

回溯戰爭足跡：陸軍十年內必須具備的五項能力 (Back On A War Footing : Five Capabilities The Army Must Have In A Decade)

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The future is not what it used to be. Not, at least, for the U.S. Army. In the three-plus years since Russia invaded Ukraine, Army leaders have had to rethink what they will need to wage tomorrow's wars successfully. Near-peer, state-based threats such as the Russian military are a different kind of challenge than the Taliban.

未來已不復過去之原貌，至少對美國陸軍而言是如此。自從俄羅斯入侵烏克蘭的三年多時間裡，美國陸軍領導人不得不反思：陸軍需要具備怎麼樣的條件，方能贏得未來的戰爭。有別於塔利班，面對俄羅斯軍隊此種國家支撐且勢均力敵的威脅，又是另類的挑戰。

Somehow, the Army will need to prepare for fighting both kinds of enemies, and a diverse range of other adversaries, with a budget that amounts only to a dozen days' worth of federal spending per year. Personnel and readiness will have to come first, leaving relatively little money for modernization. So, Army leaders are struggling to prioritize which investments matter most.

美國陸軍將得同時準備與各種形式的敵人及包羅萬象的敵對勢力作戰，然而每年的預算僅足夠十幾天的耗費支出。人事及戰備經費為首要支出，留供現代化所需的金額就相對減少。因此，陸軍領導人得依輕重緩急，積極爭取投資

項目的優先順序。

The Army must have new items to fight and win in the medium term, meaning 10 years in the future. Much of the commentary about future land warfare technology focuses on ideas that won't come to fruition for 15–20 years. For instance, the Army's Future Force Development Strategy warns that even if development of a next-generation combat vehicle were to begin today, system fielding would likely not begin until the early to mid-2030s.

陸軍必須在中間期程，即意味著未來的 10 年間，獲得新式裝備投入戰場戰勝敵人。此外，有關未來陸上作戰技術的大部分評論，都關注在那些未來 15 至 20 年間，不可能實現的想法上。例如，陸軍未來兵力發展戰略即提醒我們：即使今天就開始研發下一代戰鬥車，系統部署最快也得等到 2030 年初才有可能。

A lot could happen between now and then. In the near term, any war will be a come-as-you-are campaign. Other than filling munition stocks, up-gunning some Strykers and fielding better radios, there isn't much the Army can do in the way of investments to shape the outcome of a European war during this decade. Rotational deployments to bolster forward-based forces will certainly help, but then-Army Vice Chief of Staff Daniel B. Allyn got it right when he told Congress earlier this year that the Army is “outranged, outgunned and outdated.”

在這段時間裏，世事多變，短期內，任何戰爭都有可能像以往一樣，無法預測，說來就來。在此 10 年間，除了補充彈藥存量、提升史崔克甲車的性能及裝配較好的無線電設備外，陸軍想要藉由投資方式來強化歐洲的作戰態勢，其實作用不大。反而是輪調式部署肯定對強化前進基地的部隊戰力，會有所助益。誠如時任陸軍副參謀長丹尼爾·艾林（Daniel B Allyn）在今年初向國會報告時所稱：陸軍正面臨射程不足、火力不強及趕不上潮流等問題。

Fixing Most Serious Gaps

填補最嚴重的缺口

While the Army can't do much to change that in the near term, it can fix the most serious capability gaps by the second half of the next decade. Furthermore, it can make the most important fixes without a big infusion of new money—which is a good thing, because Army leaders believe the fiscal picture is not likely to brighten anytime soon. The Army just needs to prioritize its investments correctly. Five of the most critical items follow.

儘管陸軍在短期內無法做出多少改變，但可以在下一個十年的後半段填補最嚴重的能力缺口。此外，這些最為重要的填補工作無需揖注大量經費，這是一件好事，因為陸軍領導人認為財政狀況在短期內也不太可能有任何的改觀。陸軍只需要正確地為各項投資項目，分出輕重緩急即可。其中五個最關鍵的投資項目如下：

First, though, a bit of good news. The U.S. military is not going to lose air dominance in Europe or anywhere else over the next 30 years, thanks to the F-35 fighter. One reason Army leaders think they need better air defenses, longer-range fires and enhanced electronic warfare capabilities in places like Eastern Europe is because increasingly lethal enemy defenses may deny air cover to friendly ground forces—something they have depended on for generations.

首先，儘管這算得上是一個好消息，由於 F-35 戰鬥機的出現，美國軍方在未來 30 年間，將不會在歐洲或其他任何地方，失去空中優勢。陸軍領導人之所以認為像東歐這樣的地方，需要更佳空防、更遠的火力射程及先進電子戰能力，原因之一即在於敵軍日益增加的致命性防禦，可能抵銷對友軍地面部隊提供的空中掩護，而這是他們幾世代以來所依賴的。



A Humvee and tent are part of the Army's push to explore quick-to-deploy command post designs.(Credit: U.S. Army/Edric Thompson)

悍馬車和帳篷是陸軍為測試快速部署指揮所設計的項目之一（取自：美國陸軍/埃德里克湯普森）

However, the F-35 is essentially invisible to Russian or Chinese radar and incorporates an array of technologies for suppressing hostile defenses, fires and maneuver forces. All three variants of the F-35 meet their stealth specifications, and over 1,000 will be available for combat 10 years hence (200 have been delivered already, 600 will be by 2020; 400 pilots and 4,000 maintainers have been trained). Despite all its bad press, the F-35 works as advertised and will assure U.S. air dominance in overseas theaters during the next decade.

但是，F-35 戰機能讓俄羅斯或中共的雷達偵測不到，而且還採用一系列用於壓制敵方防禦、火力及機動部隊的科技。F-35 戰鬥機的所有三款衍生型，皆擁有匿蹤功能，超過 1,000 架可應付未來 10 年的戰事（200 架已交付使用，600 架將在 2020 年之前交付；400 名飛行員和 4,000 名維修人員已接受培訓）。儘管有諸多負面報導，但是 F35 戰鬥機的性能表現還是符合廣告宣傳中所描述，同時確保美國在未來 10 年間的空中優勢。

So, the situation isn't quite as bad as Army planners fear. But it's bad enough. Despite chronic budget problems, the Russian military has matched

or surpassed America's Army in several areas crucial to effective combat.

所以，情況並不像陸軍計劃人員所擔心的那麼惡劣，但也已經夠糟糕了。儘管俄羅斯長期存在預算問題，但其軍隊的戰力在幾項至關重要的領域，已經可以和美國平起平坐，甚至超越美軍。

Here are five investments that must be made to give U.S. soldiers a fighting chance in 10 years:

以下五項投資對於美國陸軍而言勢在必行，如此美國軍人在未來 10 年間才具有克敵制勝之能力：

一、Mobile command 移動指揮

Army commanders at the company, battalion and brigade level are equipped with networking equipment that cannot communicate on the move. When they want to network on the battlefield, they must set up fixed command posts, which as Army Chief of Staff Gen. Mark A. Milley has repeatedly warned, is a prescription for being killed during the early days of combat. The latest version of the Warfighter Information Network-Tactical (WIN-T) is the only system that can solve this problem anytime soon.

陸軍的連、營及旅級指揮官們所配備的通信器材，都是在移動中無法進行通聯的網路設備。當他們想要在戰場上進行網路通信時，必須設立定點指揮所，這正如陸軍參謀長米利 (Staff Gen. Mark A. Milley) 將軍反復告誡的那樣：這種現象導致部隊在戰爭前期即被殲滅。最新版的作戰人員戰術資訊網 (WIN-T)，是能夠在短時間內解決這個問題的唯一系統。

The mobile variant of WIN-T got a mixed reception when it was first fielded because it was installed on 5-ton trucks that could not be airdropped. However, the weight and volume of the equipment has been reduced by half, and can be carried on Humvees. Without the satellite links and line-of-sight radios in the latest version of WIN-T, mobile command will not be available to most companies or battalions for a long time. They need it soon if they are to sustain coordinated operations against a near-peer adversary.

由 WIN-T 的移動型衍生版，因為被安裝在無法進行空投的 5 噸重卡車上，

所以首次配發時係與其他裝備一起接收。如今該設備的重量和體積已經減少一半，可以使用悍馬車運載。最新版的 WIN-T 具有衛星鏈路與視距無線電臺，因此大多數連或營級指揮官，可長時間進行移動式指揮。一旦需要進行協同作戰，對抗勢均力敵的敵人，那麼移動式指揮就成了勝戰利器。

二、Electronic maneuver 電子戰力

In a fight against countries like Russia or China, agility on the ground and in the air won't be enough to prevail. The Army must also be able to maneuver in the electromagnetic spectrum, denying adversaries access to key frequencies while assuring the ability of friendly forces to function. Not only will electronic warfare capabilities be crucial to suppressing enemy sensors, communications and drones, but soldiers must be able to counter enemy efforts at degrading GPS signals, command links and the like.

在面對俄羅斯或中國此等國家的戰鬥中，徒有地面與空中的敏捷性，尚不足以克敵制勝。陸軍必須能夠在電磁波頻譜中調動部隊，另在確保友軍電磁波正常運作的同時，要能阻止敵方干擾我軍關鍵頻段。電子戰能力不僅對於壓制敵方感測器、通信及無人機至關重要，美軍亦必須具有足夠能力，化解敵人干擾我方 GPS 信號及指揮鏈路等戰力之作為。



A soldier with the 780th Military Intelligence Brigade prepares cyber equipment at the National Training Center, Fort Irwin, Calif. (Credit:

U.S. Army/Bill Roche)

第 780 軍事情報旅的一名士兵在加州歐文堡國家培訓中心設置網絡設備。(取自：美國陸軍/比爾羅氏)

The Army largely divested its electronic warfare capabilities after the Cold War, relying heavily on the jamming aircraft of other services to address threats like improvised explosive devices. It needs to invest in a new generation of organic systems and operators to cope with electronic threats likely to be posed by high-end adversaries. That process has begun with programs like the Electronic Warfare Planning and Management Tool, but the current level of research and development spending (\$70 million–80 million per year) probably is too modest to get ahead of the threat.

冷戰結束後，陸軍在很大程度上削減其電子戰能力，大幅依靠其他軍種的干擾飛行器，來探尋像簡易型爆炸裝置這樣的威脅。陸軍需要投資新一代建制系統及培養操作人員，如此才能應付高端對手可能帶來的電子戰威脅。像電子戰規劃及管理工具這樣的專案投資已經開始，但是目前研發經費（每年 7000 萬到 8000 萬美元）可能稍嫌不足，無法擺脫相應的威脅。

三、Rotorcraft engines 旋翼飛機引擎

The Army has a grand plan for replacing its Cold War helicopters called Future Vertical Lift. Some observers think that plan sounds too much like the Future Combat Systems and Joint Tactical Radio System for comfort. Like those failed efforts, Future Vertical Lift has many moving pieces and requires generous annual appropriations in a time frame when federal budget deficits are expected to approach a trillion dollars annually. Even if it stays on track, the program will not field new rotorcraft for a long time.

陸軍有一個用來替換冷戰時期直升機，被稱為“未來垂直攀升”的宏偉計畫。一些觀察家認為該計畫聽起來，像是僅用來聊慰人心的未來戰鬥系統和聯合戰術無線電系統。與過去未成功的作為一樣，“未來垂直攀升”有許多未確定的要件，而且要從每年將達 1 兆美元的聯邦預算赤字，按時為其慷慨撥款。即使該計畫仍然在推動中，短時間內也無法將新的旋翼飛機投入戰場。

With Apache and Black Hawk helicopters likely to stay in the force

through the middle of the century, the Army needs to restore power margins lost as a result of increasing weight by developing a better engine. The Improved Turbine Engine Program is the only effort underway that has any hope of boosting the combat performance of the current fleet in a time frame relevant to the medium-term fight. It also could power a next-generation replacement of the Kiowa scout helicopter. Without this investment, Army aviation will be hobbled in high-end fights 10 years from now.

鑒於阿帕奇和黑鷹直升機，可能直到本世紀中葉依然會繼續服役，陸軍需要開發更好的引擎，恢復因增加重量而損失的能量差額。改良型渦輪引擎計畫是唯一可行之作法，它有望在本世紀中期內提升當前機隊的戰鬥性能，亦能為將替換基歐瓦偵蒐直升機的下一代機種，提供所需動力。如果沒有這項投資，陸軍航空隊未來十年在高端戰鬥方面，將面臨困境。



The Improved Turbine Engine Program is developing stronger engines for helicopters such as these Black Hawks.(Credit: U.S. Army)

渦輪引擎提升計畫為黑鷹直升機開發更強大的引擎。(取自：美國陸軍)

四、Active protection 主動防護

The U.S. Army has lagged behind Russia in providing active defenses to its front-line combat vehicles. Active defenses are automated sensor/interceptor systems that defeat incoming anti-tank rounds before they

can reach their intended targets. The most capable systems, such as Raytheon's Quick Kill, provide 360-degree hemispheric protection of vehicles against simultaneous threats while minimizing fratricidal effects on dismounted soldiers nearby.

美國陸軍在為其前線戰鬥車輛，提供主動防禦方面，落後於俄羅斯。主動防禦系統是自動化的感測器/攔截器系統，能夠在來襲的反坦克炮彈到達預定目標之前將其擊落。當中最有效的系統，要以雷神的快殺系統(Raytheon Quick Kill)，它能夠提供 360 度半球型防護，不僅可防止誤擊附近下車戰鬥的士兵，同時可保護戰車免遭敵武器威脅。

The Army is already installing interim active defense solutions on Abrams tanks and Bradley Fighting Vehicles, but to defeat anti-armor threats 10 years from now, it must field an integrated architecture providing common standards and interfaces for all vehicles. The Modular Active Protection System provides that framework, and is potentially applicable to kinetic and nonkinetic methods of defense. It needs to be accelerated, otherwise Army vehicles will be too vulnerable to survive future conflicts.

陸軍已開始在艾布蘭戰車和布萊德雷戰鬥車上，安裝臨時主動防禦系統，但是想要戰勝未來 10 年間的反裝甲威脅，陸軍必須為所有戰鬥車輛裝配整合結構，提供標準防護及介面。模組化主動防護系統提供所需要之架構，可適用於動態及非動態之防護方式，但仍得加把勁，否則陸軍戰車在未來衝突中，將變得不堪一擊。

五、Indirect fires 曲射火力

The area where today's Army is most decisively "outranged, outgunned and outdated" is long-range fires. Not only have prospective adversaries such as Russia and North Korea deployed much greater artillery and missile assets in key theaters than the U.S. has, but Washington has limited the Army's future warfighting options by signing on to a cluster munitions ban that takes effect in 2019. Deployment of the F-35 will mitigate this challenge, but the Army needs to bolster its organic fires for the midterm fight.

長程火力方面，最能彰顯陸軍射程不足、火力不強及趕不上潮流等問題。

俄羅斯及北韓此等潛在敵手與美國相比，皆在核心區域部署更多的重型火炮及導彈裝備，而美國卻由簽署將於 2019 年生效的集束彈藥禁令，限制陸軍未來的作戰選項。F-35 的部署有助化解此一挑戰，但是陸軍需要強化建制火力，方能應付未來 5 至 10 間可能發生的戰事。



Bradley Fighting Vehicles such as this one maneuvering at Fort Stewart, Ga., are getting interim active defense systems.(Credit: U.S. Army/Maj. Randy Ready)

在喬治亞州斯圖爾特堡進行演習的這輛布萊德雷戰鬥車，裝配了臨時的主動防禦系統。(取自：美國陸軍少校 南迪·瑞迪)

The Army's Long Range Precision Fires program is the most important effort aimed at closing this capability gap. It was conceived to replace the longer-range missiles currently fired by the Multiple Launch Rocket System with new missiles delivering the maximum range permissible under arms control agreements—about 300 miles in Europe—but also compact enough to fit two missiles rather than one in a launcher. Thus, it would double the firepower and triple the reach of launchers. It needs to be kept on track and fielded expeditiously.

陸軍的長程精準火力計畫，目的即在縮小此一能力差距的最重要作為，旨在以此計畫取代目前由多管火箭發射器發射的遠程飛彈。根據軍備管制協議允許，新的飛彈在歐洲其最大射程可達 300 英哩，同時由於發射管緊縮程度能夠容納兩枚火箭，而不是一枚；如此一來，它的火力將翻倍，同時可將發射器的

射程提升三倍。但該計畫需要持續推動，並迅速配置。

There are other capability gaps that need to be dealt with in areas like missile defense and cyber protection, but these five are the ones that will make the most

difference in 10 years. If the Army does not address all five in its near-term spending plans, its ability to deter and/or defeat near-peer adversaries a decade from now will be in doubt.

在飛彈防禦及網路保護等方面也存在能力缺口，需予以填補。但上述五項計畫，乃是未來十年間關係敵我差距，最顯著之項目。如果陸軍在其短期支出計畫中，未將這五項專案列入，那麼陸軍在未來十年間，嚇阻或擊敗與其勢均力敵對手之能力，也將令人存疑。



Raytheon Co.'s new Deep Strike missile, deployed from a mobile launcher in this artist's rendering, would allow the Army to fire two munitions from a single weapons pod.(Credit: Raytheon Co.)

圖示為部署於機動載台上，由雷神公司新推出的深度打擊導彈，讓陸軍可從單一武器吊艙中發射兩枚飛彈（取自：雷神公司）

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