SPOTLIGHT 22-2

Multi-Domain Task Forces

A Glimpse at the Army of 2035

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The three decades of "strategic respite,"[1] absent a nation able to challenge the United States after the dissolution of the Soviet Union, are over. Tectonic shifts in geopolitics, namely the rise of China and the resurgence of Russia, coupled with rapid technological advancement, could make the United States' next war unprecedented in its speed, lethality and reach.

Recognizing these currents, the U.S. Army has set out to modernize its entire enterprise for Multi-Domain Operations (MDO)—competing with, and if necessary, defeating, highly capable adversaries who can challenge the United States in the land, sea, air, space and cyberspace. The stakes for the Army are high; as then-commander of U.S. Army Pacific General Robert Brown said in 2019, "All formations will have to become multi-domain, or they'll be irrelevant."[2]

Charting the path forward to achieve this multi-domain capability are the Army's Multi-Domain Task Forces (MDTFs). The two existing MDTFs—the first established in 2017 with an Indo-Pacific focus and a second stood up in 2021 in Europe—are the Army's organizational centerpieces in employing the MDO concept. This *Spotlight* seeks to assess the MDTFs' unique value to the joint force.

Strategic Environment

The 2018 *National Defense Strategy* (NDS) identifies the "reemergence of long-term, strategic competition" with China and Russia as the primary challenge to U.S. security.[3] These strategic competitors intend to achieve their political aims by blurring the line between peace and conflict. Leveraging all instruments of national power—including political, military, economic, diplomatic, technological and informational capabilities—Beijing and Moscow seek to undermine the primacy of the United States.

First, China and Russia have undertaken significant military modernization with the goal of demonstrating capabilities to deter the United States from responding aggressively. Second, they are determined to blunt traditional U.S. military advantages and prevail in a conflict. Either scenario would alter regional and global balances of power—undermining U.S. military

ISSUE

U.S. Army's Multi-Domain Task Forces (MDTFs) represent the critical centerpiece in operationalizing the Army's Multi-Domain Operations (MDO) concept, but their role and value in strategic competition is not fully understood by the joint force or Congress.

SPOTLIGHT SCOPE

Describes the structure, role and value of the Army's MDTFs to joint force counter anti-access/area-denial capabilities across the spectrum of competition, crisis and conflict; and identifies challenges and considerations moving forward.

INSIGHTS

- MDTFs are a logical response to the era of strategic competition; long-range precision effects allow MDTFs to counter hybrid threats from China and Russia, while long-range precision fires enhance joint force freedom of maneuver should deterrence fail.
- Successful maneuver during competition forms the foundation for the MDTFs' value in crisis or conflict by securing positions of advantage across all domains.
- MDTFs are inherently joint; not only do they augment joint force capabilities, but they rely on the successful modernization efforts of the Pentagon and the other services, most notably JADC2, to maximize their value to combatant commanders.

superiority and the political, economic and diplomatic strength it underpins.

The Tyranny of Time: Anti-Access/ Area-Denial

After studying U.S. operations, Beijing and Moscow have made anti-access/area-denial (A2/AD) central to their operational concept. According to the Congressional Research Service: "Anti-Access is defined as any action, activity, or capability, usually long-range, designed to prevent an advancing military force from entering an operational area. Area Denial is defined as action, activity, or capability, usually short-range, designed to limit an adversarial force's freedom of action within an operational area."[4]

A Patriot Missile System launching a Patriot Missile during a live fire exercise, 6 November 2021, at McGregor Range on Fort Bliss. Soldiers of 38th Air Defense Artillery Battalion and Charlie Battery 1-1 ADA conducted a joint Patriot Missile live fire with their counterparts from the Japanese Self Defense Force's 5th and 11th Air Defense Missile Groups (U.S. Army photo by Sergeant Ian Vega-Cerezo).

However, A2/AD systems contribute to more than "impenetrable red bubbles" that prevent physical movement by opposing forces. The central focus of A2/AD is temporal[5] and leverages the "tyranny of time."[6] Anything that delays deployment of the U.S. military into a contested region allows Beijing and Moscow a greater chance to rapidly achieve a *fait accompli*—taking territory, consolidating gains and making a counterattack by U.S. and allied forces too costly.

The tyranny of time explains how Beijing and Moscow's political, economic, technological and informational efforts supplement A2/AD. Chinese and Russian asymmetric leverage can deter collective action by the United States and its allies. For example, a disinformation campaign matched with threats of economic retaliation may create discord among allies that delays the decision to act. This conception of A2/AD conveys how Chinese and Russian military strategies support non-military efforts and why the Army and joint force must persistently compete short of war.

The Joint Force's View of Future Warfare

The NDS states that the United States faces "an ever more lethal and disruptive battlefield, combined across domains, and conducted at increasing speed and reach—from close combat, throughout overseas theaters, and reaching to our homeland."[7] DoD has recognized the need for unprecedented jointness across all services, embodied in its conception of Joint-All Domain Operations (JADO). JADO asserts that prevailing in the next war will require rapidly integrating effects across all domains—land, sea, air, space and cyberspace—to present adversaries with multiple, simultaneous dilemmas.[8]

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Data is the "ammunition" to achieve this all-domain convergence. As such, DoD continues to develop JADO's enabler: Joint All-Domain Command and Control (JADC2). JADC2 is DoD's concept to create a cloud-like environment to connect sensors from all the services into a unified network, facilitating seamless information sharing and faster decisionmaking.[9] By utilizing artificial intelligence (AI) to process the data rapidly and recommend the optimal shooter, the U.S. military intends to achieve decision dominance and overmatch any adversary.

Multi-Domain Operations: The Army's Contribution to JADO

As its contribution to JADO, the Army has developed the MDO concept. According to Army Training and Doctrine Command, MDO is defined as the "rapid and continuous integration of all domains of warfare."[10] Along with the joint force, the Army seeks to "counter and defeat a near-peer adversary capable of contesting the U.S. in all domains [air, land, maritime, space and cyberspace] in both competition and armed conflict."[11]

The purpose of MDO is to provide combatant commanders a plethora of options for rapidly executing operations across all domains to present an adversary with multiple, simultaneous dilemmas.[12] The joint force's ability to deter and, if necessary, win a conflict is significantly enhanced if the Army is not only equipped to fight on land, but also to leverage its landpower capabilities to affect the air, sea, space and cyberspace.

A Robotic Combat Vehicle navigates in the field during Project Convergence at Yuma Proving Ground, Arizona, on 20 October 2021. The Next Generation Combat Vehicle Cross-Functional Team is experimenting with using the vehicle for semi-autonomous resupply, helping Soldiers get the materials they need on the battlefield (U.S. Army photo by Specialist Destiny Jones).

A critical though often understated aspect of MDO is its emphasis on competition, during which the Army can set favorable conditions for potential conflict, thereby demonstrating to competitors that aggressive actions on their part would result in unacceptable costs. MDO's focus on competition allows the Army to play an integral role in DoD's "integrated deterrence" concept.[13]

Should deterrence fail, the Army, as part of the joint force, seeks to overmatch the adversary, win and return to competition on terms favorable to the United States. The Army will leverage positions of advantage secured during competition to provide the joint force with counter-A2/AD capabilities and create opportunities for joint freedom of action to overmatch an adversary.[14]

MDTFs: The Centerpiece of the Multi-Domain Modernization Effort

The MDTFs are the organizational centerpiece in the Army's operationalization of MDO. MDTFs are theater-level, multi-domain maneuver elements that synchronize long-range precision effects (LRPE)—such as electronic warfare, space, cyber and information—with long-range precision fires (LRPF).[15] MDTFs integrate these capabilities under one commander while the unit's components conduct distributed operations to enhance survivability.

The role of the MDTFs is to persistently compete to gain positions of advantage that it can leverage in crisis or conflict. By integrating non-kinetic effects and kinetic fires across all domains, MDTFs provide combatant commanders with an enhanced menu of counter-A2/AD capabilities.[16]

The first MDTF—established in 2017 as an experimental unit at Joint Base Lewis-McChord—is focused on the Indo-Pacific. The Army's second MDTF was activated on 16 September 2021 at U.S. Army Garrison

Wiesbaden in Germany and is aligned to Europe. The Army plans to create three more MDTFs: a second for the Indo-Pacific theater, one for the Arctic and one for global response.[17]

MDTF Structure

The common elements of the MDTFs can be categorized into four functions: effects, fires, protection and sustainment (see Figure 1 and footnotes). While there are similarities between MDTFs, they are not one-size-fits-all. MDTF components are tailorable based on combatant commander needs.[18] This bottom-up approach ensures that the MDTFs contain the specific organizational components needed to maximize their value to their area of operations.

Members of the MDTF conduct operations. Initiated in March 2017 as a pilot program, the MDTF was designed to defeat an enemy's A2/AD capabilities in the Indo-Pacific region. Later this year, a second MDTF will stand up in Europe. A third task force may also stand up and serve the Indo-Pacific next year (U.S. Army photo by Staff Sergeant Philip Velez).

According to General John Murray, the initial commander of Army Futures Command, the "centerpiece of the Multi-Domain Task Force" is the Multi-Domain Effects Battalion (MDEB), previously named the Intelligence, Information, Cyber, Electronic Warfare and Space (I2CEWS) unit.[19] MDEBs integrate traditional signals and military intelligence with capabilities in space, cyberspace, information space and the electromagnetic spectrum. Though much of the MDEB's capabilities are classified, these units likely integrate data from a wide range of sensors, such as satellites and drones, to inform the MDTF's fires elements while providing offensive capabilities like hacking and jamming enemy sensors and networks.[20]

The Strategic Fires Battalion exploits the intelligence capabilities provided by the MDEBs. The Army has made the development of LRPF its number one modernization priority, developing a suite of highly maneuverable and survivable fires.[21] Significant for the MDTFs is the Army's development of long-range hypersonic weapons—due to be fielded in Fiscal Year 2023—capable of bypassing adversary missile defenses.

MDTFs incorporate an Air Defense Battalion for force protection, including missile defense capabilities and a Direct Energy Battery. These air defenses are vital as adversaries employ increasingly capable targeting systems, missiles and drone swarms. In addition, MDTFs include a security force to provide ground force protection when operating in non-permissive environments. Finally, a Brigade Support Battalion plans, directs and supervises supply distribution and logistics—including field maintenance and medical capabilities.

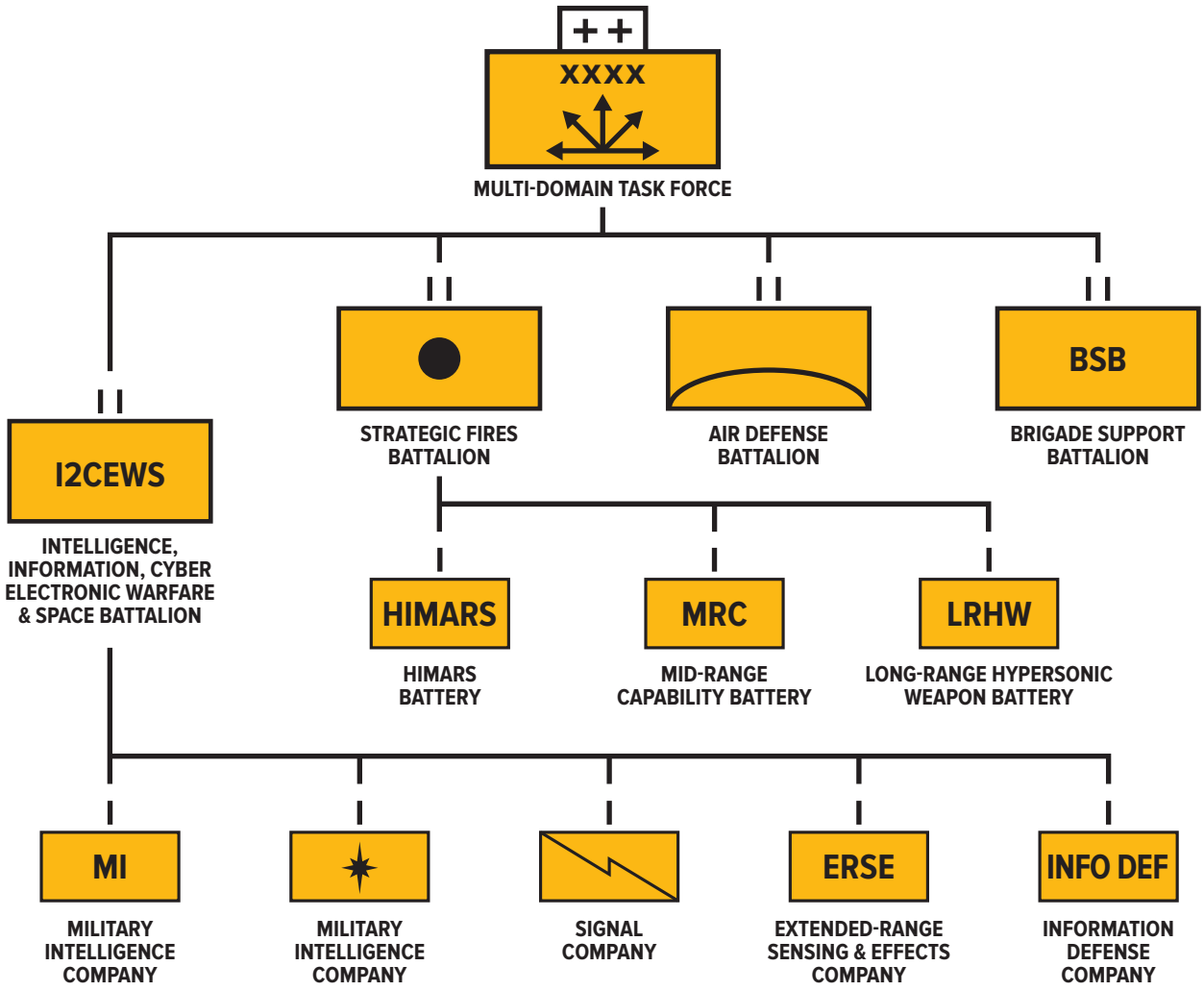
The Army is creating All-Domain Operations Centers (ADOCs) that integrate the diverse components of the MDTFs. ADOCs are intended to serve as command nodes that enhance information-sharing, allowing commanders to see data from the field and provide faster analyses to ensure that MDTFs persistently compete from home station and while employed forward.[22] The Army intends the ADOCs to be "joint from inception"[23]—fully networked across the joint interorganizational multinational (JIM) spectrum. It is not yet clear at what echelon the ADOCs will provide this integration and whether they would function complementary to centers such as the Air

MDTF FUNCTIONS

- Effects
- Fires
- Protection
- Sustainment

Figure 1

Multi-Domain Task Force Structure[24]



This graphic represents a generic MDTF template; each MDTF may vary depending on combatant commander input.

Force's Air Operations Center (AOC) to mitigate concerns that the AOC is a single point of failure,[25] or if the Army envisions presence from all services.

The Role of the MDTFs in Competition, Crisis and Conflict

In support of the joint force, MDTFs seek to gain and maintain contact with the adversary in the competition phase, to contribute to de-escalation back to competition during a crisis and, should conflict occur, to help disrupt enemy A2/AD to enable joint force maneuver.[26] **Most critically, MDTFs provide an enhanced array of options to combatant commanders**—an essential added value as Chinese and Russian A2/AD may render specific U.S. capabilities ineffective.

To be sure, MDTFs are not a "silver bullet" for future conflict. MDTFs cannot deter conflict or dismantle adversary A2/AD networks *on their own* (nor

can any military unit). MDTFs possess capabilities to achieve significant counter A2/AD effects, but their value is maximized when paired with the capabilities of each service.

Soldiers from the 82nd Airborne Division take part in an Integrated Visual Augmentation System-enabled air assault exercise on 3 November 2021, on Yuma Proving Ground, Arizona, as part of Project Convergence 21 (U.S. Army photo by Sergeant Jacob Lang).

Competition

Evident from assessing the role of MDTFs in competition is the essential nature of this phase; as Sun Tzu put it, "every battle is won before it is fought." Successfully maneuvering to positions of advantage during competition forms the foundation for the MDTFs' value in later contingencies.

MDTFs gain and maintain contact with the adversary to compete persistently.[27] By maneuvering in all domains, MDTFs obtain positions of advantage during competition. Gaining these positions of relative advantage serves two primary functions: contributing to the Army and joint force's deterrence posture and setting favorable conditions for potential conflict.

MDTFs, ideally forward deployed as an "inside force" within adversary A2/AD systems,[28] can serve as an integral component of the Army's landpower network. Stationing troops on the ground alongside allies and partners is a signal of U.S. resolve. Leveraging this forward positioning, MDTFs experiment and exercise with allies and partners. Such exercises—monitored closely by potential adversaries—are an opportunity to reveal some MDTF capabilities and inject doubt into adversary escalation calculus. The combination of boots on the ground to demonstrate resolve and exercises to demonstrate credibility is a potent contributor to deterrence.

By maneuvering in all domains, MDTFs obtain positions of advantage during competition.

In competition, MDEBs help set favorable conditions to exploit during a potential crisis or conflict. Intelligence gathered from collection platforms such as satellites, aerial platforms, adversary communications and cyber networks feeds the MDTFs and combatant commanders with information necessary to maintain situational awareness. Empowered by data, combatant commanders can respond quickly to a developing crisis to prevent it from escalating to conflict. According to U.S. Army Europe and Africa Commander General Chris Cavoli, MDEBs also actively shape the information space, possessing the requisite authorities to attribute and refute disinformation[29] that adversaries may use to undermine the United States and allies or set the conditions for conflict.

Cyber and electronic warfare capabilities provide additional options for persistently competing. MDEBs can employ electronic transmissions to stimulate enemy radars, jammers, cyber defenses and ground units into responses that the MDTFs can analyze.[30] MDEBs also contain the capacity to penetrate adversary cyber networks. During competition, these networks would be monitored for intelligence and scanned for vulnerabilities that the MDTFs could later exploit during a crisis or conflict. The MDEBs could intentionally reveal some successful cyber penetrations to an adversary to achieve cognitive and deterrent effects by signaling potential escalation costs.

Crisis

The Army perceives crisis scenarios as the high end of the competition phase—the potential spark to transform strategic competition into conflict.[31] MDTFs provide combatant commanders options to hold adversary interests credibly at-risk during crisis—thereby contributing to the joint force's ability to deescalate a crisis and return to competition on terms favorable to the United States.

In the crisis phase, the MDTFs' monitoring and shaping of the information environment could be paramount. By enabling the joint force commander to sense adversary actions across all domains, the MDTFs could help provide intelligence to preempt adversary aims (such as a *fait accompli*). Additionally, the MDEBs' ability to counter adversary disinformation could allow U.S. and partner forces to maintain an accurate picture of developments and rebuff adversary attempts to prevent a collective response.

Soldiers assigned to 82nd Airborne Division, prepare to launch an Air-Launched Effect (ALE) on 14 October 2021, during Project Convergence 21 at Yuma Proving Ground, Arizona. The Future Vertical Lift Cross-Functional Team (FVL CFT) experimented with using ALEs to help Soldiers see the battlefield and extend their reach. Using Soldiers in the field allowed the FVL CFT to get valuable Soldier feedback on an emerging capability (U.S. Army photo by Sergeant Marita Schwab).

With sufficient situational awareness, the MDTFs would provide combatant commanders with kinetic and non-kinetic options to coerce de-escalation by an adversary. Compared to the competition phase, the MDTFs could more overtly reveal capabilities to the adversary. For example, an MDEB could temporarily disable an adversary cyber network to show that escalation could bring unacceptable costs. Any action would need to be well-calibrated to avoid conflict, such as an adversary's perception that they must escalate before losing essential capabilities. However, a proportionate measure that signals U.S. capability while providing an off-ramp could coerce an adversary to return to competition.

Conflict

Should a crisis escalate to conflict, MDTFs provide options to integrate kinetic and non-kinetic effects that counter adversary A2/AD capabilities. In 2019, based on at least 10 exercises and wargames, then-commander of Army Pacific General Brown called the MDTFs a "game-changer" and remarked, "Before, we couldn't penetrate A2/AD. With it, we could."[32]

> *Before, we couldn't penetrate A2/AD. With [the MDTF], we could.*
>
> –General Robert B. Brown, then Commanding General, U.S. Army Pacific, 2019

MDTFs largely generate their value from their unique capabilities as land forces. Because they are small, distributed and maneuverable, they may be more resilient against enemy fires than sea or air platforms. MDTFs can exploit terrain features—such as tunnels, tree cover and mountains—to hinder adversary targeting. Likewise, terrain presents opportunities for deception. MDTFs can employ cost-effective physical decoys (like fake missile launchers or vehicles) and electronic and cyber spoofing to stimulate enemy detection mechanisms. These decoys can fool enemy surveillance and targeting—including AI systems.[33]

Leveraging this survivability, MDTFs synchronize kinetic and non-kinetic effects to penetrate adversary A2/AD. MDTFs may utilize LRPE to disrupt adversary command and control (C2), communications and cyber networks. The MDTFs can also employ LRPF to destroy enemy targets—whether

land-based forces such as infantry, air defenses, missile systems and C2 nodes, or adversary air and naval forces. MDTFs are working to operate non-formulaically, using AI to take advantage of emerging opportunities and to overmatch an adversary rapidly.

As Admiral Harry Harris, former commander of U.S. Indo-Pacific Command, put it, MDTFs must "sink ships, neutralize satellites, shoot down missiles and airplanes, and hack or jam the enemy's ability to command and control."[34] MDTFs could intercept missiles aimed at U.S. Navy ships or shoot down enemy fighters targeting the U.S. Air Force. It could also drive enemy naval forces away from coasts into deep water where the U.S. Navy maintains significant undersea advantages over China and Russia.[35] MDTFs thus support the goal of opening lanes for the joint force to close distance, target vital enemy interests and achieve overmatch. Enemies are more likely to terminate the conflict when facing multiple, simultaneous dilemmas.

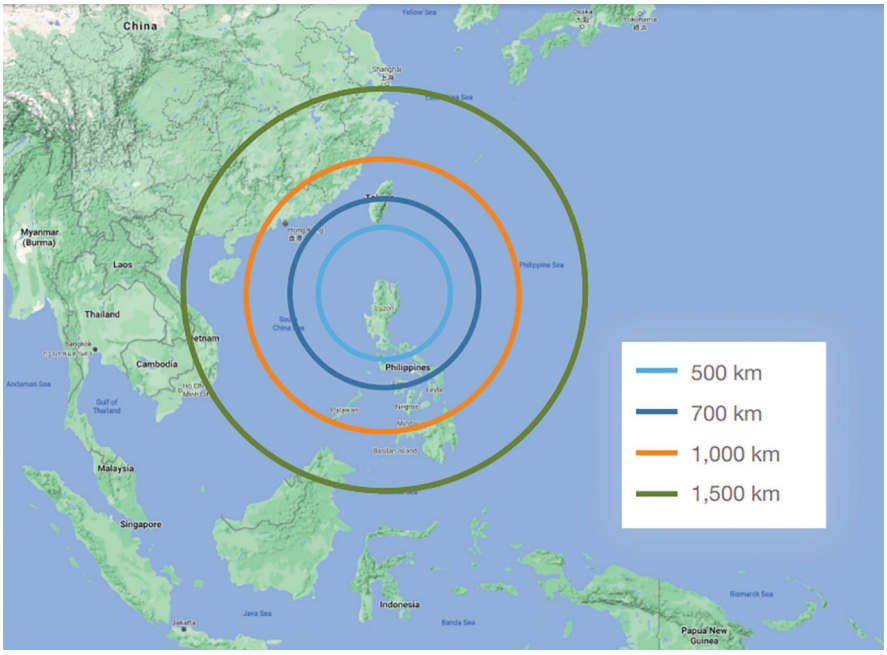
Lieutenant Colonel Steven M. Rachamim, commander of the 5th Battalion, 7th Air Defense Artillery Battalion, briefs the 10th Army Air and Missile Defense command team during a "maintenance terrain walk" in Baumholder, Germany, on 1 February 2022 (U.S. Army photo by Major Robert Fellingham).

Considerations for MDTFs in the Indo-Pacific and Europe

Given that MDTF-1 and MDTF-2 are aligned to the two priority regions for the U.S. defense strategy—the Indo-Pacific and Europe, respectively—it is worth considering how they could vary. Though both will serve the same overarching role and continue to adapt as they experiment, their organizational components could differ based on theater geography, regional security architecture and adversary capabilities.

Figure 2

Long-Range Fires in the Indo-Pacific[36]



> *[MDTFs must] sink ships, neutralize satellites, shoot down missiles and airplanes, and hack or jam the enemy's ability to command and control.*
>
> –Admiral Harry B. Harris

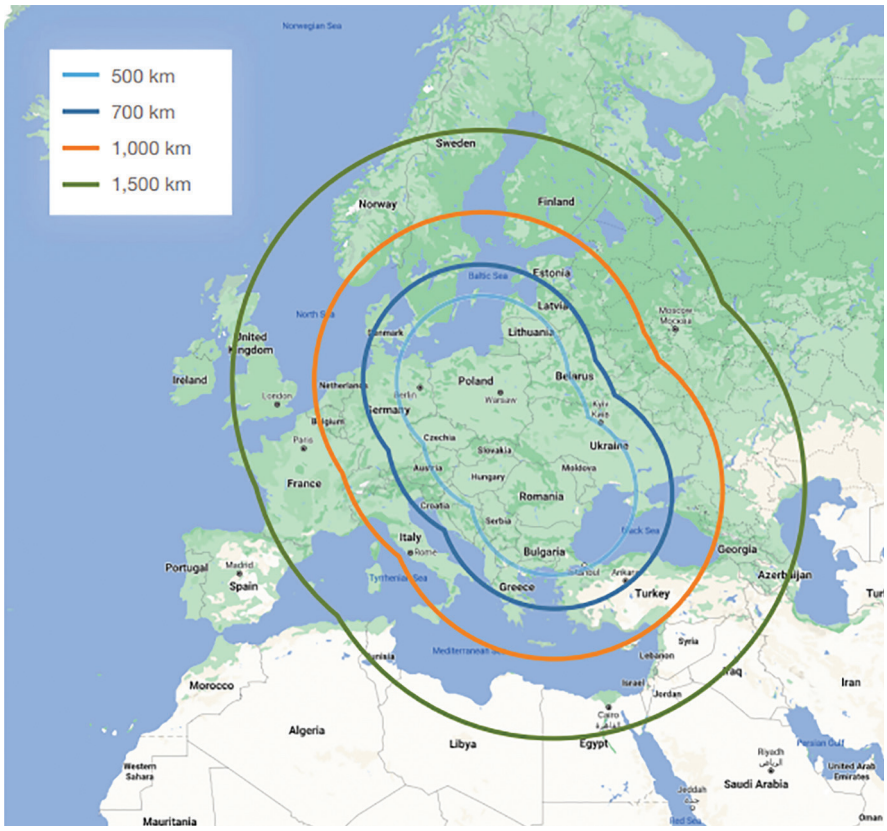
The Indo-Pacific presents a wide array of challenges to the MDTF. First, much of the Indo-Pacific is characterized by vast distances of ocean interspersed by land. This geography results in less area for an MDTF to occupy for advantage (see Figure 2, which represents one example of Army long-range fires capabilities if based in the northern Philippines). As a further complication, no comprehensive regional security alliance exists in the Indo-Pacific; the United States relies primarily on bilateral agreements with Japan, South Korea, Australia, Thailand and the Philippines.[37] This may make the political process of achieving bilateral agreements for MDTF basing in the region more difficult. Last, especially in the medium to long-term future, Chinese A2/AD systems are likely to surpass Russia's quantitively and qualitatively, with more significant capability to disable the U.S. military's communications.

Soldiers assigned to the Western Army Field Artillery of the Japan Ground Self-Defense Force observe and facilitate reload operations on the U.S. Army High Mobility Artillery Rocket System (HIMARS) at Yausubetsu Training Area, Japan, 16 September 2019. Bravo Battery, 5th Battalion, 3rd Field Artillery deployed a HIMARS for the first time to Japan in support of bilateral exercise Orient Shield 2019. The HIMARS is a key capability for the MDTFs, increasing their lethality (U.S. Army photo by Captain Rachael Jeffcoat).

These factors could shape MDTF-1's organizational components. For example, the geography of the Indo-Pacific may compel MDTF-1's Long-Range Fires Battalion to rely more heavily on the Army's Long-Range Hypersonic Weapon (LRHW)—capable of supersonic speeds at ranges of 1,725 miles and due to be fielded in 2023. The LRHW would have enough range from numerous locations in the Indo-Pacific to put Chinese land-based targets

Figure 3

Long-Range Fires in Europe[38]



at risk in addition to its sea-based platforms. Depending on their locations, Army long-range fires with less range, such as the Precision Strike Missile (PrSM—capable of hitting targets at 800 miles) and Strategic Long-Range Cannon (SLRC—capable of hitting targets at 1,000 miles), could be effective in targeting Chinese maritime capabilities, notably during contingencies in Taiwan and the Senkaku Islands. However, for certain land-based targets, these weapons would benefit from closer positioning.

U.S. Army Paratroopers assigned to Chosen Company, 2nd Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade Combat Team, provide security during the deployment of a Terminal High Altitude Area Defense (THAAD) to Naval Support Facility Deveselu, Romania, 15 May 2019 (U.S. Army photo by Sergeant 1st Class Jason Epperson).

The distances within the Indo-Pacific also pose challenges to communications resilience, especially given China's rapidly evolving space and cyber capabilities. Likewise, this geography makes sustaining the distributed operations of the MDTF in a contested environment difficult. As a result, MDTF-2's MDEB may require additional Space and Signal Companies and a greater number of Distribution Companies for its Brigade Support Battalion. These demands partly explain why the Army plans for a second MDTF aligned to the Indo-Pacific; it is vital that the Army receives the necessary funding and quickly establishes this unit.

Unlike the Indo-Pacific's vast oceans, Europe's geography is dominated by land and much shorter distances (see Figure 3). Additionally, NATO could simplify the process of gaining MDTF basing arrangements across more locations in Europe, with the benefits of NATO's robust infrastructure, including transportation networks and supply depots. In combination, favorable geography and security architecture increase the number of potential MDTF locations that could place Russian interests at risk. Further, over the medium- and long-term, as Russia faces economic constraints, it is unlikely that it will keep up with Chinese A2/AD capabilities and may rely on lower-cost options, particularly in the information domain.

Due to these factors, PrSM and SLRC could play a more prominent role in MDTF-2's fires units, as they would have ample range from many locations in Europe to target Russian forces attempting, for example, to invade the Baltic States; they could even place targets within Russia's borders at risk. Additionally, MDTF-2's MDEB could require an additional Information Defense Company to identify and counter Russian disinformation. Moscow has featured these low-cost cyber and information tools heavily in operations in Georgia, Crimea and Ukraine, and, more broadly, during competition with the United States and Europe. As Russia's relative military power decreases and technologies with implications for the information environment, such as deepfakes, evolve, these low-cost cyber and information options could become more prominent. Thus, MDTF-2's organizational structure may change to reflect this emphasis.

Critical Enablers of MDTFs

For the MDTFs, three external factors are essential: the efficacy of JADC2; MDO interoperability with allies; and gaining access in foreign countries within adversary A2/AD networks. The Army should plan for how the

envisioned role of the MDTFs may change should one or more of these enablers not come to fruition.

Joint All-Domain Command and Control (JADC2)

MDTFs rely on data integration to provide the maximum number of options to combatant commanders—for example, to use land-based fires to target adversary sea capabilities. However, no service owns all the necessary sensors and shooters. Therefore, with JADC2's integrated network, MDTFs can optimize their capacity to present adversaries with multiple dilemmas.

Second, JADC2's AI capabilities can provide MDTFs with the necessary speed of data analysis to achieve overmatch against adversaries. While connecting all sensors into a unified network facilitates seamless data integration, it also creates challenges—namely, the volume of data will be enormous, making timely analysis difficult. Through JADC2's AI capabilities, MDTFs will be able to analyze and act on information at the speed of relevance.

U.S. Army Captain Erik Doering, assigned to the 1st Multi-Domain Task Force, works on network capabilities in preparation for Project Convergence at Yuma Proving Grounds, Arizona on 14 October 2021 (U.S. Army photo by Specialist Destiny Jones).

Finally, because MDTFs can conduct distributed operations across significant distances, the envisioned resilience of JADC2's network is essential. Given that U.S. communications are likely to be degraded in a conflict with China or Russia, a network that can remain functional despite this degradation is critical. Otherwise, the MDTFs may struggle to integrate data and send it to the best available shooter, diminishing a joint force commander's situational awareness and options.

Whether DoD can fully achieve JADC2 is an open question. DoD has conducted several major JADC2 exercises, in which data was collected, analyzed and shared in real-time between a limited number of platforms owned by different services.[39] In October, the Army conducted Project Convergence 21 (PC21)—its annual contribution to JADC2's development—bringing in participation from the joint force for the first time. This "campaign of learning" included exercises where the Army tested its ability to link sensor-to-shooter capabilities with the other services in real-world scenarios.[40] Still, some are skeptical whether "it is even possible to field a network that can securely and reliably connect sensors to shooters . . . in a lethal, electronic warfare-rich environment."[41]

Operating as an Inside Force

The Army envisions MDTFs as an "inside force," operating within adversary A2/AD networks.[42] The closer MDTFs are to potential conflict points, the greater their ability to hold vital adversary interests at risk. For example, the closer an MDTF's long-range fires unit is to an adversary's territory, the more it can put its strategic support area at risk.

However, gaining access to foreign countries is a political question that neither the Army nor the U.S. government can directly control. Nations weigh the benefits of U.S. military presence against the costs that China or Russia

can impose. Time, persuasion and the potential effects of hostile adversary action—not U.S. pressure—will achieve the most significant progress.

While the Army does not control these decisions, it can play a role. The Army should strive to achieve a common strategic understanding with allies and partners through high-level military-to-military contacts to convey its assessments of adversary capabilities and intentions. Exercises and demonstrations can also portray the value of the MDTFs when employed within adversary A2/AD networks. The Army's efforts could be especially beneficial in the Indo-Pacific, where 21 of its 27 nations' defense chiefs (about 78 percent) are army officers.[43] By contrast, 19 of the 30 defense chiefs in NATO (approximately 63 percent) are army officers.[44] Over time, the effect of achieving common military-to-military perspectives could influence political decisions.

U.S. Army Japan commanding officer Major General Viet Luong discusses Multi-Domain Operations during a visit with Lieutenant General Stephen Fogarty, commander of U.S. Army Cyber Command, and Lieutenant General Bruce Crawford, Army Chief Information Officer (G-6), at Segami Depot, 19 September 2019. The general officers visited with members of the U.S. Army's MDTF to gain insight into information and cyber connectivity during the units participation during a command post exercise (U.S. Army photo by Captain Rachael Jeffcoat).

Multi-Domain Interoperability with Allies

As General Murray observed, "The Army approaches [the future fight] with the belief that we will never fight alone."[45] Beyond merely gaining a presence in foreign countries, MDTFs must conduct MDO alongside partners and allies.

However, several challenges exist to achieving MDO interoperability. There exists no consistent way of describing the multi-domain environment between the United States and many of its allies.[46] Moreover, there is no common operating system underpinning allied AI. This lack of standardization risks that these systems could be incompatible for sharing data seamlessly.[47] Additionally, smaller allies and partners may lack the necessary capabilities to contribute fully to MDO. If the Army fails to maintain constant engagement with allies regarding modernization efforts, there is a risk that "U.S. capabilities will diverge from allied systems, making the level of integration necessary to achieve convergence unworkable."[48]

Fortunately, the Army is bringing allies and partners on board. After PC21 brought on joint partners, Project Convergence 2022 (PC22) will bring in allies.[49] While PC22 will likely focus on Five Eyes partners, the Army intends to bring in a more expansive group from Europe and the Indo-Pacific in future years. The more partners and allies that understand MDO, the greater their ability to invest in compatible systems, to understand the capabilities they can contribute and to enhance the concept's effectiveness.

Recommendations

Army

Recommendation #1: Expand realistic MDTF experimentation, wargames and exercises with the joint force, allies and partners to demonstrate MDTF value and influence adversary perceptions of U.S. capabilities.

Recommendation #2: Leverage military-to-military contacts to promote shared understandings of the strategic and operational environments that

will facilitate future MDTF integration with prospective allies and partners.

Recommendation #3: Identify and integrate niche multi-domain capabilities of smaller allies and partners (e.g., Eastern European expertise in cyberspace and the information domain) to ensure that multi-domain interoperability is not only achieved by the most capable allies.

Office of the Secretary of Defense

Recommendation #1: Create a central authority to integrate the development of JADC2. Doing so will mitigate concerns that current efforts by each service to develop their respective networks will be unable to converge to create a genuinely joint network.

Recommendation #2: Communicate to Congress that MDO is essential for the future fight and identify the vital modernization programs that Congress must prioritize for the United States to prevail on the multi-domain battlefield.

The Northern Lights shone above the Soldiers from the 1st Battalion, 6th Field Artillery Regiment, 41st Field Artillery Brigade, after they successfully fired six M31 rockets from their M270A1 Multiple Launch Rocket System during the Thunder Cloud live-fire exercise in Andoya, Norway, on the night of 15 September 2021. Thunder Cloud was designed to test out the targeting capability of the High Altitude Balloon system coordinated through MDTF–Europe using long-range precision fires on a seaborne target 20 kilometers off the coast on Andoya, above the Arctic Circle (U.S. Army photo by Major Joe Bush).

Congress

Recommendation #1: Provide consistent and sufficient funding for MDTFs and all-domain modernization efforts of the joint force, including investment in LRPF and emerging cyber, space, information and AI technologies.

Recommendation #2: Increase congressional foreign policy engagement with allies and partners to promote stability and build resilient trust. Doing so can set the foundation for more expansive military engagement and basing arrangements, such as MDTF presence.

Recommendation #3: Avoid the "one-issue fallacy"[50]—overprioritizing China and so creating excessive vulnerabilities from other threats. With Washington's poor record of predicting its next war, underinvesting in U.S. landpower is myopic for the Indo-Pacific theater and perilous if its next fight occurs with Russia, Iran, North Korea or elsewhere.

Conclusion

MDTFs represent a critical pillar of the Army's aggressive modernization. Integrating LRPF and LRPE in a highly survivable land-based unit provides the joint force commander with unique options. By gaining positions of advantage during competition, MDTFs form an invaluable component of the joint force's deterrence posture and counter-A2/AD options in conflict. Critically, the MDTFs' value lies not only in its role in a conflict but also in the day-to-day competition that is *already* occurring.

To be sure, the challenges facing the United States extend far beyond the Pentagon and require a revitalization of American economics and diplomacy. However, the surest way for Washington to invite conflict is through degradation of its military capabilities. At this inflection point, Congress and the American public should recognize that the costs of making the necessary investments to ensure national security would pale in comparison to the costs of ceding its global position to China or Russia.

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