



多領域作戰：推動贏得未來作戰的變革

Multi-Domain Battle Driving Change to Win in the Future

譯者簡介



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取材：Military Review, Volume 97, Number 4, July-August 2017

《軍事評論雙月刊》，第97卷第4期，2017年7、8月

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This is the first of three articles discussing the impact of multi-domain battle through the lens of the U.S. Army Training and Doctrine Command. This article frames the ideas taking shape for how land forces might conduct future operations under the multi-domain battle concept being developed by the Army Capabilities and Integration Center. In recognition of the centennial of American Expeditionary Forces entering World War I, the articles will incorporate relevant historical observations and lessons to help drive home the new and differentiate it from the old.

本文是透過陸軍訓練暨準則司令部的視角，探討「多領域作戰」所帶來影響的三篇系列文章中的第一篇。「多領域作戰」是由陸軍能力暨整合中心所發展出來的概念(如圖1)。在此概念下，本文將說明地面部隊如何執行未來作戰的具體內容。在表彰美國遠征軍參與第一次世界大戰百年紀念的同時，本文也將從歷史的觀點與教訓，以增進對新概念的理解，並且與舊概念予以區別。

"Perhaps we are losing too many men," is not the way to start a conversation about changing doctrine.¹ Army Gen. John J. Pershing penned these words in August 1918 after American Expeditionary Forces (AEF) sustained more than sixty thousand casualties over about four months.²

準則的修編不該是以「也許我們損失太多人了」這樣的對話開始的。¹1918年8月，美國遠征軍在4個月之內，傷亡就超過6萬人，當時總司令潘興將軍就寫下這樣的字句。²

When the United States entered World War I in the spring of 1917, Pershing firmly believed the Germans would be driven from the trenches and defeated in the open by self-reliant infantry employing a doctrine of open warfare.³ Open warfare doctrine imagined infantry brigades maneuvering outside the trenches that had immobilized the war months after it began in 1914. Instead of stationary fighting from trenches, U.S. brigades supposedly would employ speed and mobility to inflict decisive defeats on the Germans. Though Pershing coined the phrase open warfare, the ideas were consistent with prewar doctrine—heavily influenced by German military thought—that minimized the use of artillery and machine guns.

1 Gen. John J. Pershing, memorandum to Maj. Gen. James McAndrew, 7 August 1918, National Archives, records group 120, box 101, entries 16, 17, and 18 (Chief of Staff, GHQ [General Headquarters], Memoranda, Cablegrams, Telegrams, 1917-19), cited by James W. Rainey, "Ambivalent Warfare: The Tactical Doctrine of the AEF [American Expeditionary Forces] in World War I," in *The Parameters of War: Military History from the Journal of the U.S. Army War College*, eds. Lloyd J. Matthews and Dale E. Brown (Washington, DC: Pergamon-Brassey's International Defense Publishers, 1987), 220.

2 Ibid.; Mark Ethan Grotelueschen, *The AEF Way of War: the American Army and Combat in World War I* (Cambridge, UK: Cambridge University Press, 2010), 45; *American Armies and Battlefields in Europe* (Washington, DC: Center of Military History, 1995), 42.

3 Grotelueschen, *The AEF Way of War*, 31-32.

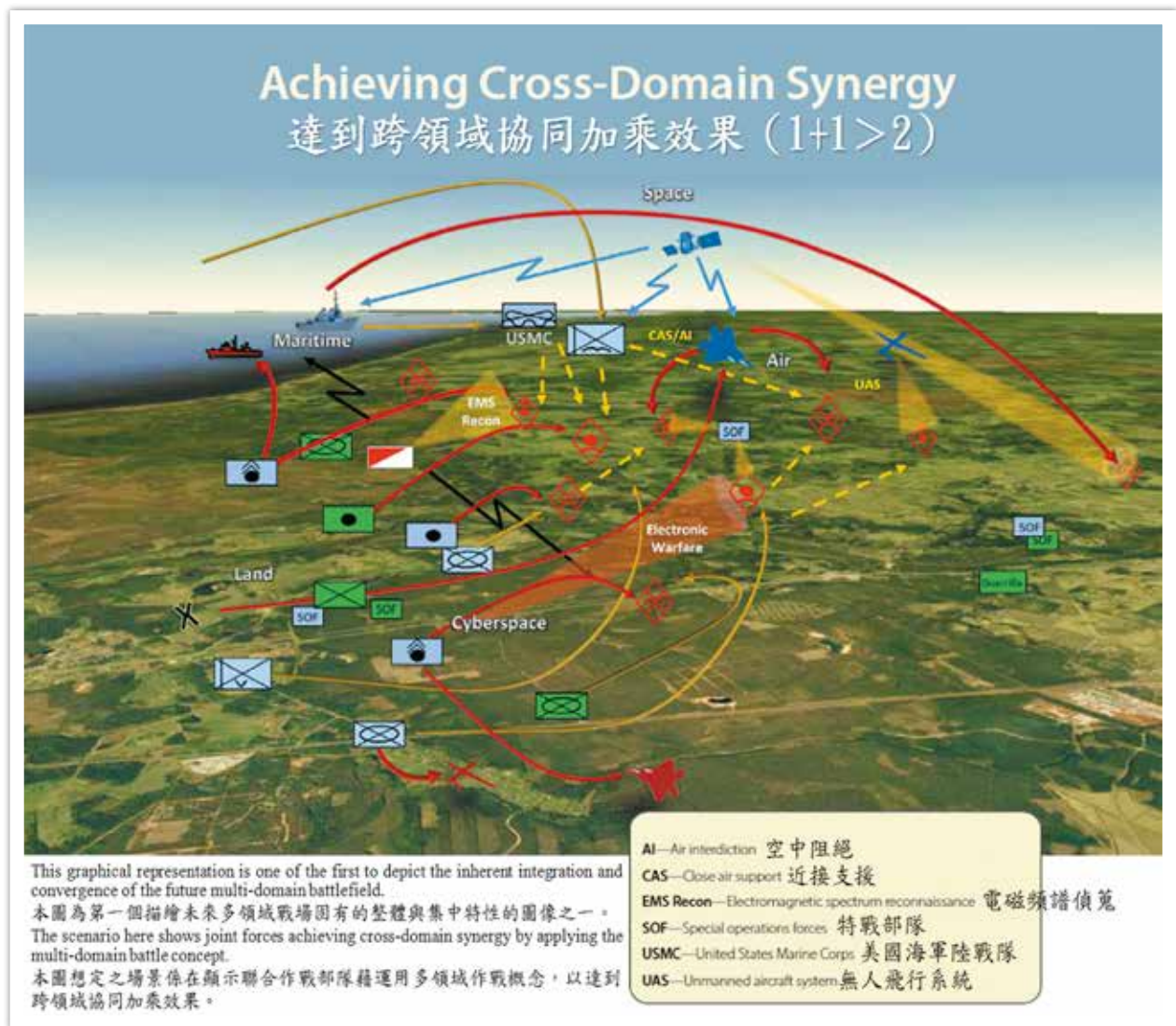


圖1 Achieving Cross-Domain Synergy達到跨領域協同加乘效果(1+1>2)

當美國在1917年春季開始參與第一次世界大戰時，潘興將軍堅信只要運用開闊地作戰準則，就能以純步兵，將德軍從戰壕中驅離，並擊潰在開闊地之中。³開闊地作戰準則，就是設想以步兵旅在戰壕外翼實施機動，然而在1914年戰爭爆發後的數月，壕溝戰卻造成戰事的膠著。想要不固守在戰壕內實施戰鬥，美軍欲以速度與機動之運用，以大敗德軍。雖然潘興將軍首創「開闊地作戰」的軍事術語，其戰術概念未脫離戰前準則—深受德國軍事思想影響—儘量不用砲兵和機槍。

However, casualties suffered by German and Allied forces starting in 1914 forced the combatants to realize that the lethality of rapidly firing artillery, machine guns, mortars-and later, gas, tanks, and aircraft-made tactics such as those advocated by Pershing's open warfare

doctrine almost suicidal. European armies, confronting unsustainable casualties, had to adapt and develop new doctrine and tactics after a stalemate settled in.

然而自1914年起，因德軍與協約國軍隊所造成的傷亡，迫使協約國交戰方意識到射擊速度快的火炮、機槍、迫擊砲，以及後來的毒氣、坦克與飛機的殺傷力，使得潘興將軍所提倡開闊地作戰的戰術準則，不啻為自殺的戰術行動。歐洲軍隊面對難以承受的傷亡，在戰局呈現膠著狀態後，就必須調整與發展新的準則與戰術。

Facing his own unsustainable list of casualties, Pershing directed his General Headquarters to conduct a doctrinal review.⁴ What little change came was too late; over half of U.S. casualties in World War I happened in late 1918 during the Meuse-Argonne Offensive.⁵ Despite the talk of change, open warfare persisted as leaders such as Pershing maligned Allied tactics and doctrine while continuing to create extraordinarily aggressive and optimistic attack plans.⁶ They underestimated the importance of heavy firepower and their control, communication, and coordination.⁷

面對己方難以承受的傷亡名單，潘興將軍於是指示他的司令部檢討準則內涵。⁴但這樣小小的改變為時已晚，因為美軍在1918年底謬斯－阿爾貢攻勢期間，遭受的戰損，超過美軍在第一次世界大戰傷亡的一半。⁵儘管談到要改變，但是諸如潘興將軍之輩仍堅持開闊地作戰的指揮官們，敵視協約國的戰術與準則，卻仍然研擬出過於積極與樂觀的攻擊作戰計畫。⁶他們低估了強大火力及其指揮、通信與協調合作的重要性。⁷

The approaching centenary of the end of World War I provides a moment to reflect on how land forces should adapt to changing operational environments. Despite the heroism of the AEF in 1917 and 1918, it is clear that the Army did not adapt its doctrine for the operational conditions that existed on the Western Front before the United States entered the war. The United States had an opportunity to observe and learn from European experience. Instead,

4 Ibid., 45.

5 Richard S. Faulkner, "Hard Knocks, Hubris and Dogma: Leader Competence in the American Expeditionary Forces," in *Leadership: The Warrior's Art*, ed. Christopher D. Kolenda (Carlisle, PA: Army War College Press, 2001), 159.

6 J. P. Clark, *Preparing for War: the Emergence of the Modern U.S. Army, 1815-1917* (Cambridge, MA: Harvard University Press, 2017), 267.

7 Grotelueschen, *The AEF Way of War*, 50-57.



the Army persisted with doctrine that had already been found wanting. The United States now faces a comparable moment. Operational environments are changing rapidly. However, when called to fight, the Army cannot afford the price paid in blood during World War I. This time, the Army must understand the changes as they occur and anticipate how they will affect operations. Doctrine must evolve before the Army faces potential enemies, not after. We must learn from careful study and analysis so we will not have to learn from bitter experience.

在第一次世界大戰結束一百周年即將到來之際，正是一個檢視地面部隊，何以必須適應作戰環境變化不居的時機。儘管遠征軍在1917及1918年驍勇善戰，但是美國在參戰之前，美軍顯然沒有就西線的作戰現況來修訂自己的準則。美軍原本有機會可觀察與學習歐洲作戰經驗的。不料，美軍仍然墨守成規。如今美軍又面臨類似的情況。戰場景況是瞬息萬變的，當受到徵召實施作戰時，美軍無論如何已經不能再次承受如同第一次世界大戰時血淋淋的代價。這一次，美軍必須在變化發生時就能察覺，並且預判這些改變將對作戰有何影響。準則必須在面對潛在敵軍之前就完成演進，而非事後。我們必須透過謹慎的研究與分析來學習，這樣就不必從痛苦的經驗中學習。

Changes to How the Army Will Fight

When the Nation calls upon the Army to fight and win its next war, the operational environment will be unlike the circumstances of our recent experiences. It will be defined by an enemy who will challenge our ability to maintain freedom of maneuver and superiority across the air, cyberspace, land, maritime, and space domains and the electromagnetic spectrum. As U.S. forces arrive on the battlefield with high-tech and expensive precision-guidance missiles, enemies may counter with innovative and effective responses costing pennies on the dollar. To counter our state-of-the-art communications network, they may hack in, disrupt, and deny our assurances through a well-organized group of experts hitting targets purposefully selected with intelligence and acting in accord with a larger maneuver plan—all executed from outside the area of operations. The Army Capabilities and Integration Center is developing the multi-domain battle concept to help prepare the Army for these possible future battlefields, in which current American strengths could become future weaknesses, and domains of present dominance could become areas of violent struggle.

陸軍作戰方式的變革

當陸軍受到國家的召喚執行作戰，並贏得下一次戰爭之時，那時的作戰環境，必將不同於我們目前歷練的環境。它將會是由對我們維持行動自由，以及在空中、網路空

間、陸上、海上、太空等領域與電磁頻譜保持優勢的能力造成挑戰之敵軍來界定。當美軍攜帶各式高科技與高價值精準導引飛彈進入戰場時，敵軍就可能採取極其低廉，而創新及有效的應變措施實施反制。為了對抗我們最先進的通信網路，敵軍會藉由綿密編組的專家群，透過情報分析選擇目標，實施有目的地攻擊，以及為更大規模的機動計畫實施活動，以達到入侵、破壞、屏蔽我通信保證的效果。而這些作為都是可以從作戰地區以外的地域執行。陸軍能力暨整合中心正在發展多領域作戰概念，以協助陸軍就未來可能的戰場實施準備，特別是針對美國目前的優點未來將變成弱點，而目前可以支配的領域，未來可能變成爭奪激烈的區域。

Doctrine describes how the Army conducts and trains for operations today with the capabilities it already has. Conversely, concepts describe how the Army may operate in the mid-to far-term future based on anticipated future operational environments. When published in U.S. Army Training and Doctrine Command pamphlets, concepts guide the study, experimentation, and evaluation of new solutions for doctrine and for organization, training, materiel, personnel, and facilities (the force domains, together known as DOTMLPF). When validated, concepts lead to changes within the force domains, including doctrine.

準則描述的是陸軍基於現有的能力，如何遂行作戰與訓練。反言之，概念則是依據對未來中程至遠程作戰環境的預判，以闡述陸軍將如何執行作戰。當美國陸軍訓練暨準則司令部概念手冊策頒時，其概念即針對「準則」、「組織」、「訓練」、「裝備」、「領導統御與教育」、「人員」及「設備」(在軍事領域上，統稱為DOTMLPF)等各個層面上，引導後續的研究、實驗與評估各種新的解決方案。經過驗證後，該概念就會引導包括準則等軍事領域的變革。

Change is never easy, especially in large organizations. The Total Army is a massive enterprise of over 1,030,000 soldiers plus thousands of Army civilians spread across the globe in a wide variety of operations and readiness stages.⁸ To change the Army and to prepare it for future operations is not as simple as rewording the Army's doctrine and purchasing new equipment. Due to its size, the Army will change on a scale beyond that imaginable by almost every Fortune 500 company. That change requires the Army to develop an operational concept

8 2017 Index of U.S. Military Strength, The Heritage Foundation website, 2017, accessed 19 May 2017, <http://index.heritage.org/military/2017/assessments/us-military-power/u-s-army/>.



based on a thorough campaign of learning that will guide changes across the entire force.

在大型組織中變革尤為不易。陸軍是一個有103餘萬官兵，以及數千位文職人員的龐大組織，廣布全球執行各種不同的作戰與戰備。⁸因此對陸軍實施改革，為未來作戰準備，不像修訂陸軍準則內容與購買新裝備般地簡單。以其規模而言，陸軍改革的幅度幾乎可以超過任何一個財富500強企業之想像。因此這樣的變革需要陸軍以全面的學習運動為基礎來發展一個作戰概念，以引導全軍上下的變革。

In Forging the Sword-Doctrinal Change in the U.S. Army, Benjamin M. Jensen explains that doctrinal change takes hold through shock and competition or through cultural self-selection.⁹ Change from shock and competition is change by force, from failure or from observing others' failures. Armies that fail before changing may not have the luxury of keeping their preferred organizational structures; they must quickly adapt to the immediate realities of what will work in their current fight. With failure, an army is forced to adapt immediately or to continue to fail and even lose. Among many examples, Pershing's failures in doctrine reverberate this truth-U.S. forces were victorious in the end but after too many lives lost.

在《淬鍊利劍－美國陸軍準則的變革》一書中，作者班傑明·傑生解釋準則的變革之所以會發生的原因，是透過衝擊與競爭，或是藉由文化上的自我選擇。⁹經過衝擊與競爭方式而產生的變革，是一種經歷過失敗、或是借鏡他人的失敗，而不得不的改變。在變革前就遭受失敗的軍隊，應該不會妄想再繼續維持他們所偏愛的組織結構，應該必須依據眼下將立即影響當前戰鬥的實況，快速實施調整。隨著失敗發生，軍隊就會被迫即時調整、或是繼續失敗，甚至戰敗。在各種例子當中，潘興將軍在準則變革上的失敗，則是呼應了這樣的事實——美軍在歷經傷亡無數之後，總算才獲得了勝利。

Change from cultural self-selection, however, is proactive change. It is change by choice, made by anticipating problems and evolving to prevent failure. In proactive change, leaders have the time and opportunity to focus change reflective of their cultural and organizational strengths.¹⁰ The best historical example of change by choice is the AirLand Battle doctrine of the 1980s.

9 Benjamin M. Jensen, Forging the Sword-Doctrinal Change in the U.S. Army (Stanford, CA: Stanford University Press, 2016), 8-17.

10 Ibid., 13.

然而，透過文化自擇的變革，則是積極主動的改變。這種變革是經過預判問題與發展解決方案，以避免失敗的選擇過程。在積極主動改變的過程中，領導者有時間與機會把重點放在反映文化和組織優勢的變革上。¹⁰ 1980年代的「空地作戰」準則即是史上最佳之例證。

AirLand Battle as a Model for Change

In contrast to the bloody learning by experience that the AEF endured in World War I, the development of AirLand Battle offers a better model for change. The genesis of AirLand Battle came from observing Israel's devastating lack of readiness at the start of the October War in 1973 (also called the Yom Kippur War or the Ramadan War), when Egypt and Syria attacked Israel in the Sinai Peninsula. Since 1967, a confident Israel had considered itself ready to repeat its decisive victory over an Arab coalition in the Six-Day War. In 1973, however, the Arab armies advanced quickly, and Israeli forces suffered heavy casualties before their eventual victory. With the Arabs supplied by the Soviet Union and the Israelis supplied by the United States, the conflict pitted Soviet and American capabilities against each other in combat.¹¹ The U.S. Army's ability to observe and learn from Israel's mistakes allowed it to change proactively and to build on strengths unique to it and the North Atlantic Treaty Organization.

「空地作戰」為準則改革的典範

與第一次世界大戰期間美國遠征軍歷經的血腥教訓不同，「空地作戰」的發展為變革提供一個較佳的典範。「空地作戰」的發展源自於1973年「十月戰爭」(亦稱作「贖罪日戰爭」或「齋月戰爭」)爆發之初，當埃及與敘利亞聯軍在西奈半島對以色列實施攻擊時，以軍戰備不忍卒睹的狀況。自1967年以來，信心滿滿的以色列認為他們已經完成準備，可以再次重複在「六日戰爭」中制壓阿拉伯國家的聯軍，獲得決定性的勝利。然而在1973年，因為阿拉伯聯軍進展快速，使以色列在終於獲得勝利之前，遭受到慘重的傷亡。由於阿拉伯聯軍的裝備是由蘇聯供應，而以色列的裝備是由美國供應，因此在本次的衝突中，被外界形容成美、蘇兩國間軍備在戰鬥中的對抗。¹¹ 美國陸軍因具有觀

11 Steven Baxter, "Arab-Israeli War October 1973, Lessons Learned, Lessons Forgotten," research paper (Newport, RI: Naval War College, 1994), 1, accessed 31 May 2017, <http://www.dtic.mil/dtic/tr/fulltext/u2/a279557.pdf>; George W. Gawrych, "The 1973 Arab-Israeli War: The Albatross of Decisive Victory," Leavenworth Papers no. 21 (Leavenworth, KS: Combat Studies Institute, 1996); "Yom Kippur War," History.com website, accessed 31 May 2017, <http://www.history.com/topics/yom-kippur-war>.



察與學習以軍所犯錯誤的能力，而使其可以採取主動的變革，並為美軍及北大西洋公約組織建立其獨特的優勢。

Army leaders in 1973 understood that the Army was a force ready to fight counterinsurgency in Vietnam, not major combat on the plains of Central Europe. They understood that their likely operational environments had changed and that the Army needed to change to keep pace. Over the course of more than eight years, AirLand Battle was developed in an ongoing process, first as a concept, and ultimately as doctrine, in the 1982 version of Field Manual (FM) 100-5, Operations.

1973年時的陸軍領導幹部認知到當時陸軍的作戰準備，只是針對越南的反叛亂作戰，而非在中歐平原的大軍作戰。他們瞭解可能的作戰環境已經改變了，而陸軍需要實施變革方能跟上變化的腳步。歷經了8年多的過程，陸續發展出了「空地作戰」，先是概念，最後再成為準則，納入1982年版FM 100-5《作戰要綱》野戰準則中。

Of the many takeaways from AirLand Battle, three offer value regarding multi-domain battle. The first is the introduction of operational art, as it is known today, and the battlefield framework.¹² The framework gave Army commanders a clear visualization of their battlefield, codified as deep, close, and rear areas. The second was decentralized execution, requiring commanders to continuously monitor their sector for possibilities to exploit—a precursor to mission command.¹³ Third, integrated battle, a term coined by Douglas Skinner, was the idea of maneuver, synchronization, and firepower being integrated in execution on the battlefield.¹⁴ While not specifically defined in FM 100-5, integrated battle as an idea permeates the document. Integrated support of all arms and services is critical in close operations, to include integration of airpower for attacking the enemy in echelon.¹⁵

在許多脫胎於「空地作戰」的概念中，有三個對「多領域作戰」概念的發展有其重要性。首先是引入了目前所熟知的「戰法藝術」與「戰場框架」。¹²戰場框架是為各級

12 FM 100-5, Operations (Washington, DC: U.S. Government Publishing Office, 1982 [now obsolete]), 10 and 19-21.

13 Ibid., 98; Douglas Skinner, AirLand Battle Doctrine (Alexandria, VA: Center for Naval Analyses, September 1988), 15.

14 Skinner, AirLand Battle Doctrine, 17.

15 FM 100-5, Operations, 36.

指揮官提供一個清晰的戰場畫面，將戰場區分為縱深、近接與後方等三個地域。其次是分權執行的觀念，即要求指揮官對責任區持續地戰場監控，以充分地運用其戰力，此觀念為「任務式指揮」的先驅。¹³最後則是由道格拉斯·斯基納所提出「整合化作戰」的術語，其概念是在戰場上要求兵力與火力為一體。¹⁴雖然在FM 100-5野戰手冊中並無此軍語的定義，但是「整合化作戰」概念已充分融入準則的內涵中。各兵種與軍種的整體化支援，對近接作戰至關重要，包括對梯隊方式攻擊之敵的空中戰力之整合。¹⁵

The fall of the Soviet Union and the collapse of the Warsaw Pact ended the threat that AirLand Battle was intended to counter. Instead, in 1991, Operation Desert Storm offered a chance to fully validate AirLand Battle as doctrine. In executing the seemingly impossible left hook, Army Gen. Norman Schwarzkopf relied heavily on planners who had graduated from the School of Advanced Military Studies versed in maneuver warfare and operational art. Decentralized execution combined with combined arms maneuver had been honed to a knife's edge through constant rotations and exercises at combat training centers. That tactical superiority became clear to the world during the one-hundred-hour ground war. Operation Desert Storm was AirLand Battle's debutante ball, and it proved that an effective process adjusts the doctrine before the next battle.

蘇聯的解體與華沙公約組織的瓦解，原本「空地作戰」意圖反制的威脅已經告終。不料，在1991年「沙漠風暴作戰」使「空地作戰」的準則理論，有充分驗證的機會。在執行似乎不可能達成「左勾拳」戰術作為的過程中，諾曼·史瓦茲柯夫將軍十分倚重畢業自陸軍戰術專精班精通機動作戰與兵法的計畫參謀。美軍在戰鬥訓練中心針對分散式執行結合聯合兵種機動之訓練課目，持續不斷的輪訓及演習，儼然已成為後來沙漠軍刀作戰行動的磨刀石。在100小時的地面作戰過程中，已向全世界清楚展現這樣的戰術優勢。「沙漠風暴作戰」使「空地作戰」的戰術運用，初試啼聲就一鳴驚人，並且證明針對在下一場戰爭來臨前完成準則修訂的變革，是一種有效的過程。

The Multi-Domain Battle Concept for the Future

In developing the multi-domain battle concept, the Army seeks to follow the path successfully blazed by the developers of AirLand Battle. It intends to avoid the sort of bloody, traumatic learning that the AEF experienced in 1918. Multi-domain battle is a concept driven by proactive choice and informed by the threat of failure. It is an evolution of the Army operating concept, detailing a response to our observations of developments in the South China



Sea, Russian New Generation Warfare, and continued challenges in the Middle East. It is an acknowledgment that the United States is reaching the end of a period in which it can make change by choice, without having taken severe losses. The Army must evolve and change.

未來「多領域作戰」的概念

在發展「多領域作戰」概念的過程中，陸軍是要追隨「空地作戰」概念開發者所開創的成功道路。其目的在避免重蹈1918年的美國遠征軍所經歷血淋淋教訓的覆轍。受到積極主動變革與失敗威脅的驅使，「多領域作戰」是陸軍作戰概念的演進，它詳述我們針對南海局勢的發展，俄羅斯的新一代戰爭觀，以及在中東地區持續面臨的挑戰等觀察意見的因應之道。這也是美國正在進入一個時代的尾聲，在此時代中美國可以透過選擇來實施改變，而不需承受重大傷亡。基此，陸軍必須實施進化與變革。

Concept development gives us the opportunity to define complex problems, develop a framework to better understand those problems, and then break those complex problems into smaller, more detailed, and solvable problems through real-world scenarios. They give us the opportunity to fully develop the what, why, and how of change. They force us to change.

概念的發展可以使我們有機會去界定複雜的問題，研擬可以更清楚瞭解問題內涵的架構，然後依據現實環境的想定設計，將複雜的問題化小、化細而得以解決。也是對改革的內容、原因及執行方式等方面得以充分發展的契機。在在都驅使我們要變革。

For the multi-domain battle concept to eventually succeed as doctrine, and in the other force domains, the first step is to clearly understand the potential operational environments it is meant to address. The 2017 white paper "Multi-Domain Battle: Combined Arms for the 21st Century" defines the central problem this way: "U.S. ground combat forces, operating as part of ... joint, interorganizational, and multinational teams, are currently not sufficiently trained, organized, equipped, or postured to deter or defeat capable peer enemies to win in future war."¹⁶ Whereas in AirLand Battle, the terrain, politics, and enemy were known, today, multiple adversaries of varying and growing capabilities are actively achieving their objectives under the threshold of armed conflict. Military action in response to our adversaries' actions faces a

16 Edwin B. Werkheiser, "Multi-Domain Battle: Combined Arms for the 21st Century," Army-Marine Corps white paper (Fort Eustis, VA: U.S. Army Training and Doctrine Command, 24 February 2017), 3, accessed 25 May 2015, http://www.tradoc.army.mil/MultiDomain-Battle/docs/MDB_WhitePaper.pdf.

variety of complex problems. Adversaries may threaten the costs of a highly lethal battlefield, limit access to critical domains, challenge the ability to maintain superiority in air and maritime domains, and attempt to deny access into the theater.

對於使「多領域作戰」概念最終能成為準則，以及在其他軍事領域而言，第一步就是要清楚地瞭解未來可能要應付的作戰環境為何。在2017年的《多領域作戰：21世紀之聯合兵力》白皮書中所界定的核心問題是這麼說的：「身為聯合作戰、跨組織及多國部隊等團隊一分子的美國地面戰鬥部隊，對於嚇阻或擊潰戰力匹敵的敵軍，以贏得未來的戰爭，目前缺乏足夠的訓練、組織、裝備或狀態。」¹⁶由於在「空地作戰」中的地形、政治與敵人是已知的，但是當今擁有能力多樣化與持續發展的多樣化敵人，在軍事衝突的門檻之下，正積極的企圖實現他們的目標。因應我們敵對作為之軍事行動，面臨著各種複雜的問題。敵人可能在高致命性的戰場中，對我們將付出的代價造成威脅；在關鍵的領域，限制我們可以運用的空間；挑戰我們維持空優與海優的能力；以及企圖使我們無法進入戰區等。

Drawing from these complex and interrelated problems, the multi-domain battle concept will ultimately detail these problems to a level that solutions can be developed, applied, tested, and evaluated. Critical to achieving this level of detail is the establishment of a battlefield framework. A battlefield framework is a cognitive tool used to help commanders exercise mission command. The right battlefield framework allows commanders to clearly visualize, describe, direct, lead, and assess the application of combat power in time, space, purpose, and resources. As operational environments change, previous frameworks will prove inadequate to these tasks. Reimagining the battlefield framework is essential to multi-domain battle's success.

從這些錯綜複雜的問題中，「多領域作戰」概念發展的最終成果，是針對這些問題發展出各種解決方案，鉅細靡遺地研擬、應用、驗證及評估。要達到這樣的詳細程度是要建構出清晰的戰場框架，戰場框架是一種協助指揮官執行「任務式指揮」認知的工具。正確的戰場框架則可以讓指揮官在所望的時間、地點、目的及資源來運用戰力的效果上，能夠無疑的洞悉、描述、指導、指揮與評估。一旦作戰環境發生變化時，之前的戰場框架將會被證明不足以滿足上述任務的需求。因此，重新檢視戰場框架，是「多領域作戰」成功之要件。

AirLand Battle gave us a battlefield framework of deep, close, and rear to frame the problem of how the U.S. military would fight outnumbered and win. Multi-domain battle's



framework must allow victory in an even more complex world. Multi-domain battle is developing an expanded battlefield framework to fight across the breadth and depth of enemy capabilities, seamlessly reaching from battlefield to home station and across multiple domains. The figure illustrates a draft version of the battlefield framework, as evolved from AirLand Battle, based on the construct's development at the time of this article's publication.

「空地作戰」的戰場框架係將戰場區分縱深、近接及後方等三個地區，以建構美軍如何與具數量優勢之敵實施作戰並贏得勝利的問題。「多領域作戰」的戰場框架則是必須在更複雜的世界中能夠剋敵制勝。「多領域作戰」正在形塑一個擴大的戰場框架，此架構是在跨越敵軍整個能力的廣度與縱深、從戰場無縫接軌到本土駐地，以及橫跨多個領域中實施作戰。圖2是依據本文發表時的發展進度，圖解說明從「空地作戰」進化而來的戰場框架草案。

The draft framework being developed by the Army Capabilities and Integration Center

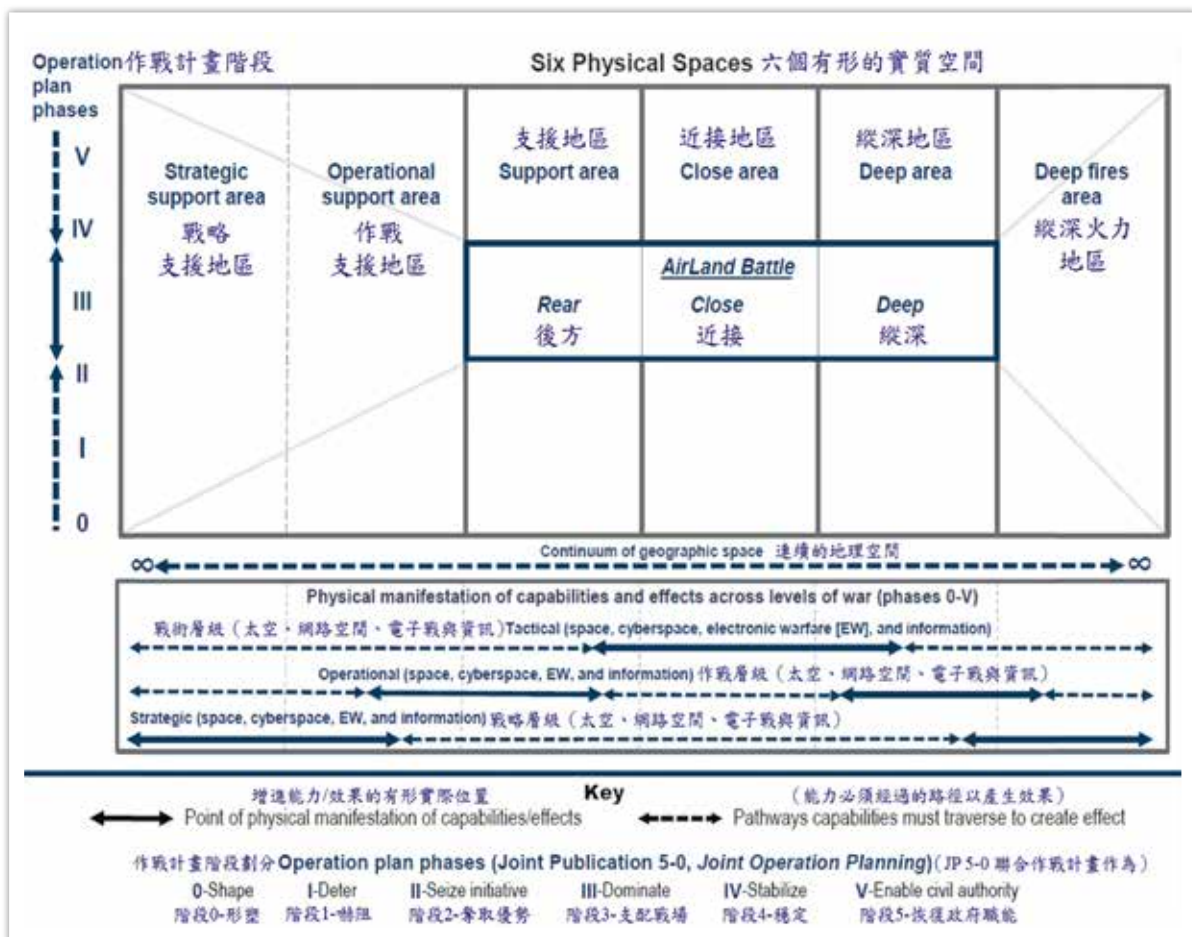


圖2 「多領域作戰」戰場框架草案與「空地作戰」之比較示意圖

comprises six physical spaces: deep fires, deep area, close, support, operational support area, and strategic support area. In application to real-world missions, these areas are not necessarily linear or contiguous; assignment and delineation of these areas are completely dependent on the geopolitical terrain where they are placed:

由「陸軍能力暨整合中心」所發展的戰場框架草案是由六個有形的實質空間所構成，包括縱深火力、縱深、近接、支援、作戰支援及戰略支援地區等。在應用到現實環境的任務中，這些地區並不一定是線性或相鄰的，而且這些地區的劃分與輪廓，完全取決於他們所處地緣政治的區域。

◆ A deep fires area is beyond the feasible range of conventional maneuver forces, but it is where joint fires and national capabilities may be employed to operational or strategic effect. Likely within sovereign borders, it is largely denied by maneuver elements.

◆ A deep area contains challenges that must be defeated in order to be successful in the close area. In a deep area, maneuver forces must have the capability to converge and open temporary windows of domain superiority to seize the operational initiative.

◆ A close area is where the major direct fire fight unfolds. In a close area, ground forces seize and hold key terrain, maneuver to destroy enemy ground formations, and secure populations.

◆ A support area directly supports the forward fight. A support area enables operations in the close, deep maneuver, and deep fires areas with sustainment, fires, maneuver support, and mission command capabilities.

◆ An operational support area holds the central point, key capabilities, and sustainment of joint forces. An operational support area provides the location of critical joint force mission command, sustainment, and fires and strike capabilities.

◆ A strategic support area stretches from the homeland, along deployment lines of communication, to the initial point of entry. In detail, a strategic support area encompasses home ports and stations, strategic sea and air lines of communication, and homeland communications. Traversing through, and operating within, the strategic support area will undoubtedly require acute cross-combatant command coordination.

◆ 縱深火力地區係指超出傳統機動部隊可以擴及的區域範圍，但此地區是可以運用聯合火力與國家能力，以達到作戰或戰略效果。有可能在邊境領土之內，並且在很大程度上無法實施部隊機動。



◆ 縱深地區係指針對必須擊潰的各種威脅挑戰實施牽制，以有利於在近接地區作戰成功的區域。在縱深地區中，機動部隊必須具備集中戰力與開創短暫領域優勢的能力，以奪取作戰的主動。

◆ 近接地區是指主要直接火力展開射擊的地區。在近接地區中，地面部隊奪取與確保重要地形要點，以機動力擊潰敵軍地面編組，並且確保人民安全。

◆ 支援地區係指直接支援前線作戰的地區。支援地區是確保在近接、縱深機動及縱深火力等地區的作戰，維持充足的作戰持續力、火力、機動支援與任務式指揮(指揮與管制)能力。

◆ 作戰支援地區係收容聯合作戰部隊的核心、關鍵能力與作戰持續力的區域。在作戰支援地區內，它提供聯戰部隊關鍵任務式指揮、持續力、火力與攻擊等能力所需要的場所。

◆ 戰略支援地區是指從延伸至美國本土，沿著交通線的部署，一直到進入戰場初期位置的區域。具體而言，戰略支援地區係包括國內的港口與駐地，戰略海上與空中交通線，以及國土通信系統等。通過戰略支援地區與在區域內實施作業時，無庸置疑的則需要跨聯合作戰司令部間敏銳的協調。

It is important that even virtual locations are tied to physical locations within this framework. Space, cyberspace, and information are often cited as exclusive virtual domains or dimensions, but that attribution is inaccurate. Achieving a physical effect requires a physical location of a delivery mechanism, supporting points to facilitate delivery, and the point of the intended effect.

在此戰場框架內，將虛擬位置與有形的實質位置緊密聯繫在一起是很重要的。太空、網路空間與資訊通常被認定為專有的虛擬領域或空間次元，但是這樣的屬性歸類是不正確的。要達到一種物理的實際效果，需要有形的實質位置的傳送機制，促進傳送的支援站，以及預期要達到效果的位置。

Additionally, across the levels of war and throughout all operational phases, virtual capabilities are positioned in physical space according to their level of employment. For example, an organized group of hackers operating in a deep fires area may use proxy servers of another deep fires area, outside the theater of operations, to deliver effects against a specific unit holding key terrain in the close area. The hackers may do this by targeting their enemies' dependents in the homeland. These effects could be lethal, utilizing social media and open

source imagery to select targets on the unit's more vulnerable home-base and community, or they could be nonlethal, such as emptying bank accounts. Through either approach, the targeted unit would become distracted, thus opening a window of opportunity for the enemy to exploit.

此外，在橫跨各戰爭層級與貫穿所有的作戰階段中，虛擬能力會依據所應用的程度，而在實體空間中有其不同的定位。例如，在一個縱深火力地區實施駭客作業的電腦駭客組織團體，可能利用另一個縱深火力地區或是作戰區之外的代理伺服器，對在近接地區內之控制重要地形要點的某特定單位，實施駭客攻擊。這些電腦駭客也可以對遠在母國本土的敵軍家屬實施相同的攻擊。而攻擊的效果可以是具有殺傷力的，譬如他們運用社交媒體與公開的圖像資源，來選擇我軍單位內家庭與社區關係較為脆弱的攻擊目標。或是攻擊的效果也可以是不具殺傷力的，例如清空銀行帳戶等。透過這兩種模式，可以使被攻擊目標之單位分散注意力，進而為敵人開創可以利用的機會。

Through this battlefield framework, problems identified in "Multi-Domain Battle: Combined Arms for the 21st Century" go from broad strokes to detailed problems we can solve. These problems are conceived along the battlefield framework against specific adversarial capabilities. Through this approach, whether we are dealing with the lethality of the battlefield or refining capabilities to mitigate weaknesses in our command and control networks, the battlefield framework provides a basis to develop depth of understanding so that DOTMLPF solutions can begin to take shape.

透過這樣的戰場框架設計，在《多領域作戰：21世紀之聯合兵力》白皮書中所界定的問題，從廣泛的描繪而逐漸詳細發展成我們可以解決的具體問題。這些問題的內涵都是在戰場框架下，針對反制特定敵軍的能力所設想出來的。通過這樣的探討進程，無論我們是在處置戰場上致命性的威脅，或是在改善我們在指揮與管制網絡的弱點上持續精進其能力，而在深入瞭解的過程中，戰場框架則是奠定了一個基礎，以利在「準則」、「組織」、「訓練」、「裝備」、「領導統御與教育」、「人員」及「設備」等各方面的解決方案得以成形。

Multi-Domain Battle-A Descendant or Fundamentally Unique?

The question now is whether the battlefield framework has expanded the battlefield, compressed it, or both. While the proposed framework has expanded far beyond AirLand Battle doctrine, it appears to have actually compressed the battlefield. In the draft framework, however, the vastness of space and cyberspace-along with the far-ranging effects of information



operations, electronic warfare, and even some conventional weapons-ensures that the battlefield is limitless. From home station to the close area, there is the potential to be engaged instantaneously with long-range fires, cyberspace, space, electronic warfare, and information. If the battlefield truly is compressed, it will drastically change how and why DOTMLPF solutions are sought.

多領域作戰 —— 是衍生的還是根本上的獨一無二？

目前的問題是戰場框架的設計究竟是擴大了戰場，還是壓縮了戰場，抑或是兩者皆是。雖然所提出的框架已經遠遠超出「空地作戰」的準則，但它似乎實際上是壓縮了戰場。在框架草案中，廣大遼闊的太空與網路空間，以及伴隨著影響範圍十分廣泛的資訊作戰、電子戰，甚至一些常規武器裝備等，都能使戰場成為無遠弗屆的廣大區域。但從本土的駐地到近接地區，透過遠程火力、網路空間、太空、電子戰與資訊作戰等運用，都可能在一瞬之間，就與敵人實施接戰。假使戰場確實是被壓縮的空間，它將徹底改變在「準則」、「組織」、「訓練」、「裝備」、「領導統御與教育」、「人員」及「設備」等各方面上尋求解決方案的情況及緣由。

Multi-domain battle, as a concept, and the expansion of the battlefield both draw on a resurgence of past ideas. The battlefield framework brings back a construct similar to deep, close, and rear-the standing operational concept for the U.S. Army until it was replaced in 2001 with full-spectrum operations, only to return with publication of Army Doctrine Publication 3-0, Operations, ten years later.¹⁷ There is also a clear focus on the operational level of war and the idea of Skinner's integrated battle. Last, multi-domain battle's genesis comes partly from Deputy Secretary of Defense Robert Work's call for an AirLand Battle 2.0 as a means to operationalize the third offset strategy (initiated November 2014 by then Secretary of Defense Chuck Hagel).¹⁸ While multi-domain battle is a descendant of AirLand Battle, every step of its

17 Bill Benson, "The Evolution of Army Doctrine for Success in the 21st Century," *Military Review* 92, no. 2 (2012): 2-12.

18 Robert Work, "Deputy Secretary of Defense Speech," Army War College Strategy Conference, Carlisle, Pennsylvania, 8 April 2015, accessed 31 May 2017, <https://www.defense.gov/News/Speeches/Speech-View/Article/606661/army-war-college-strategy-conference/>; for more on the third offset strategy, see Chuck Hagel, "Toward a Strong and Sustainable Defense Enterprise," *Military Review* 95, no. 1 (January-February 2015): 8-14.

evolutionary process is designed to confront prevailing challenges by developing solutions that are both new and different.

「多領域作戰」作為一種概念，以及戰場的擴張，兩者皆是汲取過去觀念的一種復甦。這樣的戰場框架回溯到類似於縱深、近接與後方地區的架構，而此架構過去曾是美國陸軍長期以來標準的作戰概念，直到2001年被「全方位作戰」概念取代。但是在歷經10年之後，隨著《陸軍準則3-0：作戰》的頒布，此概念又再次回歸至準則中，¹⁷同時也清楚的置重點在戰爭的作戰層級與道格拉斯·斯基納的「整體化作戰」概念。最後，「多領域作戰」的發想也有部分來自於國防部助理部長羅伯特·沃克當初要求以「空地作戰2.0」作為實施「第三次抵銷戰略」（於2014年11月時由時任國防部長查克·海格推動）的手段。¹⁸雖然「多領域作戰」是承襲「空地作戰」的概念，但它演進過程的每一步都是通過發展新的與不同的解決方案，以因應當前的挑戰。

The prevailing challenges facing the U.S. military today demonstrate a battlefield that is being compressed. In the geographically massive framework of multi-domain battle, planning for the inability to assure communications and domain superiority would be an entirely new focus, although the threat is not entirely new in war. From this perspective, multi-domain battle evolves as something informed by the past but set to take on circumstances new and far different from those U.S. land forces faced generations ago.

今日，美軍普遍面臨的挑戰顯示為一個被壓縮的戰場。在「多領域作戰」廣大地理環境的戰場框架中，針對須能確保通信系統與領域的優勢上，雖然這些威脅在戰爭中並不是新的概念，但目前仍不具備能力的內涵，在規劃上將會是一個全新的重點。就此一觀點而言，「多領域作戰」的發展部分是受到過去經驗的啟發，但是被設計為可以因應新的作戰環境，而這樣新的作戰環境是遠不同於過去幾個世代前美國地面部隊所面臨的環境。

Beyond just the framework, integrating space and cyberspace domains and the electromagnetic spectrum for how Army units and joint forces will fight is something the Department of Defense is just now beginning to understand. Multi-domain battle reintroduces the idea that converged cross-domain capabilities across DOTMLP are an absolute prerequisite for success; this is how the concept frames integration. Finally, because of the role of new technology, from artificial intelligence to robotics, multi-domain battle accounts for how



the character of warfare on the future battlefield will be different. However, as a concept, multi-domain battle draws back from science fiction and looks to the specific capabilities that will be required to win in the future fight.

除了戰場框架之外，將太空與網路空間之領域，以及電磁頻譜等實施整合，對於陸軍單位與聯戰部隊未來如何執行作戰，也是當前國防部正要瞭解的議題。「多領域作戰」概念再次提出集中於「準則」、「組織」、「訓練」、「裝備」、「領導統御與教育」、「人員」及「設備」等跨領域能力的理念，絕對是成功的先決條件。這就是概念如何設計成為整體化。最後，由於新科技技術的作用——從人工智慧到機器人技術，「多領域作戰」則說明在未來戰場中，戰爭的特性會有哪些差異。然而，作為一個作戰概念，「多領域作戰」需要從科幻小說中抽離，並且關注於贏得未來作戰所需要的具體能力。

The Army-along with all the services-has a clear window of opportunity. The security environment is evolving and will continue to change quickly. Our challenges may extend beyond the immediate adversaries on whom we focus. However, by focusing on how to respond to our adversaries' capabilities, the concepts and subsequent doctrine we create will continue to improve our DOTMLPF capabilities in a converged and integrated fashion across warfighting functions, and, hopefully, across joint forces so we can arrive on the future battlefield with convergence and integration-one step further, one step faster, than our enemy. Victory starts here.

陸軍與各軍種，均有一個明確的機會之窗。安全環境正在逐漸演變，並且將會繼續地快速變化。我們所面臨的挑戰可能是超出我們當前所關注的敵人。然而透過專注於如何因應我們敵人的能力，我們所發展的概念，以及後續的準則，在橫跨所有「作戰功能」，希望也可以橫跨聯合作戰部隊，以集中與整合的模式，將持續增進「準則」、「組織」、「訓練」、「裝備」、「領導統御與教育」、「人員」及「設備」等能力，因此我們可以在未來的戰場上，比我們的敵人更進一步與更快一步，達到集中與整合的目標。勝利在此啟程。