelerates, **are we doing enough, fast enough** to keep pace?

Introduction

In October 2019, the U.S. Army Training and Doctrine Command published TRADOC Pamphlet 525-92, *The Operational Environment and the Changing Character of Warfare*. This seminal document defined the Operational Environment (OE) from the present through the deep future and served as the starting point for Army activities relating to leader development, training and education, concept and doctrine writing, and materiel acquisition.

A great deal has occurred since the publication of that document, including a revolutionary move by the Army to establish Army Futures Command (AFC), whose mission is “to lead a continuous transformation of Army modernization to provide future warfighters with the concepts, capabilities, and organizational structures they need to dominate a future battlefield.” To support this effort, AFC recently published AFC Pamphlet 525-2, *Future Operational Environment: Forging the Future in an Uncertain World 2035-2050*, which focuses with far more detail on the future OE, including offering four alternative futures the Army could encounter.

In light of the publication of this excellent product by AFC, TRADOC equally understands the need to provide focus on the period 2021-2030. The Army clearly must prepare for the future, but it also must be prepared to fight and win tonight, and through 2028-2030, largely with the force that exists today.

Moreover, although the basic tenets found in the *Operational Environment and the Changing Character of Future Warfare* remain valid, the study of the OE is a continuous process, and the OE has shifted in several ways since the initial drafting of TRADOC Pamphlet 525-92. For example, the initial analysis found in the Pamphlet focused more on underlying OE



Kremlin Regiment Guards on duty. Russia places significant importance on the prestige of the Kremlin Guards, on par with its Special Operations Units. Source: Shutterstock

conditions than on the activities of our key 2+3 adversaries—China and Russia (the “2”) and Iran, North Korea, and radical ideologues (the “+3”). TRADOC and its partners across the Army, Department of Defense, and Intelligence Community over the course of two years of analytic effort, focused on how our Pacing Threats—China and Russia—will challenge the United States across Competition, Crisis, Conflict, and Change.

This analytic work, which has been briefed to senior Army and Joint leaders during this period, has more closely aligned the Army with the National Security Strategy and has served as the baseline for TRADOC’s efforts to establish the Waypoint Force. Furthermore, DIA and the Joint Staff last year published *The Joint Operating Environment 2040* (JOE 2040), which also focuses on the Pacing Threats. TRADOC was an integral partner in that effort, having participated in most of the JOE’s analytic conferences and several senior review panels.

“...TO LEAD A CONTINUOUS TRANSFORMATION OF ARMY MODERNIZATION TO PROVIDE FUTURE WARFIGHTERS WITH THE CONCEPTS, CAPABILITIES, AND ORGANIZATIONAL STRUCTURES THEY NEED TO DOMINATE A FUTURE BATTLEFIELD.”

A further shock to the OE came in the form of the COVID-19 pandemic, which shook, or perhaps even altered the international order. The effects of the pandemic in terms of human loss, economic decline, and political/social instability are still not clearly understood; however, it is clear that COVID-19 has impacted the OE.

In September 2020, the TRADOC G-2 led an analytic effort from across the Command to publish a white paper titled the “Post-COVID-19 Analysis of the 2020-2028 Operational Environment.” This analysis attempted to discern possible outcomes of the pandemic and what these would mean for TRADOC, the Army, and the Joint Force. This analysis offered four alternative futures leading to 2028 in terms of the impact of the pandemic on the Army and on our Pacing Threats. This work also needed to be added to our understanding of the OE.

As we delved deeper into the meaning of the post-COVID timeframe, particularly looking at the potential implications for our Pacing Threats, TRADOC G-2 analysts realized that our adversaries were doing more than trying to match the United States and the Army in terms of technology. Our adversaries know that technology itself is not enough to ensure victory over the United States. Rather, the true U.S. edge comes from our ability to wage our preferred way of war and in the quality of the Soldiers, Sailors, Airmen, Marines and their leaders who comprise the Joint Force.

Our adversaries now are engaged in a race to compete with the United States globally—which includes competing directly with the Army—and that Competition has extended to the two areas where the Army has enjoyed its historical advantages: in the ability to fight the way we wish to fight and in human capital. Indeed, the Pacing Threats challenge to the Army is more than a multi-domain challenge on the battlefield; it also is a challenge across doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P), and it is clear that these challenges have significant impacts on their ability to operate within Competition, Crisis, Conflict, and Change.

It is with these events and changes in mind that TRADOC produced this document. It does not render the analysis found in TRADOC Pamphlet 525-92 obsolete, but builds on the story by highlighting the changes to the OE that have occurred over the past two years, including the efforts of China and Russia to undertake DOTMLPF-P modernization programs, as well as the impact of the COVID-19 pandemic. This assessment provides an addendum to our previous analysis and fully demonstrates the dynamic nature of the OE.

Our Pacing Threats and the OE

While the United States was engaged for almost 20 years in counterinsurgency operations in the Middle East and Southwest Asia, our potential Pacing Threat adversaries—Russia and China—studied our past and ongoing military operations and independently arrived at two general conclusions about how they could defeat the United States in a Great Power conflict. First, in light of overwhelming U.S. military capabilities demonstrated over the period 1990-2018, particularly in the ability to employ long-range, precision strike weapons, they determined that instead of engaging the United States in traditional military conflict, that their best opportunity to defeat the United States is to do so without fighting. Instead, they would use all elements of national power – diplomatic, information, military, and economic (DIME) – to achieve national objectives in what is now called the Competition phase, right up through Crisis, and just to the edge of outright Conflict. Second, if actual conflict becomes inevitable, then it is best to prevent the United States from entering a close fight with overwhelming capabilities by relying on stand-off capabilities, both kinetic and non-kinetic, to separate the United States internally among its own population, from its allies and partners, and to prevent the U.S. Joint Force from converging capabilities. The Pacing Threats watched the United States build combat power against Iraq in DESERT STORM and IRAQI FREEDOM and against Serbia in ALLIED FORCE before launching an attack, and realized that allowing the United States to marshal its forces in an uncontested manner, build up logistics and combat power over time, and then conduct operations on timelines of its choosing would be a recipe for abject disaster.

» PACING THREATS OVERMATCH CAPABILITIES

» Our Pacing Threats have steadily increased their abilities to both win without fighting and to use stand-off capabilities to target the U.S. national will, to deter the United States from entering into conflicts, to prevent the deployment of U.S. forces to a threatened region, and to effectively mitigate U.S. advantages. To do this, our Pacing Threats have developed certain overmatch capabilities, which include cyber-attacks; long-range, precision strike weapons; land-based air defense weapons; and electronic warfare (EW) systems.

» **Cyber-attacks** gather intelligence, steal technology, spread misinformation, and potentially damage key infrastructure. An example is the recent Russian-attributed “SolarWinds” intrusion, which, according to *The New York Times*, affected more than 250 federal agencies and 18,000 government and private networks.

» New families of **long-range, precision strike weapons** can be launched against targets across the battlespace. These include weapons like China’s land-based DF-21 and DF-26 ballistic missiles, which include variants capable of targeting maneuvering ships at sea, or Russia’s Kalibr-family of cruise missiles.

» **Land-based air defense weapons** can contest control of the air domain from the ground, such as the Russian S-400 or the Chinese HQ-9.

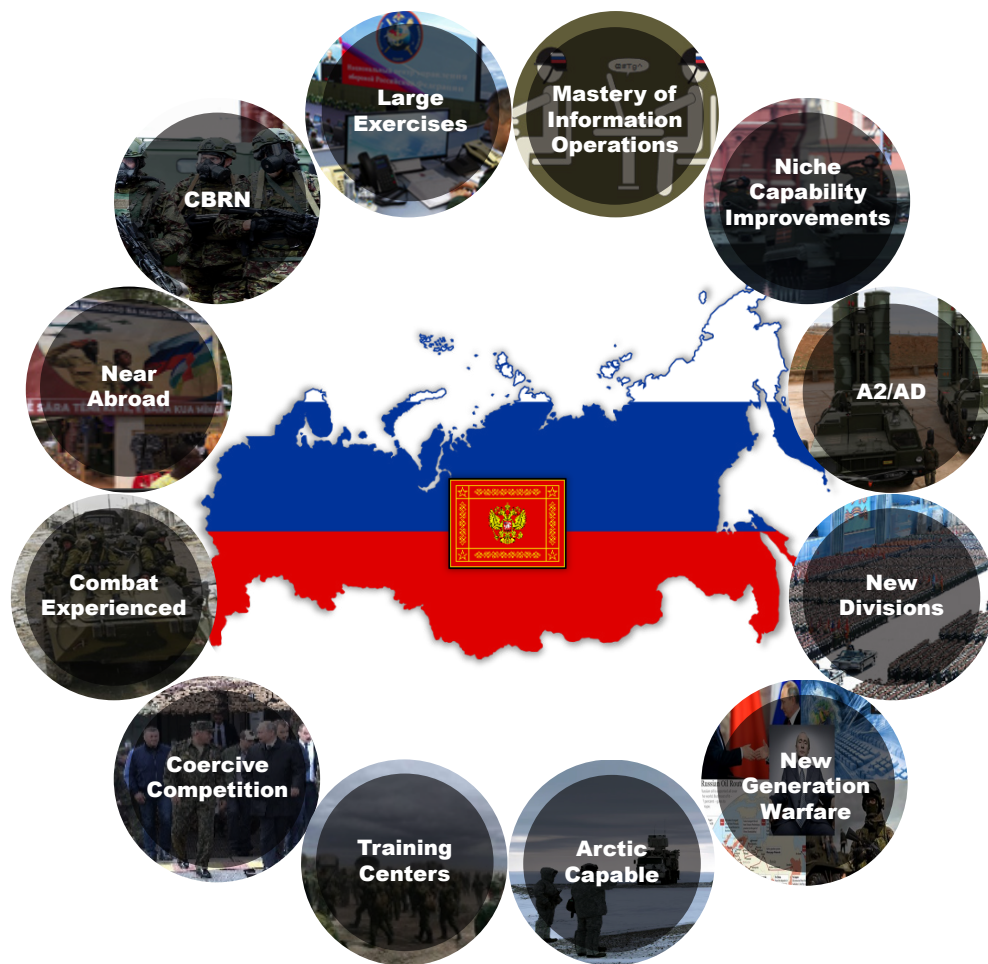
» New **EW systems** are designed to target U.S. command, control, and communications, and sever vital U.S. “kill chains.” China’s newly formed Strategic Support Force has this mission, and it has a variety of systems, jammers, and other capabilities at its disposal, including EW-variant UAVs.

The answer they derived was to establish sophisticated, multi-domain, anti-access/area denial capabilities that could be used to prevent the United States from repeating these successes, and challenge the ability of the US Joint Force to deploy forces from its CONUS-based facilities, installations, and mobilization sites —across the maritime and air domains—and to the theater of conflict.

These capabilities include EW, integrated air defenses (IADS), counter-space and precision navigation and time (PNT), cyber and social media, reconnaissance-information strike complexes, UAVs, massed artillery and fires, protection, the use of proxies, deception and ambiguity, and CBRN. The result is that the Pacing Threats either developed, or came near to developing, overmatch in several key areas, including EW, cyber and space, fighting vehicles, air defenses, rockets, and artillery. This has created an uncomfortable situation for a U.S. Army that has grown accustomed to possessing technological advantages over its enemies. For the first time since arguably the Second World War, the U.S. Army faces adversaries with more capable equipment than it fields.



A PLA Strategic Support Force soldier stands in front of a Chinese short-range ballistic missile system. Source: Creative Commons/ Kremlin.ru



So why do we consider Russia and China to be our Pacing Threats?

Russia is a capable, nuclear-armed near-peer adversary that seeks a return to Great Power status after the collapse of the Soviet Union. It effectively employs a whole-of-government approach to Competition and excels at the use of cyber capabilities and information. Russia's military has significant combat experience, fighting in Chechnya, Georgia, the Crimea, Ukraine, and Syria. Although capable, Russia likely is technologically inferior to China today, and almost certainly either has been surpassed, or will soon be surpassed by China as a global power. China is a rapidly modernizing nuclear-armed near-peer, and is on a trajectory to become a peer power to the United States. It harbors global ambitions and is increasingly confident in terms of the Competition space, using its economic clout and information operations to bolster its position and undermine its adversaries. China's People's Liberation Army lacks

combat experience but is a formidable force that is working diligently to not only introduce new capabilities, but also to improve its training and leader development. It is our most technologically sophisticated Pacing Threat today, and it will almost certainly be our most formidable Pacing Threat by 2028. Both Russia and China are global powers, and they are active in the Competition space across the global commons.

In terms of their ways of war, both Russia and China have roughly similar approaches, but with some key differences. As noted earlier, both wish to prevail in the Competition or Crisis phase through an integrated use of their national power across the DIME. If it comes to Conflict, Russia generally prefers a rapid military operation designed to quickly achieve a result and then seek a diplomatic resolution before the United States can generate combat power and move to the affected theater. It essentially creates facts on the ground over an issue that it judges likely is more relevant to Moscow than it is to Washington,



and then it seeks to find a negotiated solution, offering the United States a choice between acceptance or large-scale war to overturn the gain. China views warfare slightly differently. If Crisis shifts to Conflict, Beijing hopes to win the first battle in as overwhelming a way as possible, thereby ensuring that an opponent has no desire for a second battle.

Both Pacing Threats will contest us in all domains in Competition, Crisis, Conflict, and Change, and their nuclear deterrents provide a factor that U.S. defense planning has not had to truly consider since the Cold War.

Among the key differences between Russia and China are geography, capacity, and experience. The distances involved in moving a CONUS-based U.S. force to deal with a Russian advance in Europe are formidable; they are more formidable by a factor of three when moving from CONUS to the Chinese First Island Chain. Because of its economic strength, China has an edge in capacity over Russia, both in terms of its

force structure and magazine depth. Finally, as mentioned above, Russia has an edge in experience.

This brings the story to 2021. Russia and China also are investing in force modernization, and just like the United States, they too are focused on key new technologies, such as energy weapons, quantum computing, artificial intelligence, hypersonics, and robotics, among others. Looking out to 2028, there likely will be a rough general technological equivalency among the three Great Powers, with each of the actors having certain relative advantages in some areas but facing disadvantages in others. The notion of Contested Equality, which first was established in Pamphlet 525-92, likely remains valid. No single great power likely will have full-spectrum technological dominance. What this means is that the true advantage moving from 2021 to 2028 lies with the force that is most capable of waging its preferred way of war and has the human capital ready to do so.

COVID-19 Pandemic + Its Potential Impact on the OE

COVID-19 pandemic arrived as the OE already was moving in a direction in which our adversaries were making gains in terms of their systems, capabilities, and approaches to warfare. The effects of the pandemic will have implications for the Army's ability to address these areas moving forward, particularly if difficult resource decisions need to be made between military modernization and enabling a broader domestic recovery. Under such circumstances, COVID-19 could be considered gasoline thrown on an already smoldering OE. This first driver of the pandemic's impact on the OE is represented by the horizontal axis in the figure on the right. On its left end is the OE that existed before pandemic, with its slowly evolving new states restrained by the normal resistance of organizations to dramatic change. On the right end is an OE with rapid adjustments to continue necessary functions and operations resulting from the pandemic. These demands cause changes to the interactions and linkages among the OE variables at a dizzying pace, either by accelerating trends or implications for the OE or potentially even by slowing down progress and creating bottlenecks or brakes that disrupt the current OE. They impact organizations like the U.S. Army, whose processes and structure are built around a definitive culture and age-old traditions.

The impact of the pandemic on the Competition that exists between the Great Powers is the second driver. As the saying goes, the enemy gets a vote. This analysis must also include an understanding of how COVID-19 impacts the United States in comparison with our Pacing Threats if we are to more fully comprehend the impact of the pandemic on the Army. This driver is represented by the vertical axis of the quad chart. On the lower end, the impact—

1. The New Renaissance

This world represents an unlikely best-case scenario in which there is an unbalanced impact of COVID-19 across our Pacing Threats, but one dramatically favoring the United States.

2. The Status Quo Reprieve

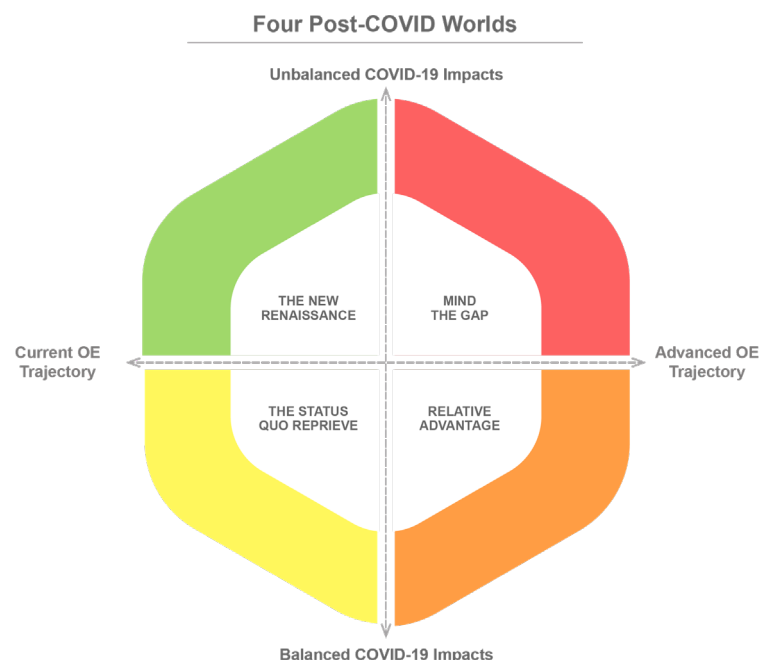
This world represents the pre-COVID OE, with some exceptions. It assumes that the impact of COVID-19 is relatively balanced between the United States and its Pacing Threats so that there are no great system altering changes that occur.

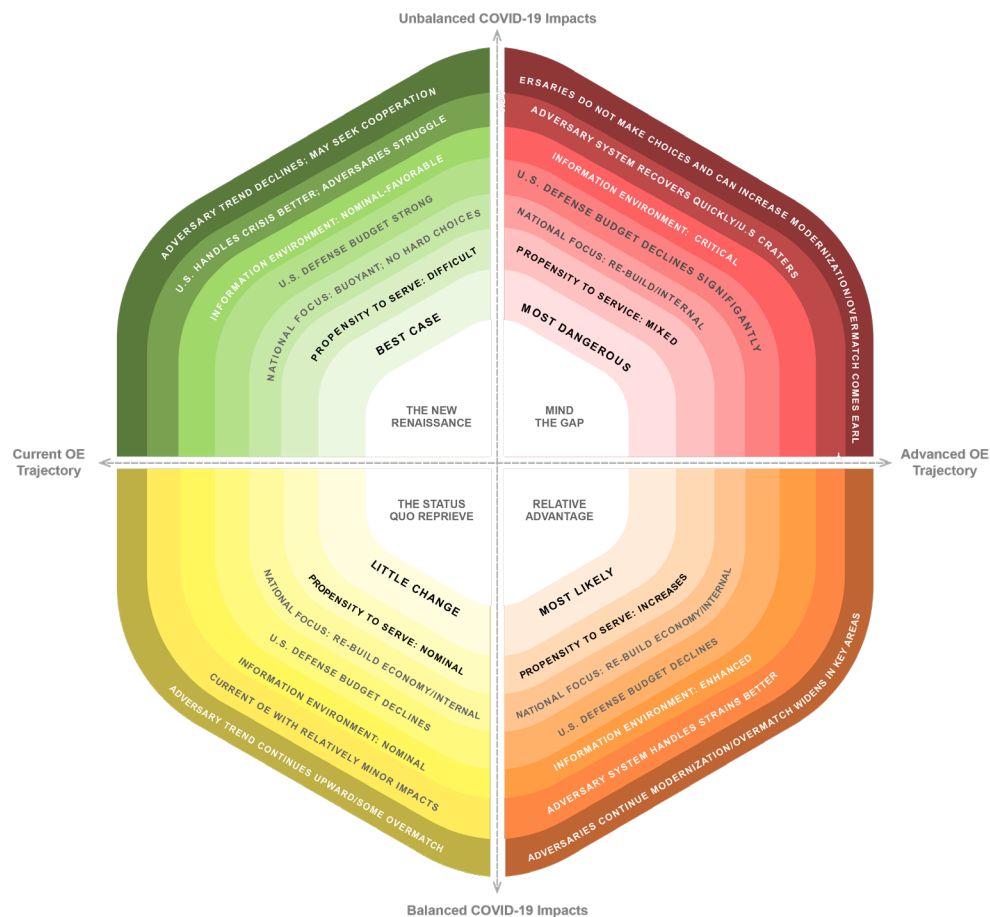
3. Mind the Gap

This world represents a clear worst-case scenario in which the COVID-19 pandemic implications are unbalanced in favor of our adversaries.

4. Relative Advantage

This world represents a departure from the assessed OE and assumes that the impacts of the COVID-19 pandemic are not as severe or system altering as initially feared, but that the United States (and its Western allies) are less able to handle the stresses and shocks imposed by the pandemic when compared to the centralized systems of our Pacing Threats.



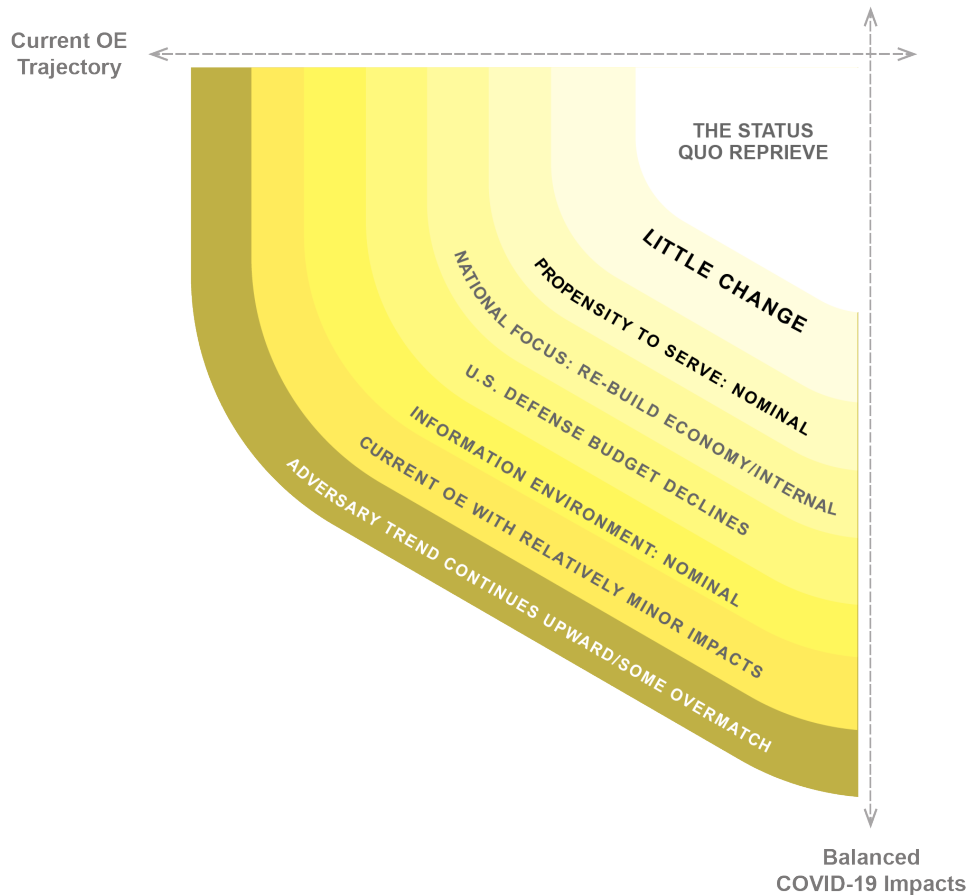


considered largely in terms of effects across the DIME spheres—is relatively balanced, with no one side accruing significant advantages in terms of global Competition. The effect is uneven on the upper end with one side or another gaining significant competitive advantages. It is likely that the effects of the pandemic, particularly in the medium-to-long term, will fall relatively evenly among the United States and its two primary adversaries, China and Russia. However, while we expect that the overall effects will be balanced, it is highly likely that Chinese and Russian public sector technology investment and defense spending—including military modernization—will suffer less, in relative terms, than they will in the United States or among its Western allies. China’s and Russia’s centralization of authority and their focus on security over individual liberty enable these adversaries to maintain their current priorities without having to be responsive to their respective publics by diverting resources to a general recovery.

When the two drivers are combined, we are left with four alternative futures for the post-

COVID world. The Status Quo Reprieve world represents a continuation of the OE along its pre-COVID trajectory. The Relative Advantage world offers a future in which Russia and China are impacted by the pandemic, but gain a relative advantage over the United States due to their centralized governments and ability to prioritize military modernization over the civilian economy. The Mind the Gap world presents a true disaster for the United States, in which China and Russia are unaffected by the pandemic in the long-term, while the United States suffers severely, and a wide gap in military capabilities develops. Finally, the New Renaissance world postulates a future in which the United States is able to recover quickly, while China and Russia languish, and the United States surges ahead in terms of influence and capability. We assess the Relative Advantage world is the most likely outcome of the COVID-19 pandemic, with the pace of our adversaries’ modernization quickening in relation to the United States over the next ten years.

The Status Quo Reprieve



The Status Quo Reprieve world represents the pre-COVID OE, with some exceptions. It assumes that the impact of COVID-19 is relatively balanced between the United States and its Pacing Threats so that there are no great system-altering changes that occur. Our adversaries grow in capabilities at the same pace relative to the United States as has been previously assessed, although with some delays on certain systems, capabilities, technologies, or concept/doctrine development. In essence, our adversaries will continue to develop their forces so that they will achieve selective overmatch in some capabilities and technologies by 2025-2028.

The United States likely will retain an overall military advantage, primarily because the Joint Force will still have advantages in integrating capabilities and in human capital, even if some of our adversaries' weapon systems may be superior to our own. This advantage, however, will lessen by 2028 as our adversaries work on their own advanced training and education efforts, as well as develop and practice new concepts

and doctrine. Our adversaries will remain increasingly active in the Competition space as they sense opportunity in this below-armed-conflict realm. While open Conflict between Great Powers remains relatively unlikely, the chance for miscalculation may be heightened. COVID-19 will not change the fundamental nature of DIME as the toolbox for national strategy. It will, however, offer possibilities for unexpected shifts in national, regional, and global relationships.

One of the most notable changes will be that virtual communications will be a common part of everyday life. With vast segments of the nation working from home and so much social activity reliant on online communications (Zoom, Skype, Hangouts, Teams, etc.), business practices and traditional ways of communicating will be altered and new norms will be established. Internally, the divisions that have occurred in terms of political outlook, social views, and debate between collective security and individual liberty will continue and be intensified to some degree by reaction to the pandemic (e.g. disputes over social

distancing, wearing masks, and government aid, as well as the tradeoffs between personal control of private information and its collection for public welfare, between public health and individual mental and physical health, and between quarantine and normal economic activity).

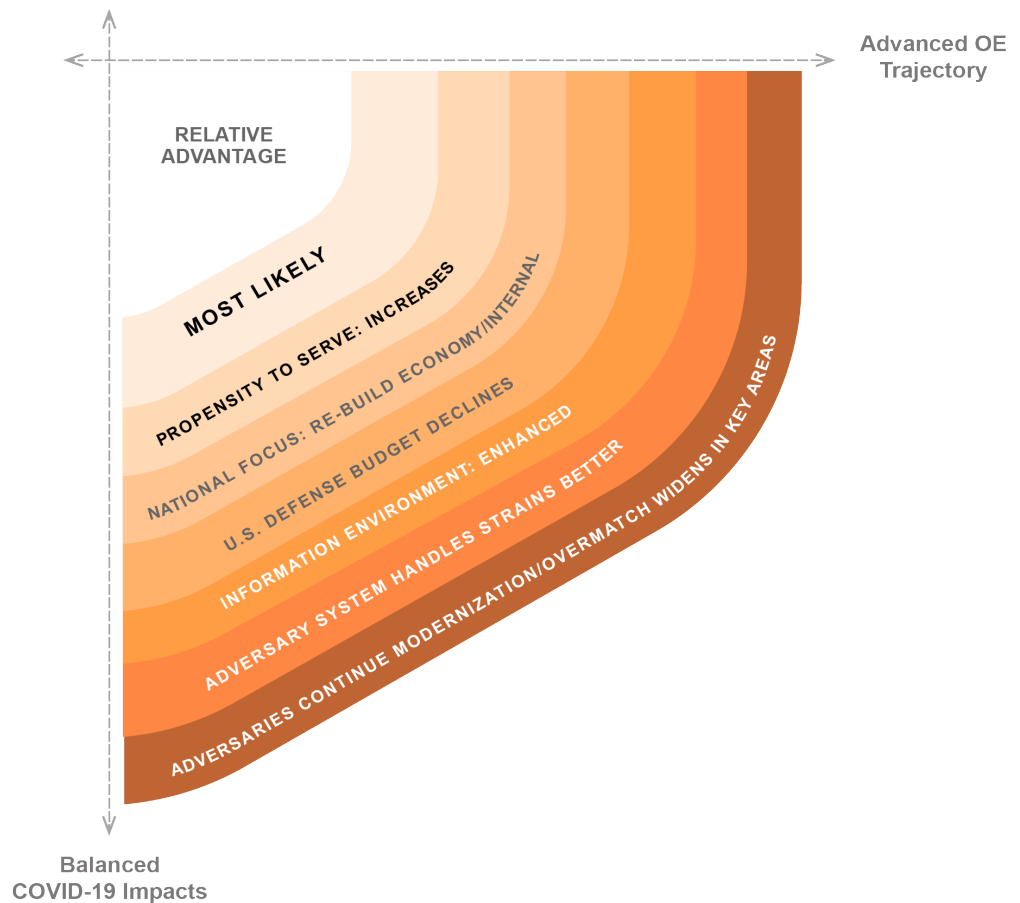
As the Government focuses on rebuilding the economy, the DOD and Army likely will face budget reductions, although in this scenario the reductions are not terribly severe and certainly are less than anticipated. Some plans will nevertheless impact both Army readiness and modernization. Modernization may be slightly delayed, which in turn will somewhat impact the Army's training and education budget. Although the influence of COVID-19 will be relatively limited on the economy as a whole, there will be both geographical and market-sector pockets that will face challenges. The Army may as a result be presented with opportunities in terms of recruiting new personnel. Conversely, while the Army may offer a significant opportunity

for those impacted by COVID-19, it will have to compete not only with other services but with industries that were publicly on the front lines of the COVID response, including the medical profession, first responders, science and technology researchers, and information technology providers.

Soldiers conduct physical fitness training. The Army has transitioned to combat-focused physical fitness, demonstrating the unique fitness requirements needed in the future Operational Environment. Source: Instagram



Relative Advantage



This world, which we judge to be the most likely outcome of the pandemic, represents a departure from the assessed OE and assumes that the impacts of the COVID-19 pandemic fall evenly across China, Russia, and the United States, but that the United States (and its Western allies) are less able to handle the stresses and shocks imposed by the pandemic when compared to the centralized systems of our Pacing Threats. While there is greater balance in the impacts and stresses on the United States and our adversaries' abilities to act than in the "Mind the Gap" (worst-case) world, the consequences do not fall equally on all. In this world, our adversaries are better able to keep a focus on readiness and military modernization due to their ability to give priority to defense and security issues over the reconstruction of the civilian economy. As a result, our adversaries' modernization efforts will continue to outpace our own, and in some ways, will expand the gaps that already were developing in the pre-

COVID-19 OE. Some of their more advanced capabilities may enter service either quicker than our own or on schedule, whereas many U.S. efforts may be delayed.

This will create significant challenges for the Joint Force and Army as our adversaries accelerate their own capabilities and develop overmatch in key areas more rapidly, or at a relative advantage to the United States. The previously assessed land combat gaps will widen in select areas as our adversaries—especially China—start to outpace the United States more quickly in terms of overall capability than originally anticipated. Adversaries could develop true overmatch as early as 2023 in some key areas, particularly if anticipated U.S. capabilities are delayed or cancelled. Additionally, our adversaries almost certainly will understand the relative advantages they are creating. As a result, they could become more activist, particularly in the Competition space. In some cases, they may consider actions



A U.S. Army Soldier prepares to administer the COVID-19 vaccine. The Army will increasingly be called upon to serve in a variety of non-traditional roles in the future Operating Environment. Source: Instagram

right up to the point of Conflict to secure their national objectives. The United States will retain critical advantages, particularly in terms of human capital, experience, and in the ability to conduct Joint operations, but these will lessen as our adversaries continue their own efforts to improve.

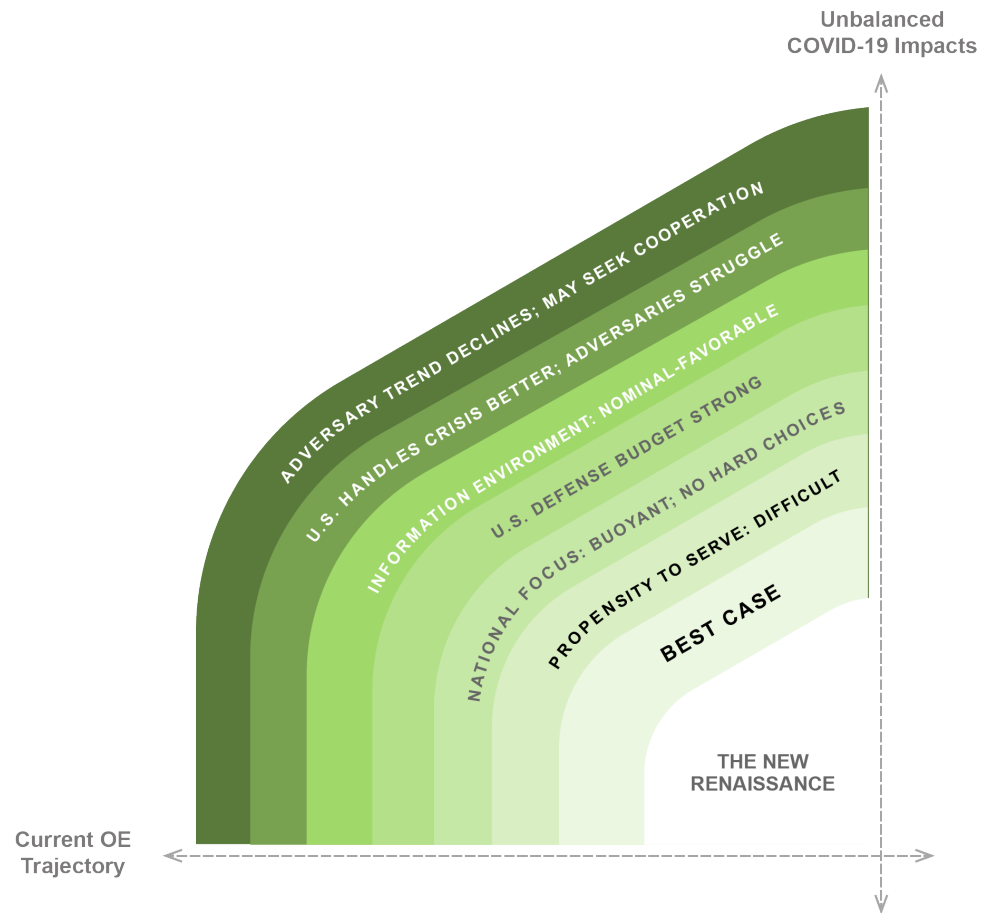
The economic recovery within the United States in this scenario raises problems for the Army and Joint Force. Overall budgetary reductions to DOD likely will be relatively limited, but they will not allow the Army or Joint Force to keep pace with gains by Beijing and perhaps Moscow.

As a result, DOD and the Army will have to make hard choices between readiness and modernization that could become even more difficult if adversaries begin to flex their growing muscles. The hard choices that need to be made will also be impacted by the economic needs of the nation.

This means that materiel solutions—which provide jobs to many Americans—may take precedence over readiness, requiring some creativity to ensure that other areas of importance across DOTMLPF-P are not left to wither.

The same focus on high-tech/online communications and collaboration tools will be in effect here as the American populace becomes more attuned to the virtual world. Internal divisions will continue, placing further stresses on the DOD budget as politicians grapple with the need to jump-start the economy. Although this does not represent a worst-case scenario, many segments of the population—based on region, class, and industry—will face very real challenges. These in turn could present opportunities for Army recruiting. The Army will, however, face challenges in terms of competing for talent with emerging or newly popular lines of work, including the medical field, biotechnological research, first responders, and information technology.

A New Renaissance



This world represents an unlikely best-case scenario in which there is an unbalanced impact of COVID-19 across our Pacing Threats, but one dramatically favoring the United States. The United States becomes the post-COVID-19 world leader.

The centralized systems of China and Russia do not keep pace in terms of innovation and development. Global supply chains and investment shift away from China as countries seek greater diversity in sourcing, slowing China's economic expansion and technological development. Furthermore, the initial shocks of the COVID-19 virus to the U.S. economy are reduced in a wave of optimism that follows the rapid introduction of vaccines and medicines that counter the disease.

The nation rallies together in a newfound wave of cooperation not seen since the early days after 9/11 or even in the dark days of the Second World War. The common good prevails and the nation takes off, leaving behind in the distance our Pacing Threats, who become reliant on the United States and the West for the medical capabilities

to combat the disease and its successors. As a result, DOD budgets are not impacted in any meaningful way and in some cases may even advance (particularly in terms of military medicine, CBRN defense, biotechnology, and information technology). Our adversaries' military modernization efforts lag; the United States is therefore able to remain comfortably ahead through 2028. China and Russia will only be able to get back on track toward the end of the period (2025 at the earliest, 2028 or later more likely).

The outright advantages accrued to the United States could lead to broader global cooperation, including a stronger U.S.-led alliance in the Indo-Pacific to contain China's ambitions and, in some cases, U.S. collaboration with China and Russia. The U.S. military would be spared the hard choices between readiness, force structure, and modernization. Yet these new OE realities will have a significant impact on the Army. The drive toward the virtual world will continue to accelerate. New business practices forged during the pandemic will increasingly take root. Previous divisions

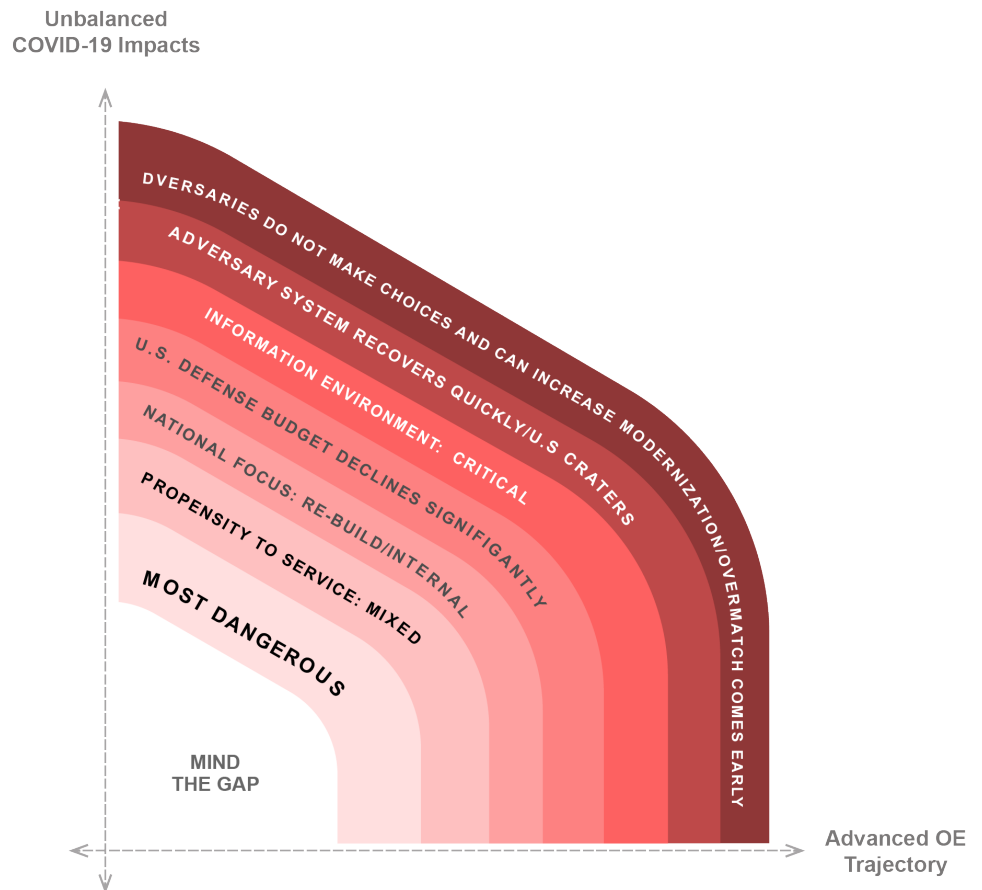
within the nation will shrink, with the vast majority of the population enjoying the benefits of the newfound optimism, collaborative spirit, and focus on the common good. A new focus on science, technology, and the objective world will make the nation more resilient in the face of our adversaries' information capabilities.

Although defense budgets will be relatively untouched, DOD and the Army will nevertheless still face some significant challenges. The most critical will be in the human capital world. With the economy taking off and new businesses, industries, and opportunities arising quickly, the Army will be forced into an even deeper competition for human capital. The Army will have to be very creative in demonstrating the type of opportunities it offers and may require rethinking some of its long-held beliefs and practices. As part of this, the Army will need to consider what it offers potential recruits in terms of access to high technology, virtual opportunities, and world-class installations that offer as much in terms of living conditions, recreation opportunities, access to information technology, and training and education opportunities as competitors for the workforce. The Army will be competing with high-tech industry, the medical field, information technology fields, and the best universities in the nation. It will therefore need to rethink how it recruits, trains, educates, and houses its troops. Installations, for example, may need to look more like university campuses or professional sports training complexes. Additionally, the Army may need to think about additional flexibility in how Soldiers serve to be more in line with developments in the civilian world.



West Point Cadets with their cellular phones. Future Army leaders will be required to take advantage of an increasingly connected world while also mitigating the associated vulnerabilities. *Source: Instagram*

Mind the Gap



This world represents a clear worst-case scenario in which the COVID-19 pandemic implications are unbalanced in favor of our adversaries and current OE trends accelerate. The U.S. economy is savaged by the pandemic and the recovery takes more than a decade. DOD budgets will face severe pressures, challenging both readiness and modernization simultaneously. Conversely, nations with centralized decision-making processes and societies that tend to focus on security over individual liberty are able to weather the storm posed by COVID-19 and even prosper. The net result is a significant advantage that accelerates their modernization efforts in comparison with the flat-lining United States and widens overmatch/reduces U.S. advantages in key areas much quicker than initially anticipated. The United States will be compelled to turn inward to deal with faltering economic progress and widespread divisions within an increasingly restive society.

Our adversaries will take advantage of this situation in several ways. First, they

will further increase their information campaigns against the United States to reinforce societal divisions and create rifts between and within the population and with U.S. allies. Second, as they quickly grasp the disadvantaged position into which the United States is falling, they will become more active in pursuing their own national goals and use all elements of the DIME to demonstrate to the world their rise in the face of a U.S. retreat. Third, they will become more aggressive in the Competition space to further the American turn inward and compel regional states to accede to their wishes. This will largely focus on issues short of war; in some cases this will involve threats of military force, armed demonstrations, and perhaps combat. At a minimum, the chance of Conflict increases as our adversaries see new freedom of action.

U.S. societal divisions will make it difficult for the nation to recover from the COVID-19-inspired decline as it will be difficult to agree on ways forward. The DOD budget will suffer dramatically, even in the face of



renewed threats, as taxpayer dollars are redirected to jump-start the economy.

Information technology, the medical sector, and other technological fields will be at the forefront of bringing the nation out of the morass, but it will take time. In essence, DOD and the Army will need to make do with the capabilities that exist today. These include difficult trade-offs between force structure, readiness, and modernization through 2028 and beyond.

Additionally, it will be increasingly difficult for our military to consistently retain an overseas presence. The military's numbers may decline as a result of the budgetary cuts; yet the Army will likely be able to take advantage of a weakening economy to recruit high-quality new personnel. Indeed, human capital may be our best investment in such a situation, possibly acting as a hedge against our adversaries and a springboard for modernization, although this likely will be after 2028. Training and education will suffer, but creative approaches, particularly in distance learning and virtual education, may provide advantages. The United States will be in an increasingly difficult position through 2028 and beyond. Laying the ground work for a new kind of force that would mature in the mid-to-late 2030s may become necessary.

Are We Doing Enough, Fast Enough?

No matter what form the post-COVID world takes, it is apparent that the United States already is locked in a form of Great Power rivalry, where our Pacing Threats, and even our regional threats, seek to challenge U.S. leadership across the DIME. From a military perspective, our adversaries will continue to modernize their forces, bringing new systems into service and challenging U.S. technological superiority. They also will attempt to challenge us in other ways. They will design doctrine and approaches to warfare that mitigate our advantages and allow them to achieve their national objectives. They will attempt to prevent us from waging our preferred way of war, and to challenge us with theirs.

New equipment, technology, and capabilities will in part, drive their efforts. But our adversaries understand that the key to achieving this goal is not materiel, but instead lies in human capital. New equipment will facilitate the effort, but if the adversary is to defeat the United States, they need well-trained soldiers and dynamic, thoughtful leaders. As such, the Pacing Threats are working to improve not only their capabilities and materiel, but also are directly challenging the United States in the leader development, training, and professional military education realm.

Since the end of the Cold War, and maybe more appropriately, since the conclusion of Operation DESERT STORM, the U.S. Army has positioned itself as the world's preeminent ground combat force. Its ability to conduct large-scale ground combat operations, carrying out its preferred way of war as part of a dynamic and highly capable Combined and Joint Force, was demonstrated decisively in the deserts of Iraq and Kuwait and paved the way for many years of dominance.

This dominance rests on three increasingly tenuous assumptions:

1. The U.S. Army has the best equipment in the world;
2. The Army produces the world's best trained, best educated, and most capable Soldiers and leaders; and,
3. The Army's ability to conduct maneuver warfare under AirLand Battle is unmatched.

In essence, Army dominance over its potential nation-state adversaries was demonstrated across DOTMLPF-P. From the end of DESERT STORM through the second decade of the 21st Century, even as the United States became involved in counterinsurgency operations in the Middle East and South Asia, the Army and the wider DOD continued to trust in these assumptions.

As the counterinsurgency campaigns continued, DOD and the Army began shifting their approach to warfare. For very good reason, DOTMLPF-P transitioned to focus on the counterinsurgency efforts in Iraq and Afghanistan. A key change was focused on a capabilities-based approach to defense planning, which prioritized DOTMLPF-P solutions for the counterinsurgency campaign. The lack of a true Pacing Threat rival enabled this switch, and new solutions were born to allow the Army to continue waging the relentless operations in Iraq and Afghanistan.

While this shift was occurring, a fundamental geopolitical change was taking shape. Russia was awakening from its post-Soviet malaise and began asserting itself regionally, and then

» COMPETITION, CRISIS, CONFLICT, AND CHANGE

Great Power rivalry plays out through a spectrum of activities, actions, policies, and strategies characterized as *Competition, Crisis, Conflict, and Change*. For our Pacing Threat adversaries who are committed to “winning without fighting,” this continuum offers a framework for challenging the United States across the DIME spheres, often at thresholds below armed conflict.

For the Army, this continuum does more than define Great Power rivalry. In the words of GEN Charles Flynn, while serving as the Department of the Army G-3/5/7, they are readiness conditions.

According to GEN Flynn, it is people that drive each readiness pillar. “They are the foundation of the Army. Ready people equals a ready Army.”

Sean Kimmons, “Army Continuously Operates on Four Fronts of Readiness,” *Army News Service*, 24 July 2020



Competition
is framed as having access, presence, and influence at every echelon.



Crisis
is the result of dynamic force employments that lead to large-scale, multi-domain operations short of actual conflict. In 2020, the Army operated in three crises; deployments to the Middle East in response to Iranian aggression, the COVID-19 pandemic, and in support to civil authorities within the Homeland.



Conflict
is when the Army has to be prepared for war.



Change
is when the Army must adapt and innovate to new conditions.

THE U.S. ARMY HAS POSITIONED ITSELF AS THE WORLD'S PREEMINENT GROUND COMBAT FORCE.

This dominance rests on three increasingly tenuous assumptions.



globally. Furthermore, China began a rise predicated on a burgeoning economy and a focus on technological advancement that catapulted it into an increasingly prominent global role. Both Moscow and Beijing understood that their continued rise would lead to an outright rivalry and perhaps even an adversarial relationship with the United States and its Allies and partners. From a military perspective, both began studying the U.S. approach to warfare and began broad modernization efforts to challenge the post-Cold War U.S. dominance.

Our Pacing Threats understood that to challenge the dominant position of the U.S. military would require a significant modernization effort. It would require a whole new approach to warfare, where armed confrontation is not necessarily the dominant form of Conflict between nation states. It would first focus on whole-of-government efforts to use all elements of national power to prevail in what we now call the Competition phase, where their goal is to “win without fighting.” They will continue efforts in the Crisis period, right up to the line of Conflict. If it comes to Conflict, the Pacing Threats understand that they need to mitigate U.S. advantages by preventing us from waging our preferred way of war. To achieve this

end, our Pacing Threats’ modernization programs must work directly to contest the three assumptions listed above.

A great deal of attention is focused on our Pacing Threat’s materiel progress, which provide them an overmatch capability under certain conditions. They have fires systems that outrange our own; they have focused on EW capabilities; they have developed sophisticated integrated air defense systems. At the same time, we stripped many of these capabilities from our force due to the exigencies of counterinsurgency. Moving forward, our adversaries are focusing on cutting-edge technologies, such as artificial intelligence, quantum computing, hypersonics, and robotics—among others—to extend their ability to challenge us into the future. This directly challenges the first assumption that underlies Army thinking. Our adversaries’ equipment is as good as ours, and in some cases better..

As we progress through 2030, it is likely that the neither the United States nor our Pacing Threats will have a true advantage in materiel. The rapid pace of technological innovation, the second-mover advantage, and the continued development of countermeasures to any technological advance likely mean that

any advantage will be fleeting.¹ Instead, a rough equivalency in capabilities is the likely outcome moving forward from 2021.

Perhaps a more dangerous and longer lasting threat is our adversaries' effort to challenge the other two assumptions. After DESERT STORM, many in the U.S. military offered the opinion that we could have switched equipment with the Iraqis and still have soundly defeated them. This is because our materiel advantage was matched by an equal focus on the rest of DOTMLPF-P. Our Pacing Threats understand that the true edge of the United States military resided in our human capital—our Soldiers and leaders—which enabled our ability to wage our preferred way of war. These two advantages were based on investments in training and leader development—our combat training centers, schools, and centers of excellence—that created thinkers who developed a winning approach to war (concepts and doctrine). Counterinsurgency made us shift away from this formula. Army Force Generation was a necessity, and so we paid less attention to large-scale ground combat operations. Our adversaries took a different path.

¹ The second-mover advantage is the idea that it is more economical to allow a rival to invest in all of the research and development that leads to the introduction of a new technology, and then soon after copy or acquire the technology for your own use.

When we look at Russia and China and how they have modernized their forces, their progress in the materiel sphere gets the lion's share of the attention. But they also are working across DOTMLPF-P not only to contest us materially, but also to directly challenge us in the human capital realm and in how we wage war. Both Russia and China have worked to modernize their training. They are trying to instill new cultures of learning into their forces. Both, for example, have established combat training centers similar to our own. They have professionalized their leader development efforts and are working to develop effective professional military education programs that cultivate more agile leaders. They have designed new doctrine and new approaches to warfare that specifically challenge our own. Russia has focused on what we term "New Generation Warfare." China has progressed from "local wars under informationized conditions" to what it now calls "intelligentized warfare." And both adversaries routinely put it all together by conducting large-scale exercises designed to test their progress.

But we have also seen more specific evidence of our Pacing Threats' focus beyond materiel. China's People's Liberation Army (PLA), for example, has reorganized its ground forces into

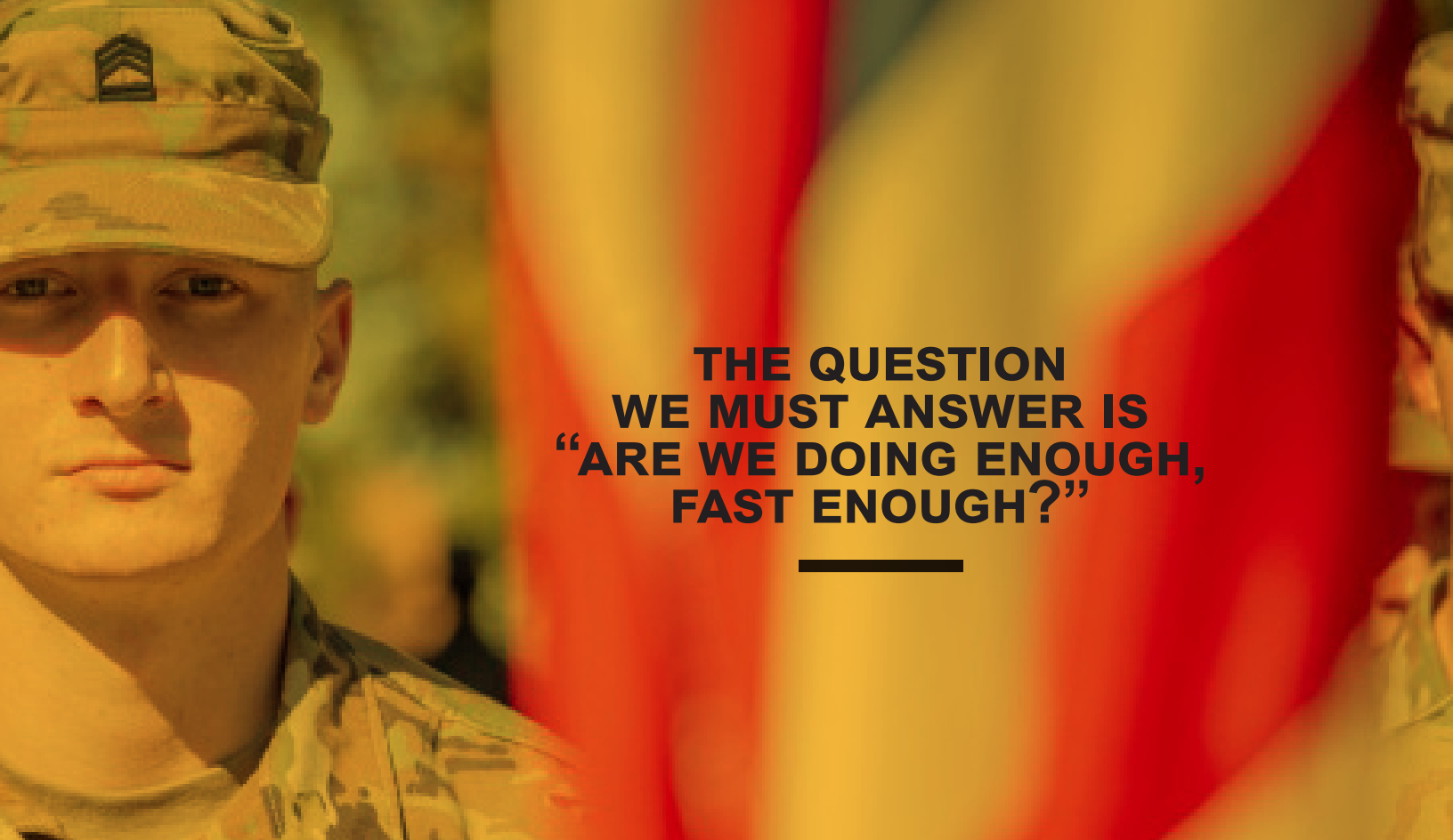




a variety of Combined Arms brigades that are smaller, and more maneuverable, yet designed to compete with U.S. forces. The PLA hopes to complete a massive transformation of its force, whereby these brigades and their parent Group Armies field modern, mechanized forces by 2030. While China has indeed focused on developing sophisticated anti-access/area denial capabilities, it also has taken unique approaches to expand its reach outside of materiel. In terms of facilities, the PLA has created a number of man-made islands in the South China Sea where it can deploy these systems, and increase its reach, allowing for overmatch within their so-called First Island Chain. Additionally, China continues with its broader approach to modernization, which began in 2015. It has created a whole new branch of service—the Strategic Support Force—that focuses on information warfare, space operations, and cyber

activities, to give true teeth to their transition to intelligentized warfare. Joint Theater Commands were established, and China continues to develop new doctrine and approaches to joint operations.

Russia has sensed the importance of developing an Arctic capability for its force. While some of this has included new equipment, Russia also has improved its facilities in the Arctic. The Russian military has increased its regular deployments in the region and has conducted training and exercises in those harsh conditions. We have witnessed Russia adopt new capabilities based on information confrontation approaches, while Russian private military companies have become useful proxies to expand Russian influence in Competition and Crisis. Russia has decided to create new high readiness divisions as the organizational construct best able to focus on



THE QUESTION WE MUST ANSWER IS “ARE WE DOING ENOUGH, FAST ENOUGH?”

high intensity warfare. Finally, Russia continues to conduct large annual exercises, which rotate through its military districts each year. Having just finished Kavkaz last year, Zapad is slated for Russia's Western Military District in 2021. These exercises not only allow Russia to test all elements of its force across DOTMLPF-P, but also focus on Russia's foreign partnerships, including large Chinese participation.

The military modernization efforts our adversaries have undertaken are aimed directly at the three assumptions that have been the foundation of the U.S. Army's position of dominance. The Multi-Domain Operations concept recognizes that our adversary will contest us in all domains. They are doing more, however, than challenging us across air, land, sea, cyber, and space; they are challenging us across DOTMLPF-P. The Army is undertaking a significant effort in response

to this challenge on the materiel side. The establishment of AFC will ensure that we will actively contest this space. But the broader challenges across DOTMLPF-P also will persist and will directly challenge our traditional advantages in human capital and in our ability to conduct maneuver. This challenge is aimed directly at TRADOC.

Our adversaries are modernizing, the OE is likely evolving faster than we initially assessed, in part due to the COVID-19 pandemic. The question we must answer is **“are we doing enough, fast enough?”**

V. 04/2021

