

Expanding the Battlefield

An Important Fundamental of Multi-Domain Operations

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An Important Fundamental of Multi-Domain Operations**

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Expanding the Battlefield: An Important Fundamental of Multi-Domain Operations

Introduction

Since its birth in 1775, the U.S. Army has often been at the forefront of battlefield innovation—once war begins. Its history of initial preparedness, however, is mixed. From the Revolution through Vietnam, America lost the first battle of many of its major wars. Bunker Hill, Fort Mackinac, Manassas, Kasserine, Task Force Smith and Ia Drang underscore the cost of a failure to prepare between wars. In fact, the type of military dominance that the United States has enjoyed for the past 30 years is historically rare. Such dominance is also short-lived. This is especially true of great powers that miss major changes to the character of war. If the Army wants to avoid returning to the tendency to lose its first battles, it must transform.

The potential, if not the imminent prospect, of war between the United States and one of several possible peer states represents the greatest threat of a catastrophic first battle loss; it has driven a renaissance of thinking about great-power competition and warfare. At the forefront of these discussions within the defense community has been the Army's Multi-Domain Operations (MDO) concept. As other services have begun to grapple with the same challenges addressed in this new operating concept, interest in both the problem and in MDO's proposed solutions has grown. Understanding, however, has unfortunately not grown as fast as interest; this article seeks to increase the depth of understanding of MDO in general and to describe some specific implications for modernizing the U.S. Army.

The MDO concept deals with great-power and peer competition, and with war, in areas of the world where there are significant numbers of relatively modern militaries capable of operating effectively in the five domains of military operations: land, maritime, air, space and cyber. It is broader in scope than previous Army concepts, in large part because the advent of the information age, 21st century science and technology advances and adversary concepts designed to dilute U.S. advantages have blurred the distinction between peace and war. The MDO concept therefore addresses both competition before, during and after war, as well as armed conflict between the United States and a peer military. It enables the Army to realize in the information

age the truism that war is an extension of policy. Once elected leaders commit the Army, it must win in order to enable political negotiation from a position of advantage.

MDO represents a dramatic shift in the Army's focus from counterinsurgency (COIN) operations, throughout almost 20 years of war, to an emphasis on high-end competition and conflict against adversaries with the potential to put vital American interests at risk. This advent of legitimate existential threat capacity by peers threatens even to overturn the post-World War II international order that has enabled the United States to become the world's preeminent diplomatic, economic and military power. As the nation returns to this side of the spectrum of competition and conflict, the Army, as a profession, is relearning the doctrine of large-scale combat operations and the importance of words such as momentum, tempo, operational reach, culmination, forms of maneuver, types of defense and the like. And, the Army is learning other things for the *first* time: the need to actively compete *left* of conflict in order to enable winning *in* conflict; a focus on systems and networks rather than formations to defeat A2AD (anti-access/area denial); and the rapid integration of cyber, information warfare, electronic warfare and the space domain at echelon in order to create overmatch.

The current Field Manual (FM) 3.0, *Operations*,¹ makes the shift for the operating force within the limits of current doctrine, organization, training, materiel, leader development and education, personnel, facilities and policy (DOTMLPF-P). But the limits are tangible. MDO is intended to drive change for the institutional Army to ensure that the intellectual precedes the physical in the development of the future force, enabling the United States to win in competition and conflict in the future.

Because of MDO's broad scope, the range of debate, dialogue and force development activities touch on every aspect of the Army. After summarizing MDO, this article will describe the physical characteristics of the operational problem in some detail. Then it will describe how the Futures and Concepts Center (FCC) is doing the math to ensure that the Army can fight and win on the MDO battlefield.

MDO 101: A Summary of the Concept

MDO identifies four interrelated trends within the operational environment for which the U.S. Army and joint force currently do not have an adequate solution: peer states are investing to *contest the United States in all domains*; recognizing American advantage in the close fight, adversaries have adopted strategies that employ multiple layers and types of *stand-off*; recognizing Western nations' high threshold for conflict, adversaries have leveraged innovative use of the *competition space* to achieve objectives contrary to U.S. security interests; and finally, taken together and combined with geographic retrenchment, these trends have *diluted U.S. operational deterrence*.

The issue of operational deterrence matters. The current operational environment poses a major problem for the United States and other Western forces; there are two options available to the National Command Authority when vital interests are threatened by a peer state in a distant theater—defer to the actions of the peer state and adjust to the new security framework and its inherent threats, or sign up for the implications of a protracted conflict due to the requirement of mobilization given current U.S. capabilities and posture. Capacity and capability of operational forces matter when nuclear parity exists with peer states. As General Don Starry noted in *Press On*, "In a time of nuclear parity . . . [strategic weapons lose] much relevance.

This is the genesis of our operational-tactical-level dilemma—how to fight . . . war without having to invoke the immediate threat of the use of nuclear weapons.”²

This is what peer states are mastering and what MDO seeks to reconcile. As Elbridge Colby writes, “The most pointed form of [a peer state’s] . . . limited war strategy is the *fait accompli*.”³ This involves isolating the target nation and friendly military forces, coercing them into submission and—if necessary—crushing their resistance and directly seizing the objective in a rapid series of blows. This enemy system relies upon four broad levers: internal covert action forces; massed external ground forces; long-range sensors and fires; and aggressive information operations. As covert action forces foment a sudden crisis inside the target nation, large conventional forces visibly concentrate just over the border and a concerted mis/disinformation crescendo distorts situational understanding. The enemy’s layered long-range fires and sensors threaten to immediately cut off and punish the geographic target and the military forces within it, paralyzing decisionmakers and confronting friendly forces with the prospect of disjointed fighting. Should this coercion fail, the enemy can mass his combined arms formations under this protective “umbrella” to quickly overwhelm the isolated defenders. Surprise, speed, mass and obfuscation are the operative tactics, and as such provide possible avenues by which to attack the viability of enemy systems.

As a result of the issues described above, the United States is vulnerable to strategic defeat. In an adversary’s region, rapid offensive military operations—and, equally important, objectives seized in competition through information and unconventional warfare operations—can threaten vital national interests in a manner that creates a *fait accompli* to the detriment of the United States. Several distinct problems emerge for the Army in this environment. How does the Army contribute to creating strategic advantage in competition below armed conflict? If conflict occurs, how does the Army enable the joint force to achieve a rapid military victory in a *fait accompli* scenario—and enable a return to competition in a position of political advantage without signing up for major protracted conflict?

Faced with this environment and the associated problems, the Army developed an operational concept in which it envisions “***Army forces, as an element of the Joint Force, conduct Multi-Domain Operations to prevail in competition; when necessary, Army forces penetrate and dis-integrate enemy anti-access and area denial systems and exploit the resultant freedom of maneuver to achieve strategic objectives (win) and force a return to competition on favorable terms.***”⁴

Unfortunately, Army forces lack the capability and capacity to achieve this now. The MDO concept is intended to enable the U.S. military to provide political leaders with two additional options that are relative to current constraints and can address adversary opportunism. They are: expanding the competition space, thereby incentivizing peers to re-calculate intentions; and enabling a rapid response to deny a *fait accompli* attack and achieve an operational position of advantage from which favorable negotiations can result in a return to competition—in short, enabling an off-ramp.

The elements of the central idea should not be understood as a phased sequence, but rather as a set of problems that the joint force must solve—a continuous cycle of penetration, disintegration and exploitation conducted through a multi-echelon fight across the depth and breadth of the environment, even as activities associated with competition occur simultaneously with the adversary. In fact, current experimentation and wargaming has demonstrated

that the speed, lethality, range and cyclic rate of the five-domain fight exceeds that of any fight anyone has ever experienced. Since, in the history of warfare, there has never been a full five-domain fight between peers, this should not come as a surprise.

Executing MDO requires changing how the Army: postures the force physically and virtually with increased authorities; organizes its formations; and employs its new capabilities and emerging technologies. These changes, therefore, depend on achieving three interrelated tenets: calibrated force posture, multi-domain formations and convergence. The requirement for these tenets, especially convergence, will be seen through an examination of the operational context of the 21st century expanded battlefield.

MDO's Context: The Expanded Battlefield

One of the ideas derived from the U.S. Army's analysis of the 1973 Arab-Israeli War was the "extended battlefield." This was not a new concept but a term to describe "the full potential we must realize from our acquisition, targeting and weapon systems."⁵ It introduced the Army to the battlefield geometry that would underpin AirLand Battle. This included the deep, close, rear framework, as well as areas of influence and areas of interest. The extended battlefield further described the general responsibilities of commanders from corps through battalion in the fight in terms of time (how far ahead each commander should look and think) and space (the size of the space an organization occupied and/or influenced). The term "extended" was chosen because improved weapon systems' ranges, lethality and mobility had extended the battlefield—relative to then-current doctrine—in both time and distance, especially for corps and divisions. Furthermore, this extension *seized an opportunity* to leverage the larger battlefield to maximize capacity and capability against a much larger Soviet Army. Visualizing and describing the extended battlefield was necessary to enable the Army to develop tasks and purposes at echelon and to design the forces required, such as Division 86.

The studies and analysis that undergird MDO demonstrate that the battlefield has not only extended beyond the ranges and speed of the early 80s; the battlefield has in fact *expanded* to such a degree as to make previous battlefield geometry wholly insufficient to guide operations. In large part, this is because of the inclusion of two domains that were not relevant to the "extended battlefield"—space and cyberspace. The previous battlefield geometry is also decreasingly relevant. This is because the geographic and time boundaries were primarily determined by the ranges and speed of their formations. Today, weapon systems are so fast, so lethal, have so much range—and, in some cases, have effects that transcend geographic relevance (cyber)—that "formation size" and "weapons caliber" are insufficient metrics for determining a corps or division commander's area of responsibility. In fact, today it is often policy or human factors that determine the time and space constraints of an echelon, rather than its organic weapon systems. Last, but perhaps most important, the information environment and the requirement for real time information operations were not fundamental elements of the extended battlefield, but they must be elements in understanding the *expanded* battlefield. Physics still matters, but what was once called "battlefield geometry" is now a problem that leans closer to quantum mechanics than high school mathematics. All of the above leads to the operational problem that the FCC is tackling today. ***How does the Army visualize and describe the "expanded battlefield" in order to be able to develop battlefield tasks and purposes, assign them to the appropriate echelon, allocate capabilities and inform force design and capability development?***

Figure 1

Maneuver Evolution – Expanding Battlespace

EXPANDED BATTLEFIELD

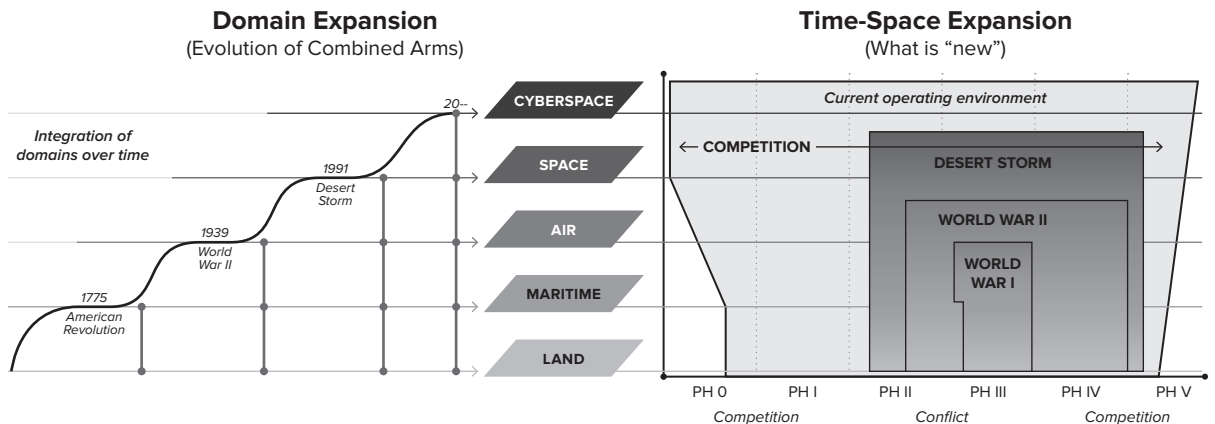
EXPANDED DIMENSIONS

EXPANDED TIME

SMALLER ARMIES

“Future Joint Forces will leverage better integration to improve cross-domain synergy—the complementary vice merely additive employment of capabilities across domains, time, and space....Our ability to project force across domains generates our decisive advantage.”⁶

The role of the military professional has expanded exponentially over time.



The expansion of time, space and domains in warfare requires U.S. forces to operate in a state of competition prior to armed conflict, and to remain in competition following conflict.

The diagram above shows that the role of military professionals has exponentially increased over time—in both relevant domains and in time-space.

Convergence

Of MDO’s 3 tenets, convergence has proved to be the most discussed and most often misunderstood. Although it shares some heritage with the integrated synchronized joint combined arms operations conducted today, the differences between those operations and convergence are fundamental. In fact, the word “convergence” was chosen explicitly to differentiate the requirement from the current notions of synchronization and integration. This is important. Every reader should pause to consider this idea and understand that convergence is *not* a synonym for synchronization.

Defining convergence is critical: it is the ability to enable any shooter, with any sensor, through any headquarters with the right authorities, in near real time. It has two essential characteristics: 1) recognizing that it is cost-prohibitive to invest enough money in individual domains to dominate in each independently, it relies on the idea of integrating all five domains in decisive space⁷ such that the “total effect is greater than the sum of the parts,” thus creating overmatch; 2) because the U.S. Army will be challenged in all domains and exquisite linear kill chains will be defeated, convergence must exhibit resilience and have the ability to leverage alternate or multiple pathways to achieve the same effect. Both of these must be achieved rapidly and continuously in order to enable convergence.

These ideas are important because the world for which the Army optimized has changed. The joint combined arms operations of the last 30 odd years have occurred within an environment

of maritime, air, space and cyber supremacy with assured C2 (command and control) and PNT (position, navigation and timing). The only contested domain has been the ground. Moreover, the synchronizing of maritime, air, space or cyber capabilities has been primarily a resource or authorities exercise. Integration of joint combined arms has not been impeded by the enemy, but rather by the U.S. military's own constraints; the former will not be the case in a future peer fight and the latter, left unadjusted, will only exacerbate the problem.

Convergence is a multi-echelon activity, more so than current joint combined arms. Today, echelons integrate their own operations, but synchronization and integration across echelons is seldom required. Even if a higher echelon provides resources to a lower echelon, those capabilities are integrated by the supported commander or at the point of attack. This behavior has become ingrained over the last 18 years. However, convergence of globally-tasked space assets and highly-controlled cyber effects at speed will require convergence of capabilities at multiple echelons against widely distributed targets in time and space to enable ground maneuver at a decisive point. In effect, this fight will require that strategic, operational and tactical assets converge in order to conduct even basic tactical actions to achieve the required speed of attack and reattack and to maintain tempo. In that way, multiple echelons, rather than hindering convergence, are essential to achieving it at will.

Convergence begins now—capabilities driven by concepts must begin to build a network and pathways to achieve convergence against a great-power competitor in 2028 and beyond. The intellectual development of solutions must at least accompany, and preferably precede, materiel acquisition decisions. Institutionally, convergence really means that it is necessary to develop a solution that is integrated from the top down at inception, not cobbled together later in a federation.

Depth and the Requirement for Echelonment on the Expanded Battlefield

Having demonstrated the role of echelons in achieving convergence, it is useful to consider echelons more broadly in the MDO fight. MDO and its predecessor, Multi-Domain Battle, have been the subject of almost three years of study, experimentation and wargaming. A constant theme of the lessons of those three years has been the relationships between agility, depth, speed and echelonment. One of the clearest lessons of MDO research, analysis and experience is that echelons are vital. The Army must change its understanding of the role of echelons in creating depth and enabling exploitation. Doctrinal templates for calculating operational reach, unit frontages, times-distances and similar battlefield calculations that inform the role and structure of echelons are wholly inadequate for the current fight.

Depth has spatial, temporal and cognitive aspects. The sheer size of the space; the increased lethality, range and speed of weapon systems; the added “space” foisted from the “virtual”; the fact that all echelons will be in contact simultaneously; and lower force densities all *demand optimization* of the depth of the battlespace.

Two of the most challenging scenarios we face, one each against our principal adversaries, involve narrow physical dimensions that favor enemy *fait accompli* efforts. The geographic problem is similar to that faced by Douglas MacArthur in Korea, commanders in Europe in the Cold War and Norman Schwarzkopf in Kuwait—how to create depth and, by doing so, maneuver room to enable a U.S. advantage. What is different today is the conundrum of battlefield expansion—despite relative spatial battlefield expansion, commanders have less time to act.

This may seem counterintuitive, and requires examination. Although in general the battlefield is greatly expanded from that of even 30 years ago, time horizons are compressed because of the range and speed of modern fires. This compression will only become more pronounced with the proliferation of hypersonic weapons. Moreover, temporal compression is not linear—it increases as one rises in echelons. The time horizon is about the same for a squad leader in contact; everything happens instantaneously. Time is significantly different for a division commander, where the horizon is not 24 hours, but likely 6 to 12; time is even more compressed for a corps commander. Where extending the spatial depth of the battlefield was the key of AirLand Battle, understanding the fight in time will be the key to winning in the MDO fight.

As seen in Joint Warfighting Assessment 2019 in the Pacific Theater, a lack in depth and an inability to exploit initial convergence operations means they will be wasted. Depth enables exploitation, exploitation creates momentum and momentum enables tempo—all of which are intended to enable a position of advantage to force adversaries to recalculate or off-ramp.

One description of this environment in a recent Modern Warfare Institute article put it this way:

The challenges of the battlefield and the promise of technology will change the physics and geometry of the battlefield as operations necessarily transition from a still predominantly linear framework to one that is non-linear and distributed—that is, deliberately conceived and apportioned across the battlefield. In a multi-domain campaign, distributed operations are necessary to both survive and thrive on a sensor- and fires-swept battlefield, increasing ambiguity and uncertainty for the adversary, reducing the probability of detection and targeting, achieving positional advantage, and overwhelming adversary systems by forcing them to fight in multiple directions and in multiple realms of warfare simultaneously.⁸

The imperative of depth and exploitation must inform requirements development for C2, ISR (intelligence, surveillance and reconnaissance), sustainment and in fact all of the warfighting functions.

Ground Forces Achieve Depth through Echelonment

The role of echelons is more important now than ever. Echelons are not legacy vestiges of the past. They are not overhead. The speed and complexity of modern warfare requires multiple echelons of military commanders and forces. Each level, or “echelon,” manages fundamentally different but complementary problems, nested within the CJFLCC (combined joint force land component command) commander’s vision and intent. Each echelon commander requires unique capabilities and increased experience at higher echelons, due to scope and complexity. In this way, each echelon contributes to the success of the whole by concentrating on a designated aspect of the fight, freeing the others to concentrate on theirs. The vastness of the spatial, temporal and cognitive spaces in modern warfare renders essential the ability to operate decisively across the depth and breadth of an entire theater with complimentary simultaneity, not just within the ranges of tactical units, as was generally the case in 20th century war.

MDO engagements are fought simultaneously and synchronously across the four echelons described below. Within each echelon, there will exist multiple formations. The expansion of the battlefield and increased speed of events will blur—but not erase—the distinctions between these broad echelons, which may provide opportunities to develop and test novel warfighting approaches.

Tactical. This is the level at which military forces execute *combined arms*. Tactical commanders and forces dynamically blend available capabilities—organic, joint, multinational, from any available domain—and bring them to bear against localized enemy forces or objectives. Tactical ground forces and systems generally have an effective engagement radius or maneuver range, measured in tens of kilometers.

Operational. This might be termed the level at which joint forces plan and execute *combined domains operations*. Operational commanders construct and manage the campaign and resourcing framework within which tactical forces can successfully execute combined arms operations and attain intended objectives. Operational ground forces and systems generally have an effective engagement radius or maneuver range, measured in hundreds of kilometers.

Theater. This is the level at which the whole of government *blends all available elements of national (and alliance) power* into a unified theater-strategic approach to defeat the enemy and achieve strategic objectives. Theater commanders construct and manage the theater-strategic approach and play an important role in shaping and sustaining alliances or coalitions. This level combines competition and conflict into a coherent theater strategy to achieve victory. Theater forces and systems generally have an effective engagement radius or maneuver range, measured in thousands of kilometers.

Global. The president develops and DoD executes *national policy and grand strategy* at this level. The resources are determined and translated into available elements of national power. This is the level that calibrates force posture. Global forces and systems—often termed “national assets”—generally have unlimited engagement radii or maneuver ranges.

Some question the need for more headquarters to operate within this framework. However, even in the COIN fights of Iraq and Afghanistan, one of the first capabilities that was required was additional C2 headquarters. Moreover, lessons learned suggest that the ad hoc nature of those early new headquarters delayed initiation of effective operations in both countries because the existing headquarters were unprepared for the scope and scale of their responsibilities. Despite U.S. kinetic dominance in Iraq and Afghanistan, the demands of C2 within a combined coalition environment quickly made headquarters proliferation one of the highest priorities. Furthermore, it was not that long ago that NATO, for example, was organized into Army Groups, under which were multiple Armies, with multiple corps. That organization was not just to account for numbers, but to ensure that NATO had the C2 capacity to fight throughout the depth and breadth of the battlefield.

In fact, 1) echelonment *increases efficiency* because it allows one to pool capabilities relevant to all formations, yet not essential as organic assets to the subordinate formation, thus enabling mass as required; 2) echelonment *relieves burdens* of subordinate commanders, given their tasks and roles—this is an essential benefit, given the challenges facing brigade combat team commanders at combat training center (CTC) rotations, who must sustain C2 for all of their capabilities in decisive action rotations; 3) echelonment *provides resilience* by enabling cognitive depth, allowing higher commanders to focus on identifying opportunities and withstanding setbacks; and 4) echelons *provide agility* by metering force into the fight to control tempo, overcoming tactical decisive engagement. Notably, these merits for echelons significantly *increase* in the future operating environment when tactical echelons face potential surprise attack in every domain at any time.

More than any other service, the Army organizes and employs its functional brigade and below units in echelon. In essence, the tactical echelons have traditionally waged the close combat, direct fire fight. Higher echelons wage the ISR, indirect fires, cyber, information, electro-magnetic spectrum, sustainment, engineer and civil affairs fights in a joint multinational environment using organic or assigned brigade and below formations. Only multiple echelons (often several) arrayed in depth enable a CJFLCC commander to seize the initiative, establish momentum, control tempo and ultimately dominate the adversary on the ground, where all adversaries must ultimately be defeated.

In a recent article, General Scott Wallace, USA, Ret., compared his experience as a Corps Commander in Operation Iraqi Freedom I with that of a future MDO corps commander:

Offensive maneuver and sustained tempo are prerequisites for successful corps campaigns, regardless of concept. Maneuver and tempo are dependent on capability, intent and situational awareness. None of us who experienced the debilitating effect of a three-day sandstorm in early April of 2003 will ever forget how the situational awareness we had previously enjoyed was impacted. Although visually-impaired, we still had the advantage of a “thin fielding” of GPS [global positioning system] devices on which to rely, yet the capacity for offensive maneuver was limited. Moreover, the dust-induced grounding of aviation assets reduced the effectiveness of combined arms operations, while the logistics flow, vital to continued offensive action, slowed to a crawl. With GPS denied and the employment of effective deceptive techniques, the MDO fight might seem like being stuck in a sandstorm that never ends, continually fighting for situational understanding and seeking opportunity for complimentary actions across domains.⁹

The foregoing paragraphs make clear the challenges in calculating and then dominating the depth and breadth of the MDO battlefield. Determining variables like correlation of forces, operational reach, area of interest and area of influence, span of control, rules of allocation and other mathematical equations that have defined how the Army has organized, trained, equipped and fought for over a generation will also become more difficult.

Clearly, there is a growing sense of the scale of the mathematical problem at hand; the next level of detail FCC is exploring is to develop a visualization of roles, missions, tasks and functions at distinct echelons in time and space. This work must inform DOTMLPF-P solutions for the MDO force in sufficient detail that every Soldier in every formation knows how they contribute to victory.

Doing the Math: Reviving the Battlefield Development Plan (BDP)

Not all of the problems have been solved—yet. However, there is a mature understanding of the time-space and cognitive problem at hand and the organization and processes to solve it in the FCC. The organizing mechanism of the process is the current BDP—reimagining a series of documents that served as the analytical framework for U.S. and Soviet DOTMLPF capabilities from 1978 until 1992. That product was utilized by the U.S. Army to develop capability requirements and drive modernization efforts to confront Soviet modernization efforts in Europe. The current BDP examines how the U.S. Army, as part of the joint force, conducts MDO to deter, or, failing to deter, to defeat a peer threat or other adversary. This examination includes analysis of all current and projected capabilities, systems and force structure of the Army from now through 2028—and potential capabilities through 2035, when employed

against a peer threat's military using principles outlined in the MDO concept. As a systematic program of experimentation focused on capabilities, systems and formations, the BDP provides a visualization of how the U.S. Army will perform in MDO against an adversary, using specific scenarios at different times.

The BDP serves as a “running net assessment” for the Army and provides an integrated look that links threats to solutions as part of the Army Modernization Framework. It outlines specific threat and friendly future force capabilities and illustrates how U.S. forces will operationalize MDO, allowing modeling and experimentation of the Army's and joint partners' new concepts with analytical rigor. In this way, it provides Army senior leaders with validated data-driven products to inform its modernization priorities and to achieve the balance required between current and future readiness against great-power threats.¹⁰

Conclusion

This article began with a reference to the extended battlefield, citing the article published by General Donn Starry in 1981 that came five full years after the publication of the Active Defense doctrine, three years after the initiation of the BDP and five years *before* the publication of the final AirLand Battle doctrine in the 1986 FM 100-5, *Operations*. In the 12 years it took the Army to develop and refine AirLand Battle, it developed processes and procedures to enable the operating force to rapidly adopt mature solutions into the force, even as the operating force contributed essential learning to the effort through the CTCs. The entire enterprise of the Army bent itself—and collaboratively provided insight—to the changes required of the concept and gave birth to a renaissance of professional discourse and discovery.

The Army is at a similar point today. Twenty years of COIN operations have diminished the collective knowledge and ability to converse professionally about large-scale combat. In fact, one of the purposes of MDO is to drive the Army to the professional dialogue about large-scale combat that used to be second nature to Soldiers.

The senior leadership of the Army has rapidly integrated the bridge required to move to the future with resourced modernization priorities, multi-domain task force pilots, experimentation, fielding and immediate decisions on Total Army Analysis. But much more work is required. Army Futures Command and the FCC are focused on solving the “battlefield quantum mechanics” problem of the future and continuing to develop MDO, such that sooner rather than later, every Soldier in the Army will know how to contribute to winning on the modern battlefield.

The Army must continue to develop the complete MDO conceptual solution to the problem of advanced information age warfare, while rapidly migrating mature solutions into the force. Achieving the right balance requires deliberate haste, a term which accurately describes both the urgency of the problem and—a mixed history since 1775 notwithstanding—the need to get it right, lest we repeat the mistakes of the past.

Notes

- ¹ Department of the Army, Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: U.S. Government Printing Office, 10 October 2017), 9.
- ² Lewis Sorley, *PRESS ON! The Selected Works of General Don A. Starry, Volume 1* (Fort Leavenworth, Kansas: Combat Studies Institute Press, 2012), 121.
- ³ Elbridge Colby, “How to Win America’s Next War,” *Foreign Policy*, May 2019.
- ⁴ U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The U.S Army in Multi-Domain Operations 2028*, 6 December 2018.
- ⁵ Donn A. Starry, “Extending the Battlefield,” *Military Review*, March 1981, 31–39.
- ⁶ Joint Chiefs of Staff, Joint Publication, *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: U.S. Government Printing Office).
- ⁷ TRADOC Pamphlet 525-3-1, p. L-3, describes decisive spaces as “locations in time and space (physical, virtual, cognitive) where the optimization of the employment of cross-domain capabilities generates a marked advantage over an enemy and greatly influences the outcome of an operation.” The Army must move beyond “decisive points” because they artificially imply discrete physical characteristics of a battlefield that no longer exists. Decisive space implies that there are in fact particular synergistic opportunities where domains overlap, but acknowledges that there will be ill-defined bleedover.
- ⁸ Bill Hix and Robert Simpson, “Accelerating into the Next Fight: The Imperative of the Offense on the Future Battlefield,” *Modern War Institute*, 26 February 2020.
- ⁹ William S. Wallace, “Multi-Domain Operations in Context,” Association of the United States Army, *Landpower Essay 20-4*, April 2020.
- ¹⁰ Access to BDP-Russia products is available on classified DTIC: <https://dodtechspace.dtic.smil.mil/dodtechspace/groups/bdp-r-products>; classified MDO and BDP videos are available on Intelink: <https://ivideo.intelink.sgov.gov/channels/viewChannel.aspx?type=Manual&id=aff9f3>.



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