



## Multi-Domain Battle

## The Advent of Twenty-First Century War

## 多領域戰鬥——廿一世紀戰爭新型態

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This is the final article in a series discussing multi-domain battle through the lens of U.S. Army Training and Doctrine Command. This article discusses how the Army must adapt to meet the requirements for a future force operating in a multi-domain environment.

本文是以美國陸軍訓準部的視角所撰寫之最具決定性之多領域戰鬥的文章，討論的是陸軍應該如何調整，未來面對多領域戰鬥環境時，能從容應對。

In July 1940, the U.S. Army could no longer dither about preparing to conduct armored warfare. France had just fallen to Germany in a lightning-fast campaign led by combined arms mechanized and motorized formations that integrated airpower at the tactical and operational level while synchronizing all elements of combat power on a scale and in a manner for which the Allies had no effective solutions. German success in such a short timeframe illuminated both that World War I-based doctrine had run its course and that the failure to adapt to changes

brought by advances in technology had left the U.S. Army on its heels, facing a war that would eventually unfold on two fronts and requiring a modern army that did not yet exist. In a matter of years, the U.S. Army would transform from a small active force of less than 250,000, devoid of modern equipment, to a modern army capable of defeating the Axis in Africa, the Pacific, and Europe.

1940年7月，美軍就不再對如何遂行裝甲作戰指導感到惶惑。當德國以機械化、摩托化部隊搭配空中武力，在戰術和作戰層級同步整合各戰鬥元素，迅雷不及掩耳的攻陷法國，不論規模和手法，都讓同盟國找不出有效的因應對策。德國在很短的時間掌握了兩個成功因素，其一是善用以第一次世界大戰為基礎的準則；其二是掌握到美軍展開了兩條戰線，卻無法肆應先進科技帶來的改變，而且能運用這種改變的現代化部隊也還沒有誕生。爾後幾年，美軍一直設法將一支不足250,000人，欠缺現代裝備的部隊，轉型成可以在非洲、太平洋和歐洲戰場，擊敗軸心國的現代化軍隊。

### Lessons of the Past—Failure to Adapt 以往的經驗教訓——肆應不良

After World War I, the Army failed to effectively modernize, despite efforts over two decades to do just that. At the beginning of the Second World War, the U.S. Army found itself little better off than it had been in 1920.<sup>1</sup> This failure to maintain a modern military during the interwar period was the result of a poor understanding and visualization of what constituted a modern force. The difficulty of securing money to modernize was exacerbated by the lack of a compelling vision of future combat. Still, the Army did try.

第一次世界大戰之後，即使努力了20多年，美軍還是沒能有效地現代化。二戰之初，美軍發現他們比起1920年代好不了多少。<sup>1</sup> 這種情況致使兩次大戰之間，因為缺乏瞭解與想像，而錯失了組建現代化兵力的機會。軍隊現代化的經費，因為對未來戰鬥缺乏具備說服力的願景，籌措起來變得更加困難。不過，陸軍並未放棄。

Significant efforts to modernize the U.S. Army began in 1920, when the Army took

1 David E. Johnson, "From Frontier Constabulary to Modern Army," in *The Challenge of Change: Military Institutions and New Realities, 1918-1941*, eds. Harold R. Winton and David R. Mets (Lincoln, NE: University of Nebraska Press, 2000), p. 204.



on a strategy of readiness specifically focused on personnel and mobilization as the core components to victory in modern war. However, prioritizing personnel and mobilization came at a direct cost to overall force modernization. Given limited resources, it was difficult to promote or coordinate equipment and organizational modernization efforts in a cohesive manner.

美軍現代化的重大改變，始於1920年。當時的策略，是將重心放在現代戰爭中，應如何執行兵力動員與裝備部署，作為作戰勝利的核心原則。然而，兵力動員對全面現代化來說，最先考量到的就是直接成本。因為資源有限，要想上下一心致力於裝備提升或協調組織的現代化，都遇到困難。

As an example, over the next twenty years, the United States failed to produce a capable armor force. In part, this was due to an inability to field modern tanks. Infantry Branch created a set of requirements for the production of a tank that could not be met by a vehicle under the weight of fifteen tons. Fifteen tons was the maximum weight that could be carried on Army pontoon bridges, the capabilities of which Engineer Branch was unwilling to commit research and development funds to increase. At a stalemate, neither side saw finding a solution a priority.

舉例來說，過了20年，美國還是弄不出一支像樣的裝甲部隊，部分原因是造不出現代化的裝甲車。步兵設立了一連串強人所難的要求，重量在15噸以下輪型車的標準。15噸是陸軍浮橋能搭載的最大重量，工兵不願意再投入預算去研發載重量更大的浮橋，這就形成一個僵局，兩邊都找不出最佳解決方案。

Even in 1939, with the invasion of Poland, the War Department pushed the chief of cavalry to deactivate horse cavalry units and provide personnel for new mechanized forces.<sup>2</sup> He refused, stating, "Under no circumstance will I agree to any further depletion of my horse cavalry. To do so would be a betrayal of the nation's defense."<sup>3</sup>

即使到了1939年，德軍入侵波蘭期間，戰爭部要求騎兵主管裁撤乘馬騎兵，抽調人力另外成立機械化部隊。<sup>2</sup> 他拒絕了，他說：「我絕對不同意裁減我的騎兵兵力，這樣

2 "Memorandum, Brig. Gen. F. M. Andrews for the Chief of Cavalry, G-3/42070," 23 February 1940, file 322.02, Office of the Chief of Cavalry, correspondence, 1921-42, Box 7b, Record Group 177, National Archives and Records Administration.

做是對國防的背叛」。<sup>3</sup>

With limited funding, the Army defaulted to funding personnel and mobilization capabilities. These decisions ultimately played a role in a U.S. armored force meeting German panzers for the first time without adequate protection, firepower, and training.<sup>4</sup> Drawing lessons from this period, it is clear that we must understand the operational environment and visualize how the Army will operate with concepts that accurately address the requirements of future warfare.

受限於經費，美軍無法充分挹注人力與機動部署。這些決策造成美軍裝甲部隊在首次與德軍對陣時，沒有足夠的防護、火力與訓練。<sup>4</sup> 這段時間的教訓清楚顯示，我們必須瞭解作戰環境，明白在從容面對未來戰爭時，陸軍應具有哪些願景與概念。

In 2018, the U.S. Army requires concepts that allow us to begin a modernization program to meet anticipated threats. The complexity of war on land continues to grow as the number of actors able to employ capabilities in the air, sea, space, and cyberspace domains increases. The interrelationship of military activities within domains becomes much more problematic than when forces enjoyed nearly uncontested superiority in each of them. The Army's dominance on land has become dependent, if not contingent, on access to the air, cyber, and space domains. These domains are a challenge not just because they will be contested. They also challenge our previous views of responsibilities at echelons of command and geographical containment of actions and effects. When the next major fight comes, twenty-first century largescale ground combat will arrive with it, whether the Army is prepared or not. To be ready, the Army must work toward an accurate vision of the future battlefield and understand its operational environments. Multi-domain battle is the start of this process. It is an evolving war-fighting concept designed to win in an ever-changing complex world, leveraging the lessons of the past with twenty-first century capabilities.

2018年，美軍提出了一些讓我們面對預期威脅時，在裝備部署計畫部分，有好的

3 "Memorandum, Maj. Gen. J. K. Herr for the Assistant Chief of Staff, G-3," 28 February 1940, file 322.02, Office of the Chief of Cavalry, correspondence, 1921-42, Box 7b, Record Group 177, National Archives and Records Administration.

4 Ibid., p. 201.



開始之概念。隨著可以運用在空中、海上、太空和網路上的各式能力急速增加，地面作戰的面貌也隨之越趨複雜。各個不同領域之間軍事相互關連的問題，比起以往部隊在各領域幾無競爭的年代，多了太多。陸軍對地面的掌握，就算不能說越來越難以意料，至少把海上、空中、太空和網路這些因素歸納進來，也是越來越不確定。這些領域之所以會變成挑戰，並不只因為加入了競爭勢力；這些領域的挑戰，還包含了我們對指揮階層的责任，以及對地區性圍堵作戰效益的原本認知。當下一個大規模衝突發生時，不管美軍是不是已做好準備，所謂21世紀的大型地面戰勢必隨之而至。為此，美軍必須洞察未來戰場，並熟知作戰環境。多領域戰鬥是個開頭，它是能平衡過去與21世紀各種能力的新思維，同時也是能在變動不居的複雜世界獲勝的新興作戰概念。

## Multi-Domain Battle: A New Concept for a New World 多領域戰鬥：新世界的新概念

In 1940, the U.S. Army began to learn the hard way how to become a modern military force.<sup>5</sup> We face indications of similar challenges today. Operational environments are evolving through technological advancements and diffusion, increasingly weaponized information, and divergent political systems designed to upend the current international order. These challenges demand a new perspective on how the Army fights both in purpose and in design.

1940年代，美軍艱難地學習現代化軍隊的路。<sup>5</sup> 我們今天面對的挑戰也很類似。在技術進步與普及、武器化資訊增加、政治型態各異、國際情勢混亂等原因之下，造成現今的作戰環境不斷地在變動。應付這些挑戰，陸軍必須在作戰目的和作戰設計這兩方面，有新的觀點。

The nature of war will remain unchanged. However, the continuum of conflict must be understood in the current and future context. There is and always will be strategic competition. You are either winning or losing, present tense. Seldom will conflict result in a permanent win or loss. The linear depiction of peace to war and back again must be revised to reflect the cyclical nature of war where there are only positions of relative advantage. The continuum of conflict is defined by competition short of conflict, conflict itself, and the return

5 Johnson, "From Frontier Constabulary to Modern Army," p. 191.



to competition.

戰爭的本質並沒有改變。然而，衝突之變異，不論在目前還是未來，都應該充分掌握理解。戰略競爭永遠都會存在，現實的態勢非贏即輸，然而衝突的結果未必永遠是輸或贏。和平到戰爭之間的線性描述到頭來必須加以修正，以反映出兩者之間循環的本質，唯相對優勢地位是論。衝突的變異是由未達衝突階段的競爭、衝突本身，以及重新回到競爭這一循環而構成的。

Our adversaries and potential adversaries have studied and learned from our battlefield successes since the first Gulf War. With that knowledge, they are adapting their methods of warfare, while accelerating the modernization and professionalization of their combat forces. They seek to gain strategic advantage by offsetting the advantages we have enjoyed over the last twenty years. Through these new methods, they are competing now below the threshold of open armed conflict while continuing to posture to more effectively engage in large-scale combat, if it were to come to that. To offset our key advantages, three macro lessons are guiding their new approach to warfare. First, do not let the United States and our allies gain access to the area of operations. Once fully established, we have the operational advantage in logistics, firepower, and command and control necessary to overwhelm anyone. Second, try to fracture the joint team by isolating our air, sea, and land forces to prevent mutual support. It is the synergies of our interdependent joint capabilities that make us dominant. Third, fix us and do not allow our forces to maneuver and bring all of our elements of combat power (including leadership) to bear in the close fight.

我們的敵人與潛在對手自從第一次波灣戰爭之後，就一直在研究、學習我們在戰場上的成功之道。他們用學到的這些知識，來改變作戰方式，強化其戰鬥部隊現代化與專業化程度。他們要設法補足美軍過去20年的優勢，並轉化成他們的戰略優勢。透過這些新方法，對手們現在已經可以在開放式的軍事衝突中與我們競爭。更有甚者，會在大規模戰鬥中持續對我有效率的施壓。為了抵銷我們的關鍵優勢，對手們採行了三個新的戰法，第一，不讓美軍或聯軍進入作戰區；一旦進入戰區完成整備，在後勤、火力和指揮管制方面，不論面對任何對手，我方都能擁有作戰優勢。第二，設法破壞我軍空中、海上和地面部隊間的連結，阻止我軍相互間的支援；相互間的協同作戰能力，是我軍掌控戰局的最重要依靠。第三，限制我軍，不讓我方部隊自由移動，以免我軍將作戰能力諸般因素(包含指揮領導能力)帶進預期的戰場之中。



We can expect all domains to be contested. Adversaries possess significant integrated air defenses and long-range fires, as well as sophisticated intelligence, surveillance, and reconnaissance and information, electronic warfare, and cyber capabilities. It is no longer possible to maintain total dominance in all domains all of the time.

我們假設在各方面都會競爭。敵人擁有整合空防和長程之火，搭配精密的情報、監視、偵察與資訊、電戰及網路能力，我們已然不可能在各領域維持住全面的掌控優勢矣。

Multi-domain battle is a concept designed to overcome our adversary's integrated defensive capabilities, avoid domain isolation and fracturing, and preserve freedom of action. The joint force must be able to penetrate adversarial defenses at a time and place of our choosing, in more than one domain, by opening windows of domain superiority to allow maneuver inside our adversary's integrated defense. The rate and speed of current and future world events will not allow us the time to synchronize federated solutions. In order to present the enemy with multiple dilemmas, we must converge and integrate multi-domain solutions and approaches before the battle starts. We must become sensor-shooter agnostic in all our platforms, and we must maintain a common operating picture.

多領域戰鬥是一種具針對性的概念，其目的是克服敵人整合性之防禦能力，避免各領域被分割或破壞，以保持我軍行動自由。聯合部隊必須在我軍所望時間地點穿透敵之防禦，在多個領域開啟作戰優勢，以利在敵之整合防禦中找出破綻。當前與未來世界發生國際事件的頻率與速度，已使我們無暇尋求同步解決方案；為了讓敵人進退兩難，我們必須在戰鬥開始之前集中心力整合多領域作戰方案與手段。我們必須在所有作戰平台都做好一擊必殺的萬全準備，並保持清晰的共同作戰圖像。

## Evolving Capabilities from Vision to Reality

### 從洞見到實現：逐步發展的能力

Success of multi-domain battle is contingent on our ability to match the concept to the doctrine, organization, training, materiel, leadership and education, personnel, and facilities capabilities and material modernization requirements. Some of the emerging required capabilities to achieve this follow:

多領域戰鬥的成功，應該是建立在能力必須與準則、組織、訓練、裝備、領導與教育、人員、器材，以及設施現代化的要求相符。某些必須具備的能力列舉如下：

Long-range precision/cross-domain fires. The U.S. Army is developing multipurpose munitions and sensors for long-range precision fires and air-delivered electronic warfare. The goal is to have both lethal and nonlethal fires that are delivered from the land domain to produce effects in all domains. The ability to deliver precision fires at extended ranges is essential to mitigate risks associated with semi-independent maneuver and create the conditions necessary for deep maneuver to defeat the threat's integrated fires complex.

長程精準、跨領域火力。美軍正在研發用於長程精準打擊和空投電子作戰的多功用彈藥。其目的是從陸上領域投射到各領域，產生致命與非致命的火力。有全面區域投送精準火力的能力，在半獨立機動和條件許可下的深遠地區作戰狀況下，於擊潰敵人火力整合設施時能降低自身風險，是非常重要的。

Next generation combat vehicle. The next generation of combat vehicles will incorporate new weapons with greater range, as well as utility for urban environments. Designed to be optionally manned, they will be smaller in size, allowing greater maneuverability in restricted areas. They will have reduced fuel and bulk ammunition consumption rates while also incorporating integrated active protection combined with advanced-material armor. The next generation of combat vehicles will incorporate emerging technologies such as networked targeting systems, directed energy weapons, semi-autonomous wingman teaming, and increased-range munitions.<sup>6</sup> These will enable the type of semi-independent maneuver that multi-domain battle requires.

下一代的戰鬥輪車。下一代的輪型戰鬥車，將配備更長射程的新式武器，而且能在城鎮環境中使用。相關設計可供人員運送使用，體積較小，在惡劣地形中有較強的機動能力。這種車輛會降低燃料和彈藥的耗用率，同時裝配主動防護與先進材質的裝甲。另外像連結網路的目標定位系統、定向能量武器、半自主僚車整合通連，以及增程火力等新興技術，都將出現在這些車輛上。<sup>6</sup> 這些具備半自動機動能力的新裝備，就能符合多領域戰鬥的使用需求。

6 於下頁。





Future vertical lift. Future vertical lift will play a critical role in moving combat power directly into the fight and ensuring casualties retain access to lifesaving treatment-despite distances. In multi-domain battle, aviation reconnaissance units will cover greater areas, aviation attack units will apply increased adaptability to take advantage of fleeting opportunities and respond more quickly to friendly ground units in need, aviation assault and transport units will move larger forces further and faster to build combat power at decisive points, and medevac units will move casualties over greater distances within the "golden hour" of lifesaving treatment. Future vertical lift, using supervised autonomy, will provide commanders additional options of manned and unmanned platforms dependent upon mission requirements and level of risk.

未來垂直起降輸具。未來，垂直起降功能無遠弗屆的輸具，在戰力投入戰場，或確保傷員能儘速後撤就醫以保全戰力兩方面，都扮演了重要角色。在多領域戰鬥中，空中偵察單位必須涵蓋至廣闊的區域；空中攻擊單位則必須設法掌握稍縱即逝的機會，迅速反應以提供地面友軍所需之火力；至於空中突襲與運輸單位，負責輸運較大兵力快速且深入抵達決戰點建立戰鬥能量；醫療後送單位負責在黃金搶救時間內，將傷員後送進行搶救。未來，垂直起降方式會在監管範圍之內，於任務需求與風險評估之間取得平衡，提供指揮官更多戰術運用的選擇。

The network. The network will increase the speed and flow of the right information to the right people, enabling faster understanding and action while simultaneously denying our adversaries freedom of maneuver on the "electronic battlefield."<sup>7</sup> To do this, the U.S. Army is creating a single end-to-end network framework and advanced cyberspace offensive and defensive capabilities. The network will deliver a common understanding of the operational environment while sharing information horizontally and vertically across all services and partners-managing information from home station to the tactical edge. Offensive and defensive cyber capabilities, using artificial intelligence, protect the friendly network and create windows of opportunity while disrupting and denying the enemy's use of the electromagnetic spectrum.

6 "U.S. Army Future Force Development Strategy (unsigned)," May 2017, 26; "U.S. Army Tanks, Strykers, and Bradleys Are Getting Active-Protection Systems to Fend off Enemy Fire," Business Insider website, 8 June 2017, accessed 7 September 2017, <http://www.businessinsider.com/us-army-tanks-strykers-and-bradleys-getting-active-protection-systems-2017-6>.

網路。網路可以增進資訊傳輸的速度與流量；在電子戰場上，當我方需要同步阻滯敵人的行動自由時，網路可以促使更快的理解掌握與行動。<sup>7</sup>為了達成這個目標，美軍正在研發單一點對點的網路架構，設法提升網路空間的攻擊與防禦能力。如果需要分享資訊給友軍與單位，網路就可以把從駐地到戰術地區所有作戰環境的細節傳播出去。所謂攻擊與防禦的網路能力，就是使用經過加工的情報，保護我方的網路運作，並且創造機會擾亂、拒止敵人對電磁頻譜的使用。

Air/missile defense. The Army is taking steps to defend key fixed sites and provide effective air and missile defense protection of maneuvering forces by modernizing short-range air defense and Terminal High Altitude Area Defense systems as well as developing onboard aerial and ground vehicle advanced protection systems. Survivability of units will be dependent on the success and distribution of these capabilities. As an enabler, increasing ground-based fires will support joint force commanders with more options while simultaneously providing force protection against enemy missile and manned and unmanned air system attacks. As a deterrent, positioning and demonstrating these abilities will frustrate adversaries' aims to fracture the joint force.

防空與飛彈防禦。陸軍已經著手強化關鍵固定設施，並提供有效的空中與飛彈防禦，同時將短程空防系統、薩德反飛彈系統(THAAD)，與現役其他空中、地面載具現代化，以保護機動部隊之安全。部隊安全必須倚賴這些系統的健全運作。主動防禦時，增加地基火力，可以讓聯合部隊指揮官在面對敵人飛彈、有人或無人空中系統攻擊時，在部隊防護方面有更多選擇。當被動防禦時，設置並展示這些裝備與能力，可以打消敵人將我方聯合部隊當成攻擊目標的念頭。

Soldier lethality. The soldier and squad are the cornerstone of the U.S. Army. Our Army is only as good as our soldiers' ability to perform both physically and cognitively. They must have overmatch with their weapons and equipment to succeed in high-intensity combat. Lethality must be balanced between fire and maneuver with systems to increase the delivery of accurate and lethal fires while increasing individual soldier maneuverability. In terms of lethality, the Army is increasing close- and long-range small arms accuracy via new fire control systems, munitions, and weapon designs. The introduction of robotics in terms of exoskeleton suits and

7 "U.S. Army Future Force Development Strategy," p. 24.



manned-unmanned teaming will improve maneuverability by decreasing the individual soldier's load while also increasing small unit range, coverage, and responsiveness.

官兵傷亡率。官兵與各班，是美軍的基石。唯有每位官兵在體能和心態方面能充分發揮，陸軍才能變得更好。在激戰中，官兵們必須比敵人更嫻熟地操作武器裝備，才能獲得勝利。在執行單兵機動的同時，火力與佈防調動除了講求精確之外，也必須考量降低傷亡。就傷亡率而言，陸軍正透過新型火力控制系統、彈藥與武器設計，試圖增加近接與長程小型火力的精確度。隨著機器人和外掛式動力裝置，以及有人、無人協同技術的引進，演訓或機動時可以減輕官兵的負擔，也可以加強小部隊的火力射程、覆蓋率及反應能力。

Organizational design. One example of force design and experimentation pertaining to the multi-domain battle concept is the multi-domain task force (MDTF). The MDTF is experimenting under the guidance of U.S. Army Pacific. It delivers operational fires to enable joint force freedom of maneuver at the earliest stage of deployment and conflict. The MDTF achieves this by deploying and managing capabilities like long-range precision fires, air and missile defense, attacking enemy networks, and defending the friendly network. While still experimental, the first MDTF is a major step toward realizing the multi-domain battle concept.

組織設計。與多領域戰鬥概念相關的兵力設計與實驗的例證，就是多領域特遣隊 (MDTF)。多領域特遣隊的兵力驗證，是在太平洋陸軍指揮部進行。在部署和衝突的最初期，多領域特遣隊以作戰火力，讓聯合部隊在火力掩護下獲得行動自由。多領域特遣隊藉著對長程精準火力、防空與飛彈防禦、攻擊敵人網路與防護我軍網路等諸多措施，實施部署與控制，達成行動自由的目標。雖然仍處於測試階段，第一支多領域特遣隊的成軍，將會是貫徹多領域戰鬥概念的重要一步。

## From Parochialism to Understanding 從本位主義到相互理解

Between 1920 and 1939, there was no greater challenge to modernization than branch and service parochialism. We cannot allow that to happen again.

1920到1939年之間，對現代化最大的挑戰，來自於各兵科與軍種間的本位主義。我們不能再讓這種情況發生。

Parochialism was mitigated in the past with significant and effective results. A great example of overcoming parochialism is the U.S. Army and U.S. Air Force's 31 Initiatives. As part of , 31 Initiatives brought modernization efforts that had been in the works since the early 1970s to a combined recommendation shared between the Air Force and the Army.<sup>8</sup> Central to the success of this inter-service effort was a shared Terms of Reference (TOR) that articulated a common understanding of demands on the present force as well as the process to design and field the best affordable Air-Land combat forces.<sup>9</sup> The TOR began with Army doctrine in FM 100-5, Operations, as the point of departure to conduct joint training and exercises-to reach a shared understanding of what Air-Land Battle would require.<sup>10</sup>

過去，本位主義的逐漸淡薄，產生了深遠的影響。克服本位主義最好的例子，莫過於美國陸軍與空軍之代號31項聯合方案的演習。作為空地戰鬥演練的一部分，31項聯合方案將1970年代以來現代化的努力，轉化成聯合作戰的優勢，讓空軍和陸軍共享。<sup>8</sup> 兩個軍種之間最主要的成功因素是清楚律定了權限範圍，因為把雙方部隊的要求和理解都表達得很清楚，因而演習設計和部署程序都能最有利於參演的空地戰鬥部隊。<sup>9</sup> 在陸軍準則FM 100-5，《作戰篇》中，首次提到權限範圍，作為聯合作戰訓練的起點——以達成空地戰鬥所要求的理解分享。<sup>10</sup>

For multi-domain battle, we have already begun to build the components for future collaboration in the spirit of the 31 Initiatives. As with Air-Land Battle, multi-domain battle naturally challenges domain-based parochial positions. It readily identifies that land components cannot dominate without convergence across domains. With publication of the first version of the concept we are working to establish a clear point of departure for additional multiservice and joint collaboration, and building a coalition of leaders committed to developing a shared understanding and visualization of the future force and multi-domain battle.

對多領域作戰來說，在31項聯合方案演習之中，我們已經著手創建未來聯合作戰所需的部隊。只要牽涉到空地作戰，多領域戰鬥很自然就會產生各部隊本位主義帶來的挑戰；最明顯的就是地面部隊如果得不到其他部隊的合作，就無法掌握戰局。當這種作戰

8 Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, DC: Office of Air Force History, 1987).

9 Ibid., p. 38.

10 Ibid., p. 35; *Field Manual 100-5, Operations* (Washington, DC: U.S. Government Printing Office, 1982 [obsolete]).





概念第一次在準則裡出現，我們就致力於建立跨軍種的聯合戰力，並且為各級指揮官，在未來多領域戰鬥部隊指揮時，提前建立分享戰場即時資訊的機會與平台。

The idea of a coalition of leaders from across the services is not aspirational. From inception, the U.S. Marine Corps partnered with the Army to develop the original multi-domain battle white paper and concept (version 1.0). The Marines brought their extensive experience in both combined arms maneuver and cross-domain maneuver. The Air Force also committed to working multi-domain battle issues. They helped identify U.S. Army natural bias to think spatially at the cost of functional perspectives when viewing the operational framework.<sup>11</sup> The Air Force, through the Air Combat Command (ACC), also committed to conducting multiservice exercises, experiments, and war-games on multi-domain battle to increase shared understanding and visualization. The U.S. Army Training and Doctrine Command and Air Combat Command are working jointly to develop a converged operational framework to visualize multiple domains simultaneously. Finally, there are the invaluable roles of U.S. Pacific Command and U.S. Army Pacific, which have provided, and continue to provide, opportunities to operationalize multi-domain battle through exercises and taking on the first MDTF.

將不同軍種指揮官聯合起來，並不是件多麼困難的事。起初，美國海軍陸戰隊和陸軍聯合撰寫了一份《多領域戰鬥白皮書》(1.0版)，陸戰隊將他們在兵種協同演習以及跨領域演習的豐富經驗都寫了出來。空軍也想在多領域戰鬥這個議題上有所貢獻，幫忙點出陸軍面對作戰架構時，在職責調配方面存在的先天偏見。<sup>11</sup> 以空軍的立場，很希望透過空軍作戰司令部(ACC)，在執行多領域戰鬥的跨軍種演習、驗證與兵棋推演時，能多多分享戰場理解與作戰觀點。陸軍訓準部與空軍作戰司令部，正聯手研擬通用作戰架構，以因應多領域的同步作戰需求。此外，在這個領域角色較不突出的太平洋司令部和太平洋陸軍，也一直在演訓和組建多領域特遣隊方面，提供了很多建議。

## Conclusion

### 結 論

The U.S. Army must continue to strive to be a premier learning and innovative institution.

11 James M. Holmes and David G. Perkins, "Multi-Domain Battle: Converging Concepts toward a Joint Solution," Joint Force Quarterly (forthcoming).



Multi-domain battle and the subsequent Army capabilities will continue to be assessed through our iterative processes of think, learn, analyze, and implement. To get where we want to go, it is critical to understand that multi-domain battle, at this stage, is still a concept. Transitioning the Army from the constabulary force of 1917 to a modern army took over twenty years and two world wars. Transitioning the Army from the Vietnam War to Air-Land Battle took over ten years. In the years to come, multi-domain battle is our concept to drive change. We will invariably find that the ideas, capabilities, and requirements we generate are not always correct—what will be critical is that we adapt and innovate consistently with a common joint vision and shared understanding. Twenty-first century warfare is coming. In many respects it has already arrived. The challenge the Army and Joint Force face today is whether we can adapt. The battlefield has simultaneously compressed and expanded globally.<sup>12</sup> Unlike the past, we will not have two years to correct the mistakes of twenty. The force that is postured, resilient, and able to converge its capabilities across all domains will win. We must be that force. Victory starts here.

美軍必須持續努力，成為一個學習創新的團隊。多領域戰鬥和相關能力，未來會成為陸軍需要反覆思考、學習、分析和執行的重要項目。要達到這個目標，重要的是要瞭解在現階段，多領域戰鬥還只是一個概念。要把陸軍從1917年時，還比較像警備武力那個狀態轉型成現代化部隊，已經花掉20幾年，還經過了兩次世界大戰；從越戰那時候到有能力進行空地戰鬥，又花掉超過10年時間。未來幾年，多領域戰鬥將會是驅動改變的重要概念。我們必須時時提醒自己，很多實踐中的想法、能力和需求，不見得都是正確的——以聯合作戰的通用視角去分享戰場理解，才是持續肆應和創新的重點。21世紀的作戰型態已經來臨，在很多方面，新型態其實早已進入日常生活；陸軍和聯合部隊面對的挑戰，是能否儘快肆應它。戰場發生的狀況，已經日趨同步化，影響則趨向擴及全球化。<sup>12</sup> 與過去不同，我們不再有兩年充裕的時間去修正過去20年犯的錯誤。未來的部隊在所有領域都要能部署、隨機應變、協同一致才能獲致勝利。我們必須成為這種部隊。勝利就從這一步開始！

(110年9月16日收件，110年12月9日接受)

12 Ground Force Modernization Budget Request, Before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, U.S. House of Representatives, 115th Cong. (24 May 2017) (statements of Lt. Gen. John M. Murray and Lt. Gen. Paul A. Ostrowski), accessed 21 September 2017, <https://armedservices.house.gov/legislation/hearings/ground-force-modernization-budget-request-0>.