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Research Report

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Rethinking Jointness?

The Strategic Value of Jointness in Major Power Competition and Conflict

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About This Report

For more than 30 years, the U.S. Department of Defense (DoD) has placed a substantial emphasis on jointness. Whether in bolstering the relative influence of such joint organizations as combatant commands, requiring joint service for senior-level promotions, or achieving cross-service interoperability between operational units, jointness is valued conceptually from the strategic to the tactical levels. However, in practice, the value of jointness remains unmeasured and ill-defined, particularly as it relates to strategic competition. Many questions remain about the true utility of jointness to DoD goals, the potential negative ramifications of jointness as it was implemented following the passage of the GNA, and how the pursuit of jointness affects DoD's ability to innovate and adapt to future challenges. Moreover, it is not currently understood how jointness affects competitive advantage relative to the United States' primary adversaries. This study seeks to examine whether the assumption that jointness is inherently valuable is correct, and if so, in what ways. Understanding which aspects of jointness are most valuable and why can help DoD compete more effectively against its adversaries and maximize the United States' competitive military advantages.

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Summary

For more than 30 years, the U.S. Department of Defense (DoD) has placed a substantial emphasis on jointness throughout the force. Whether in bolstering the relative influence of such joint organizations as combatant commands, requiring joint service for certain promotions, or achieving cross-service interoperability between operational units, jointness is valued conceptually from the strategic to tactical levels.

Issue

In practice, the value of jointness remains unmeasured and ill-defined, particularly as it relates to strategic competition. Many questions remain about the true utility of jointness to DoD's goals, the potential negative ramifications of jointness, and how the pursuit of jointness affects DoD's ability to innovate and adapt to future challenges. Moreover, it is not currently understood how jointness affects competitive advantage relative to the United States' primary adversaries. This report examines whether the assumption that *jointness*—defined in this report as the combination of cross-service activities, capabilities, operations, and organizations that enhances and increases the capabilities of individual service components beyond their organic contributions—is inherently valuable is correct, and if so, in what ways. Understanding which aspects of jointness are most valuable and why can help DoD to compete more effectively against its adversaries.

Approach

The key research questions we attempt to answer in this study are the following:

1. What value does the United States derive from DoD's jointness efforts?
2. Does jointness provide the United States with advantages in strategic competition?

We answer these questions by applying three different approaches. First, the study takes a historical approach to understand how jointness evolved and which problems it was attempting to solve. The second approach we apply compares the evolution of jointness in both the U.S. armed forces and China's People's Liberation Army. Our comparison addresses the key drivers in both countries that led to programs promoting jointness, the major facets of jointness in both systems, what value both militaries have found in jointness, and the dynamics that influence the development and adaptation of jointness in both of these militaries. Our third and final approach in this report identifies specific elements of value and applies those elements to our understanding of innovation and competition.

Key Findings

The development of jointness in the U.S. military has had a profound effect on it as an organization and on its definition and execution of missions and roles:

- The nearly four-decade process of educating and ensuring joint assignments has contributed to the development of a vastly wider pool of officers with knowledge of and experience planning and working with other services. This increased familiarity over time has enabled the growth of commanders and planners who are capable of ensuring that the joint force functions more effectively.
- There have been several areas where jointness has had a profound impact on the U.S. military's operational and tactical proficiency, including command, operational effectiveness in several mission areas, and on the growth of a common systems architecture.
- Several unforeseen developments emerged out of the Goldwater-Nichols Act (GNA)—each of which might temper the benefits that the U.S. military has derived from its pursuit of jointness, including the empowerment of the combatant commands, the resulting tensions between the commands and the services, and the services' diminished roles after the GNA.
- In other critical areas—for example, military advice and strategy—the impact of jointness is much less clear, with a potentially detrimental

effect on the United States' ability to maintain its competitive advantages. This is especially the case today as the United States is faced with two aggressive, ambitious competitors.

- The most significant consideration regarding the strategic value that jointness provides to the U.S. military is that its benefits overwhelmingly have been at the operational and tactical levels. In essence, the benefits are centered on warfighting.
- At the strategic level, elements of jointness may be contributing to or exacerbating a series of problems limiting the United States ability to compete. It is not clear that all of these limitations are the result of increased calls for jointness as the only (or even the primary) cause. They appear to be problems intertwined with and compounded by bureaucratization, processes that have not been adapted to meet current requirements, and an unwillingness to set priorities and limits on day-to-day operational missions.

The strategic value of jointness has proven itself at the operational and tactical levels when considered against three components of value—the production inputs and labor, the scarcity of the commodity, and the advantages it conveys. Next, as to whether jointness provides the United States with advantages in strategic competition, we found that it does for several reasons:

- First, and perhaps most importantly, jointness—in the way it has manifested itself in the U.S. military—represents a significant innovation. This is certainly the competitor perspective, which is illustrated by attempts to emulate it.
- Related to the above point, the United States has had more than three decades of lead time as the first mover in this competition to learn and refine its approach to jointness, giving it a substantial head start over competitors.
- Finally, the complex levels of organizational and technical integration, coordination, and synchronization that the U.S. joint force has been able to achieve are not only impressive in an absolute sense, but they demonstrate a significant relative advantage over competitors who have struggled to achieve anything close. This is not to say that the capabilities are perfect or that the advantage is permanent.

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CHAPTER 1

Introduction

Operation Desert Storm provided what for many observers around the world was a clear demonstration of the value of jointness. Although it was not the first major military operation after the Goldwater-Nichols Act (GNA)[1] became law, Desert Storm was the U.S. military's most significant test since the Vietnam War. Iraq's military—the fourth largest in the world—was well entrenched, well equipped, and combat tested following eight years of war with Iran. Many observers and analysts in the United States believed that success likely would come at a significant cost.[2] In their initial estimates, U.S. planners anticipated staunch Iraqi resistance, months of fighting with significant U.S. casualties, and the possibility of Iraqi chemical weapons use.[3] U.S. military commanders and political leaders had been shaped profoundly not only by their previous experiences in Vietnam but also by more-recent failures, including an ill-fated attempt to rescue U.S. hostages in Iran and the poorly coordinated invasion of Grenada. The invasion of Panama succeeded only two years earlier than Desert Storm, but the Panamanian Defense Force was a mere shadow of Iraq's military and not equipped for high-end combat. The Ronald Reagan administration's defense buildup during the 1980s went a long way in rebuilding the U.S. military's confidence—however, on the eve of Desert Storm, it remained

[1] Public Law 99-433, Goldwater-Nichols Department of Defense Reorganization Act of 1986, October 1, 1986.

[2] Benjamin Weiser, "Computer Simulations Attempting to Predict the Price of Victory," *Washington Post*, January 20, 1991.

[3] John J. Fialka and Andy Pasztor, "Grim Calculus: If Mideast War Erupts, Air Power Will Hold Key to U.S. Casualties," *New York Times*, November 15, 1990.

largely untested. The previous decade's failures still weighed heavy in the minds of U.S. civilian and military leaders.

Following the U.S. success in Desert Storm, jointness and joint operations became a cornerstone of U.S. military thought. Despite the widely perceived and well-documented operational benefits of jointness, questions remain about the true utility of jointness to the U.S. Department of Defense (DoD)'s goals, the potential negative ramifications of jointness as it was implemented following the passage of the GNA, and how the pursuit of jointness affects DoD's ability to innovate and adapt to future challenges. In the years following the United States' first major test of GNA's jointness reforms, it was faced with a security environment with no major power competitors. Subsequent evaluations and lessons learned were drawn from conflicts against militaries that were smaller, less technologically advanced, and less operationally proficient. Accordingly, the ways in which jointness affects the United States' competitive advantage relative to its primary adversaries is an area that has not been studied widely. This study examines whether the assumption that jointness is inherently valuable is correct, and if so, in which ways. This reports seeks to understand which aspects of jointness are most valuable and why and, in turn, provide insights into how jointness may help the United States compete more effectively against its adversaries while maximizing its competitive military advantages.

The Origins of Jointness in Global Military Affairs

The GNA passage into law in 1986 and Operation Desert Storm in 1991 are two watershed events that mark the United States' military's entry into an era in which jointness became the cornerstone and arguably the defining feature of the American military establishment. Desert Storm's success exceeded nearly everyone's expectations, both in the United States and around the world. American analysts and observers closely examined the United States' technical prowess, well-orchestrated plans, and overwhelming proficiency and debated what these developments would mean

for the revolution in military affairs.[4] The military's ability to synchronize and coordinate combat operations in multiple domains among its services and allies demonstrated to many the value of jointness and the wisdom of the GNA.[5] Since Desert Storm, many American debates about jointness and joint operations have focused inwardly on the United States—in essence, using the U.S. military as its own benchmark for measuring success.[6] In a large portion of cases, these analyses are intended to discuss the impact of jointness solely on the U.S. military. As such, they weigh the pre-GNA military against the one that emerged afterward. More recently they have focused on progress since Desert Storm, treating the evolution of jointness in the American military as a path toward military excellence.

However informative, these internally focused assessments do not address a defining trend in global military affairs that began with Desert Storm—many of the United States' rivals also noticed the value of jointness.[7] This trend is particularly significant for the largest U.S. competitors, Russia and China—two militaries that have attempted to institute ambitious military reform efforts in recent years. For both countries, U.S. success in Desert Storm sent shock waves through their military establishments and a realization that the revolution in military affairs was redefining warfare both

[4] Andrew F. Krepinevich, *The Military-Technical Revolution: A Preliminary Assessment*, Center for Strategic and Budgetary Analysis, 2002, p. 12; Stephen Biddle, "Victory Misunderstood: What the Gulf War Tells Us About the Future of Conflict," *International Security*, Vol. 21, No. 2, 1996, pp. 139–179.

[5] DoD, *Conduct of the Persian Gulf War: Final Report to Congress*, 1992, pp. xix–xx.

[6] See, for example, David T. Fautua, "The Paradox of Joint Culture," *Joint Force Quarterly*, Vol. 26, October 2000, p. 81; Thomas Crosbie, "Getting the Joint Functions Right," *Joint Force Quarterly*, Vol. 94, Third Quarter 2019, pp. 96–100; Seth Cropsey, "Limits of Jointness," *Joint Force Quarterly*, Vol. 1, January 1, 1993, pp. 72–79; Robert P. Kozloski, "Building the Purple Ford: An Affordable Approach to Jointness," *Naval War College Review*, Vol. 64, No. 4, 2012, pp. 41–63; Otto Kreisher, "The Quest for Jointness," *Air Force Magazine*, blog, September 1, 2001; and Bryan McGrath, "The Unbearable Being of Jointness," *U.S. Naval Institute Proceedings*, Vol. 136, No. 5, May 1, 2010, pp. 40–43.

[7] Liu Sheng, Miao Lin, and Zhang Guoliang, *People's War Under Modern Local War Conditions*, Army Scientific Press, 1996, p. 28; Xu Guocheng, Liang Feng, and Zhou Zhenfeng, *Study of Joint Campaigns*, 1st ed., Yellow River Press, February 2004, pp. 1–5.

in type and character.[8] China's response was especially telling. Prior to the war, People's Liberation Army (PLA) observers grossly misread the political and military situation. Many were convinced that the United States' lack of recent combat experience and overemphasis on airpower would lead to significant losses and potentially failure against Iraq's military, which was tested and better tailored to that specific environment and type of conflict.[9] After the war, PLA leaders' surprise regarding the United States' rapid success forced the PLA to embark on a new path to modernize its outdated forces. The PLA redefined the types of operations for which it would need to prepare, refocused its efforts on command and control at the operational level of war, and began a process of technology development and experimentation that continues to the present.[10] Joint operations is one of three pillars (the others being informatization and system-of-systems operations) in this process and has become a defining feature of the informatized military that the PLA is still striving to become.[11]

In the new world order that emerged immediately after Desert Storm, the West's main adversary disintegrated and an ascendant United States became the world's sole superpower. Many senior U.S. leaders saw an opportunity to refocus and consolidate the United States' military and take advantage of the "peace dividend." Through the course of the 1990s, several efforts reconsidered which roles, missions, and future threats the military

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[8] Benjamin S. Lambeth, *Desert Storm and Its Meaning: The View from Moscow*, RAND Corporation, R-4164-AF, January 1, 1992; Xu Guocheng, Feng Liang, and Zhou Zhenfeng, 2004, pp. 1–5.

[9] Mark Cozad, Jeffrey Engstrom, Scott W. Harold, Timothy R. Heath, Sale Lilly, Edmund J. Burke, Julia Brackup, and Derek Grossman, *Gaining Victory in Systems Warfare: China's Perspectives on the U.S.-China Military Balance*, RAND Corporation, RR-A1535-1, 2023, pp. 4–7.

[10] The most significant outcome of the process included two publications on campaign-level warfare. See Wang Houqing and Zhang Xingye, *Science of Campaigns*, 1st ed., National Defense University Press, May 2000; and Zhang Yuliang, *Science of Campaigns*, 1st ed., National Defense University Press, 2006.

[11] State Council Information Office of the People's Republic of China, *China's Military Strategy*, May 2015, pp. 5–6 and 11; State Council Information Office of the People's Republic of China, China's National Defense in the New Era, July 2019, p. 23; Edmund J. Burke, Kristen Gunness, Cortez A. Cooper III, and Mark Cozad, *People's Liberation Army Operational Concepts*, RAND Corporation, RR-A394-1, 2020.

should address.[12] The need for an efficient, responsive, reliable, cooperative, and innovative joint force was identified as an imperative for success in the emerging security environment.[13] Some studies echoed the belief among many leaders that jointness and unified military operations should be the focal point of U.S. military thinking.[14] Over roughly the next three decades, these ideas became deeply entrenched.

The modern conception of jointness in the U.S. military can thus be broken down into two distinct periods. The first involves the five years following the GNA's passage, which can be considered an incubation period in which the services' initial reservations somewhat receded to the background, and the Chairman of the Joint Chiefs of Staff (CJCS), the Joint Staff, and the combatant commands transitioned from dead-end positions with limited influence into indispensable organs in the United States' post-GNA joint structure. This was certainly the case following the United States' success in the First Gulf War. The second period began with Desert Storm and can be considered the birth and initial trial by fire of this modern joint system.[15] The most significant feature of these two periods is the short amount of time that was required to initially socialize and implement the GNA reforms before their first major test in combat.

The United States' main competitors—particularly China—have also set about reforming their militaries with jointness as a central organizing principle. The core concepts, prominent test cases, and benchmarks guiding these reforms are based largely on the United States' example.[16] In the PLA's case, integration, synchronization, and efficiency have become imperatives required for future warfare, supplanting the PLA's traditional reliance on mass, mechanization, annihilation, and tightly centralized control and

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[12] Les Aspin, *Report on the Bottom-Up Review*, U.S. Department of Defense, October 1993; John P. White, *Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces*, U.S. Department of Defense, May 1995.

[13] White, 1995.

[14] See, for example, White, 1995.

[15] Richard Weitz, "Jointness and Desert Storm: A Retrospective," *Defense & Security Analysis*, Vol. 20, No. 2, June 1, 2004, p. 133.

[16] Dong Lianshan, ed., *Target-Centric Warfare: The Path to Achieving Victory in Future Warfare*, National Defense University Publishing House, 2015, pp. 17–24.

decisionmaking.[17] A nearly three-decade process of developing a joint infrastructure within the PLA signifies the high priority that China's political and military leaders place on the value of jointness.[18] As the old adage suggests, "imitation is the sincerest form of flattery." It is also an indication of the value an imitator places on that object or activity being imitated. It also speaks to the importance militaries attach to keeping up with their main adversaries. For this reason, imitation is not simply a flattering adaptation of a current trend. It is a perceived necessity for relevance and survival, and a distinct strategy choice for countering a major military innovation such as jointness. Because of the impact jointness has had on the United States' competitors, it is necessary to identify and understand those facets of jointness that they prioritize and value. In the end, these competitors' perspectives on jointness and the United States' practice of it very well might enhance an understanding of the value jointness provides to the United States in this era of renewed strategic competition.

Jointness and Innovation

Military innovation is a central feature of strategic competition, with militaries tending to copy each other to a much greater extent than almost any other category of institution.[19] Innovations frequently disrupt existing balances of power, forcing nations to consider alternative strategies to maintain sufficient strength relative to their main competitors. Multiple factors influence the nature and extent of these innovative disruptions. Frequently, the most notable and visible characteristic of an innovation is technological; however, cost, competence, organizational capacity, and culture are all critical factors contributing to an innovation's disruptive impact. The develop-

[17] Lianshan, 2015, pp. 53–66; Wang Shumin, *The Operations Analysis of System-of-Systems Combat*, Military Science Press, 2018, pp. 38–41.

[18] Mark Cozad, "Toward a More Joint, Combat Ready PLA?" in Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N. D. Yang, and Joel Wuthnow, eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, 2019, pp. 203–226.

[19] Emily O. Goldman and Richard B. Andres, "Systemic Effects of Military Innovation and Diffusion," *Security Studies*, Vol. 8, No. 4, June 1999, pp. 82–83.

ment of carrier aviation is a primary example of the interplay among technical, financial, and organizational factors and demonstrates the systemic qualities at the center of many military innovations. The technologies associated with carrier warfare have been widely observed and notionally are available to those nations with sufficient financial resources. However, only a limited number of militaries have successfully developed this capability because aircraft carriers were initially fielded in the interwar period.[20] A central reason for the limited numbers of navies adopting this innovation is the extremely high financial costs of carrier development and maintenance, as well as the financial and organizational components—for example, supporting ships, aircraft, logistics, support, personnel, and training—required for carrier warfare.[21]

Looking at the relationship between innovation and competition, our study examines jointness as a major military innovation and relies on Michael Horowitz's framework, which defines *military innovations* as "major changes in the conduct of warfare, relevant to leading military organizations, designed to increase the efficiency with which capabilities are converted to power."[22] Horowitz further points out that military innovations are identified "when the production of military power changes, meaning the character and conduct of warfare change in some measurable way."[23] The revelation of joint operations during Desert Storm marked such a change in the production of military power. Not only has this revelation become central to U.S. military thinking, but it has also reshaped how the major U.S. competitors think about the future of warfare and measure their capabilities relative to the United States and other modern militaries. The rapid, synchronized destruction of Iraq's military was unexpected to say the

[20] The United States, Japan, and United Kingdom (UK) are the only nations to have fielded and employed aircraft carriers in combat and on a meaningful scale. Several other nations—France, the Soviet Union, India, Thailand, Brazil, and now China—have extremely limited, untested capabilities in this area, or they have only recently introduced them into their navies.

[21] Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics*, Princeton University Press, 2010, pp. 95–97.

[22] Horowitz, 2010, p. 22.

[23] Horowitz, 2010, p. 22.

least, particularly for the PLA. Omitting discussions of innovation in any examination of the strategic value of jointness risks failing to comprehend the profound impact jointness has had on the United States' competitors. In this report, we treat the connection between jointness and innovation as a core relationship for assessing the strategic value of jointness. By doing so, we seek to avoid overlooking a potentially significant competitive advantage for the United States.

Building Jointness into the U.S. Defense System

The 30th anniversaries of the GNA and Operation Desert Storm engendered public debates about just how far the U.S. military has come since the initial GNA-mandated reforms.[24] Congressional hearings during this time focused their attention on two key themes—DoD's strategic management and the military's ability to plan and execute joint operations. As with most milestones of this magnitude, lawmakers, civilian and uniformed officials, analysts, and scholars offered varied perspectives on the merits and pitfalls of the GNA, its impact on today's military, and areas that might require new reforms and updates to the original law.

A general theme regarding the GNA and the development of jointness in the U.S. military, albeit not a universally accepted one, has been the positive impact both have had on the U.S. military's operational effectiveness. Several aspects of jointness—command, operational integration, and multidomain operations among others—might be considered major military innovations in their own right. Successes in these areas, particularly when considered in a broader joint context, give competitive advantages in capability areas to the United States that its competitors have yet to demonstrate on a large scale. Other facets of the GNA that addressed jointness, such as strategic planning and strategy development, have been much less successful. In some areas of GNA reforms that are viewed positively—empowering the combatant commands, for example—there have been unforeseen con-

[24] Mark F. Cancian, *Goldwater-Nichols 2.0*, Center for Strategic and International Studies, March 4, 2016.

sequences that are leading to potentially harmful trends.[25] In congressional hearings marking the 30th anniversary of the GNA's passage, former officials and experts considered the state of GNA reforms today as the military confronts a new security environment and the challenges that accompany it. Many of the original problems that led Congress to advocate for reform have changed as a result of new technologies, changes in DoD, and advances in management practice.[26] In several areas, they have disappeared altogether and been replaced by new problems for which the United States' post-GNA military is not optimally organized. If the U.S. military fails to adapt and effectively address the new realities of today's competitive environment, the growth of bureaucratic structures and outdated or misguided conceptions of jointness likely will limit its ability to compete.

The United States' military's development and application of jointness in the decades after Desert Storm have been recognized as a central reason behind its tactical and operational success. Even those who view GNA as having a much more negative impact on DoD tend to agree with this conclusion.[27] However, there has not been corresponding strategic success during this same period. Jointness has proven itself in the realm of warfighting but not as a means for developing strategy.[28] This contrast may reflect the lack of attention given to implementing GNA strategy provisions that were originally intended to improve strategy development and planning processes along with military effectiveness.[29] But the United States' limited strategic success and, in some cases, outright failures, are likely the result of a broad

[25] James Foggo, "The Last Thing the Navy Needs Is Another Congressional Panel," *Breaking Defense*, June 30, 2022; Mackenzie Eaglen, "Putting Combatant Commanders on a Demand Signal Diet," *War on the Rocks*, November 9, 2020.

[26] U.S. Senate, Committee on Armed Services, *30 Years of Goldwater–Nichols Reform*, Senate Hearing 114–316, U.S. Government Publishing Office, November 10, 2015.

[27] For examples, see Seth Cropsey, "Janus and the God of Jointness," *Armed Forces Journal*, Vol. 143, No. 11, June 1, 2006; and McGrath, 2010.

[28] John Grady, "Panel Advocates Reducing Number of U.S. Combatant Commands, Staff Size," *USNI News*, November 5, 2015.

[29] U.S. House of Representatives, *Goldwater-Nichols Department of Defense Reorganization Act of 1986, Conference Report*, 99th Congress, Second Session, Conference Report 99-824, September 12, 1986, p. 3 (specifically, see Section 3: "Policy").

variety of factors that are neither derived from nor remedied by efforts to promote and improve jointness. These factors may include the impact of jointness on the strategy and policy process, but they undoubtedly involve other more deeply rooted problems in American strategy development that organizational or bureaucratic solutions, including jointness, are unlikely to solve.

Arguably the most prominent provision in the GNA was codifying the role of the CJCS as principal military adviser to the President and Secretary of Defense (SECDEF). Previous administrations had long argued that the military advice they received from the CJCS was watered down, unhelpful, and frequently irrelevant.[30] The new role of the CJCS was meant to improve the quality of military advice by freeing him of the consensus-oriented processes that were prevalent prior to GNA. The CJCS's ability to fulfill this role was supposed to be enhanced by a Joint Staff capable of supporting him not only in his capacity as principal military adviser but also in the area of strategic planning. Strategic failures in Iraq and Afghanistan, the repeated failures in clearly identifying and planning for future threats, the inability to set priorities, and substantial concerns about the military's readiness for future challenges all raise major questions about whether this provision of the GNA has been as successful as it was once thought to be. In no respect can failure in any of these areas be attributed to the CJCS's military advice. These failures and their contributing factors are the result of complex dynamics that cannot be attributed to a single cause. However, this aspect does beg consideration of whether problems with military advice prior to the GNA were really a function of process and organization or other factors, such as culture and an inability to develop strategic thinking in the defense and military establishments.

This paradox of tactical and operational success and strategic failure has several implications for understanding the connection between jointness and the United States' ability to compete effectively in the future. At the operational and tactical level, the U.S. military has proven to be highly adaptable, having developed its capabilities in a wide spectrum of military operations over the past 30 years, including large-scale ground combat,

[30] James R. Locher III, "Has It Worked? The Goldwater-Nichols Reorganization Act," *Naval War College Review*, Vol. 54, No. 4, Autumn 2001, pp. 96–100.

integrated air operations, counterinsurgency, and counterterrorism. Along the way, the military has developed its joint command structures, its information architecture, and the integration and interoperability of its forces in several mission areas. The lessons learned from these operations are also fed into education and training programs that enable continued development and adaptation. A major explanation for this success involves the growth of jointness in combat operations. Strategically, the opposite has been true over the past 30 years as U.S. strategy has often lagged or reacted to emergent conditions. The threat from al Qaeda, Russia's aggression, and the identification and designation of China as the United States' primary competitor were all developments that U.S. defense and military strategies addressed only after significant crises, failures, or unavoidable shifts in the security environment occurred. The U.S. military's ability to adapt at the operational and tactical levels was enabled by a relatively large and technologically dominant force. It was also aided by an absence of major challenges from peer competitors. Aging equipment, continuous deployments, and a failure to clearly set strategic priorities may well limit the joint force's ability to adapt as readily as it has in recent decades, particularly when faced with more technologically advanced competitors. It would be difficult to argue that jointness is the main cause for these strategic failures—many factors contributed and most are unrelated to jointness. That said, the development of jointness at the strategic level clearly has not been the solution.

The life span of a military innovation is often limited because competitors are motivated to adopt the most effective military technologies and practices to remain competitive and survive.[31] Few nations have been able to emulate the complex system necessary to engage in carrier warfare. However, for both the Soviet Union/Russia and China, the development of anti-ship cruise missiles and anti-ship ballistic missiles has been a centerpiece in their strategies for countering this innovation.[32] Jointness represents another complex innovation that the United States' competitors have attempted to adopt with varying degrees of success. For jointness to be successful, a nation

[31] Goldman and Andres, 1999, p. 83.

[32] Yu-Ming Liou, Paul Musgrave, and J. Furman Daniel, "The Imitation Game: Why Don't Rising Powers Innovate Their Militaries More?" *Washington Quarterly*, Vol. 38, No. 3, July 3, 2015, p. 167.

must possess technical and organizational components and have a will to ensure the financial commitment to make the system operate at the highest level of performance. In a period of compressed budgets, aging systems, and an insatiable level of demand, the competitive advantages provided by jointness require sound strategy and guidance; otherwise, the United States' ability to maintain its advantage in this area will likely recede.

Trade-Offs and Unintended Consequences

When the GNA was passed in 1986, its focus on military reform was targeted at addressing a series of problems associated with the international security environment at the time and a department and military that were grappling with contemporary problems. These reforms were successful in addressing some of the problems the law was designed to fix, but GNA reformers could not foresee the host of changes that would emerge within the next five to ten years, including the collapse of the Soviet Union, the reexamination of military roles and missions, the Bottom Up Review, major cuts in the defense budgets, a host of new security priorities, and a greatly reduced force structure. Like other major bureaucratic or political reform efforts, the GNA was based on a series of trade-offs that were necessary to meet the law's main objectives at the time it was passed.

Since its passage, the GNA's original goals have never been systematically revisited to account for changes in both the post–Cold War international security and domestic political environments. It remains an open question whether GNA's many trade-offs and accommodations—particularly as they related to jointness—are suited to today's strategic environment and domestic political realities. In other cases, it is not clear that the GNA was able to solve some of the problems it set out to fix. By accepting these trade-offs, GNA reforms altered existing bureaucratic responsibilities and power balances to address immediate needs. On the whole, many of these trade-offs were successful—however, today, they may be ill-suited to a multipolar competitive environment, with increasing demands on fewer and older resources.

Another key factor that affects the development of jointness is the extent to which management structures and practices have adapted over time and

whether those structures and practices currently in place in the military's joint system are capable of delivering decisions at the speed and quality required to maintain competitive advantage in today's security environment. As the architects of the GNA pointed out during hearings in 2015, the U.S. system has not kept pace and adapted to the new environment.[33] The amount of data available to decisionmakers, modern management practices, and the decentralization of decisionmaking in the world's most innovative corporations suggests that the trade-offs that emerged from the GNA have created bureaucratic structures and practices that have behaved in ways one would expect bureaucracies to behave. In short, they have expanded, become self-perpetuating, and calcified to an extent that follow-on reforms likely will prove extremely difficult. Jointness, in its general sense, does not inhibit these processes, but, as currently conceived, it may contribute to them in several cases.

Jointness in Strategic Competition

The goal of the GNA was to make DoD and the U.S. military better, more capable, and more suited to winning the strategic competition with the Soviet Union. In this study, we explore the strategic value of jointness as it has evolved since that period and examines the value jointness provides the United States military in an era of renewed strategic competition. We do so by examining how jointness developed in the United States and the implications of these developments for the U.S. military and its key competitors. In this report, we explore American views of what jointness has delivered and what the United States valued most in its pursuit of jointness. We do so by identifying the core problems that the GNA originally was intended to solve and how they relate to subsequent efforts to build a joint military system. In some cases, choices made as part of the GNA reforms brought with them trade-offs that need to be reconsidered in light of the United States' emerging security needs. We will also address how these original problems and solutions have evolved over the

[33] There are multiple places in this 2015 hearing where this discussion emerges. For two specific examples, see p. 6 for Locher and p. 36 for Thomas in U.S. Senate, Committee on Armed Services, 2015.

past three and a half decades and whether the GNA provisions on jointness remain suitable to today's competitive environment.

In this report, we also provide insight into a competitor's perspective by examining China's views on how jointness has changed the character of modern warfare, the impact these changes have had on the PLA, and their relevance to China's strategic competition with the United States. By addressing Chinese perspectives on the strategic value of jointness in this report, we provide an additional lens for considering the direction and value of jointness in the U.S. military. As mentioned previously, most discussions about jointness in the United States are focused inwardly. Some have considered how jointness might improve U.S. adversaries' capabilities, but only a few have examined the difficulties and challenges that jointness presents to them. This last point is especially important because the U.S. joint system was originally designed to address problems unique to the American defense and military establishment. Accordingly, it reflects the ideas, organizational relationships, and culture of the American political and military systems. This report will consider this fact and its implications for strategic competition based on U.S. competitors' ability to adapt or emulate the United States' successes with jointness.

Approach

The key research questions we attempt to answer in this study are the following:

1. What value does the United States derive from DoD's jointness efforts?
2. Does jointness provide the United States advantages in strategic competition?

We answer these questions by applying three different approaches. First, we take a historical approach to understand how jointness evolved and what problems it was attempting to solve. A key part of this discussion focuses on the historical development of jointness since the GNA and the role jointness has played in shaping the military today. As part of this examination, we address those areas where jointness has been most successful and what

each has meant for the United States' military effectiveness. Likewise, we also identify several of the trade-offs derived from the jointness provisions in the GNA and the unintended consequences that have emerged as a result.

The second approach we apply is comparative. We do so by comparing the evolution of jointness in both the American armed forces and the PLA. Our comparison addresses the key drivers in both countries that led to programs promoting jointness, the major facets of jointness in both systems, and what value both militaries have found in jointness. In our study, we also examine the similarities and differences between the two approaches and draws conclusions about the relevance of jointness to military elements of the current competition. The final element of our comparative analysis attempts to understand the impact of the organizational and cultural foundations in both the U.S. military and the PLA to identify key organizational dynamics that influence the development and adaptation of jointness in both of these militaries.

Our third and final approach in this report identifies specific elements of value and applies those elements to our understanding of innovation and competition. Our approach begins by seeking to understand what actually drives the value of something. To answer this question, we adopted a framework that identifies three elements of value: (1) production inputs and labor, (2) the scarcity of a resource, and (3) the advantages the resource conveys.[34] We rely on the findings from our comparison of the U.S. military and the PLA to examine each of these criteria and ask the extent to which jointness provides the United States with strategic value in its competition with the People's Republic of China (PRC). Finally, our research addressed the potential pitfalls of jointness as it relates to competition. Our findings on pitfalls highlight areas in which jointness might limit or negatively affect the United States' ability to compete in the future.

A core element in our research analysis is the treatment of jointness as an innovation. Therefore, we briefly examine the organizational and technical elements of innovation and how they apply to Chinese and U.S. approaches

[34] Julie M. Meehan, Mike Simonetto, Larry Montan, and Christopher A. Goodin, eds., "What Is Value and Why Is It So Difficult to Measure?" in *Pricing and Profitability Management*, John Wiley and Sons, 2012, p. 301.

to the current military environment. We did so in the context of understanding which advantages jointness might convey in a competitive environment.

Our research is based on an extensive literature review of current and historical materials including both primary and secondary sources. We made extensive use of DoD publications, policy memorandums, directives, and doctrinal publications extending back to the early days of the GNA. For our discussions of joint developments we relied on DoD official analyses and lessons learned studies, congressional testimony, and the large body of scholarly work and international press reporting covering the development of military affairs following the GNA's passage. A key element of our argument about the value of jointness in this report is tied to military innovation. To address this connection, we relied on the body of literature detailing the general concept of major military innovations, how they have developed over time, and the systemic factors driving their development. Finally, in our examination of China's views of jointness, we relied on an extensive body of Chinese military science and military press publications as well as work from U.S. scholars and experts covering China's military.

Scope

We intended for this report to focus on those elements of jointness today that are most valuable for future competition and which elements might have a negative effect on our ability to compete. Our study is not intended to provide an analysis of the overall effectiveness of the GNA reforms that included multiple provisions that went well beyond the military's joint structure. This report uses the GNA as a starting point for its analysis since the most significant developments in the U.S. military as they relate to jointness are outcomes of the 1986 reforms. Our choice of the GNA as a starting point for analysis should not suggest that there were no efforts to develop jointness prior to 1986. There were several, some of which—such as the Army-Air Force collaboration on AirLand Battle—achieved notable success. Similarly, this report does not provide a comprehensive assessment of U.S. or Chinese military capabilities. Instead, it focuses on a critical component of military capability and attempts to identify how significant that capability area is for both nations' military preparations for major power competition. Finally, our research is centered on high-end conventional capabilities

and does not address aspects of competition below that level. Our decision to focus on conventional military effectiveness reflects the major thrust of joint development in both militaries over the past three decades. Although both countries recognize the importance of coordinated interagency actions and strategies that work below the threshold of armed conflict, military planners in Washington and Beijing understand that the development of those capabilities necessary to fight large-scale conflicts are critical due to the United States' and China's increased tensions and competing interests.

Finally, we focus on understanding the relationship between jointness, strategic value, and innovation and how these variables interact in military competition. Although we briefly discuss recent strategic failures, our report is not intended to address the roots of those failures unless they are tied to jointness or a lack of jointness. Recent failures may have occurred, and capability gaps may well exist, but in many cases the root causes of these problems cannot be tied to jointness—in the same manner that not all successes can be attributed to jointness. For this reason, our team attempted to keep this report closely tied to its central research questions. We provide recommendations on areas for future research related to these additional questions in the report's conclusion.

Organization of This Report

Following this introduction, Chapter 2 addresses the drivers and evolution of jointness by examining the main environmental factors that led to GNA reforms and the law's key objectives. Chapter 3 examines those elements of jointness that the United States has valued over time and the context for why those features of the U.S. joint system were valued. Chapter 4 addresses the impact of jointness on the American military's organization, capabilities, and roles. Chapter 5 examines the trade-offs and unintended consequences associated with the GNA and the implementation of jointness. Chapter 6 provides a comparative perspective on how China views jointness and what the PLA values in its pursuit of it. Chapter 7 takes these comparative perspectives and examines the value jointness brings to major power competition. Finally, Chapter 8 provides a set of conclusions and outlines the implications they have for the U.S. strategic competition with China.

CHAPTER 2

Origins of Contemporary Jointness

The GNA, the first law since the National Security Act of 1947 to enact major changes within DoD, sought to improve the efficacy and efficiency of the organization. Challenges faced by the military during the war in Vietnam and multiple operations in the late 1970s and early 1980s "shaped a widespread Congressional consensus that DoD required a major overhaul."[1] As part of the law's reform efforts, multiple provisions established and developed a more joint approach to command, leadership, education, and management. Jointness, essentially, was a major part of overall departmental reform but not its sole focus. To provide context for the assessment of jointness in the following chapters, this chapter describes the eight primary objectives outlined in the GNA and provides some examples of the changes included in the law to meet those objectives.

Objectives of the Goldwater-Nichols Act

In many respects, the GNA addressed many of the unfinished issues that had arisen time and again since 1947. An important issue for consideration when examining the GNA's impact was that the reforms were driven from outside DoD and the military. The reforms only materialized because of a convergence of bipartisan cooperation, a series of negative media stories that some in Congress felt could jeopardize the Reagan administration's defense buildup if not addressed, and realization within the administration

[1] Public Law 99-433, 1986; Clark A. Murdock, Michele A. Flournoy, Christopher A. Williams, and Kurt M. Campbell, *Beyond Goldwater-Nichols Defense Reform for a New Strategic Era, Phase I Report*, Center for Strategic and International Studies, 2004, p. 14.

that the time was right for change in the defense establishment. These developments were notable because they marked a significant departure from previous administrations' efforts that tried but ultimately failed to reform the defense establishment.

In those earlier cases, resistance from the services and the political difficulty that U.S. Presidents and Congress faced in instituting change made reform exceedingly complicated and difficult. In most cases, such as the 1958 Key West Agreement, the outcomes still left many issues unresolved.[2] Moreover, these cases demonstrated that defense reform was an extremely difficult issue for Congress to address without support from the U.S. President. Even in those cases in which support was possible, the political dynamics of reform and competing priorities on presidential and congressional agendas limited the appetite in both branches for tackling these complex problems. The passage of the GNA in 1986 was, in some respects, a perfect storm that aligned conditions, interests, and action in a way that no previous reform attempts could.

The authors of the GNA outlined their objectives in the first major sections of the law's text. These objectives were broad and covered a wide variety of activities and organizational relationships. Not all were treated with the same sense of urgency. Many received relatively little attention in the years that followed. The eight objectives were the following:[3]

1. Reorganize DoD and strengthen civilian authority in DoD.
2. Improve the military advice provided to the President, the National Security Council (NSC), and the SECDEF.
3. Place clear responsibility on the commanders of the unified and specified combatant commands for the accomplishment of missions assigned to those commands.
4. Ensure the authority to those commanders is fully commensurate with that responsibility.
5. Increase attention to the formulation of strategy and to contingency planning.

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2 David Jablonsky, *War by Land, Sea, and Air*, Yale University Press, 2010, pp. 169–170.

3 U.S. House of Representatives, 1986, p. 3 (specifically, "Section 3: Policy").

6. Provide for more efficient use of defense resources.
7. Improve joint officer management policies.
8. Enhance the effectiveness of military operations and improve the management and administration of DoD.

The law addressed each of these objectives with multiple directives, categorized within the text by responsible entities and types of policy.

Strengthen Civilian Authority in the U.S. Department of Defense

The first objective sought to enhance the civilian authority within DoD through its reorganization, especially at the top levels of DoD. Most significant, the law designated the SECDEF as the central authority within DoD. As the GNA conference report made clear, "The Secretary of Defense has sole and ultimate power within the Department of Defense on any matter on which the secretary chooses to act."[4] Every position within DoD fell under the SECDEF because no one office or individual held power independently of the SECDEF any longer. The authority granted the SECDEF more control over programs within DoD than ever before.[5] The law also established the CJCS as the principal military adviser to the SECDEF. The intent of this action was to help bridge the military-civilian divide by giving the SECDEF a close military ally on which to call. Therefore, the SECDEF's main adviser would provide a military and DoD-wide perspective to complement the top civilian's point of view.[6] The act also outlined the service secretaries' duties in support of the SECDEF. This further emphasized the overarching authority of the SECDEF, while more clearly distinguishing the service secretaries' roles.[7]

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4 U.S. House of Representatives, 1986, p. 101.

5 Locher, 2001, p. 106; James R. Locher III, *Victory on the Potomac*, Texas A&M University Press, 2004, p. 438; Murdock et al., 2004, p. 15.

6 Locher, 2001, p. 106; Locher, 2004, pp. 438–439.

7 Locher, 2001, p. 106; Locher, 2004, pp. 438–439.

Provide Better Military Advice

The second objective aimed to provide better military advice for the President, NSC, and SECDEF. Prior to the act's passage, the service chiefs and JCS provided the majority of military advice to these critical offices. Consequently, military advice to the President, NSC, and SECDEF was often watered down, consisting of compromises that fit the needs and desires of every interested party providing the counsel. To combat this situation, the law directed the CJCS to take over as the primary military adviser for all three of the offices. By doing so, the law supplied the top three national security decisionmakers with a singular, nonservice-based, DoD-wide perspective as their primary source of military advice.[8] The law enacted additional changes to the JCS structure. The CJCS received the roles and responsibilities that were previously assigned to the corporate JCS and subordinated the Joint Staff to directly support the CJCS in meeting the position's new roles and responsibilities. All new roles also fell to the CJCS, rather than the corporate JCS. To further support the CJCS's expanded role, the GNA created the role of Vice CJCS (VCJCS). This new role provided the CJCS with more freedom to meet the office's demands because the VCJCS could represent the CJCS in NSC meetings and oversee specified defense agencies and field activities.[9]

Enhance Authority of Commanders of the Unified and Specified Combatant Commands

Because of the intertwined nature of the third and fourth objectives addressing the combatant commands' authority, we discuss them together in this section. The third objective sought to ensure clarity when it came to the roles and responsibilities that combatant commands would hold. Prior to the GNA, combatant commands essentially competed for operational command of the forces in their areas of responsibility with the service chiefs. To

[8] Locher, 2001, p. 106; Locher, 2004, pp. 439–440; James R. Locher III, "Taking Stock of Goldwater-Nichols," *Joint Force Quarterly*, Autumn 1996, p. 12.

[9] Jablonsky, 2010, p. 322, Locher, 2004, pp. 439–440; Peter J. Roman, and David W. Tarr, "The Joint Chiefs of Staff: From Service Parochialism to Jointness," *Political Science Quarterly*, Vol. 113, No. 1, Spring 1998, pp. 100–102.

better carry out missions, the GNA attempted to clarify that the combatant commands held the decisionmaking and directive authority over the service components in their theaters to carry out operations. Consequently, the law assigned all theater combat forces to the combatant commanders, so that service chiefs were no longer in charge of operational missions. The GNA also placed combatant commanders directly under the SECDEF and President in the chain of command, clarifying the roles of both combatant commanders and service chiefs. Complementarily, the law removed the JCS from the chain of command, to reduce any confusion about which positions held ultimate authority over operations. As the congressional conference report on the law stated, "The role of the JCS Chairman regarding operational matters must be carefully prescribed in order to ensure the absolute and unquestioned integrity of the fundamental principle of civilian control of the military."[10]

Additionally, the fourth objective of the GNA outlined the specific powers the combatant commanders would hold, aligning them with those typically held by a unit commander. These included giving authoritative direction, prescribing the chain of command, organizing commands and forces, employing forces, assigning command functions to subordinate commanders, coordinating and approving aspects of administration and support, selecting and suspending subordinates, and convening courts-martial. The specificity of the language used to describe combatant commands' authorities aimed to reduce any confusion or prevent potential alternative assumptions by other military leaders.[11]

Increase Attention to Strategy and Contingency Planning

The fifth objective looked to address what had previously been identified as a shortcoming within DoD: the need for broader strategic thinking and guidance from top leadership. Prior to the GNA, the development of strategy had been siloed, with military planners developing independent assumptions, and the JCS not openly sharing contingency plans with DoD civilians

[10] U.S. House of Representatives, 1986, p. 118.

[11] Locher, 2001, p. 107; Locher, 2004, pp. 440–441; Roman and Tarr, 1998, p. 101.

other than the SECDEF. Consequently, the law established requirements for several leadership positions to strengthen high-level planning. First, the GNA required the President to develop a national security strategy on an annual basis. Second, the law directed the SECDEF to supply guidance for the CJCS and the combatant commanders on the preparation and review of contingency plans. Third, the law delegated the responsibility of developing and reviewing contingency plans to the CJCS, to ensure compliance with the SECDEF's guidelines. The combatant commanders would then create theater operations plans based on the directions and feedback from the SECDEF and CJCS. The law also required the CJCS to use the regional and functional plans developed by combatant commanders to form global strategic plans, once again providing a broader strategic lens.[12]

To Provide for More Efficient Use of Defense Resources

In yet another attempt to ensure more purposeful direction within DoD, the GNA directed multiple leaders and agencies to take active part in the allocation and administration of budget resources. The law first directed the SECDEF to create and issue policy guidance on the use of DoD resources. The law dictated such guidance to include objectives and policies, mission priorities, and considerations of resource constraints. The CJCS received several new responsibilities related to the effective administration of DoD resources, with the hope that the position could provide a joint perspective for this critical function. The act instructed the CJCS to advise the SECDEF on combatant command priorities, assess whether the military departments' and defense agencies' strategic plans and combatant command priorities aligned with each other, and "recommend alternative programs and budgets" to better align budget proposals with strategic plans. Finally, the GNA instructed the military departments to meet the needs and demands of the combatant commands. They were to develop methods to carry out their functions, through the responsible use of resources, to "fulfill the current and future operational requirements" of the commands. The military departments were to also work with the other agencies to "provide for

[12] Jablonksy, p. 322; Locher, 2001, pp. 107–108; Locher, 2004, pp. 441–442.

more effective, efficient, and economical administration and to eliminate duplication."[13]

Improve Joint Officer Management Policies

The GNA sought to provide better leadership options and opportunities to improve both the operational and administrative capabilities of DoD. To do so, the act formalized a Joint Officer Management Program (JOM) and joint educational requirements. The JOM essentially created methods for the selection, education, assignment, and promotion of joint duty officers. It created *joint specialty* designations intended to distinguish joint-educated and trained officers. The law also defined joint experience, so that education, training, and joint duty opportunities could be developed to support the development of joint officers and leaders. Relatedly, the GNA identified and mandated joint duty assignments (JDAs) to encourage joint experience throughout officers' training. The law also established and extended joint education requirements by formalizing joint education coursework, requiring all military education schools to review their curriculum to enhance and ensure focus on joint topics and preparation for joint experiences. The law increased oversight of joint education by requiring periodic reviews of the National Defense University and any other designated joint schools to ensure that rigorous standards remained in place for joint education. It also mandated that high-level service officers take a joint capstone course "to prepare new general and flag officers to work with the other armed forces."[14]

Enhance the Effectiveness of Military Operations and Improve Department of Defense Management

The last GNA objective is twofold, with one facet pertaining to operational effectiveness and the other to DoD management. As one of the main impetuses of the GNA, many of the law's provisions could be argued as seeking to improve operational effectiveness. One key example included providing the combatant commanders with the authority needed to carry out opera-

[13] Jablonsky, 2010, p. 322; Locher, 2001, p. 108; Locher, 2004, pp. 442–443.

[14] Public Law 99-433, 1986, § 401 and § 404; Locher, 2004, pp. 443–444.

tions and train for their specific missions. This action intended to decrease the confusion about which institutions had control over forces during operations, thus ideally improving the chances of meeting mission objectives. The law also directed the CJCS to create joint doctrine and training guidance, with the intent of increasing coordination and awareness among the armed services to improve the execution of joint operations.[15] The second facet of the objective sought to improve the management and administration of DoD by increasing efficiency and decreasing duplication of effort. Multiple provisions within the law supported these efforts. For instance, the law combined some functions under the service secretariats and decreased the proportions of senior-level personnel (both civilian and military), seeking to reduce the size of DoD headquarters staff. In another example, the GNA decreased the number of positions that reported directly to the SECDEF to make the organization less hierarchical and reduce the number of positions the SECDEF oversees. The law instructed the SECDEF to redistribute oversight of these positions to senior-level civilians or the CJCS. Finally, the law also aimed to modify the organizational structure of DoD to better support its purpose. The law directed a shift toward organizing DoD based on mission instead of specific functional categories, such as "manpower, research and development, health affairs, and so on."[16]

Conclusion

Despite the initial lukewarm reception that the GNA received within DoD, shortly after its passage, senior military leaders would tout the reforms—particularly jointness—as a key reason for the military's success in war not only five years after its passage. This chapter highlighted GNA's objectives and described the relevance of each to the law's ultimate intentions. In subsequent years, some objectives would receive far more attention than others—specifically, those dealing with military advice, military effectiveness, the chain of command, and joint personnel management. Others, particularly those dealing with strategic and operational planning and resource

[15] Locher, 2001, p. 108; Locher, 1996, pp. 15–16; Locher, 2004, pp. 444–446.

[16] Locher, 2001, p. 108; Locher, 2004, p. 447.

management, would receive far less. As a result, the operational and tactical elements of the reform program advanced more rapidly and effectively than the strategic and organizational areas. When the resources of the 1980s faded with the collapse of the Soviet Union, it became much more clear which elements of GNA and jointness were favored most by DoD.

CHAPTER 3

Valued Aspects of Jointness

Since 1986, the United States has placed a significant amount of emphasis on DoD's jointness efforts and, as a result, these efforts have come to be viewed as a core element of the U.S. military success over the past three decades. Senior defense leaders, including the SECDEF, CJCS, and combatant commanders, have cited such characteristics as integration, efficiency, and unity of effort as examples of the benefits of jointness.[1] Similarly, the architects of the GNA identified the objectives outlined in the previous chapter as specific areas where the United States defense establishment had fallen short and required change to improve the military's effectiveness. Over the years, jointness has come to be identified as one of the central strengths of the U.S. military, both from a U.S. perspective and that of its main competitors.

This chapter is the first part of our analysis that addresses the strategic value of jointness. It examines how the United States has viewed the benefits and advantages of jointness since the passage of the GNA. The chapters that follow will build on this idea and explore the strategic value of jointness in terms of the *inputs* and *labor* that went into the development of the United States' joint system; reforms in professional military education (PME); personnel management; and several areas related to the chain of command, operational effectiveness, and planning.

[1] John Warner et al., "'Lessons Learned' During Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom, and Ongoing Operations in the United States Central Command Region," hearing before U.S. Senate Committee on Armed Services, U.S. Government Printing Office, July 9, 2003, pp. 14–23.

Strategic and Historical Context of Jointness: 1986–Present

The GNA became law during the final years of bipolarity between the United States and the Soviet Union. The nearly four-decade-long Cold War dominated the United States' strategic landscape since the end of World War II. U.S. and Soviet Union alliances engaged in various conflicts during those decades, with a geographic focus on Europe, and proxy wars in other areas, including Asia.[2]

Three years after the passage of the GNA, the end of the Cold War marked an important turning point for U.S. national security. The Berlin Wall fell in 1989, signifying the imminent decline and dissolution of the Soviet Union. The Warsaw Pact disbanded in March 1991, and the Soviet Union dissolved months later. The fall of the Soviet Union denoted the first time in more than six decades that the United States did not have a single specific enemy on which to focus.[3] The post–Cold War period thus ushered in a new sense of hesitancy to take on great risk, but also a recognition that the United States was facing an uncertain and potentially dangerous situation in which regional threats that had long been contained were now likely to reemerge and require military responses.[4]

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[2] John R. Hoehn and Kelly M. Sayer, *Renewed Great Power Competition: Implications for Defense—Issues for Congress*, Congressional Research Service, R43838, December 3, 2020, p. 20.

[3] One major effect of the end of the Cold War and the new hesitancy to enter another major conflict was a fundamental reassessment of the funding levels, strategy, and missions of DoD. The shift from Cold War posture demanded reductions in overall spending, leading to questions of how DoD could increase efficiency, including the implementation of jointness that was one avenue toward minimizing redundancy and realizing cost savings. Although a decline in spending did occur as the Cold War ended and a new order developed, GEN Colin Powell, who became Secretary of Defense in the early 1990s, prevented overwhelming cuts to the defense budget. He argued instead for "right sizing" the force to decrease spending by ensuring the efficient distribution of funding across DoD. S. Rebecca Zimmerman, Kimberly Jackson, Natasha Lander, Colin Roberts, Dan Madden, and Rebeca Orrie, *Movement and Maneuver: Culture and the Competition for Influence Among the U.S. Military Services*, RAND Corporation, RR-2270-OSD, 2019, p. 200; Hoehn and Sayer, 2020, p. 26.

[4] Zimmerman et al., 2019, pp. 195, 200–201; Hoehn and Sayer, 2020, p. 20.

Within this new post–Cold War security environment, the United States participated in numerous operations involving such issues as territorial integrity, ethnic conflict, and humanitarian assistance. These operations included the first Gulf War in the early 1990s and the United States' sustained presence in the Middle East, a region that would come to dominate foreign and defense policy for the next two decades. The Gulf War also provided the first major operation in which the new joint command structure in which the commander-in-chief (CINC) of U.S. Central Command (CENTCOM) reported directly to the SECDEF. Command and control of the operations in individual domains fell under theater service component commands including the Joint Force Land Component Commander, the Joint Forces Air Component Commander (JFACC), and the Joint Force Maritime Component Commander (JFMCC). Within three years after the end of the first Gulf War, the United States began an extended involvement in no-fly zones in the Balkans, punctuated by brief air campaigns in both Bosnia (1995) and Kosovo (1999).[5] The Soviet Union's collapse removed the United States' primary ideological and existential opponent and led many to declare the United States as the world's sole superpower, and that a new reality of Pax Americana, where the United States essentially oversaw the world and enabled peace, now prevailed.[6] The United States' lengthy engagement into the Middle East and Balkans reflected a broader set of security concerns focused on the maintenance of peace and regional stability. The United States' ability to take on these missions and lead the broad coalitions supporting them cast the United States as the unchallenged leader of the new global order.

The terrorist attacks on September 11, 2001, provided a strategic surprise and significant reorientation of U.S. threats. Terrorist networks and

[5] These conflicts were considered discretionary because they did not include near-peer competitors and did not represent direct threats to U.S. national security.

[6] Hal Brands, "Understanding the Arc of American Power," in *Making the Unipolar Moment U.S. Foreign Policy and the Rise of the Post-Cold War Order*, Cornell University Press, 2016, p. 350; Christopher Marquis, Denton Dye, and Ross S. Kinkead, "The Advent of Jointness During the Gulf War: A 25-Year Retrospective," *Joint Forces Quarterly*, Vol. 85, 2017, pp. 76–77; Zimmerman et al., 2019, p. 200; Hoehn and Sayer, 2020, pp. 1 and 20.

nonstate actors would now top the list of U.S. national security priorities.[7] In response to the attacks, the United States sent forces to Afghanistan and in 2003 invaded Iraq based on U.S. assessments that the Iraqi regime had reinitiated its weapons of mass destruction (WMD) programs. Both of these operations would continue for over two decades, during which time DoD's budget would increase significantly to fund the operations costs of both wars, both of which were predominantly focused on counterterrorism and counterinsurgency. The wars also represented a change in focus for the armed forces, as ground and air forces took center stage within the landlocked countries of Afghanistan and Iraq. Operations in these wars often featured joint efforts—employing U.S. Air Force forces–supported Army ground troops, special operations forces, and joint elements representing multiple services.[8]

Although the United States focused on counterterrorism and the Global War on Terror and counterinsurgency in Iraq and Afghanistan for the majority of the first decade of the 21st century, other forces were in play among major state actors, particularly China and Russia. Both countries were undergoing major modernization and reform efforts focused on improving their militaries, both in terms of new weapons and organizational changes.[9] The Chinese effort began in the early 1990s and involved a rapid growth in funding to modernize the PLA. Russia's reform efforts gained steam following its invasion of Georgia—an operation that although successful revealed numerous shortcomings in Russia's military. In addition, both countries became more aggressive and more assertive in their respective regions as they sought to gain influence, control, and challenge the United States. As the United States wound down its engagements in Afghanistan and Iraq, China aggressively pursued its claims in the South and East China Seas, ultimately building and fortifying numerous outposts in the South China Sea. It also challenged several of the key U.S. allies and partners in the region, including Japan, South Korea, Australia, and Phil-

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7 Brands, 2016, p. 356; Zimmerman et al., 2019, p. 202.

8 Richard W. Stewart, ed., *American Military History*, Vol. II, U.S. Army Center of Military History, 2010, pp. 10, 21–24; Brands, 2016, p. 356; Zimmerman et al., pp. 203–206.

9 Brands, 2016, pp. 358–360; Hoehn and Sayer, 2020, pp. 20–21; Zimmerman et al., 2019, pp. 209–210.

ippines. Meanwhile, Russia's pursuit of its own aggressive regional agenda included invasions of Georgia in 2008 and of eastern Ukraine in 2014. Russia's invasion of Ukraine in 2014 resulted in the seizure and annexation of Crimea and portions of eastern Ukraine, prompting European and United States' concern over Russia's growing ambitions and intentions in Europe and other regions. These concerns were reinforced further following Russian troop deployments to Syria in 2015 to support the Bashar al-Assad regime's attempts to maintain power.

From this historical and strategic context, the United States' major national security concerns have shifted and morphed multiple times since 1986. During the same period, efforts to increase jointness within the U.S. military were developed and implemented, aimed at attaining certain values discussed in the subsequent sections. Did the values of jointness shift along with these concerns, or did they remain relevant despite the emerging challenges faced by the United States? The following analysis offers an initial attempt to answer these questions.

The Values of Jointness

Due in part to a lack of common understanding about what constitutes jointness, it is challenging to pinpoint what it is the U.S. military (and, more broadly, the U.S. government) wants out of jointness among the armed services. The following section takes a first step toward addressing the questions that arise from this challenge. What are the desired outcomes of promoting cooperation and interoperability among the military services? What are the values that motivate the pursuit of jointness, and have these remained the same over time?

Since there is no singular definition of jointness from which a set of intended goals and objectives can be pinpointed, this analysis uses the GNA as the closest proxy to an official outline of the U.S. military's goals, objectives, and intentions for jointness. This report defines *jointness* as the combination of cross-service activities, capabilities, operations, and organizations that enhances and increases the capabilities of individual service

components beyond their organic contributions.[10] Accordingly, jointness also describes the degree to which efforts to promote cross-service cooperation, coordination, and integration are reflected in organizational structures and cultures. Without question, "the unmistakable thrust of the GNA was to improve interservice coordination and foster a more joint culture," which makes it an ideal foundation from which to originate the values of jointness.[11] Through a detailed review and analysis of the GNA, we identified several benefits the U.S. government and military desired in promoting jointness across the armed services. These are

- strategic unity and unity of command and effort
- strategic adaptability and responsiveness
- service parity and participation
- efficient use of resources
- operational effectiveness.

These outcomes are based on our review of the objectives and changes included in the law and the problems highlighted within supporting congressional documentation of the legislation. When conducting this review, we systematically applied the following questions:

- What is the ultimate desired outcome of the law's objective or change?
- What overall value does this objective or change work toward?[12]

Along with these desired outcomes, we identified five types of action under which jointness would be pursued across the armed services. These action types included those related to the following:

- organization and authority
- doctrine and strategy

[10] This definition is based on text taken from the Office of the Chairman of the Joint Chiefs of Staff, *DOD Dictionary of Military and Associated Terms*, Joint Staff, November 2021, p. 113.

[11] James A. Kitfield, "A Better Way to War," *Air Force Magazine*, October 2006, p. 39.

[12] We also incorporated input from relevant RAND subject-matter experts in the development of the value factors.

- education and joint duty
- training
- management.

Table 3.1 shows the alignment of the derived outcomes with the objectives of the GNA, the problems it sought to address, and the identified action types.[13] For example, it was argued that the SECDEF lacked sufficient power and influence, which led to the objective of strengthening civilian authority within DoD that contributed to the value of strategic unity and unity of command.

Using these desired outcomes and action types derived from the GNA and supporting documentation in hand, we reviewed historical and governmental documents on the passage of the GNA, academic and governmental analyses of jointness, the Quadrennial Defense Reviews (QDRs) (1997 to 2014), the National Military Strategies (2004 to 2015), and the most recent National Defense Strategy (2018).[14] We then compiled major initiatives and authoritative changes related to jointness cited within the documents. We note that this is by no means a comprehensive list, but rather the results of the review of these specific documents. It is very likely that other initiatives related to jointness occurred within our studied time frame, but we believe that our collection of sources allows us to provide a succinct overview of the major actions related to jointness and their endurance over time. We organized the initiatives by action type, identified when they were initiated, and determined if they are still in existence (in some form) today. By doing so, we see not just when and how different aspects of jointness were implemented after the passage of the GNA, but *also whether they endured over*

[13] It could be argued that all of the identified action types contributed to or supported the value factors in one way or another. To keep our scope narrower, we focused on those action types that seem to directly and/or significantly contribute to the value factors.

[14] Authors' analysis of QDRs, National Military Strategies, and National Defense Strategies from 1997 to 2018 (see James Mattis, *Summary of the 2018 National Defense Strategy of the United States of America*, U.S. Department of Defense, 2018; Historical Office, Office of the Secretary of Defense, "National Defense Strategy," webpage, undated-a; Historical Office, Office of the Secretary of Defense, "National Military Strategy," webpage, undated-b; and Historical Office, Office of the Secretary of Defense, "National Security Strategy," webpage, undated-c).

TABLE 3.1

Crosswalk of Jointness Value Factors, Goldwater Nichols Act Problems and Objectives, and Identified Jointness Action Types

Jointness Value Factors	GNA-Identified Problems	GNA Objectives	Jointness Action Types
Strategic unity/unity of command and effort	• Imbalance of emphasis on functions versus missions • Imbalance of service versus joint interests • Interservice logrolling • Lack of clarity of strategic goals • Failure to clarify the desired vision of work • Excessive spans of control and absence of effective hierarchical structures • Insufficient power and influence of the SECDEF	• DoD reorganization, civilian authority strengthened, and better military advice provided • Combatant command responsibility and authority • Enhance the effectiveness of military operations • Improve the management and administration of DoD	• Organization and authority • Doctrine and planning • Management
Resource considerations	• Predominance of programming and budgeting	• Provide for more-efficient use of defense resources • Improve the management and administration of DoD	• Organization and authority • Doctrine and planning • Management
Service parity and inclusion	• Imbalance of service versus joint interests • Inadequate quality of joint duty military personnel	• Improve joint officer management policies • Improve the management and administration of DoD	• Education and joint duty • Training

Table 3.1—Continued

Jointness Value Factors	GNA-Identified Problems	GNA Objectives	Jointness Action Types
Strategic adaptability and responsiveness	• Imbalance of emphasis on functions versus missions • Predominance of programming and budgeting • Insufficient mechanisms for change • Excessive spans of control and absence of effective hierarchical structures	• DoD reorganization, civilian authority strengthened, and better military advice provided • Improve joint officer management policies • Enhance the effectiveness of military operations	• Organization and authority • Education and joint duty • Training
Operational effectiveness	• Imbalance of service versus joint interests • Predominance of programming and budgeting • Failure to clarify the desired vision of work • Excessive spans of control and absence of effective hierarchical structures	• Enhance the effectiveness of military operations	• Organization and authority • Doctrine and planning • Training

SOURCE: RAND analysis of text drawn from U.S. House of Representatives, 1986.

time. As authorization and initiation are only a first step for any program, policy, or system, we sought to assess if each initiative was formalized or institutionalized in some manner, thus indicating their significance and robustness within the U.S. military's pursuit of jointness.

Review of Major Jointness Initiatives

As outlined above, we reviewed governmental and academic sources to identify the major authorities and initiatives established in the pursuit of jointness after the passage of the GNA in 1986 through to the present day. As many of these initiatives contributed to multiple desired outcomes, they are presented here by action type for simplicity and to avoid redundancy. The following sections each include a table with the major initiatives, their year or time period of initiation, and an indication of whether they are still in effect today. Each section then highlights examples of how certain initiatives contributed to their related value factors, as discussed above and presented in Table 3.1.

Organization Changes and Initiatives

The following section highlights how the organizational changes and initiatives captured in Table 3.2 contributed to the associated value factors identified in the analysis described above. Specific examples for each factor are provided to illustrate the connection between each. As noted above, this list is not meant to be comprehensive, but rather a representation of the results of our literature review and solicitation of subject-matter input.

Strategic Unity and Unity of Command and Effort

Organizational changes intend to contribute to strategic unity and unity of command by creating "homes" and combined-service sources for strategic thinking, planning, and commanding. For example, the GNA directed the CJCS to prepare joint mobility and logistics plans to provide a single source for the development of broad, joint strategic plans.[15] Prior to the act, the

[15] Public Law 99-433, 1986, § 153.

TABLE 3.2

Representative Organizational Changes and Initiatives

Description of Change/Initiative	Year Began	Still in Existence (yes or no)
SECDEF granted new authorities for guidance across armed services	1986	Yes
Reorganization and expansion of Joint Staff	1986–early 1990s[a]	Yes
CJCS delegated as principal military adviser and granted planning authorities	1986	Yes
Combatant commanders granted commensurate authority over campaign plans	1986	Yes
U.S. Special Operations Command (SOCOM) and U.S. Transportation Command (TRANSCOM) established	1987	Yes
Joint Warfighting Center formed	1994	Yes
Joint Forces Command established	1999	No
Combined Joint Task Force Horn of Africa and Joint Task Force Guantanamo established	2002	Yes
U.S. Strategic Command (STRATCOM) and NORTHCOM established	2002	Yes
U.S. Africa Command (AFRICOM) established	2007	Yes
U.S. Cyber Command (CYBERCOM) established as a subunified command (2010) and a full combatant command (2018)	2010/2018	Yes
Joint Task Force Headquarters for Elimination (of WMD) established	2012	No
Defeat ISIS Task Force	2017	No

Table 3.2—Continued

Description of Change/Initiative	Year Began	Still in Existence (yes or no)
U.S. Space Command (SPACECOM) established	2019	Yes
U.S. Space Force established	2019	Yes

SOURCE: U.S. House of Representatives, 1986; Kitfield, 2003, p. 40; Joint Warfare Analysis Center, "About Us," webpage, undated; Joint History Office, Organizational Development of the Joint Chiefs of Staff, Office of the Chairman of the Joint Chiefs of Staff, April 2013, pp. 80–85; Lawrence Kapp, General Flag Officers in the U.S. Armed Forces: Background and Considerations for Congress, Congressional Research Service, R44389, February 1, 2019, pp. 7–8; U.S. Strategic Command, "History," webpage, last updated January 2018; NORTHCOM, "Our Story," webpage, undated; AFRICOM, "About the Command," webpage, undated; CYBERCOM, "Our History," webpage, undated; Kristofer D. Hopkins, *The History of the Standing Joint Force Headquarters for Elimination (SJFHQ-E): No More Ad Hoc*, U.S. Army Command and General Staff College, 2014, p. 33; DoD, "Department of Defense Establishes U.S. Space Command," press release, August 29, 2019b; U.S. Space Force, "U.S. Space Force History," webpage, undated.

NOTE: The Joint Warfighting Center under STRATCOM, the Joint Forces Command, was disestablished in 2011, its functions were dispersed to other offices throughout DoD, and renamed the Joint Warfare Analysis Center as a functional component. The Defeat ISIS Task Force was disestablished in December 2020.

[a] Enacted in 1986, realized through application of the authority in the early 1990s under General Powell.

strategic planning process within DoD was "piecemeal, irregular, and highly informal."[16] By providing strategic planning a dedicated home and responsibility, the law attempted to improve and promote strategic unity among DoD and the services. In another instance, the GNA authorized combatant commanders to pull resources and forces from the services to address the mission at hand. Before this change, forces were still overwhelmingly controlled by the service chiefs, despite their assignment to combatant commands. This was due to the fact that in most instances one service dominated a command, and a leader from that service served as commander and predominantly relied on the resources from their particular service. Thus, despite not being in the chain of command, service chiefs held more power over operations than combatant commanders.[17] The GNA sought to clarify the roles and divisions of labor between the services chiefs and combatant commanders through this provision. This clarification of authority from the more service chief–centric[18] to combatant commander–centric command and control strives to enable a more joint force engaged under a single commander during operations.[19]

Resource Considerations

Organizational initiatives to improve jointness seek to contribute to the value of resource management by creating institutions and distinguishing roles and responsibilities for DoD-wide budget development, interservice coordination on resource allocation, and the alignment of resource allocation and strategic objectives. For instance, the GNA issued directions to both the SECDEF and the CJCS to provide guidance and develop plans for resource allocation. The Secretary must provide a broad framework for the resources needed to meet strategic objectives, while the Chairman must oversee and provide advice on combatant command and service priorities and needs. The law also directed the CJCS to submit alternative budget

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16 James Locher III, *Defense Organization: The Need for Change, Staff Report to the Committee on Armed Services, United States Senate*, Senate Report 99-86, U.S. Government Printing Office, 1985, p. 497.

17 Locher, 1985, pp. 306–307.

18 At least in practice, if not in law.

19 Locher, 1985, pp. 329 and 352.

recommendations from the services to better align the budget with overall strategy and command priorities.[20] These requirements of the SECDEF and CJCS placed resource considerations at a higher, and more joint, level by focusing on the necessary requirements to carry out broad strategy. In another example, the formation of new functional combatant commands, such as STRATCOM and CYBERCOM, aimed to create centralized homes for specific functions and capabilities. For instance, STRATCOM, formed in 2002, encapsulates the U.S. military's strategic deterrence, global strike, space operations, and global missile defense. It was originally formed as a unified command in 1992 to combine the United States' requisite nuclear forces, and then merged with the unified command SPACECOM in 2002 to further align these related capabilities. SPACECOM was reestablished in the fall of 2019 to "conduct operations in, from, and to space to deter conflict, and if necessary, defeat aggression, deliver space combat power for the joint/combined force, and defend U.S. vital interests with allies and partners."[21]

Strategic Adaptability and Responsiveness

Organizational changes strive to increase aspects of strategic adaptability and responsiveness by establishing authorities to oversee joint service operations, create flexible entities to address emerging threats with representatives from multiple services, and provide opportunities for institutionalization of entities to counter long-standing threats. In one example, combatant commanders were granted the authority and full command over the forces assigned to their geographic area of control. Assessments prior to the GNA stated that commanders had "weak authority over their components, limited influence over resources, and an inability to promote greater unification within their commands."[22] By granting the commands explicit authority over forces within their area of responsibility, the GNA aimed to provide the commanders with more flexibility over how they could use assigned forces. In another instance, the continued and new formation of joint task forces, standing Joint Task Force Headquarters, and Combined Joint Task Force

[20] Public Law 99-433, 1986, § 102 and 153.

[21] U.S. Strategic Command, 2018.

[22] Public Law 99-433, 1986, § 162; Locher, 1985, p. 302.

Headquarters seek to facilitate strategic and operational adaptability. These organizations provide the military broadly, and commanders specifically, access to support, forces, and partners to address specific mission sets.[23] By combining these functions and capabilities under singular entities, leaders, ideally, can more quickly access the expertise and support needed to adjust to ever-changing strategic demands.

Operational Effectiveness

Organizational initiatives and authorities also endeavor to contribute to operational effectiveness by clarifying roles, responsibilities, and authorities within the chain of command, creating centralized sources for strategic and contingency planning, and forming institutions for interservice geographic and functional command, and joint analysis. In one example, the GNA directed the CJCS and the Joint Staff to develop joint logistic and mobility plans in support of their broader strategic and contingency plans.[24] This process intended to capture and consolidate input from the services, department, and commands, so plans represented the views and capabilities of all who would be involved in the operations. In another example, the Joint Warfare Analysis Center's formation sought to contribute to joint operational effectiveness by increasing the expertise and capabilities directed toward joint analysis for crisis operations and contingency planning.[25]

Doctrine and Strategy Changes and Initiatives

The following section highlights how the doctrinal and strategic changes and initiatives captured in Table 3.3 contributed to the associated value factors identified in the analysis described above. Examples for each factor are provided to illustrate the connection between each. As noted above, this list is not meant to be comprehensive, but rather a representation of the results of our literature review and solicitation of subject-matter input.

[23] Joint Publication (JP) 3-33, *Joint Operations*, Joint Chiefs of Staff, July 30, 2012, p. xii.

[24] Public Law 99-433, 1986, § 153.

[25] Joint Warfare Analysis Center, undated.

TABLE 3.3
Representative Doctrine and Strategy Changes and Initiatives

Description of Change/Initiative	Year Began	Still in Existence (yes or no)
CJCS directed to develop joint doctrine	1986	Yes
President directed to develop a national security strategy	1986	Yes
CJCS directed to develop strategic directions and plans for the military	1986	Yes
Joint Doctrine Center formed	1987	Yes
National Security Strategy first published	1987	Yes
JP-1 first published	1991	Yes
National Military Strategy first published	1992	Yes
JP 3-0 first published	1993	Yes
Joint Warfighting Center[a] formed	1994	Yes
JP 5-0 first published	1995	Yes
CJCS designated as Global force Integrator	2017	Yes
Joint Guide for Interagency Doctrine developed and released	2019	Yes

SOURCES: Public Law 99-433, 1986; Don M. Snider, "The U.S. Military in Transition to Jointness," *Airpower Journal*, Vol. X, No. 3, 1996, p. 22; Historical Office, Office of the Secretary of Defense, undated-b; Historical Office, Office of the Secretary of Defense, undated-c; Robert A. Doughty, "Reforming the Joint Doctrine Process," *Parameters*, Autumn 1992, p. 45; Rick Rowlett, "Joint Publication 3-0, Joint Operations," *Joint Force Quarterly*, Vol. 86, June 21, 2017; Joint Warfare Analysis Center, "About Us," webpage, undated; Steve Townsend, "Joint Publication 5-0, Joint Planning," *Joint Force Quarterly*, Vol. 87, October 1, 2017; U.S. Senate, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2014: Bill Summary*, 2014; U.S. Senate, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2017*, December 2016; Joint Chiefs of Staff, "Global Integration: What Is It?" webpage, undated-a; Joint Chiefs of Staff, *Joint Guide for Interagency Doctrine*, U.S. Department of Defense, November 4, 2019.

[a] The Joint Warfighting Center was renamed the Joint Warfighting Analysis Center and became a functional component under STRATCOM in 2011.

Strategic Unity and Unity of Command and Effort

The creation of centralized strategies and doctrine, and the appointment of specific offices, individuals, and centers responsible for their formation, aimed to increase strategic unity within the U.S. military. In two significant developments, the GNA established two broad strategic documenta-

tion requirements: the National Security Strategy and the National Military Strategy.[26] Prior to the law's passage, it was determined that the military and DoD lacked focus on strategic planning and would become mired in questions of resource allocation and bureaucracy rather than focusing on the development and implementation of a broad framework under which the services would work toward common objectives. Thus, by directing the President to construct a National Security Strategy and the CJCS to create a National Military Strategy, the law provided single, dedicated sources for unified strategies. To further articulate and supply guidance on the aspects included within the strategy documents, the law also dictated the creation of joint doctrine by the CJCS and Joint Staff. These documents "present fundamental principles that guide the employment of U.S. military forces in coordinated and integrated action toward a common objective."[27] They essentially seek to encapsulate the processes, policies, programs, and procedures to carry out the military's unified strategy.

Resource Considerations

Prior to the passage of the GNA, the general assessment of resource considerations was that DoD and the services focused a great deal on specific budgetary concerns but did not tie their budget and resource allocations to a broad strategy pursued jointly. Therefore, although resource considerations were a large part of DoD prior to the GNA, they were not particularly effective, joint, or strategic in application.[28] Consequently, making resource considerations more comprehensive and connected to joint strategic goals and objectives became a desired outcome. Strategy and doctrine developed into important sources for resource considerations, as they sought to make these connections more clearly. In one example, the GNA directed the CJCS to perform assessments of required resource levels, logistic plans, and net assessments of capabilities; thus, intending to provide a central source

[26] Public Law 99-433, 1986, §153 and § 603.

[27] JCS, "Joint Doctrine Publications," webpage, undated-b; CJCS Instruction 5120.02D, *Joint Doctrine Development System*, Joint Chiefs of Staff, January 5, 2015.

[28] Locher, 1985, pp. 495–496, 498–503.

for the combination of strategic and resource considerations.[29] In another instance, the CJCS and Joint Staff, responsible for joint doctrine, developed multiple documents that specifically address resource considerations since 1986.[30]

Operational Effectiveness

A lack of joint strategy and supporting doctrine can negatively affect operational effectiveness if commanders and forces do not have clear plans, goals, and objectives to cooperatively carry out joint operations. With the development of the National Security Strategy, National Military Strategy, and joint doctrine, the goal was to make sure joint capabilities were considered and employed in the most effective manner. Generally, the continued development of joint doctrine since 1986 across a wide variety of topics offers an ultimate source of authoritative guidance from which the services can learn to engage with one another and carry out joint operations. Also, joint doctrine "promotes a common perspective from which to plan, train, and conduct military operations."[31] In just one example, the first publication of JP 3-0 came to print in 1993 and, to this day, "provides the doctrinal foundation and fundamental principles that guide the Armed Forces of the United States in all joint operations." It also "govern[s] the activities and performance of the Armed Forces of the United States in joint operations."[32]

Education and Joint Duty Changes and Initiatives

The educational and joint duty changes and initiatives captured in Table 3.4 contributed to the associated desired outcomes identified in the analysis described above. Examples for individual initiatives are provided to illustrate the connection between each. As noted above, this list is not meant to be comprehensive but rather a representation of the results of our literature review and solicitation of subject-matter input.

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[29] Public Law 99-433, 1986, § 153.

[30] JCS, undated-c. Some examples include such volumes as those within JP 1-0 (which addresses personnel issues), JP 4-0 (which focuses on logistics), and JP 5-0 (which addresses planning).

[31] JCS, undated-c; CJCS Instruction 5120.02D, 2015.

[32] JP 3-0, *Joint Operations*, Joint Chiefs of Staff, January 17, 2017, p. i.

TABLE 3.4
Representative Education and Joint Duty Changes and Initiatives

Description of Initiative/Change	Year Began	Still in Existence (yes or no)
Joint PME (JPME) authorized and formed under the GNA	1986	Yes
JOM authorized and formed under the GNA	1986	Yes
JDA List formed	1987	Yes
Skelton Panel on joint education held and recommendation issued	1989	Yes
Two-phase JPME established	1991	Yes
PME section codified within Title 10	2005	Yes
Tiered approached to JPME formed	2005	Yes
Joint qualification levels, criteria, and system established	2007	Yes
Defense Officer Personnel Management Act (DOPMA) reforms	2018	Yes
Joint Staff issuance of vision and guidance for professional military education and talent management	2020	Yes

SOURCE: Public Law 96-513, 1980; Public Law 99-433, 1986; John F. Schank, Harry J. Thie, Jennifer Kawata, Margaret C. Harrell, Clifford Graf II, and Paul Steinberg, *Who Is Joint? Reevaluating the Joint Duty Assignment List*, RAND Corporation, MR-574-JS, 1996, p. iii; CJCS Instruction 1330.05B, *Joint Officer Management Program Procedures*, Joint Chiefs of Staff, July 6, 2020; Anna T. Waggener, "Joint Professional Military Education," *Joint Force Quarterly*, Vol. 77, Second Quarter 2015, p. 56; Kristy N. Kamarck, *Goldwater-Nichols and the Evolution of Officer Joint Professional Military Education*, Congressional Research Service, R44340, January 13, 2016, pp. 4, 7; Joint Chiefs of Staff, *Developing Today's Joint Officers for Tomorrow's Ways of War: The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management*, U.S. Department of Defense, May 1, 2020.

Service Parity and Involvement

Joint education and duty initiatives and programs put into place since the passage of the GNA endeavor to contribute to service parity and participation among the services by ensuring common educational requirements and exposure to members from other services. For instance, the GNA directed the CJCS to review the curriculum in joint military education institutions

to ensure they adhere to the same rigorous standards.[33] Taking this further, the reforms resulting from the Skelton Panel in 1989 established common educational standards across all joint and service schools, as defined by CJCS policy. Those same reforms aimed to further service parity and inclusion by requiring balanced representation by the different services within the student bodies and faculties of service and joint institutions. Thus, no one service could dominate any one school, with a 60-40 split between host services and nonhost services, or proportional distribution, applied to both student and faculty representation.[34] All of these reforms sought to increase the opportunities for interservice interactions and awareness of other services' capabilities, languages, and cultures.

Strategic Adaptability and Responsiveness

Joint education programs aim to contribute to strategic adaptability by helping the military overcome service parochialism through interservice learning and experience. These opportunities provide members a deeper understanding of what other services contribute to the joint force. With this knowledge in hand, joint leaders and commanders should be more capable of adapting to new environments because they are increasingly aware of what functions each service is capable of performing. Joint education is a central tenet of the development of joint officers and joint-minded service members, which strives to increase interoperability as members learn to work with one another and rely on each other's strengths before engaging in joint operations. In further support of this point, JPME Phase II specifically highlights strategic adaptability as one of its main foci and objectives for graduating officers.[35]

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[33] Public Law 99-433, 1986, §663.

[34] CJCS Instruction 1800.01F, *Officer Professional Military Education Policy*, Joint Chiefs of Staff, May 15, 2020, pp. A-8–A-10; Anna T. Waggener, "Joint Professional Military Education," *Joint Force Quarterly*, Vol. 77, Second Quarter 2015, pp. 57–58.

[35] CJCS Instruction 1800.01F, 2020, p. A-15.

Training Changes and Initiatives

The training changes and initiatives captured in Table 3.5 contribute to the associated outcomes identified in the analysis described above. Examples for individual outcomes are provided to illustrate the connection between each. As noted above, this list is not meant to be comprehensive but rather a representation of the results of our literature review and solicitation of subject-matter input.

TABLE 3.5
Representative Training Changes and Initiatives

Description of Change or Initiative	Year Began	Still in Existence (yes or no)
Authority and directive for joint training codified	1986	Yes
Joint Training System and Joint Mission Essential Task List formed	1994	Yes
USACOM's Joint Training, Analysis and Simulation Center	1997	Yes/no[a]
Development of Universal Joint Task List	1999	Yes
Joint National Training Capability established	2003	Yes
Joint Training Strategy	2007	Yes

SOURCE: Public Law 99-433, 1986; Janet St. Laurent, *Military Training Actions Needed to Enhance DoD's Program to Transform Joint Training*, U.S. Government Accountability Office, GAO-05-548, June 2005, p. 19; CJCS Instruction 3500.01J, *Joint Training Policy for the Armed Forces of the United States*, Joint Chief of Staff, January 13, 2020; Virginia Modeling, Analysis, and Simulation Center, "The History of VMASC," webpage, undated; Office of the Chief of Naval Operations Instruction (OPNAV) 3500.38C, *Universal Naval Task List*, Department of the Navy, April 25, 2022; Dennis J. Quinn, ed., *The Goldwater-Nichols DoD Reorganization Act: A Ten-Year Retrospective*, National Defense University Press, 1999, p. 57; "Joint Chiefs of Staff, undated-c; CJCS Manual 3500.03E, *Joint Training Manual for the Armed Forces of the United States*, Joint Chiefs of Staff, April 20, 2015; William S. Cohen, *Report of the Quadrennial Defense Review*, U.S. Department of Defense, May 1997, p. 77.
NOTE: USACOM = U.S. Atlantic Command.

[a] The U.S. Atlantic Command became the Joint Forces Command, which was disestablished in 2011. The Analysis and Simulation Center remains in place, but not under DoD. It is now housed within Old Dominion University.

Service Parity and Participation

Joint training seeks to contribute to service parity and participation by establishing common standards for training within joint environments and providing service members with access to the same training for joint operations. Joint exercises also offer service members the opportunity to train together to understand the inherent and distinct roles, functions, capabilities, and value each bring to the successful application of the joint force. For instance, the Joint National Training Capability uses the Global Joint Training Infrastructure to share common training among the services. These initiatives capitalize upon service training programs by developing and distributing joint training on a consistent basis through existing service programs. Although the service programs' structures may be unique to some extent, the joint training adheres to joint training objectives and enterprise standards.[36] Thus, the Joint National Training Capability and Global Joint Training Infrastructure aspire to ensure shared access to essential joint training by taking advantage of service-based programming, striving to realize the best of both worlds.

Strategic Adaptability and Responsiveness

Joint training endeavors to contribute to strategic adaptability and responsiveness by facilitating interaction, preparation, and planning between the services, the major commands, and the joint offices. Joint training provides in-person and virtual experiences for the joint warfighter to understand how different service counterparts can complement and address needs to carry out operational missions. In a specific instance, the Joint Training System's four-phases approach aligns and integrates joint concepts, solutions, lessons learned, and doctrine into joint training. The Joint Training System is designed to train the armed forces to be versatile to address all possible mission requirements.[37] Incorporating the perspectives from a variety of sources aims to allow leaders and service members to form a basis from which to draw upon, not only in response to operational shifts, but

[36] CJCS Manual 3500.03E, 2015, pp. G-C-1–G-C-2.

[37] CJCS Guide 3501, *The Joint Training System: A Guide for Senior Leaders*, Joint Chiefs of Staff, May 5, 2015, p. A-2.

to broader strategic ones. The foundation joint training provides seeks to enable leaders and members to adapt to strategic changes as they occur and prepare for those in the future. In another example, joint training centers and strategies support the development, update, and exercise of joint strategic plans. Joint training centers and other supporting institutions work to supply the expertise and support to carry out necessary changes based upon dynamic strategic context.[38]

Operational Effectiveness

Joint training initiatives seek to contribute to operational effectiveness by ensuring that the services conduct training in ways that meet operational objectives for combatant commands. For instance, the Joint Training System supplies the formal process by which mission analyses conducted by commands can be incorporated into the training requirements the services must then meet.[39] This is further supported by the Joint Mission Essential Task List, which is a compilation of common joint training tasks that are in use or recommended by combatant commands and sanctioned by the CJCS. The joint tasks featured on the list become the basis for joint operational planning by serving as a common language from which the combatant commands can draw, thus ideally improving their clarity and thoroughness.[40] Additionally, the Joint National Training Capability, through its Global Joint Training Infrastructure, enables the joint force to train through multiple mechanisms all over the world.[41] Having capabilities across the globe makes it possible to meet service member where they are, aiming to sufficiently train individuals and improve operational effectiveness.

[38] CJCS Instruction 3500.01J, 2020, pp. B-2 and GL-7; Old Dominion University, *From Concept to Leader: The Virginia Modeling, Analysis, and Simulation Center: A Ten-Year Narrative*, 2008, pp. 42, 48–49.

[39] St. Laurent, 2005, p. 19.

[40] JCS, "Universal Joint Task List," webpage, undated-c.

[41] CJCS Manual 3500.03E, 2015, pp. G-C-1–G-C-2.

Management Changes and Initiatives

The management changes and initiatives captured in Table 3.6 contributed to the associated outcomes identified in the analysis described above. Examples for individual outcomes are provided to illustrate the connection between each. As noted earlier, this list is not meant to be comprehensive, but rather a representation of the results of our literature review and solicitation of subject-matter input.

Strategic Unity/Unity of Command and Effort

Joint management initiatives aim to contribute to strategic unity and unity of command by facilitating the exchange and incorporation of information across services and commands through the creation and maintenance of joint forums and channels. For instance, the Global Command System, which is now the Global Combat Support Family of Systems and the Global Combat System-Joint, is the command and control family of systems incorporating all services and related defense agencies. The system "provides the [Joint Force Commander] and staff the necessary logistics information visibility to support unity of effort and enable freedom of action."[42] Additionally, management initiatives, such as joint acquisition programs, seek to encourage strategic unity between services and agencies, as they require forward planning and incorporation of service needs and capabilities.

Resource Considerations

Management initiatives endeavor to support resource considerations by distinguishing resource-oriented roles and responsibilities, forming institutions dedicated to resource decisions, and supplying oversight and administration for DoD-wide and interservice ventures. For example, the GNA created the position of VCJCS to assist the CJCS in carrying out the position's duties. Although not specified in law, the first VCJCS, General Robert T. Herres, received direction from the SECDEF that the VCJCS should "con-

[42] CJCS Instruction 6723.01B, 2009, p. 2.

TABLE 3.6

Representative Management Changes and Initiatives

Description of Change/Initiative	Year Began	Still in existence (yes or no)
Creation of VCJCS position	1986	Yes
VCJCS established as chairman of the Joint Requirements Oversight Council	1987	Yes
Joint Warfighting Capabilities Assessment	Mid-1990s	Yes
Joint Requirements Oversight Council focus and activities expansion	Mid-1990s	Yes
Joint Strike Fighter Acquisition Program	1995	Yes
Joint Air-to-Surface Standoff Attack Missile and Joint Standoff Attack Weapon	1996	Yes
Global Command/Combat Support System	1999	Yes
Recognition of Fourth Estate[a] agencies' roles in joint force (as specified in DoD Instruction 7730.64)	2004	Yes
GNA reform proposals	2015–2016	Yes/no
CJCS as global integrator for the joint force	2018	Yes

SOURCE: U.S. House of Representatives, 1986; Richard M. Meinhart, "Vice Chairman of the Joint Chiefs of Staff and Leadership of the Joint Requirements Oversight Council," *Joint Force Quarterly*, Vol. 56, First Quarter, 2010, pp. 145–146; Hoehn, 2022, pp. 7–18; Cohen, 1997, p. 71; DoD, *Joint Air to Surface Standoff Missile (JASSM) Selected Acquisition Report*, U.S. Air Force, April 16, 2014, p. 8; Quinn, 1999, p. 60; Defense Information Systems Agency, *Department of Defense Fiscal Year (FY) 2022 Budget Estimates, Defense Information Systems Agency, Defense-Wide Justification Book*, Vol. 5 of 5, U.S. Department of Defense, May 2021; DoD Instruction 7730.64, *Automated Extracts of Manpower and Unit Organizational Element Files*, December 11, 2004; Peter Levine, "Goldwater-Nichols Working Group Recommendations," information memo from Deputy Chief Management Officer, Joint Chiefs of Staff, to the Secretary of Defense and the Chairman of the Joint Chiefs of Staff, April 2016; U.S. Senate, Committee on Armed Services, 2016; Joint Chiefs of Staff, webpage, undated-a; CJCS Instruction 6723.01B, *Global Combat Support Family of Systems Requirements Management and Governance Structure*, July 31, 2009.

NOTE: Although an omnibus reform package of the GNA and jointness did not come to pass, there were a few initiatives that derived from this effort. See the "Patterns in Jointness over Time" section later in this chapter for a more-detailed discussion of these reform efforts.

[a] For an explanation of the "Fourth Estate," see DoD, "Acquisition Career Management in the 4th Estate," webpage, June 20, 2019a.

centrate on acquisition and resource management issues in order to free up time for the Chairman to deal with military policy and strategic matters."[43] Additionally, the Joint Requirements Oversight Council officially formed shortly before the passage of the GNA; and in 1987, the VCJCS was designated as the Chairman of the Joint Requirements Oversight Council. The concentration of the VCJCS and the Joint Requirements Oversight Council on resource and acquisition management aimed to provide centralized, joint leadership for acquisition and resource management, which had not previously existed to the same extent. The council's responsibilities and involvement in these areas expanded from its formation through the present day, with the development of supporting organizations and additional areas included for the Joint Requirements Oversight Council consideration.[44] In another example, DoD and the services worked together to develop the first joint acquisition programs to acquire weapons systems that would be used by more than one service. Part of the intent behind these joint programs was to reduce and share expenditures across the services, ideally improving resource management for DoD.[45]

Patterns in Jointness over Time

The above analysis shows that the U.S. military pursued multiple jointness initiatives across varying types of action in the decades since the passage of the GNA. Initial authoritative actions based on the law itself took effect immediately or within a few years of the law's passage. Throughout the 1990s and into the 2000s, initiatives became more numerous as programs formalized and institutionalized desired outcomes of jointness. Some of these were wholly in response to GNA directives, while subsequent efforts developed from them. With few exceptions, the jointness efforts within the five action

[43] Steven L. Rearden, *Council of War: A History of the Joint Chiefs of Staff, 1942–1991*, National Defense University Press, 2012, p. 455.

[44] Meinhart, 2010, pp. 145–146.

[45] Joint Strike Fighter Program, undated; John R. Hoehn, *F-35 Joint Strike Fighter (JSF) Program*, Congressional Research Service, RL30563, updated May 2, 2022, pp. 1–2; Cohen, 1997, pp. 79–80.

types identified in our analysis follow a general pattern of initiation, implementation, and formalization, starting in the 1980s and ending in the 2010s.

After 2010, jointness initiatives began to dwindle in number but for a few major developments. For instance, SECDEF Robert Gates officially disestablished the Joint Forces Command in 2011, which could be assumed to denote that jointness was of less import to DoD. Yet the decision to close the Joint Forces Command was based in part on the assumption that jointness did not need a dedicated command, for it had already been inculcated throughout the military. Plus, other joint institutions assumed many of the command's responsibilities after its disestablishment, meaning that the command's jointness functions remained in effect.[46] Other new major initiatives included the formation of CYBERCOM in 2012 and its establishment as a full combatant command in 2018. This action clearly supported a joint, whole-of-government effort for addressing cyberspace planning and operations across DoD.[47]

In addition to these changes, calls for reform of DoD and its pursuit of jointness occurred. The years 2015 and 2016 saw the most ambitious reform effort related to jointness, touted as a new GNA. A long series of congressional hearings during those years considered changes and improvements to DoD and jointness writ large, such as those held prior to the passage of the GNA. Although omnibus legislation did not originate from these efforts, some suggestions, such as transitioning CYBERCOM into a full combatant command, did come to be. What is worth highlighting about the proposed reforms is that the ideas put forth fell within the same action categories identified through the above analysis of the GNA. The changes and reforms were not about disestablishing jointness because it no longer held value, nor were they about reinventing jointness and the values desired from it. Rather, the committees and DoD presented solutions that aligned closely with the action types identified from our analysis of the GNA.[48] Thus, the

[46] Joint History Office, 2013, pp. 80–85.

[47] U.S. Cyber Command, undated; U.S. Cyber Command, *Achieve and Maintain Cyberspace Superiority Command Vision for US Cyber Command*, April 2018, pp. 4–5.

[48] DoD recommended changes in the following categories, which clearly align with our identified action types: command and control, strategic relationships, joint duty

same framework for jointness outlined even the most comprehensive set of proposals for DoD reform since the GNA.

The reduction in the number and extent of jointness initiatives after 2010 reflects what appears to be a presumption of jointness within the U.S. military since that time. The assumption was that now that authorities had been employed and programs had been implemented, jointness pervaded. One can even see this in the tenor and tone of the major strategic documents after 2010. Through a review of the QDRs, National Military Strategies, and NDSs after 2010, we see that the content related to jointness became less explicit, with discussions of jointness initiatives and institutionalization shifting to an assumed tone of jointness.[49] There seemed to be a sense that the efforts to instill jointness since 1986 had succeeded, and that jointness was now inherently a part of the actions and efforts of the military, particularly with respect to joint operations. With this presumption of jointness between the services, the discussions in the strategic documents broadened to contend that jointness should be integrated into DoD more broadly and extend beyond DoD to the federal government and even international partners. With the evident success of jointness at the operational level, the U.S. military and government could further benefit from jointness by expanding it to other organizational and intergovernmental levels.[50] Thus, although specific jointness initiatives became less common over time, the understanding of what jointness could be applied to, and improve, widened.

requirements, combatant commands, and acquisition and requirements. See Levine, 2016.

[49] The current National Defense Strategy of 2018 reflects similar content and tone to its QDR and National Military Strategy counterparts. The National Defense Strategy does not once mention an individual service by name, instead using the term *joint force* to refer to the armed services 19 times over 13 pages. No new jointness initiatives are mentioned either.

[50] Authors' analysis of the QDRs, National Military Strategy, and National Defense Strategy from 1997 to 2018 (see Mattis, 2018; Historical Office, Office of the Secretary of Defense, undated-a; Historical Office, Office of the Secretary of Defense, undated-b; and Historical Office, Office of the Secretary of Defense, undated-c).

Conclusions: What Has Remained and What Has Changed

According to our analysis, it becomes clear that the identified values sought from the pursuit of jointness remained fairly stable since the passage of the GNA in 1986. Jointness initiatives focused on the same action areas. Efforts at reform did the same. There have been no wholesale rebuttals of jointness, as it has developed since the GNA, by either DoD or Congress. Most importantly, the changes and initiatives instituted for jointness remain in place today. So, it seems fair to say that the U.S. military and government still seek the same values that formed the basis for reform in 1986.

Although the values have remained the same, what can be discerned is a shift in focus about what jointness, and its values, should ultimately be working toward. The clear concern and impetus for change during the GNA debates was that the armed services did not know how to work together in joint operations. Multiple operations from the 1970s and into the 1980s either struggled or failed because of the lack of coordination and cooperation between the services. Thus, the focus of jointness revolved around the ultimate value of operational effectiveness. All the initiatives and other values fed into ensuring the joint force could work together to carry out operations. Operational jointness served as the foundation for jointness writ large.

The importance of operational jointness has by no means diminished, as the institutions, policies, and programs created to support operational jointness still exist. And warnings about their removal or weakening make it clear that jointness is still essential to operational effectiveness, and that operational effectiveness is still the ultimate goal. Yet now the scope of effectiveness has been expanded, from the operational to broader departmental and intergovernmental effectiveness. The aperture of jointness has essentially widened, stemming from the original focus on the efforts of multiple services, to DoD, to the rest of the federal government, and arguably, to the rest of the world with international partners. Thus, the values of jointness have neither altered nor diminished dramatically; they have only expanded to include and affect more organizations and institutions with time.

CHAPTER 4

The Effects of Jointness on Military Organization, Capabilities, and Roles

The previous chapters outlined both the objectives and what we have come to value in jointness since the mid-1980s. This chapter will continue our analysis of the strategic value of jointness by examining two key elements in determining value and how they apply to the development of the United States' joint system—the sum of inputs and labor and advantages that jointness conveys from a U.S. standpoint. It will do so by examining how the joint system has evolved over time and identify areas where efforts at building jointness have led to noticeable and tangible results. In each of these areas, DoD invested its leadership attention, resources, and energy in building the joint system. In areas where this emphasis has been sustained, the improvements since the GNA's passage are noticeable.

Building the Joint System

The GNA led to a wide variety of initiatives, organizational changes, and the realignment of authorities. In most cases, the outcomes from these individual efforts have played a significant role in fostering jointness in the United States' military. To demonstrate the impact that the GNA and jointness has had on the military more broadly, this uses the four primary shortcomings identified prior to the GNA as a basis for measuring success. Improvements in the areas that contributed to failure in earlier operations—Desert One/Eagle Claw, Beirut, and Grenada—serve as a baseline for measuring the

impact that jointness has on the U.S. military's progress since 1986. Accordingly, the success of the U.S. model of jointness can be demonstrated based on developments in four key areas: (1) personnel, (2) command, (3) operational effectiveness, and (4) common systems and architecture.

Shaping Joint Professional Military Education and Joint Duty Programs

A crucial part of GNA reforms revolved around the education and experiences of service members throughout their careers. The law devotes an entire chapter to joint officer management, which created requirements, guidelines, and programs to support the education and development of joint leaders.[1] The GNA set the parameters for joint experience and formed a joint education system with identified roles and responsibilities, educational standards, and requirements for successful completion. The GNA established the coordination of PME across the services, conferring to the SECDEF and JCS leadership and oversight of the programs.

How the Goldwater-Nichols Act Shaped Joint Professional Military Education and Experience

The GNA made several changes to PME to develop jointness within service members at all levels of their careers, but particularly those on the path to achieving flag rank and senior-level command. The act formalized JPME curriculum and programming across all PME institutions. It directed periodic reviews of National Defense University's and all joint military schools' curriculum to confirm quality joint education across the board, including the development and incorporation of rigorous educational standards for joint instruction. The law also required that professional military schools that did not hold a joint designation to develop and implement coursework that initiates joint awareness and knowledge of other services and prepares students for future joint assignments. Finally, the law created a requirement that all officers seeking promotion to brigadier general or rear admiral must take a capstone course after their selection. The capstone course should

[1] Public Law 99-433, 1986.

focus on training general and flag officers to cooperate with members of other services.[2]

The GNA also established a JOM to standardize the steps needed to be considered joint qualified. The program's objective was to prepare officers for joint assignments at designated points in their careers. The law directed the SECDEF to create policies and procedures that would administer and develop officers with a joint specialty.[3] The joint specialty would be based on education and experience with joint matters. The GNA defines *joint matters* as those items "related to the integrated employment of land, sea, and air forces, including matters relating to—1.) national military strategy; 2.) strategic planning and contingency planning; and 3.) command and control of combat operations under unified command."[4] The services received the responsibility of selecting the officers who would pursue the joint specialty path. The service members selected had to meet two specifications. First, they were required to complete a JPME program. Second, they had to be assigned to a joint duty position after graduation from such a program.[5]

To support and carry out of the JOM, the act stipulated the definition of and requirements for joint experience. The main requirement stated that all officers completing their joint education should be assigned to a joint duty position immediately following. This would, in theory, permit officers to apply and test the knowledge gained during their joint education coursework to real-world experience. To assure that officers had time to adjust and further train while on the job, the law designated the length of time required for JDAs at no less than three years for general and flag officers, and no less than three and a half years for all other officer levels.[6] The law also tied joint experience to promotion opportunities. The GNA required JDAs for individuals seeking promotion to general or flag officer grades.[7] To ensure that the education and officer management programs produced

2 Public Law 99-433, 1986, § 401.

3 Public Law 99-433, 1986, § 401.

4 Public Law 99-433, 1986, § 401.

5 Public Law 99-433, 1986, § 401.

6 Public Law 99-433, 1986, § 401.

7 Public Law 99-433, 1986, § 404.

their intended outcomes, the GNA directed the SECDEF, CJCS, and Joint Staff to provide oversight of joint officer careers. This oversight included procedures for ensuring that officers meet their requirements for education and experience.[8]

Joint Professional Military Education and Joint Experience Programs Today

Since the GNA's passage, JPME and officer management have remained cornerstones of jointness within the U.S. military. The JOM within DoD oversees the education, training, and experience in joint matters designed to develop joint qualified officers.[9] Although JPME and joint experience programs have developed and changed since 1986, much of the framework described above remains intact. To give a sense of what has changed and what has remained, the following is a brief overview of JPME and joint experience programs in effect today.

The Joint Professional Military Education Program

According to the CJCS Instruction 1800.01F, the phrase *joint leader development* is defined as "the development of strategically minded joint warfighters who think critically and can creatively apply military power to inform national strategy, conduct globally integrated operations, and fight under conditions of disruptive change."[10] Thus, both JPME and experience through JDAs seek to meet this goal of leadership development. As one pillar of this dual-pronged approach, JPME aims to "maintain a rigorous joint learning environment designed to promote a theoretical and practical in-depth understanding of jointness and evolving areas of interest."[11] To achieve this goal, DoD offers multiple layers of joint education, which differ based on a service member's specific career trajectory. All service members

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[8] It also required an annual report to Congress on the progression of the joint officer program, with ten aspects to be included in each annual review. Public Law 99-433, 1986, § 401.

[9] DoD Instruction 1300.19, *DoD Joint Officer Management (JOM) Program*, U.S. Department of Defense, April 3, 2018, p. 5.

[10] CJCS Instruction 1800.01F, 2020, p. 1.

[11] CJCS Instruction 1800.01F, 2020, p. 2.

start with PME focused primarily on their particular service, and progressively their individual specialty. Although service members are in this level of PME, they gain a background in joint matters, attaining a general "awareness" of the other services.[12]

Then, as a service member's career progresses, that individual's joint-oriented requirements and coursework increase to develop a joint qualification. As JPME's primary purpose dictates, the program "educationally develops officers for the intellectual demands of complex contingencies and major conflicts."[13] There are three primary steps within JPME:

- JPME Phase I: officers in grades O-4 and lower take intermediate-level joint coursework
- JPME Phase II: officers in grade O-5 take senior-level joint coursework
- Capstone: general and flag officers must take an overarching joint course before completion of JPME and graduation.[14]

With the completion of the first two phases of JPME, an officer becomes "joint qualified," which is the current iteration of attaining a "joint specialty" originally outlined in the GNA.[15]

In addition to the stipulations regarding a service member's educational path to joint qualification, the GNA and resulting policies formed service and joint school requirements. A congressional panel conducted shortly after the passage of the GNA, commonly known as the Skelton Panel, examined in detail the best methods for meeting the law's new requirements. Many of the panel's recommendations were incorporated into JPME programming, including service and joint representation within PME institutions. The panel sought to ensure that one service did not dominate any one school, there were enough joint faculty to teach joint courses, and the schools' student bodies reflected the various services. Many of these stan-

[12] CCJS Instruction 1800.01F, 2020, p. A-15.

[13] DoD Instruction 1300.1, 2018, p. 24.

[14] CJCS Instruction 1800.01F, 2020, pp. A-3–A-4, A-15.

[15] CJCS Instruction 1800.01F, 2020, p. A-12; Paul W. Mayberry, William H. Waggy II, and Anthony Lawrence, *Producing Joint Qualified Officers FY 2008 to FY 2017 Trends*, RAND Corporation, RR-3105, 2019, p. 1.

dards still apply, such as how in senior service-level education institutions, the host military department faculty must be well versed in joint matters so as to supply a rigorous joint education and comprise no more than 60 percent of the faculty. The remaining faculty share must be split proportionally among the other services.[16] In another example, faculties in the National Defense University and National Intelligence University programs, which focus on joint education, should be proportionally split across the three services.[17]

Joint Experience Program

Complementary to JPME, DoD seeks to provide opportunities of joint experience to build on and apply joint education. Service members gain joint experience primarily through designated JDAs, known as the *standard path*, or less commonly through positions for which they have requested joint credit, known as the *experience path*. For the standard path, DoD determines which types of activities and duties qualify as JDAs, which it defines as "assignments in which an officer gains significant experience in joint matters."[18] DoD issues a JDA list annually with the positions that DoD has determined include enough joint aspects to be credited for joint duty. To ensure accountability and accuracy, DoD revalidates the JDA list every five years.[19] The JDA list consists of assignments in a variety of agencies and departments, including the Office of the Secretary of Defense (OSD), the Joint Staff, command headquarters, DoD agency and field activity headquarters, and other organizations with significant exposure to joint matters.[20] JDAs must also last for specified lengths of time. As stated above, the GNA dictated that JDAs last for at least three years for officers at the general and flag level and three and a half years for those at all other levels.[21] How-

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16 CJCS Instruction 1800.01F, 2020, pp. A9–A10.

17 CJCS Instruction 1800.01F, 2020, p. A10.

18 CJCS Instruction 1330.05B, 2020, p. D-1.

19 CJCS Instruction 1330.05B, 2020, pp. D1, D6, and D9; DoD Instruction 1300.19, 2018, pp. 17–18.

20 CJCS Instruction 1330.05B, 2020, pp. D1–D2; DoD Instruction 1300.19, 2018, pp. 16–17.

21 Public Law 99-433, 1986, § 401.

ever, a 2018 change in policy decreased the required time in position to at least two years for all officers, regardless of level.[22]

To track the progression of officers in their joint development, DoD uses the Joint Qualification System (JQS). The JQS is "open to all officers and recognizes joint experiences, regardless of where they occurred."[23] Officers may advance through three JQS levels, which align with the three steps in the JPME program discussed above. Officers receive joint credit in the form of points and must reach a designated point total to progress from one level to the next. Points represent the duration and intensity of a joint assignment or experience, combined with the requisite JPME coursework within the same level.[24] The three levels are the following:

- Level II: Recognition of joint matters experience and completion of JPME Phase I (minimum of 12 points)
- Level III: Recognition for significant joint matters experience and joint education that enables joint officers to function as a joint matters expert (minimum of 24 points)
- Level IV: For general and flag officers only, who have earned 24 joint qualification points or awarded general/flag officer credit from an assignment after completing at least 14 months in a general or flag officer billet and successful completion of the JPME capstone course.[25]

Officers attain the designation of *joint qualified officer* when they complete Level III of the JQS.[26]

[22] DoD Instruction 1300.19, 2018, p. 19; Mayberry et al., 2019, p. 16.

[23] DoD Instruction 1300.19, 2018, p. 10.

[24] DoD Instruction 1300.19, 2018, pp. 10–11.

[25] DoD Instruction 1300.19, 2018, pp. 12–13.

[26] CJCS Instruction 1330.05B, 2020, p. B-2. Officers may have the JPME Phase II requirement waived if they have successfully completed two JDAs, one of which must be a standard JDA (see DoD Instruction 1300.19, 2018, pp. B4–B5).

Joint Professional Military Education and Joint Experience: The Unintended Consequences of Requirements

As the above evidence shows, the GNA laid the foundation for using joint education and experience to develop and encourage jointness across the services. Since then, DoD and services built on this foundation, leading to the JPME and joint experience programs in place today. These efforts have changed the progression of career paths for service members compared with those before the act's passage, especially those seeking to become officers and senior leaders. Yet the implementation and progression of these programs over time has led to some unintended consequences that diminish the goal of increasing jointness between the services. To show how this has occurred, the next section discusses two major examples of how real-world application of JPME and joint experience programs have shifted the focus away from the intent of encouraging jointness to that of meeting requirements.

The GNA included an entire section on joint officer management to establish and implement methods by which service members could better understand the culture and capabilities of services other than their own. The development described above institutionalized the idea that education and experience could facilitate exchanges that would increase the interoperability of the services during joint operations. One of the ways the GNA tried to make joint education and experience attractive to the services and their members was tying their completion to promotion opportunities. Essentially, to become a general or flag officer, one needed to partake in JPME courses and JDAs. By doing so, the law tried to address the concern that services encouraged their members to focus on service-oriented education and experience as they progressed through their careers.[27] Because the services shepherd their members through the promotion process, it is logical that they may weigh service-oriented experience more heavily than joint experience.[28] Thus, the GNA tried to make joint education and experi-

[27] Public Law 99-433, 1986, § 404.

[28] Paul W. Mayberry, Charles A. Goldman, Kimberly Jackson, Eric Hastings, Hannah Acheson-Field, and Anthony Lawrence, *Making the Grade: Integration of Joint Professional Military Education and Talent Management in Developing Joint Officers*, RAND Corporation, RR-A473-1, 2021, pp. 19–21; Mayberry, Waggy, and Lawrence, 2019, p. 1.

ence worthwhile in the eyes of both the services and individual members by making it a requirement for promotion.

One consequence that came from tying joint education and experience to promotion is the increased number of requirements placed on service members seeking to become officers. Members must meet not only JPME and joint experience requirements but also those dictated by the DOPMA, which outlined a set of uniform steps and requirements for career progression across the military.[29] Consequently, service members must meet multiple sets of requirements between those stipulated within DOPMA and GNA. Combined with service promotion demands and operational duties, service members may feel overwhelmed by every item they need to achieve to meet their career goals. Congressional examinations and testimony over the past ten years reflect this constraint. In 2010, the House Committee on Armed Service's Subcommittee on Oversight and Investigations issued a 218-page report on the state of PME two decades after the GNA passage and Skelton Panel recommendations. Regarding the stresses placed upon service members in meeting their requirements, the report stated: "The competing demands over the course of a 20- to 30-year career make it difficult to accommodate competing needs for the requisite education, training, and experience."[30] Five years later, during a congressional hearing on potential reform of the GNA, John Hamre, president of the Center for Strategic and International Studies and chairman of the Defense Policy Board Advisory Committee, affirmed that service members still faced difficulties meeting their requirements:

> The second problem with the original Goldwater-Nichols Act is not resolved, and that concerns the way we added joint-duty obligations to the normal officer management system. The Defense Officer Personnel Management Act, or DOPMA . . . created a uniform set of requirements for officer development . . . it created a very elaborate set of requirements. We then added on top of that, the joint-duty require-

[29] Public Law 96-513, Defense Officer Personnel Management Act, December 12, 1980.

[30] U.S. House of Representatives, Committee on Armed Services, Subcommittee on Oversight and Investigations, *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel*, April 2010, p. 42.

> ments for promotion to general/flag officer ranks . . . creating a very elaborate and complex system.[31]

Although some changes have been made to reduce the burden of joint requirements for promotion, such as shortening JDAs to two rather than three or more years, the demands remain.[32] This creates conflict for individual service members as they face pressure from both service and joint requirements. Recent research on the integration of joint education and experience confirms that this challenge persists:

> A tension exists between the needs of the services and the joint community for officer education, assignments, and career progression. Joint commitments, for example, can be viewed as detrimental to an officer's career, while service-specific education and assignments are often perceived to be more valuable to promotion. Officers are increasingly challenged to complete required JPME, which is even more difficult when faced with continuous operational requirements.[33]

These consuming demands thus shift the focus away from gaining education and experience to enhance jointness, and instead place it upon meeting the requirements, or checking the boxes, needed to attain promotion.

Another instance where the application of JPME and joint experience programs resulted in unintended outcomes is the interconnection between the two programs. Specifically, the GNA outlined that an officer could not be "selected for the joint specialty until the officer—(A) successfully completes an appropriate program at a JPME school and (B) *after completing such program of education*, successfully completes a full tour of duty in a joint duty assignment."[34] Through this clause, the law shows that a connection between JPME and joint experience exists, that joint duty should follow completion of joint education. Subsequently, the Skelton Panel echoed the law's sentiment and underscored the connection between completing JPME

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[31] U.S. Senate, 2015, p. 19.

[32] DoD Instruction 1300.19, 2018, p. 19; Mayberry et al., 2019, p. 16.

[33] Mayberry et al., 2021, p. 19.

[34] Emphasis added. Public Law 99-433, 1986, §401.

and assuming a JDA. "The Skelton Panel . . . carefully highlighted the preparatory nature of JPME Phase II, implying that such education and socialization would achieve the greatest utility and benefit when received by officers *en route to their initial joint assignment*."[35] As a consequence, the initial DoD JOM required service members to complete the JPME Phase II coursework prior to starting their JDAs.

In 2007, the National Defense Authorization Act (NDAA) amended the JQS, instituting changes to the JPME and joint experience programs. The law, seeking to make the system more flexible for service members and personnel management, altered the requirement of attending JPME in full prior to a JDA. Instead, officers must still take JPME Phase I and Phase II programs to become joint qualified, but they do not have to complete JPME Phase II prior to their JDA. Given the demands placed on service members, the flexibility granted by the NDAA makes sense. However, by removing the requirement to take the two levels of JPME prior to a JDA, it makes completing JPME Phase I, and especially JPME Phase II, seem of less import to successful joint experiences. The GNA and Skelton Panel contended that completion of JPME Phase II was a prerequisite for a JDA; that completing JPME Phase II would help a service member be successful in the follow-on JDA. But by removing the requirement to take JPME Phase II beforehand, that message is no longer clear or even defensible. The change "bolstered beliefs that JPME Phase II is merely a check-the-box requirement rather than an essential joint educational, socialization, and preparatory experience. Such institutional devaluing occurred because Service personnel managers were allowed to view JPME Phase II only as a qualifier for promotion to general or flag officer."[36] The number of service members taking advantage of the flexible policy and partaking in JDAs prior to their JPME Phase II coursework is significant too. According to one study, approximately 75 percent of

[35] Charles Davis and Frederick R. Kienle, "Toward a More Lethal, Flexible, and Resilient Joint Force Rediscovering the Purpose of JPME II," *Joint Force Quarterly*, Vol. 92, First Quarter 2019, p. 25.

[36] Davis and Kienle, 2019, p. 27.

the Joint Staff had not taken their JPME Phase II course before serving in their positions.[37]

From another perspective, having officers enter JDAs prior to receiving the two main levels of joint education means that they may not be sufficiently prepared to take on joint positions. The intended preparatory nature of JPME Phase II should provide officers with at least more knowledge and exposure to joint matters than an officer without such education. Thus, officers are starting their JDA experience with a steeper learning curve than those prior to 2007. Coupling this with the fact that JDAs have been shortened from three or more years to two, their experience could be even less beneficial to them and the organization they support. With only two years in some positions, a service member may not reach full functioning capability until much later in the rotation without prior preparatory education. As a 2017 RAND report on producing joint qualified officers asked, "JPME [Phase] II is no longer a prerequisite for a joint assignment but rather a matter of timing and availability determined by the services. . . . Are officers reporting to assignments sufficiently prepared and capable of performing their joint billet responsibilities?"[38]

Thus, the application of JPME and experience programs has resulted in some unintended consequences. First, tying JPME and joint duty to promotion has increased the requirements placed upon service members to such a point that it created additional contention between joint and service interests. Second, an attempt to increase flexibility in requirements aided in placing the need for JPME Phase II into question. Both instances have essentially made the joint education and experience processes seem more about requirements than jointness. Therefore, services and individual members may view these as check-the-box obligations rather than opportunities for growth and learning to become better joint officers.

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[37] Dina Eliezer, Theresa K. Mitchell, and Allison Abbe, "Development Beyond the Joint Qualification System: An Overview," *Joint Force Quarterly*, Vol. 95, Fourth Quarter 2019, p. 86.

[38] Mayberry et al., 2019, pp. xii–xiv.

The Complexity of Joint Requirements

The GNA established in law that jointness is critical to the successful operation of DoD and its military services. The law's chapter on joint officer management clearly connected the assumption of jointness throughout the services to joint education and experience. Without joint education and experience, the services would retain their siloed posture that had created the challenges and operational failures that led to the passage of the act in the first place.

The act's provisions and the succeeding policies, directives, and initiatives pertaining to joint education and experience sought to thread jointness throughout service members' careers. The GNA created ties between promotion and joint education and experience, seeking to incentivize both the services and its members to seek out and attain these opportunities—to incentivize jointness at a time when it was not valued. Yet, as time has passed and joint education and experience programs have matured, their real-world implementation led to unexpected outcomes. Service members face numerous demands on their time and skill set, due in part to joint requirements. Consequently, DoD and Congress provided additional flexibility to meet competing demands, but in turn, diminished the value gained from joint education and experience. This outcome shows the complexity of joint requirements: seeking to address one problem unintentionally created another. In the end, both applications shifted the desired end point from becoming better joint leaders and fighters toward one of meeting necessary requirements. Thus, requiring joint education and experience needs to be both balanced with the other requirements placed on service members and remain true to their preparatory intentions. Doing so would allow service members to benefit from the intended outcomes of joint education and experience, rather than face challenges from the unintended ones.

Command and Integration

One of the most noticeable areas in which jointness has affected the U.S. military is in the area of command and integration. GEN Tommy Franks, in testimony examining the lessons learned from operations in Afghanistan and Iraq in 2003, argued that the succession of experience gained over the 1990s in such operations as Operations Southern and Northern Watch

(OSW and ONW, respectively) "helped to develop a joint culture in our headquarters and in our components."[39] This joint culture had a significant influence on the military's ability to jointly integrate ground maneuver, special operations, and precision lethal fires and nonlethal forces that resulted in "the first time integration of forces rather than deconfliction of forces."[40] These developments marked a significant milestone in the evolution of jointness as a feature of military command and a critical element in our consideration of the strategic value of jointness.

Confused Command Relationships in the 1980s

Some of the most significant failures leading up to the GNA involved multiple aspects of command, including the lack of a clear chain of command, overlapping responsibilities and authorities among the service chiefs and the combatant commanders, the absence of an integrated system for operational planning, and an overall lack of mechanisms to enable synchronization and deconfliction of individual lines of effort. The most notable examples leading up to the passage of the GNA included Operation Desert One/Eagle Claw in 1980, the response to the Beirut bombing in 1983, and the successful but poorly planned and coordinated invasion of Grenada (i.e., Operation Urgent Fury) in 1983.[41] In none of the three cases was there a clear chain of command, unity of effort, or clear authorities and responsibilities for integration and execution.

The problems with planning in Operation Desert One were magnified by the lack of a planning staff with the experience and expertise necessary for the operation. None of the members of the joint chiefs had special operations experience, and the Joint Staff did not have the necessary resources or expertise for the detailed planning required for the mission.[42] According to the senior Air Force commander for Desert One, "There were four commanders at the scene without visible identification, incompatible radios,

[39] Warner et al., 2003, p. 23.

[40] Warner et al., 2003, p. 23.

[41] Kathleen J. McInnis, *Goldwater-Nichols at 30: Defense Reform and Issues for Congress*, Congressional Research Service, R44474, June 2, 2016, pp. 2–6.

[42] Locher, 2004, p. 47.

and no agreed-upon plan."[43] For this reason, planning for the operation was accomplished by an ad hoc planning staff with limited experience and no clear lines of authority and responsibility.[44] The Joint Staff planning process ultimately was overly compartmentalized and deemed "as not being useful."[45]

Many comparable issues arose in 1983 with the Marine barracks bombing in Beirut and the invasion of Grenada. The most notable problem involved the lack of clarity and overlapping command relationships between the Marine Corps and the regional combatant commander, U.S. European Command (EUCOM). As in other cases where these confused lines of control were present, the service through its theater components communicated directly with commanders on the ground regarding operational matters that, in theory, were supposed to be the responsibility of the combatant commands. In Beirut, there was a clear conflict in the delineation of chains of command. The EUCOM commander summarized the problem by relaying that he "really felt the Marines didn't work directly for me" but rather they worked for the CINC of U.S. Naval Forces Europe.[46] Similarly in Grenada, Army and Navy planners did not coordinate their individual service planning efforts and entered into the operation with no clear understanding of each other's requirements. As a result, after-action reports highlighted shortcomings in interoperability and coordination, most notably in such areas as fire support, communications, targeting, and mapping.[47]

As these events demonstrate, there were two central problems complicating the planning process in each of the operations. The first problem was that no single organization had responsibility for developing operational plans. In the case of Operation Desert One, the task initially fell to an inexperienced and unprepared Joint Staff, and none of the services had coordinated their initial planning to address system capabilities and limitations, communications, synchronization, or individual missions. In Beirut,

[43] Locher, 2004, p. 47.

[44] Locher, 2004, p. 47.

[45] Locher, 2004, p. 47.

[46] McInnis, 2016, p. 5.

[47] McInnis, 2016, p. 4; Locher, 1985.

the Navy component in Europe and the Marine Corps took on roles such as antiterrorism training and crisis response that negated the role played by EUCOM, complicating both force protection measures and preparation and the post-attack response.[48] Grenada also demonstrated the problems associated with individual planning efforts that each of the services undertook without any type of information sharing or attempts at coordination and synchronization. Furthermore, individual service chiefs pushed to have their forces involved in the invasion, as demonstrated by Marine Corps Commandant Gen. P. X. Kelley's calls to the CJCS, GEN John W. Vessey, Jr. In the end, the other services agreed and divided the island into sectors for the Marines and Army.[49] As some critics argued, "service parochialism created a tendency for each chief to 'roll' the CINC to ensure that his service got a piece of the operation."[50]

Operation Desert Storm

Potentially the most significant push toward jointness that emerged out of GNA reforms was the increased authority and responsibility given to the regional combatant commanders. From the outset, these reforms clarified the chain of command and removed the service chiefs' direct involvement in the operational chain of command and the operational planning process. After the GNA was passed, the chain of command went from President and SECDEF directly to the combatant commander. The first test of the new command relationship came only five years after the GNA during Operation Desert Storm when GEN Norman Schwarzkopf, the CINC CENTCOM, was assigned operational command of U.S. forces involved in the operation.[51] From an organizational standpoint, the service component commands in theater now reported directly to the CINC CENTCOM and assumed responsibility for administration, logistics, and operations of the deployed forces.[52]

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48 Locher, 2004, pp. 154–159.

49 Locher, 2004, p. 307.

50 Roman and Tarr, 1998, pp. 98–99.

51 The precursor to combatant commands, specifically CENTCOM.

52 DoD, 1992, p. 55.

A key element of the new planning process focused on the CINC CENTCOM's ability to centralize planning authority while at the same time enabling theater component commanders to exercise a significant level of initiative. The component commanders coordinated closely with one another through the use of liaison detachments in addition to close coordination with CINC CENTCOM.[53] This new focus on planning directed by the regional combatant commander marked a significant departure from earlier efforts dating back to Vietnam, in which service chains of command in essence created independent operational plans that usually lacked adequate coordination. In the end, the new joint structure that emerged in Desert Storm "was unambiguous, letting CINC CENTCOM exercise full command over all U.S. forces in theater, maximizing the unique service capabilities of all forces, while ensuring unity of command."[54] One closely related development that also marked a significant achievement was the level of coordination among the many coalition partners. Although the issue of combined operations goes beyond the scope of this study, the United States' clear chain of command under the CINC CENTCOM played a role in ensuring effective coordination within the coalition.

Operation Allied Force

Despite the significant improvement in command arrangements in Desert Storm, several problems emerged during the campaign to include rivalries and disagreements among the service components; differences in planning and targeting approaches; lack of compatibility among Navy and Air Force systems disseminating the air tasking order (ATO); and different perspectives on employment of critical assets for precision strike, refueling, and close air support (CAS), among many others.[55] Operation Allied Force provided a first major test for the joint and combined application of air power since Desert Storm. Operation Allied Force—the air campaign that lasted for 78 days between March and June 1999—was a response to Serbia's ethnic cleansing and repression of Kosovo's majority ethnic Albanian population

[53] DoD, 1992, p. 56.

[54] DoD, 1992, p. 59.

[55] Weitz, 2004, pp. 135–139.

and the subsequent humanitarian crisis that stemmed from Serbian aggression.[56] During Allied Force, progress had been made in several areas but additional complications arose, mainly in terms of the U.S. and NATO structures that needed to be reconciled. A key feature of the theater command architecture in Europe prior to Allied Force was the stand-up of joint task forces that removed the CINC, U.S. Air Forces Europe and the CINC, and U.S. Naval Forces Europe from the operational chain of command and replaced them with the commanders of 16th Air Force and Sixth Fleet who then reported directly to the CINC EUCOM.[57]

The two joint task forces—Flexible Anvil and Sky Anvil—were established between August and December 1998, with each being assigned to execute different planning options. Sky Anvil was tasked with planning for the execution of a limited strike option primarily using Tomahawk land attack missiles, while joint task force Sky Anvil was tasked with planning to execute more extensive strikes if the limited option did not achieve its objectives.[58] Under the structure that was used during combat operations, both joint task forces were subsumed under Noble Anvil, which eventually linked U.S. and NATO organizations and command and control structures.[59]

The command structure in place for Allied Force was different from that in Desert Storm in several important ways. First, the command structure for Allied Force was much more heavily oriented toward air and maritime power, with only a limited role played by Army Aviation units as part of Task Force Hawk.[60] The primary focus for planning was on air and cruise missile strikes against critical targets in Serbia with no significant ground planning involved. Accordingly, a key element of command emphasis in Allied Force involved the deployment and orchestration of U.S. and allied fighters, bombers, tankers, and special mission aircraft. A second major difference between the two command structures involved the linkages

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[56] DoD, *Kosovo/Operation Allied Force After-Action Report: Report to Congress*, January 31, 2000, p. 1.

[57] DoD, 2000, p. 18.

[58] DoD, 2000, p. 18.

[59] DoD, 2000, p. 18.

[60] DoD, 2000, p. xxi.

between the United States and NATO. Therefore, efforts for air tasking, targeting, and mission planning were to some degree linked much more closely than the Desert Storm coalition had been eight years earlier. Finally, and perhaps most significant, the joint task force commander, the JFACC, and the JFMCC were all dual-hatted in both U.S. and NATO positions, and the regional combatant commander notionally was given a much less prominent role in the operational chain of command than CINC CENTCOM had enjoyed in Desert Storm.[61]

Similar to Desert Storm, the command structure in place for Allied Force was faced with several challenges. Despite these difficulties, several significant developments necessary for the command of forces in modern military operations either emerged or showed improvement. First among these improvements was the development of command, control, communications, and computers (C4) capacity, which was "unprecedented in terms of capacity and variety of services," according to DoD's after-action report on Allied Force.[62] Overall, the bandwidth available to users in theater nearly doubled that available in Desert Storm—an operation with significantly more forces involved.[63] In a similar fashion, intelligence, surveillance, and reconnaissance (ISR) capabilities provided "unprecedented levels of information to NATO warfighters" through the use of an intelligence architecture that "included a worldwide network of processing centers and high-speed data communications" that operated in direct support of Allied Force and combat operations in Kosovo.[64] Ultimately, the further development of command structures coupled with vastly improved C4 and ISR capabilities provided joint force commanders with a much greater capability and capacity to conduct the complex planning necessary for modern combat.

Operations Enduring Freedom and Iraqi Freedom

The command structures put into place during Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF) followed many of the recent joint struc-

[61] DoD, 2000, p. 18.

[62] DoD, 2000, p. xxii.

[63] DoD, 2000, p. xxii.

[64] DoD, 2000, p. xxii.

tural developments that had evolved since Desert Storm, but command in these operations was complicated by circumstances and conditions unique to both conflicts. One notable feature regarding the evolution, deployment, and organization of command organizations and practices was that they both occurred in a very short time window. OIF planning began as early combat operations in OEF were still underway. CENTCOM applied lessons learned from OEF planning in their initial conceptualization and planning for OIF.[65]

These two cases demonstrated several key facets of the evolution of joint command that should be considered in our understanding of the impact that jointness has had on the exercise of command. First, both operations occurred within the CENTCOM area of responsibility (AOR) within the span of two years. Second, OEF and OIF occurred under significantly different conditions that required CENTCOM to organize and deploy its command elements in significantly different ways. For instance, OEF was initiated approximately one month after the 9/11 attack, with no basing or forward headquarters in close proximity to where operations were being conducted. For this reason, in the initial phases of OEF, there was no forward deployed joint headquarters in Afghanistan, meaning that OEF command and decisionmaking was exercised from outside Afghanistan, frequently with key decisions being made from CENTCOM headquarters in Tampa, Florida.[66] In contrast, OIF was able to benefit from forward joint headquarters located in the Persian Gulf region.[67]

At the outset of OEF, the United States had no regional infrastructure or basing capable of enabling the type of buildup that accompanied Desert Storm, Allied Force, and the numerous other monitoring operations that ran through the course of the 1990s, including ONW, OSW, and Deny Flight (Bosnia). As a result, during its earliest days, OEF relied on special forces and close coordination with CIA paramilitary, the Northern Alli-

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[65] Walter L. Perry, Richard E. Darilek, Laurinda L. Rohn, and Jerry M. Sollinger, eds., *Operation IRAQI FREEDOM: Decisive War, Elusive Peace*, RAND Corporation, RR-1214-A, 2015, p. 245.

[66] Perry et al., 2015, pp. 246–247.

[67] Perry et al., 2015, pp. 246–247.

ance, and Air Force bombers and strike assets.[68] Command was exercised from CENTCOM and fell under General Franks, who chose not to establish a combined joint force headquarters, instead controlling coalition through the component commanders.[69] Eventually, the command structure included a headquarters in Afghanistan led by a three- and, later, four-star general. Therefore, command responsibilities expanded to include command and control of stability maintenance and coalition operations as NATO and partner nation participation increased. Critical aspects of OEF joint command responsibilities and functions over time included a diverse range of activities including counterterrorism, counterinsurgency, security force assistance, and regional reconstruction.

OIF proved more complex because of the number of forces and military organizations involved and the large number of allies and supporting organizations that fell under CENTCOM's purview. In all, a total of seven U.S. task organizations (i.e., CENTCOM and its service and functional components), 24 supporting organizations (i.e., intelligence community, combat support agencies, U.S. government departments, and other combatant commands), multiple allies, and several other government organizations participated in OIF.[70] Similar to OEF, General Franks did not establish a combined joint force headquarters for OEF. Instead, he chose to control operations from CENTCOM's forward deployed headquarters in Qatar.[71]

Both OEF and OIF highlight important developments in the evolution of joint command since the GNA. First, the complexity of command organizations and the breadth of relationships that joint commanders had to manage grew significantly. Today these relationships routinely involve the participation of numerous government departments and agencies in addition to allies and partners. This was evident in Desert Storm, but the expansion of these relationships over the past 30 years has added yet another element of complexity to our understanding of jointness. Second, differences

[68] Richard W. Stewart, *The United States Army in Afghanistan: Operation Enduring Freedom October 2001–March 2002*, U.S. Army Center for Military History, 2003, p. 8.

[69] Perry et al., 2015, p. 247.

[70] Perry et al., 2015, p. 245.

[71] Perry et al., 2015, p. 247.

in structure, time constraints, and geographic expanse in these operations demonstrate a degree of flexible design and application that is a key element in modern joint command. Last, technological advances in C4, ISR, and data management have enabled a wide range of options for how command is structured and executed.

The Continuing Evolution

The preceding examples should not suggest that these new command structures have been without their own problems. Quite the contrary. Lessons-learned studies and testimony from senior leaders highlight a multitude of problems and complexities that have led to complications for command and control in each of these operations. Rivalries and disputes among the components, technology shortfalls, the use of new technologies (e.g., video teleconferencing in Allied Force), and the management of interagency and coalition relationships have all been highlighted as areas requiring attention. But as the progression of events suggests in these four cases, many of these problems over time have seen improvement enabled by new technologies, new organizational structures, and a consideration of previous experiences. Ultimately, although current U.S. joint command structures continue to show their shortcomings, they have demonstrated an ability to command large, complex operations under a diverse range of conditions.

More specifically, studies following Desert Storm highlighted one of the key improvements that took place under the new joint command structure led by regional combatant commands—"in contrast to Vietnam, where the Army, Navy and Air Force waged three separate air wars and the Army and Marines each fought its own war on the ground, Desert Storm saw all the U.S. services fighting the same war at the same time."[72] Empowering regional combatant commands was a significant step in alleviating these problems. First, combatant commanders answering directly to the SECDEF avoid many of the problems of service interference and parochialism that characterized the exercise of command prior to the GNA. Former SECDEF James Schlessinger pointed out that "each of the services wants a piece of

[72] Weitz, 2004, p. 133.

the action . . . and is demanding usually that it control its own forces."[73] The change in relationships and authority was evident during Desert Storm when the CJCS General Powell "rebuffed U.S. Marine Corps Commandant Al Gray when the latter sought the Chairman's assistance in persuading Schwarzkopf to authorize a Marine-led amphibious operation," and later when CINC CENTCOM Schwarzkopf vetoed General Gray's plan to move Marine Corps Forces Central Command headquarters to a location away from Riyadh, where CINC CENTCOM staff were located.[74] In addition, in one case a service chief was denied permission to visit the CENTCOM AOR unless the visit was approved by Schwarzkopf.[75] These developments marked a significant departure from the Marine barracks bombing in Beirut and the EUCOM Deputy Commander's comment that he did not feel the Marines in theater worked for him.

Another critical element that demonstrates the importance of joint command in our assessment of strategic value is the significant changes in experience and planning that took place when the regional combatant commands were empowered following the GNA. At the outset of the debate leading up to the GNA, then–CJCS GEN David Jones pointed out that his "director of operations on the Joint Staff, an army officer, know little about the army outside of his branch and nothing about the other services"—a problem reflected in the lack of experience and expertise that hobbled planning for Desert One.[76] The services' unwillingness and inability to work together, coupled with service parochialism that influenced planning, led to major shortfalls in how such operations as Grenada were planned and executed. Although far from flawless, the development of a combatant command–led planning process that centralized planning with the commander and delegated planning for domain- and service-specific functions down to the theater component commands was evident in any comparison of operations in Vietnam and Grenada with those conducted from Desert Storm and after.

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[73] Locher, 2004, p. 302.

[74] Weitz, 2004, pp. 133–152.

[75] Weitz, 2004, p. 134.

[76] Locher, 2004, p. 48.

Global Integration

One of the most significant developments in recent years has centered on the CJCS's role in global integration. Building on the CJCS role in "providing advice on the military elements of defense strategy and the global integration of military activities, and advocating for the joint warfighter of today and tomorrow," the 2017 NDAA sought to "strengthen the Chairman's ability to assist the Secretary with the global integration of military operations and activities to address the multiregional, cross-functional, and multi-domain threats."[77] The NDAA stated that the GNA deliberately left the CJCS out of the chain of command to prevent overcentralization, thus protecting civilian control over the military. However, the increasingly transnational and transregional nature of the threats now confronting the United States and requirements for transferring resources and capabilities across combatant commands requires a more responsive and dynamic means for ensuring global integration.[78]

The approval for any transfers between combatant commands is the SECDEF's responsibility, and with the increasing demand being placed on the military, the NDAA viewed this single point of failure—particularly in light of the vast number of demands on the SECDEF's time—as potentially limiting the United States' ability to respond in a timely manner in times of crisis or conflict. For this reason, the NDAA provided a provision that "would allow the Secretary to delegate some authority to the CJCS for the worldwide reallocation of limited military assets on a short-term basis, consistent with the Secretary's policy guidance and in furtherance of the defense strategy."[79] This provision did not explicitly place the CJCS in the chain of command, but it did permit the Secretary to decide on when and under what circumstances to delegate authority to the CJCS while at the same time stating that the SECDEF was to be fully informed of any CJCS decisions. These provisions largely have been accepted by SECDEFs since

[77] U.S. Senate, Committee on Armed Services, 2014, p. 2.

[78] U.S. Senate, Committee on Armed Services, 2014, p. 2.

[79] U.S. Senate, Committee on Armed Services, 2014, p. 2.

the FY 2017 NDAA, with SECDEFs being willing to grant these increased authorities to the CJCS.[80]

As CJCS, GEN Joseph Dunford laid out four pillars for global integration: (1) planning, (2) decisionmaking, (3) force management, and (4) force design.[81] The general concepts that underpinned these four pillars were based on a recognition that changes in the strategic environment and the emergence of major power competitors were creating problems that were no longer resident in one geographic region. At its core, today's security environment was marked by more-assertive powers that were actively challenging the existing international order and openly challenging the United States' role within that system.[82] Likewise, the growing presence of both of these competitors in strategic domains—space, cyber, and information—created a new dynamic in which adversaries could extend their reach, even potentially threatening the U.S. homeland, in ways they could not in recent decades. Accordingly, global integration now emphasizes the JCS role in strategy development process and a move away from regionally based plans toward integrated global campaign plans.[83] Emphasis on force management and force design also play a significant role in ensuring the right kinds of forces are allocated where they are needed, when they are needed. General Dunford's pillars highlighted the importance of experimentation and global exercises in ensuring that the United States and its allies were putting into place operational concepts that were relevant to future wars and providing forces capable of executing them.[84]

Ultimately, the CJCS's role in global integration builds on his statutory responsibility of providing military advice to the SECDEF. In this capacity, the focus of global integration is to accelerate decisionmaking and provide

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[80] Paul D. Shinkman, "The Joint Chiefs' Power Surge," *US News & World Report*, September 30, 2019.

[81] Jim Garamone, "Global Integration Deserves More Attention, Selva Says," *DOD News*, June 19, 2019a.

[82] Jim Garamone, "Dunford's Term as Chairman Encompassed Great Changes, " *DOD News*, September 26, 2019b.

[83] Garamone, 2019b.

[84] Jim Garamone, "Global Integration Seeks to Buy Leaders Decision Time, Increase 'Speed of Relevance,'" *DOD News*, July 2, 2018.

flexibility in a dynamic, rapidly changing security environment.[85] According to General Dunford, the process is marked by top-down decisionmaking and then refined with "bottom up" inputs from the combatant commanders on their specific theater requirements. The goal is to deploy the force in what General Dunford referred to as "the boxer's stance," which sought to provide the best posture for the most likely problem while simultaneously maintaining the ability to respond to unexpected or newly developing problems.[86]

At this point, it is unclear how effective these changes have been in achieving their overall goal of global integration. Since General Dunford's departure, his successor, GEN Mark Milley, has emphasized using wargames and globally integrated exercises as a means for furthering the goals of global integration while also reiterating his responsibility to "provide advice on tough calls—giving resources in a global context at the speed or relevance."[87] As subsequent sections will address, there are persistent concerns that these efforts for delivering improved global integration are still lacking, particularly in terms of current requests for forces (RFFs). However, efforts related to experimentation with new operational concepts and globally integrated exercises suggest that there have been significant strides in global force integration in areas that are particularly relevant to developing U.S. military capabilities for major power competition and conflict.

Operational Effectiveness

The impact of jointness on command had a corresponding effect on improvements in the military's operational effectiveness. In 2003, SECDEF Donald Rumsfeld told the U.S. Senate's Committee on Armed Services that one of the key lessons learned from OIF was "the importance of jointness, and the ability of the U.S. forces to fight, not as individual de-conflicted Services, but as a truly joint force maximizing the power and lethality they

[85] Garamone, 2018.

[86] Garamone, 2018.

[87] Jim Garamone, "Milley Will Use Defense Strategy to Chart Way Ahead for Joint Force," *DOD News*, December 2, 2019c.

bring to bear."[88] The importance of speed, intelligence, and precision were all demonstrated improvements that benefited from jointness. Although, in some cases, these improvements were the result of an orchestrated process that identified lessons learned, developed new concepts, and then tested those concepts in operational experiments, many of the military's advancements in joint operations occurred as a result of improved planning that coordinated and synchronized service activities and the day-to-day experiences of combat operations and the need to find solutions for specific, often time-sensitive problems.[89]

Possibly the most significant early example of the effect of jointness on operational effectiveness came in the opening hours of Desert Storm. In the initial hours, Air Force MH-53J Pave Low helicopters led nine Army AH-64 attack helicopters on a mission into southern Iraq designed to destroy two early warning radar sites.[90] In addition to crews that had trained and rehearsed together, the mission was enabled by night- and low-light vision devices and precision navigation provided by the global positioning system (GPS)—an Air Force program. Shortly after the AH-64s struck the Iraqi radar sites, U.S. warships launched Tomahawk land attack cruise missiles at high-value targets in Baghdad, and F-117 fighters targeted a hardened Iraqi air defense intercept operations center in southern Iraq.[91] The initial timing of the attacks was designed to prevent the initial strike package's detection while it struck high-value targets in Baghdad and other key air defense facilities. In the end, this first mission prevented Iraqi air defense assets from coordinating their actions, minimizing coalition air losses and enabling the air campaign to be carried out with maximum lethality. The joint planning that led to these strikes incorporated weapons and platforms from three services; space, air, and maritime assets; and precision strike,

[88] Warner et al., 2003, p. 14.

[89] Case Cunningham, Patrick Donahoe, Mike Jernigan, and Michael Riggins, "Sustaining the 'New Norm' of Jointness," *Joint Force Quarterly*, Vol. 81, Second Quarter 2016, p. 5.

[90] DoD, 1992, pp. 152–153.

[91] DoD, 1992, p. 153.

special operations forces, and new stealth capabilities.[92] The end result was an enormous and considerably more complex step forward from the failures that occurred only a decade prior as a result of Desert One/Eagle Claw.

This opening example is one of many cases demonstrating the impact that jointness has had on the U.S. military's operational effectiveness. Earlier examples from Desert One and Grenada have demonstrated that the lack of joint planning, coordination, and training significantly limits operational effectiveness and risks potential mission failure. The subsequent sections will examine key areas in which jointness has proven critical to the development of operational effectiveness. Of note, because command was discussed in the previous section, it will not be examined in the sections that follow. However, as the previous section demonstrates, the improved command and control structures that emerged with the regional combatant commands have provided a significant boost to the United States' operational effectiveness.

Integrated Air Operations and Long-Range Precision Strike

The air campaign that immediately followed the initial strikes against Iraqi air defense targets in the opening hours of Desert Storm marked a major achievement in joint planning and execution. In the days preceding the initiation of coalition ground operations into Iraq, the United States and its coalition partners flew 100,000 combat and support sorties and fired 288 Tomahawk land attack cruise missiles and 35 air-launched cruise missiles against Iraqi targets.[93] Roughly 60 percent of these sorties were combat missions flown by aircraft from all services and multiple coalition partners. The damage to Iraq's command and control system was extensive; its supply lines and key infrastructure were badly damaged; and Iraq's army was in "poor condition with heavy desertions, low morale, and a severely degraded capability to coordinate an effective defense."[94] The effective integration of forces from across all services enabled the United States to employ a host of new capabilities either for the first time or in volumes that well

[92] DoD, 1992, pp. 152–158.

[93] DoD, 1992, pp. 190–191.

[94] DoD, 1992, pp. 190–191.

surpassed any previous use. Accordingly, the war showcased the "military-technological revolution in warfare" that included stand-off precision weaponry, advanced sensors, stealth, night-vision technology, and precision navigation and timing systems, including GPS.[95]

Allied Force continued this trend and pushed developments further in several areas, particularly the integration of advanced sensors, developments in command and control, ISR, and new precision weapons systems. In all, the NATO force that assembled conducted 38,000 sorties during a 78-day period against a wide range of targets, including bridges, ammunition storage, petroleum storage, refineries, command posts, and airfields, among others.[96] Approximately 23,300 strike missions were flown against both fixed and flex targets.[97] One of the most significant developments in the eight years between Desert Storm and Allied Force was the significant increase in the number of aircraft capable of employing precision-guided munitions. In Desert Storm, only 10 percent of U.S. strike aircraft were capable of delivering these weapons. By contrast, in Allied Force, that number increased dramatically to 90 percent.[98] Finally, key advances in ISR and targeting enabled the increased use of precision-guided weapons and demonstrated that these weapons required significant planning, detailed data, and a wide range of geospatial support.

The air component of OIF was scaled down considerably from Desert Storm, and its primary focus was to support "gaining and maintaining air superiority, supporting land forces in operations to defeat the Iraqi Republican Guards and regular army, dismantling the regime's ability to command its forces and govern the state, supporting special operations forces in northern Iraq, and suppressing Iraqi ballistic missiles and other systems capable of delivering weapons of mass destruction."[99] In total, the number of combat and support sorties flown during OIF by U.S. and coalition pilots was more than 41,000. One of the most notable features that affected the OIF

[95] DoD, 1992, pp. xii–xiii.

[96] DoD, 2000, pp. 79–82.

[97] DoD, 2000, p. 87.

[98] DoD, 2000, p. 88.

[99] Perry et al., 2015, p. 151.

air campaign included the adaptations that Iraqi forces had made to enhance survivability. These measures were taken in response to the destruction in Desert Storm and their experiences in the subsequent decade dealing with the no-fly zones in northern and southern Iraq. Accordingly, Iraqi leaders avoided many leadership facilities that would likely be targeted. Iraq also employed a wide range of passive measures (e.g., mobility and deception) to ensure the survival of key functions.[100] Although a primary planning objective for the air campaign—*shock and awe*, or the simultaneous attack against critical targets that would lead to paralysis and weaken Saddam Hussein's ability to maintain control—fell short in the eyes of many Western observers, the level of synchronization and destruction associated with the air campaign received significant attention from the United States' key competitors.[101]

A final example of the role that jointness has played in the development of the United States' ability to perform integrated air operations is demonstrated by Operation Inherent Resolve (OIR)—the two-phase air campaign against the Islamic State that ran from late 2014 until early 2019. In total, over the course of the four-year-long air campaign, a total of approximately 250,000 strike, ISR, airlift, and tanker sorties were flown by U.S. and coalition aircraft.[102] Several key features emerged during OIR that demonstrate a continued evolution in jointness and its impact on integrated air operations. First, OIF highlighted the atrophy that had taken place in the U.S. joint targeting processes since the end of OEF, largely due to several years of an overwhelming focus on time-sensitive targeting as opposed to deliberate planning.[103] The JFACC reenergized the targeting process later, but this

[100] Perry et al., 2015, p. 202.

[101] For two representative examples from widely cited texts, see Shou Xiaosong, ed., *The Science of Military Strategy*, Military Science Press, 2013, p. 139; and Peng Guangqian and Yao Youzhi, *The Science of Military Strategy*, Military Science Press, 2005, pp. 214–215.

[102] Becca Wasser, Stacie L. Pettyjohn, Jeffrey Martini, Alexandra T. Evans, Karl P. Mueller, Nathaniel Edenfield, Gabrielle Tarini, Ryan Haberman, and Jalen Zeman, *The Air War Against the Islamic State: The Role of Airpower in Operation Inherent Resolve*, RAND Corporation, RR-A388-1, 2021, p. 285.

[103] Wasser et al., 2021, p. 68.

episode demonstrated the need for these types of supporting activities to perform effectively. Second, OIR involved significant integration and application of both special operations forces and national and military intelligence resources.[104]

Since Desert Storm, the joint force and its coalition partners have gained significant experience in planning, leading, and executing joint air operations. The development of jointness, although certainly not the sole reason for this, has been a major contributor. Over the past 30 years, all services have participated in these operations in a variety of capacities. The complexity of these operations and their management under a joint command structure arguably represent one of the most significant developments in modern warfare since the end of the Cold War. No other military has planned or executed an operation of the magnitude discussed in this section. As a point of comparison, according to Russian Ministry of Defense statistics, from January 2015 to August 2018, Russian aircraft flew 39,000 sorties in Syria in their efforts to combat ISIS and prop up the Syrian regime.[105] During that rough time window, the United States flew roughly 207,000 sorties in support of the campaign against ISIS.[106] More recently, preliminary estimates from the United States' DoD and UK's Ministry of Defense suggest that Russia's sortie rates during its ongoing war with Ukraine have averaged between 200 sorties per day at the outset of the war and may have risen recently to as many as 300 per day.[107] Even using the high-end estimates of daily sortie rates, Russia's air campaign in Ukraine has been conducted on a scale considerably smaller than the examples listed above. In addition, the qualitative differences and deficiencies are now being noted by Western

[104] Wasser et al., 2021, p. 68; Helene Cooper, "U.S. Special Operations Force in Iraq to Grow, Pentagon Says," *New York Times*, December 1, 2015.

[105] "Russia Says 63,000 Troops Have Seen Combat in Syria," *BBC News*, August 23, 2018.

[106] Wasser et al., 2021, p. 285.

[107] James Beardsworth, "Uptick in Combat Missions Signals Changing Role for Russia's Air Force in Ukraine," *Moscow Times*, May 11, 2022; Tara Copp, "Russian Jets Flying 200 Sorties a Day, but Firing from Their Own Airspace, Pentagon Says," *Defense One*, March 11, 2022; Abraham Mahshie, "Russian Sorties Rise, British Defense Minister to Meet Austin as Ukraine Aid Money Runs Low," *Air Force Magazine*, May 10, 2022.

observers.[108] More notably, the PLA Air Force (PLAAF) has not conducted a major air operation in at least the past 50 years.

Close Air Support

Closely related to the development of integrated air operations and long-range precision strike is the impact of jointness in the area of CAS. There are numerous prominent examples of the impact that jointness has had directly on the battlefield, most directly tied to CAS. These examples stretch back to Desert Storm, but over the intervening years the tactics, techniques, and procedures (TTP) associated with CAS have developed in subsequent operations including OEF, OIF, and OIR. One example from Afghanistan in 2011 highlighted a situation in which a platoon from the U.S. Army's 1st Battalion, 133rd Infantry Regiment was ambushed by 300 Taliban.[109] During the fight, two Air Force joint terminal attack controllers (JTACs) were able to contact a U.S. Air Force MC-12 reconnaissance aircraft that relayed requests for air support to aircraft in the area, including Air Force, Navy, and Army aircraft. In the end, roughly 250 Taliban were killed with no U.S. losses.[110] Other examples highlight the use of special operations forces and their ability to direct early strikes in Afghanistan in 2001, as well as later cases from OIR where they supported Iraqi government forces. As these examples demonstrate, the importance of CAS as a joint function has been a prominent feature in recent operations.

Although much of the recent discussion of CAS has focused on specific air frames and their suitability for the mission, the most significant elements involved in effective CAS include "communication and coordination between controllers, deployed alongside soldiers, sailors, airmen, and

[108] Justin Bronk, "The Mysterious Case of the Missing Russian Air Force," Royal United Services Institute, February 28, 2022a; Justin Bronk, "Is the Russian Air Force Actually Incapable of Complex Air Operations?" Royal United Services Institute, March 4, 2022b; Isabel Van Brugen, "Russian Air Force Struggling in Ukraine Because of Combat Losses: U.K.," *Newsweek*, June 24, 2022.

[109] Cunningham et al., 2016, pp. 5, 43.

[110] Cunningham et al., 2016, pp. 5, 43.

marines on the ground, and pilots from all four services in the air."[111] This joint development has evolved significantly based on the lessons derived from recent conflicts. Two examples demonstrate how jointness has evolved in this key mission area. First, the Air Force instituted a new career field for tactical air control parties (TACPs), a capability that is identified as a weapons system and integrated into other aspects of the Air Force special tactics community.[112] In earlier iterations, Air Force personnel were embedded in Army units to serve as JTACs, but as doctrine developed in both services, the role of a TACP emerged, providing a much broader responsibility and enhanced capability for command and control of airborne assets in forward areas.[113] Second, both services run joint training efforts as part of the Green Flag series of exercises conducted at the National Training Center (NTC) at Fort Irwin in California. The Air Force's 12th Combat Training Squadron is located at Fort Irwin with the dedicated mission of "providing continuous support for rotations of Green Flag exercises via various roles that their flight plays" to include TACP and JTAC airmen controlling aircraft and advising the ground commander.[114] These exercises—which include up to 11 rotations per year—involve a dedicated opposition force (i.e., "the Blackhorse," which is played by the 11th Armored Cavalry Regiment) and provide some participants with their first experience in realistic combat scenarios involving joint CAS operations.[115] This level of training—adapted based on years of experience derived from joint interactions and lessons derived from operations in Afghanistan, Iraq, and Syria—is also being conducted in forward locations on a routine basis with participation from the Army, Air Force, allies, and partners.[116]

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[111] Robert G. Angevine, "Time to Revive Joint Concept Development and Experimentation," *War on the Rocks*, January 23, 2020.

[112] Devin Nothstine, "TACP Weapon System Evolves with Character of War," *Defense Visual Information Distribution Service (DVIDS)*, December 2, 2021.

[113] Nothstine, 2021.

[114] Dwane Young, "12th Combat Training Squadron Supports Joint Air-to-Ground Operations," U.S. Air Force, November 19, 2020.

[115] Young, 2020.

[116] Tara Fajardo Arteaga, "U.S. Air Force Works Alongside U.S. Army in Poland and the Czech Republic," *Defense Visual Information Distribution Service (DVIDS)*, March 8,

Although the integration of air power discussed in the previous section highlights one benefit of jointness at the operational level, the development and evolution of CAS demonstrates the value of jointness at the tactical level. The development of CAS in all aspects—aircraft, munitions, communications, training, and procedures—has enabled, on multiple occasions, a much smaller U.S. force to overcome significant numerical advantages. The example provided earlier in this section is but one example of the force multiplying effect that jointness has had in this area. Another example also provides insight into the nature of U.S. joint operations in OIR. In early February 2018, an outpost with about 40 Americans in eastern Syria came under attack from a force of nearly 500 pro-Syrian government forces, including Russian mercenaries, and almost 30 vehicles including tanks. The pro-Syrian forces and their Russian partners conducted a heavy artillery barrage while a column of tanks and infantry advanced on the position. After sustained strikes from U.S. Air Force aircraft, Army helicopters, and Marine rocket artillery, 200 to 300 of the enemy fighters were killed, and the attackers left the area.[117]

Integration of Special Operations Forces

The U.S. forces involved in the firefight in Syria also reflect changes in special operations that can be viewed through the lens of jointness. The impact that jointness has had on U.S. special operations capability has been significant since the failure in Desert One—a situation in which none of the service special operations components had trained together, had little or no interoperability, and limited expertise to enable joint planning beyond their own service capabilities. Earlier examples have highlighted the role that special operations forces played at the outset of Desert Storm. Since then, their contributions and the U.S. reliance on them has only grown.

The establishment of SOCOM was a significant step in developing jointness within the special operations community. Initially, the role of special forces was largely constrained by CINC CENTCOM during Desert Storm,

2022; Alexandra Longfellow, "U.S. Air Force TACPs Train NATO Forces in INIOCHOS 22," Air National Guard, April 7, 2022.

[117] Thomas Gibbons-Neff, "How a 4-Hour Battle Between Russian Mercenaries and U.S. Commandos Unfolded in Syria," *New York Times*, May 24, 2018.

reportedly because of his belief that these types of operations were too risky, might lead to excessive Iraqi responses, and were not necessary to achieve the campaign's objectives.[118] General Schwarzkopf's guidance for special operations forces directed them to "co-operate closely with the Coalition's conventional forces (a process that often involved their subordination or absorption into regular units) and focus their actions on reconstituting the Kuwaiti military, offshore special reconnaissance, antimine warfare, advising and liaising with Arab units, and psychological operations."[119] According to one source, he disapproved the original plan for using Green Berets to disable the Iraqi radar sites in the opening hours of the air campaign and only reluctantly approved a later plan that was described in a preceding section.[120]

Despite these initial limitations, special operations forces contributed significantly to Desert Storm and proved invaluable in later conflicts, most notably in Afghanistan immediately following the 9/11 attacks and subsequent operations in Iraq and the GWOT. Most notably, joint special operations capabilities in targeting high-value assets demonstrated an advanced ability to fuse intelligence and employ a wide range of weapons systems and force groupings. Accordingly, U.S. special operations forces during this period were overwhelmingly focused on countering terrorism, providing a significant contribution to these missions to dismantle terrorist networks, target their leadership, and train foreign partners for internal security and counterterrorism missions.[121]

More recently, senior civilian and military leaders have announced significant changes in strategic guidance for U.S. special operations forces that are focused more on the capabilities required for future conflict scenarios involving major power competitors, such as China and Russia. This new guidance acknowledges the continued importance of counterterrorism missions, but also highlights a range of new missions that have been deempha-

[118] Weitz, 2004, pp. 133–152.

[119] Weitz, 2004, pp. 133–152.

[120] Weitz, 2004, pp. 133–152.

[121] Walter Pincus, "Change Is in the Mission for U.S. Special Operations Command," *The Cipher Brief*, opinion, October 12, 2022.

sized for the past two decades.[122] One of the most pronounced and high-demand missions areas to receive attention over the past five years involves helping allies and partners develop their ability to conduct resistance operations against major powers. A major component of this has been focused on Europe, particularly in response to Russian aggression.[123] This increase in interest has emerged in both Europe and Asia, including the involvement of U.S. forces—such as SOF—in a training mission in Taiwan.[124] U.S. special operations forces have also stepped up their mission focus for confronting information campaigns in Europe and the Pacific.[125] In addition to these two areas, joint special operations missions will also be heavily influenced by lessons learned from Russia's invasion of Ukraine to encompass areas of urban combat, counter-unmanned aircraft systems, and psychological operations.[126]

The flexibility and wide range of missions and effects that special operations forces can deliver have become a critical element in modern warfare. The value and use of special operations forces for diverse missions such as psychological warfare, direct action, and ISR are well understood by the United States primary competitors, including China.[127] Similarly, their integration into joint operations and their interoperability make these enhancements particular areas of concern for the PLA.

[122] Stew Magnuson, "Special Ops Tech Pulled in Different Directions," *National Defense Magazine*, June 28, 2022; Davis Winkie, "Less Door-Kicking, More Resistance: Inside Army SOF's Return to Unconventional Warfare," *Army Times*, September 9, 2021.

[123] Theresa Hitchens, "Ukraine's Experience Spurs Allies' Interest in 'Resistance,' Info War Training," *Breaking Defense*, October 11, 2022b.

[124] Hitchens, 2022b; Gordon Lubold, "U.S. Troops Have Been Deployed in Taiwan for at Least a Year," *Wall Street Journal*, October 7, 2021.

[125] Mark Pomerleau, "Special Operations Team in Pacific Will Confront Chinese Information Campaigns," *Army Times*, March 25, 2021a.

[126] Hitchens, 2022b; Magnuson, 2022; Pincus, 2022.

[127] Lianshan, 2015, p. 34. This reference specifically addresses U.S. special operations in Afghanistan, but other books also discuss the role of special forces throughout.

Space and Cyber

Another key development in the joint force has been the growing prominence of space and cyber capabilities, their integration into operations, and their wider availability to commanders and planners. From Desert Storm and the important role that GPS played in positioning, navigation, and timing, space capabilities have rapidly become critical to U.S. operations in the areas of command and control, communications, ISR, and early warnings. In today's military, the risk to these capabilities as core elements of military operations presents a significant planning consideration for joint commanders. Similarly, cyber operations have also become a much more viable tool, with greater demand being placed on these sophisticated and limited resources.

One of the most significant developments in both of these areas is the evolving understanding in both the United States and China that space and cyber independently constitute domains of warfare that are increasingly vital to future military effectiveness and strategic and operational success.[128] This understanding demonstrates the evolution in U.S. operational thinking in which both space and cyber were supporting domains with significant importance broader regional missions and planning scenarios, but not necessarily independent warfighting domains in their own right.[129] According to the global significance of both domains and the interest among the major U.S. competitors in building new organizations—especially China with the creation of the Strategic Support Force—the U.S. military has sought to build the joint architecture and command and control structures to ensure that space and cyber capabilities are effectively integrated into operational planning, and global operations are coordinated and synchronized among the combatant commands.

The push for jointness in these areas and the understanding that both constitute operational domains in their own right has most recently led to combatant commands dedicated to each—SPACECOM and CYBERCOM.

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[128] Joshua Rovner, "Warfighting in Cyberspace," *War on the Rocks*, March 17, 2021; Stephen F. McCall, *Space as a Warfighting Domain: Issues for Congress*, Congressional Research Service, IF11895, August 10, 2021.

[129] Theresa Hitchens, "SPACECOM Reorganizing Amidst Theater Component Command Debate," *Breaking Defense*, November 15, 2021.

In a similar fashion to SOCOM's functional responsibilities, these commands are responsible for space and cyber components, respectively, and ensuring that the planning and integration of these capabilities is accomplished to support the designated supported commander. Both commands currently have initiatives underway to enhance training and mission planning capabilities across the joint force.[130] Likewise, both commands have initiated new exercise series designed to develop and improve the integration of both space and cyber capabilities into joint force planning and operations.[131]

The importance of jointness as it relates to space and cyber is that both are now warfighting domains and not simply support areas.

Intelligence and Targeting

Intelligence and targeting have been important themes in most major lessons-learned reports—both official and unofficial—written about U.S. operations since Desert Storm. From event to event, there has been a steady progression in the development of joint intelligence organizations, collection platforms, analysis, and targeting functions that have essentially been built from lessons and shortfalls in previous operations. Most notably, combatant commanders and senior DoD civilian leaders have noted the progress and importance of intelligence in modern warfare and the progress and capabilities offered by today's joint architecture.

Targeting, in particular, is an intelligence field that has proven its value as airpower and precision weapons systems have now become a central feature of U.S. operations. The joint targeting system that collects target data, analyzes and identifies targets, nominates them for selection, weaponeers,

130 Mark Pomerleau, "Cyber Command to Take Charge of Advanced Training with New Authorities," *FedScoop*, June 14, 2022; Mark Pomerleau, "Cyberwarriors Will Soon Have Access to More Training Tools," *C4ISRNet*, December 5, 2021c; Amanda Miller, "Space Command's Goal of Uniting All US Military Space Functions," *Air Force Magazine*, December 10, 2021; Mark Pomerleau, "Cyber Command Plans Bigger Budget for Mission Planning Tool," *C4ISRNet*, June 4, 2021b.

131 U.S. Cyber Command Public Affairs, "DOD's Largest Multinational Cyber Exercise Focuses on Collective Defense," U.S. Department of Defense, December 6, 2021; Greg Hadley, "Space Force Plans Two New Exercises: Polaris Hammer and Black Skies," *Air Force Magazine*, January 26, 2022.

and then performs battle damage assessment has over time proven to be an indispensable tool for ensuring the effective use of U.S. precision strike capabilities. In terms of jointness, the involvement of all services in this process is critical to ensuring that target selection and planning are based on the commander's objectives and accomplished in a manner that synchronizes U.S. operations among the services. Of note, such competitors as China have over time struggled to develop a robust targeting process, in terms of targeting support systems, databases, and procedures.[132]

Joint Logistics

No logistics system is perfect, a fact made clear in every one of the United States major operation since the end of the Cold War. Each of the operations outlined above encompassed a wide range of logistical challenges—some unique to a given operation and others common to all. After-action reports from both DoD and the U.S. Government Accountability Office have highlighted a range of logistical problems that included "insufficient and ineffective theater distribution capability," poor tracking of materiel, and a failure to apply lessons from earlier operations.[133] Despite these problems and the seemingly intractable nature of logistics challenges, the U.S. military has been able to logistically support numerous operations over multiple theaters and for sustained periods of time. In many respects, the development of joint logistics has played a critical role in improving the military's operational effectiveness by leveraging a global network of bases and support facilities, commercial logistical and transportation support contracts, and service transportation components capable of managing the movement of resources on a global basis.[134] The development of TRANSCOM and the

[132] Liu Shenyang, "The Theory and Practice of Target-Centric Warfare," *China Military Science*, No. 4, 2013, pp. 83–92.

[133] John J. Klotz, *Lack of Accountability over Materiel During Redeployment*, U.S. General Accounting Office, GAO/NSIAD-92-258, September 1992; William M. Solis, *Preliminary Observations on the Effectiveness of Logistics Activities During Operation Iraqi Freedom*, U.S. General Accounting Office, GAO-04-305R, December 18, 2003; DoD, 2000.

[134] Dan Goure, "Commercial Logistics Critical to U.S. Global Power Projection," *RealClearDefense*, May 1, 2017; Michael J. Lostumbo, Michael J. McNerney, Eric Peltz, Derek Eaton, David R. Frelinger, Victoria A. Greenfield, John Halliday, Patrick Mills, Bruce R.

Defense Logistics Agency along with common sets of databases and procedures provide the joint force with a relatively advanced joint logistics capability that U.S. competitors, such as China, have used as a frame of reference for their own joint logistics structures.[135]

Common Systems and Architectures

Finally, underlying the improvements in command and operational effectiveness is a series of common systems, services, and architectures that enable interoperability among and integration of the joint force. Many of these systems and architectures have been outlined in previous sections, but they span a wide variety of service capabilities, platforms, and systems involved in the support of positioning, navigation, timing, intelligence targeting, and command and control, among many others. In looking back at the problems of planning and communication between the service components involved in the operation, jointness has spurred significant progress in many areas.

New Concepts for New Threats

Many of the joint operational areas highlighted in the preceding sections of this chapter reflect capabilities that developed against adversaries who were not technologically advanced and in environments that were largely permissive. At no time over the past three decades has the United States military confronted the type of environment that it would have to face in a conflict against a peer or near-peer competitor. This raises the question of how valuable these joint accomplishments might be in future conflicts. This question also forces a consideration of how the U.S. joint force is adapting to its new security environment and the types of technologically advanced adversaries that it may have to face in a future conflict.

Nardulli, Stacie L. Pettyjohn, Jerry M. Sollinger, and Stephen M. Worman, *Overseas Basing of U.S. Military Forces: An Assessment of Relative Costs and Strategic Benefits*, RAND Corporation, RR-201-OSD, 2013.

[135] Minnie Chan, "Chinese Media Unveils Details of US-Inspired Military Logistics System," *South China Morning Post*, May 11, 2022.

The experience gained by U.S. forces operating jointly provides a template for how interoperability should work in developing future capabilities. In some cases, the lessons learned are focused on how to overcome technical or tactical problems. In others, familiarity with other service capabilities and procedures provides experience and insight into the development process for future concepts of operations and joint TTP. In this sense, specific capability developments highlighted in previous sections may have been tailored to a specific environment and the TTP, not necessarily translatable to some of the most challenging scenarios that the United States may face in the future. However, in many of the specific areas discussed above or other closely related areas, the U.S. joint system is adapting to the most pressing requirements of a major power conflict. This is particularly the case in areas involving joint and globally integrated exercises and experimentation—two key elements of General Dunford's vision for global integration.[136]

One of the most notable areas of recent joint development has been focused on command and control, particularly in terms of enhancing the speed and quality of the U.S. military decisionmaking process. It is widely recognized that major efforts such as the development of Joint All-Domain Command and Control (JADC2) remain in early stages of development and that integration of each of the services' independent command and control development efforts have not been tightly coordinated.[137] However, several initiatives are underway to increase the level of joint development and cooperation in key areas. Specifically, in terms of JADC2, the Army and Air Force have embarked on joint tests, such as Project Convergence, which are designed to enhance cooperation and test programs and capabilities that will be directly relevant to future high-end fights in both the European and Indo-Pacific theaters.[138] Live-fire exercises focused on JADC2 devel-

[136] Garamone, 2018.

[137] Theresa Hitchens, "Pentagon's JADC2 Strategy: More Questions Than Answers," *Breaking Defense*, March 17, 2022a.

[138] Sydney J. Freedberg, Jr., "Army Invites Air Force ABMS to Big Network Test: Project Convergence," *Breaking Defense*, May 28, 2020; Theresa Hitchens, "Army, Air Force Get Serious on JADC2: Joint Exercises in 2021," *Breaking Defense*, October 9, 2020; Jen Judson, "Project Convergence 2022 Will Focus on Both Indo-Pacific and European Scenarios," *Defense News*, March 29, 2022.

opment have also involved joint elements from the Air Force, Army, and Navy. In one exercise conducted in 2020, for instance, Air Force fighter aircraft, Army HIMARS, a Navy destroy and maritime patrol aircraft, and special operations units participated in a Europe-oriented scenario that tested JADC2 capabilities in the midst of live-fire events.[139] Other events, such as the Global Information Dominance Experiments, have focused on the integration of artificial intelligence into joint decisionmaking processes and have involved most of the combatant commands.[140]

U.S. exercises have sought to integrate elements of JADC2 and emerging operational concepts into operational settings integrating capabilities from across all domains. For example, Valiant Shield was conducted in 2022 over the course of 12 days and consisted of a series of air, land, sea, space, and cyberspace exercises designed to increase joint force proficiency in "detecting, locating, tracking, and engaging adversary targets" by incorporating a blend of "real-world forces and technology of today with the advanced next-generation systems and simulated capabilities of tomorrow."[141] Other emerging concepts involving the new Marine Littoral Regiment were demonstrated at RIMPAC 2022 while an earlier joint aviation experiment in the CENTCOM AOR tested the interoperability of Air Force and Navy fighter aircraft and JTACs operating in a maritime environment.[142]

This brief discussion of ongoing joint development activities by no means covers all areas in which the United States is seeking joint solutions to develop its future capabilities. What it does help demonstrate is that U.S. joint experience over the past three decades—in both peace and war—has provided a useful template that is helping the U.S. military to adapt to a

[139] USAFE-AFAFRICA Public Affairs, "Target Acquired: JADC2 Exercise Demonstrates Joint Lethality," press release, November 20, 2020.

[140] North American Aerospace Defense Command and U.S. Northern Command Public Affairs, "NORAD, USNORTHCOM Lead 3rd Global Information Dominance Experiment," U.S. Air Force, July 22, 2021.

[141] 505th Command and Control Wing Public Affairs, "Battle Lab Supports Cross-Service JADC2, Valiant Shield Exercise," Air Force Reserve Command, July 8, 2022.

[142] Megan Eckstein, "New U.S. Marine Regiment Shows Off Capabilities at RIMPAC Ahead of Fall Experimentation Blitz," *Defense News*, August 10, 2022; U.S. Naval Forces Central Command Public Affairs, "U.S. Forces Conduct Joint Aviation Integration Exercise in Arabian Gulf," September 26, 2020.

new environment that will be more technologically challenging and likely to involve more advanced adversaries.

Conclusions

The development of jointness in the U.S. military has had a profound effect on it as an organization and its definition and execution of missions and roles. As this chapter has argued, the joint personnel management system and JPME have played critical roles in addressing the problem that General Jones highlighted in the early stages of debates on defense reform—that U.S. military officers lacked the breadth and experience to plan and lead joint military operations. His complaint that military members were narrowly focused on their own career fields and had limited knowledge not only of other branches or communities in their own service but also the other services was core to the problems of command, planning, and operations that plagued earlier U.S. efforts, such as Desert One and Grenada.[143] The nearly four-decade process of educating and ensuring joint assignments has contributed to the development of a vastly wider pool of officers with knowledge of and experience planning and working with other services. This increased familiarity over time has enabled the growth of commanders and planners capable of ensuring that the joint force functions more effectively.

Similarly, as the examples outlined in this chapter demonstrate, there have been several areas where jointness has had a profound impact on the U.S. military's operational and tactical proficiency. The list of areas provided in this chapter is not comprehensive—there are several other areas where jointness has improved the military's operational and tactical effectiveness. That said, the areas addressed in this chapter are ones that have regularly been highlighted in lessons learned reports, testimony, and outside studies on recent operations. Potentially the most notable characteristic of these advancements, aside from their tie to jointness, is that they have progressed in an iterative fashion providing progressively greater integration, connectivity, access, and interoperability over the past three decades. In some cases, these developments are the result of a considered and delib-

[143] Locher, 2004, p. 48.

erate approach involving joint acquisition programs, experimentation, and exercises. But in many others, they have emerged through a set of experiences gained from operational and tactical application. U.S. military operations since 1991—including Desert Storm, OSW, ONW, Restore Hope, Deny Flight, Desert Fox, Deliberate Force, Allied Force, Enduring Freedom, Iraqi Freedom, Odyssey Dawn, and Inherent Resolve—have provided a large number of combat situations where joint operations in many different combinations and capacities have been tested. The areas outlined in this chapter have captured key elements of this progression and highlighted the significant improvement in operational and tactical proficiency that jointness has contributed.

Although jointness has played a significant role in improving U.S. military proficiency over the past 30 years, it is by no means the only contributing factor—nor should the development of jointness suggest that there are no significant problems confronting the United States as it engages in strategic competition with China and Russia. None of the successes highlighted in this chapter have focused on a peer competitor capable of conducting large-scale operations with a global threat and impact to U.S. interests. Several of the most-significant reforms that emerged from the GNA were well suited to the regionally oriented threats that the United States has faced in recent decades. However, the emergence of major power competition raises questions about whether the trade-offs that came with the GNA remain suited to today's environment. The next chapter will address this issue.

CHAPTER 5

Trade-Offs and Unintended Consequences

The examples in the previous chapter helped illustrate the significant impact that jointness has had on the United States' military's operational and tactical proficiency in several areas. These improvements should not suggest that the U.S. system is without shortfalls or that its successes are the result of jointness. The United States' joint system has benefited from a wide variety of contributing factors in addition to the development of jointness. That said, in those problem areas that moved members of Congress and other defense reformers to push so hard for the GNA, there have been marked improvements. The lack of interoperability, coordination, and joint experience that were hallmarks of Desert One, Beirut, and Grenada have been significantly mitigated by the improvement of the U.S. military's new joint warfighting system. It certainly has not been flawless, but it has improved greatly over those previous models.

The problems that catalyzed reform efforts in the 1980s should also not be viewed as the entire story on the U.S. military after Vietnam. The significant increases in defense spending that began in the early 1980s helped restore the military's confidence and alleviated the problems that led to the readiness and force structure crisis in the 1970s.[1] Although the military struggled with implementing the all-volunteer force throughout the remainder of the 1970s, there was a significant uptick in the overall qual-

[1] Andrew Feickert and Stephen Daggett, *A Historical Perspective on "Hollow Forces,"* Congressional Research Service, R42334, January 31, 2012, pp. 2–6.

ity of personnel entering the military by the 1980s.[2] Likewise, the services embarked on projects to reorient themselves away from the counterinsurgency operations of Vietnam and back toward the Soviet Union. To accompany the swift modernization underway across the services, a new series of operational concepts and strategies began to emerge. The Army and Air Force embarked on the development of AirLand Battle while the Navy's Maritime Strategy reinvigorated the Navy's capability to conduct war at sea against a peer adversary.[3] The force that proved so successful in the first Gulf War was largely created in the 1980s through a multipronged effort to modernize the military's hardware, update its operational concepts, revolutionize training, and improve the quality of its people.

GNA reforms became possible because a general consensus emerged in Congress and the White House about the need to reform DoD and the potential costs of not doing so.[4] The reforms that followed, like all other bureaucratic reforms, realigned power within the Pentagon. Some organizations were winners, others were losers. The GNA's objectives outlined in Chapter 2 generally were clear about the law's priorities and provided a preview of the changes to come. The CJCS was designated as the principal military adviser to the President and SECDEF, OSD and the Joint Staff were strengthened, the regional combatant commanders were given clear authority in the chain of command, and PME and joint personnel management programs would provide the basis for a new joint culture promulgated through education and experience. Although not all of the GNA's initial objectives received the same level of attention, those dealing with the chain of command received emphasis since 1986.[5] From an organizational standpoint, the primary benefactors of the GNA's reforms, particularly those tied to the chain of command objectives, were the CJCS, the Joint Staff, and the combatant commanders. The services lost considerable power.

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2 Feickert and Daggett, 2012, pp. 9–10.

3 John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973–1982*, U.S. Army Training and Doctrine Command, 1984; John Hattendorf, "The Evolution of the U.S. Navy's Maritime Strategy," *Newport Papers*, January 1, 2004.

4 Locher, 2004, pp. 429–436.

5 U.S. Senate, Committee on Armed Services, 2015, p. 7.

Trade-Offs and Unintended Consequences

Any reform of this magnitude creates winners and losers. Similarly, these choices of winners and losers will necessarily promote certain activities, priorities, and norms over others. These choices will, in turn, force several trade-offs, the ramifications of which may not fully be understood when the reforms are initiated. Likewise, trade-offs may have unintended consequences that need to be identified and evaluated to fully comprehend the costs and benefits of any reform program.

The GNA represented several trade-offs, many of which were understood and viewed as desirable based on the state of DoD management, military leadership, and the security environment at that stage of the Cold War. As discussed in the previous chapter, in several key areas related to operational and tactical effectiveness, these trade-offs generally worked well. In addition, considering the nature of the immediate post–Cold War security environment that was characterized by regional threats to include ethnic violence, terrorism, and internal conflicts that did not involve peer adversaries, the trade-offs did not present any immediate problems. Because of the dispersed, regional nature of the U.S. primary security concerns, the development of regional combatant commands was in many respects well tailored to the environment.

Our report also acknowledges areas where the military has been less successful. In keeping with our key research questions, the intent for identifying these challenges and failures is not to catalog a broad list of where we have failed to get it right. Instead, we have selected areas closely tied to GNA core objectives. In general, our research has found that when jointness has had a negative effect, it most often has not been the primary contributor to diminished performance or failure. There, typically other factors play more prominent roles. In one area, however, some researchers and critics have highlighted the significant negative impact of jointness on force modernization and acquisition.

In this section, we examine five major trade-offs that have emerged as a result of GNA reforms, unintended consequences that have emerged from these trade-offs, and the potential impact these trade-offs might have in today's competitive strategic environment.

Empowering the Combatant Commands

One of the most commonly agreed-upon outcomes of the GNA reforms has been the overall positive impact of more clearly defining the mission and responsibilities of the unified commands, a factor reflected in the comments of CJSCs, SECDEFs, and the combatant commanders themselves.[6] These clarifications have greatly enhanced the combatant commands' capability to fulfill their warfighting responsibilities and, as a result, contributed greatly to the overall increase in the American military's effectiveness. The model developed during Desert Storm set new standards and norms for how the joint force would organize and fight wars. In particular, the enhancement that empowered the combatant commands reversed a long-standing practice in which the service chiefs sought to ensure that "control over unified and specified commands was split fairly evenly among the Army, Air Force, and Navy" to exert their influence over operations with the commands' respective AORs.[7] Beginning with Desert Storm, this level of influence on operations was curtailed to a large extent by the CINCs of the combatant commands.[8]

Over time, the combatant commands' success and overall effectiveness have led to a series of developments that have recently raised concerns. These developments consist of (1) the combatant commands' expanding roles, (2) the impact these changing roles have had on their approach to warfighting, (3) an increase in the size of their staffs, and (4) the impact of their operational demands on military readiness overall. According to many former senior defense officials, military officers, and defense experts, these evolutionary changes may have been well suited to a security environment without a peer competitor; however, in an environment where the United States' two most capable competitors possess large, technologically advanced militaries, unintended consequences of these developments may

6 Locher, 2001, p. 110.

7 Amy B. Zegart, *Flawed by Design: The Evolution of the CIA, JCS, and NSC*, Stanford University Press, 2000, pp. 154–155.

8 For examples, see the "Operation Desert Storm" section in Chapter 4.

limit the United States' ability to compete, particularly with a well-resourced and motivated competitor, such as China.[9]

Expanding Roles

One of the most significant evolutions in the development of the regional combatant commands has been their expanding role as "well-funded, semi-autonomous, unconventional centers of U.S. foreign policy," a development noted as far back as 2000, that has continued to the present.[10] These developments have evolved well beyond traditional military diplomacy and now encompass routine contacts with a wide spectrum of audiences that includes foreign leaders and dignitaries to business and industrial groups while dealing with a host of nonmilitary issues to include "environmental degradation, medical care, mine clearance, piracy, drug trafficking and policing."[11] According to one former Under Secretary of Defense for Policy (USDP), the combatant commands have moved "far beyond the lean operational warfighting headquarters originally envisioned in GNA, they have become sprawling platforms for military diplomacy with nearly every country in the world and active participants in the Washington policy process."[12]

Some observers have called the combatant commands "the modern-day equivalent of the Roman Empire's proconsuls" while contrasting their sizable budgets, resources, and organizations to the State Department's shrinking budgets.[13] These observations regarding resources and budgets are largely true and reflect the significant expansion of responsibilities that the commands have assumed in the areas of security cooperation and theater engagement. The commands maintain a numerous security cooperation

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[9] Prior to and immediately following the GNA, the United States did compete with the Soviet Union. However, a key distinction between these two periods is that the combatant commands began to take on an expanding set of roles and missions beginning in the 1990s. At the same time, U.S. military budgets and resources were reduced.

[10] Thomas P. M. Barnett, "The Man Between War and Peace," *Esquire*, June 23, 2010; Dana Priest, "A Four-Star Foreign Policy?" *Washington Post*, September 28, 2000.

[11] Barnett, 2010; Priest, 2000.

[12] Michèle A. Flournoy, "The Urgent Need for Reform," testimony before the U.S. Senate Committee on Armed Services, December 8, 2015, p. 2.

[13] Priest, 2000.

mechanisms that include educational institutions, informational exchanges, training, exercises, and activities designed to promote interoperability.[14] The range of activities covered is expansive—for example, information-sharing, counterterrorism, counternarcotics, counterpiracy, coalition operations, and missile defense, among others—and requires considerable planning and coordination.[15] Similarly, the combatant commanders and their staffs are responsible for directing, assessing, monitoring, evaluating, and adjusting security cooperation activities within their respective theaters.[16] Accordingly, the combatant commands' responsibilities have evolved considerably since Desert Storm and now encompass not only contingency planning and the direction of operations within a given command's area of responsibility, but also a leading role in the United States' efforts to build and maintain alliances, gain access, and support the development and building of more competent and capable allies and partners in a given region. As one former Deputy SECDEF (DEPSECDEF) highlighted, the importance of these activities to the United States' "central grand strategy" is focused on the need to "get stronger partnerships with friends around the world that share our values and interests."[17] He further pointed out, "Those combatant command offices, that's what they do, that's their great contribution to us."[18]

The growth of responsibilities beyond warfighting have had several effects on the way commands conduct their fundamental business. The value gained from the combatant commands' security cooperation functions is widely acknowledged, even if at times it is characterized in a derogatory manner, as mentioned above, or viewed as redundant with or taking resources away from the State Department's efforts.[19] The combat-

[14] Jennifer D. P. Moroney, David E. Thaler, and Joe Hogler, *Review of Security Cooperation Mechanisms Combatant Commands Utilize to Build Partner Capacity*, RAND Corporation, RR-413-OSD, 2013, pp. 6–7.

[15] JP 3-20, *Security Cooperation*, Joint Chiefs of Staff, May 23, 2017, pp. III-1–10.

[16] JP 3-20, 2017, p. IV-3.

[17] U.S. Senate, Committee on Armed Services, 2015, p. 17.

[18] U.S. Senate, Committee on Armed Services, 2015, p. 17.

[19] U.S. House of Representatives, Committee on Armed Services, *Goldwater-Nichols Reform: The Way Ahead*, H.A.S.C. No. 114–130, U.S. Government Publishing Office, July 7, 2016, pp. 25–26; Grady, 2015.

ant commands' expanded roles thus raise questions about whether or not they remain warfighting commands as they were originally intended and whether the span of control (both size of effort and scope of activities) may make them more bureaucratic and less adaptive. Along these lines, several former senior defense officials, military officers, and defense experts have pointed out that the growth of staffs across DoD may have negative effects on the department's ability to make decisions and plan effectively and in a timely manner.

Still Warfighting Organizations?

One of the key questions raised in 2016 congressional hearings examining the state of GNA reforms after three decades was whether the commands remained the warfighting organizations in the manner that GNA originally envisioned.[20] One former senior defense official contended that "the reality now is that combatant commanders often make only cameo appearances in actual wars before DOD establishes new ad hoc commands and joint task forces devoted to warfighting, as was done in Iraq and Afghanistan."[21] The same former senior official argued that a key factor driving this reliance on ad hoc commands and joint task forces was that "over several decades, they [the combatant commanders] would be consumed by their peacetime roles as de facto regional 'super Ambassadors,' at the expense of time and attention needed for operational planning in the prosecution of wars."[22]

The designation of "super Ambassador" certainly oversimplifies the day-to-day tasks of the combatant commanders and the regional commands they lead. However, the argument raises two important issues regarding combatant command roles. The first issue is centered on the peacetime operational role that combatant commands play in managing the operations, activities, and investments in their respective regions. The second involves the implications of how the commands organize for war. According to the management of peacetime operations, activities, and investments, the commands exert a major pull on DoD resources, a factor that highlights inher-

[20] U.S. Senate, Committee on Armed Services, 2015, pp. 17, 22, and 30.

[21] U.S. Senate, Committee on Armed Services, 2015, p. 23.

[22] U.S. Senate, Committee on Armed Services, 2015, p. 23.

ent tensions between the services—that are focused on long-term modernization and maintaining readiness—and the combatant commands whose RFFs have led to frustration among both the services and key congressional committees.[23] Similarly, this friction highlights one of the most-significant trade-offs that emerged from the GNA and the increased prominence of the regional combatant commands—the impact on readiness and availability of forces. The root of the problem stems from the "constant unconstrained demands of the regional combatant commands—and the Pentagon's inability to say 'no' to them," according to a former DEPSECDEF.[24] The constant demand has had a significant negative effect on the individual services' responsibility for maintaining overall readiness by confusing the concepts of *readiness* and *availability*.[25] Reports detailing readiness problems among the services abound, as do examples of a readiness system that "biases spending on legacy capabilities for yesterday's missions, at the expense of building readiness in the arena of great-power competition and investing in modern capabilities for the missions of both today and tomorrow."[26]

The increased operational tempo in peacetime and added responsibilities for security cooperation most likely do have an impact on the manner in which combantant commands and, in particular, their commanders manage or delegate wartime command functions. The model that emerged out of Desert Storm was one in which General Schwarzkopf led planning and execution by delegating specified planning responsibilities to service-centered component commanders. Although this model was repeated at the outset of OEF and OIF, the use of joint task forces has become a promi-

[23] Mackenzie Eaglen, "Service Chiefs Versus Combatant Commanders," *RealClearDefense*, April 8, 2021; Jane Edwards, "House Lawmakers Call for Greater Scrutiny of Requests for Forces Within DOD," *Executive Gov*, April 6, 2021; Mallory Shelbourne, "House Lawmakers Want Pentagon to Rethink Global Force Deployments," *USNI News*, April 5, 2021.

[24] Robert O. Work, "Storm Clouds Ahead: Musings About the 2022 Defense Budget," *War on the Rocks*, March 30, 2021.

[25] Charles Q. Brown and David H. Berger, "'To Compete with China and Russia, the U.S. Military Must Redefine 'Readiness,'" *Washington Post*, February 1, 2021a; Charles Q. Brown and David H. Berger, "Redefine Readiness or Lose," *War on the Rocks*, March 15, 2021b.

[26] Brown and Berger, 2021b.

nent feature of how the U.S. military fights wars. One of the key staff members responsible for drafting the GNA legislation commented that at the time "we thought that we were going to fight wars through these unified combatant commands—the Pacific Command, the Central Command, the European Command . . . we thought they were going to be warfighting headquarters."[27]

The reality has become one in which combat operations are largely managed through joint or combined task forces that are established by the combatant commander for specific periods and purposes.[28] The most common practice has become one in which combatant commands focus on planning and oversight while delegating operational- and tactical-level missions to theater service components, joint task forces, or subunified commands.[29] Most notably, these structures vary from among commands—for example, the U.S. Northern Command (NORTHCOM) consists of four service component commands, two subunified commands, and three joint task forces. In contrast, the Indo-Pacific Command (INDOPACOM) has four service components, three subunified commands, and one joint task force.[30] The primary concern with this development has less to do with a detrimental impact on operational and tactical performance. It is much more broadly tied to the negative consequences of bureaucratic growth, the geographic combatant commander's increased span of control, and the expansion of core missions. As new organizational structures emerge and later mature, a combination of bureaucratic self-interest and a desire to establish and protect core missions often leads to expansion and an inability or unwillingness to shed legacy structures or missions.[31] According to many senior officials and experts, the price for this bureaucratic entrenchment is redundancy, a

[27] U.S. Senate, Committee on Armed Services, 2015, p. 17.

[28] John H. Pendleton, *Defense Headquarters: Geographic Combatant Commands Rely on Subordinate Commands for Mission Management and Execution*, U.S. Government Accountability Office, GAO-16-652R, June 30, 2016.

[29] Pendleton, 2016, p. 2.

[30] Pendleton, 2016, p. 2.

[31] Zegart, 2000, pp. 19–21.

lack of efficiency, and less adaptable and effective decisionmaking and planning processes.

Growth of Combatant Command and Other Staffs

Combatant command staffs have grown over the past three decades to support and enable the expansion of combatant command missions and increased responsibilities. Although there may be a temptation to identify this as primarily a negative aspect of jointness, the growth of combatant command staffs has expanded concurrently with other staffs to include OSD, the Joint Staff, and the services. When examining these developments in a 2016 hearing on the impact of the GNA after 30 years, testimony described the increase in staff positions across DoD—OSD had grown by more than 5,000 people, the Joint Staff by approximately 4,000, and the combatant command staffs in aggregate by almost 38,000 people.[32] "The problem," according to a former USDP, "is not just a matter of inefficiency; it is also an issue of effectiveness."[33] A member of the Defense Science Board struck a similar tone and argued that "the combatant commands have expanded from lean, warfighting headquarters to sprawling mini-Pentagons with thousands of staff members."[34]

The overall growth in staffs at all levels has come at a time when the actual size of the active-duty military has shrunk, and each of the services has been presented with difficult budgetary choices in the areas of readiness and modernization. When considered along with the growth of the DoD agencies, the expansion of what are considered staff functions has expanded to roughly 240,000 military and government civilian personnel and nearly 20 percent of the DoD budget.[35] This growth has led to a support structure across DoD that has become too large, increasingly inefficient, and, in many respects, not tailored to the tasks that it performs.[36] The two most-

[32] Scott Maucione, "Pentagon Staff Size Takes More Flack from Experts," *Federal News Network*, December 8, 2015; Flournoy, 2015, p. 4; Eaglen, 2020.

[33] Flournoy, 2015, p. 4.

[34] Eaglen, 2020.

[35] Flournoy, 2015, p. 4.

[36] U.S. Senate, Committee on Armed Services, 2015, p. 18.

prominent concerns from this across-the-board growth are the impact of these staffs on the speed and adaptability of the U.S. decisionmaking processes and the overall quality of these staffs' decisionmaking.

The connection between efficiency and increased staff size has already been briefly mentioned. Another deleterious impact of staff growth is the impact on overall effectiveness. Former senior defense officials have pointed out that "in the private sector, bloated headquarters staffs have been documented to slow decisionmaking, push too many decisions to higher levels, incentivize risk averse behaviors, undermine organizational performance and compromise agility."[37] Ultimately, the 20th-century management structure that emerged from the GNA reforms—not only at the combatant commands, but also across DoD—has produced a structure, systems, and practices that have bogged down DoD's ability to adapt.[38] The result has been "trouble producing good strategies and plans" and "processes that are too cumbersome" to keep pace with a rapidly changing competitive environment.[39]

The link between the growth of staffs and the development of jointness should be considered an unintended consequence of the type of jointness promoted by the GNA. More specifically, a central feature of the GNA reforms was focused on empowering the CJCS advisory roles and significantly increasing the authority and responsibilities of the combatant commands. One by-product of this decision is larger staffs. Another is an increase in the number of organizations involved in the decisionmaking process and the emergence of a "tyranny of consensus."[40] This consensus-driven process, according to a former USDP, is now treated as an end that has limited the development of quality options presented to decisionmakers and slowed decisionmaking in a way that limits DoD's ability to be responsive and agile.[41] Force planning, global force management, strategy development, and operational planning are all areas that have been negatively affected

[37] Flournoy, 2015, p. 4.

[38] U.S. Senate, Committee on Armed Services, 2015, pp. 5–6.

[39] U.S. Senate, Committee on Armed Services, 2015, p. 22.

[40] Flournoy, 2015, p. 2.

[41] Flournoy, 2015, p. 2.

by this "lowest common denominator" approach to decisionmaking.[42] In the end, these key changes to the GNA left many of the key actors—CJCS, the service chiefs, and the combatant commanders—newly empowered but without the necessary power and authority to make any decisions alone.[43]

Impact of Combatant Commander Requirements on Readiness

In April 2021, a letter from members of the House Armed Services Committee was sent to the SECDEF and DEPSECDEF that detailed "the significant disparity between the combatant commands' demand signals and the services' ability to provide said forces without significant disruption to longer-term readiness and modernization issues."[44] The letter argued that RFFs from the combatant commands had reached such a level that they undermined and circumvented the Global Force Management Allocation Plan (GFMAP)—a development that threatened to disrupt the balance between current operational requirements and modernization goals outlined in the National Defense Strategy. The root of the problem, according to the House Armed Services Committee members, was that combatant commands "have few incentives to be frugal in their force requests, leading to overtaxing and overworking of the services in an attempt to fulfill [combatant command] demands."[45] Ultimately, the letter requested information from the SECDEF on the thresholds for approving RFFs, an assessment of whether the security environment had changed so dramatically as to demand such a large number of RFFs, and an assessment of whether the current GFMAP had been consistently incorrect over the years.[46]

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[42] Flournoy, 2015, p. 3. See also U.S. Senate, Committee on Armed Services, 2015; and U.S. House of Representatives, Committee on Armed Services, 2016. In both of these hearings, several former senior DoD officials address the issue of decisionmaking and the impact of staff growth on outcomes.

[43] U.S. Senate, Committee on Armed Services, 2015, p. 22.

[44] Robert J. Wittman, Seth Moulton, et al., letter to U.S. Department of Defense Secretary Lloyd J. Austin and Deputy Secretary Kathleen Hicks, regarding combatant commands' requests for forces, April 5, 2021.

[45] Wittman, Moulton, et al., 2021.

[46] Wittman, Moulton, et al., 2021.

The problems outlined in this letter reflect a broader series of concerns about how DoD assesses and manages risk and how those assessments factor into decisions on balancing long-term requirements with near-term readiness.[47] Some experts have argued that DoD has demonstrated its inability to "shed missions and requirements," leading to a continuous pull on resources that often does not align with the United States' stated priorities as reflected in the National Defense Strategy.[48] Similarly, the lack of a structured decisonmaking process, competing demands from combatant commanders and service chiefs, and no mechanism for defining and assessing global risk has left the bloated, consensus-driven decisionmaking process ill equipped to address these tensions.[49] Although many of these problems stem from an inability of the nation's leaders to make difficult decisions that may entail increased risk, DoD leaders have proved unable to clearly outline the core trade-offs needed to maintain the United States' national security and competitive advantage under current budget conditions.[50] The problem thus boils down to a "lack of global prioritization" and a "lack of an ability to determine where we're going to take risks—below the level of the SECDEF."[51]

The preceding sections should not be seen as suggesting that combatant commanders make requests that are simply oriented toward gaining the most resources for their theaters. They, like other leaders, are unlikely to accept any more risk than necessary. This perspective has not only been demonstrated previously by combatant commanders—nearly all have relied on overwhelming technological and numerical advantages in the operations outlined in Chapter 4—it is also central to the thinking of service chiefs. As

[47] Adam Smith, "Opening Statement (As Prepared): Hearing on the Fiscal Year 2020 National Defense Authorization Budget Request for the Department of the Army and the Department of the Air Force," U.S. House of Representatives, Committee on Armed Services, April 2, 2019.

[48] Mackenzie Eaglen, "Just Say No: The Pentagon Needs to Drop the Distractions and Move Great Power Competition Beyond Lip Service," *War on the Rocks*, October 28, 2019.

[49] U.S. Senate, Committee on Armed Services, 2015, p. 36.

[50] Eaglen, 2019.

[51] U.S. Senate, Committee on Armed Services, 2015, p. 36.

a former Chief of Staff of the Air Force argued in an interview after being asked a question about the cost of new systems, "We don't want a fair fight . . . we should win every game 100-0 as far as I'm concerned."[52] Thus, the combatant commands' increased RFFs reflect a system characterized by inherent tensions (i.e., long-term versus short-term needs) that no single military organization or leader has the authority to resolve. Ultimately, this tension reflects a much larger problem that jointness has not necessarily contributed to, or is capable of, providing a solution. In the end, a national political leadership that places increased demands on its military (both combatant commands and services) yet limits the resources available to maintain those demands must be willing at some point to make difficult decisions on priorities and trade-offs or risk losing its most-significant competitive advantages.

Tensions Between Long-Term Planning and Short-Term Requirements

The *tyranny of the now* phrase has been used to describe one element of the competing demands between service chiefs and combatant commanders—a tension based on the long-term planning requirements of the former and the near-term operational needs of the latter.[53] The steady drumbeat of RFFs has created an "unsustainable deploy-to-dwell ratio" that "is leaving the services scrambling at a time when they need to rebuild the health of the force."[54] An effective balance between the competing demands of the services and combatant commands requires a balanced assessment of the long-term risks associated with an insufficiently modernized forces and the near-term risks if combatant command requirements are not addressed.[55] This tension over

[52] William T. Eliason, "An Interview with Mark A. Welsh III," *Joint Force Quarterly*, Vol. 74, Third Quarter 2014, p. 9.

[53] Wittman, Moulton, et al., 2021.

[54] Wittman, Moulton, et al., 2021.

[55] Wittman, Moulton, et al., 2021.

recent decades has tended to favor combatant commanders—another unintended consequence of the trade-offs at the heart of the GNA reforms.[56]

These tensions were much less pronounced and the consequences less immediate through the 1990s and into the first decade of the 21st century. Broadly speaking, most of the systems in the United States' inventory were still in reasonable stages of their operational service life, even if they were approaching the point where new systems, upgrades, or alternative capabilities would need to be considered. The United States' adversaries were much less capable, but the operations tempo high, thus continuing to place stress on the overall health and readiness of the joint force. Today, the situation has become acute. It is regularly addressed in congressional hearings and in day-to-day service accounts. The Army, for instance, has pointed out that it fulfills 60 percent of combatant commands' requirements for personnel—an overall number that included approximately 37,000 soldiers deployed to CENTCOM's AOR and another roughly 25,000 to INDOPACOM's AOR.[57] The numbers have come from a variety of Army specialties that are already reaching what the Army considers as readiness "redlines" for deploy-to-dwell ratios.[58] The Air Force has noted problems with readiness in its tanker force and parts of its bomber fleet.[59] Last, similar struggles have plagued the Navy with increasing demands on aging ships and manning shortfalls.[60]

Strains on service readiness raise questions about the near-term value placed on the United States' current peacetime operations and the potential long-term costs in the event of a major power conflict. Although the joint force largely has been successful both operationally and tactically over the past three decades, it mainly operated in permissive environments

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[56] Eaglen, 2020.

[57] Bradley Bowman, "Why We Should Grow the Active Duty Army," *RealClearDefense*, February 14, 2020.

[58] Bowman, 2020.

[59] Eaglen, 2020; Oriana Pawlyk, "Overtasking of B-1 Lancer Fleet Led to Faster Deterioration, General Says," Military.com, April 17, 2019.

[60] David Larter, "US Navy's Aging Surface Fleet Struggles to Keep Ships up to Spec, Report Shows," *Defense News*, October 5, 2020; Geoff Ziezulewicz, "Navy 'Masking' Extent of Manning Shortfalls in the Surface Fleet, Watchdog Agency Says," *Navy Times*, June 3, 2021.

against nonpeer adversaries. There was no consideration for the possibility of having to compete with the United States' antagonists because of the massive imbalance in power and capabilities. Today's strategic environment presents U.S. political leaders with tough questions about what the United States' priorities really are and whether the joint force needs to place more emphasis on day-to-day operations in support of strategic competition as opposed to preparing for major power competition. In a high-profile series of articles on redefining readiness written by the chief of staff of the Air Force and the commandant of the Marine Corps, both point out that the Marine Corps and Air Force have "been pulled in directions far from our roots and respective core missions" in a way that has "directed significant resources to ensure they are ready for dozens of other lesser requirements predicated upon an ability to project power across strategic distances in permissive environments."[61]

The preceding discussion might suggest to some observers that elements of this problem are rooted in the trade-offs associated with the pursuit of jointness—most notably, those trade-offs that elevated the combatant commands at the expense of the services. This has no doubt become a key feature of the GNA era and one that will emerge many times hereafter as DoD pursues competition in the current environment. The solution, if one can be imagined, resides with neither the service chiefs nor the combatant commands. Both parties can develop processes and procedures to more rationally consider how to deal with both sets of demands. Similarly, calls for less parochialism and greater cooperation should no doubt be considered desirable, but even if they came to pass could not address the root problems involved—the constant failure to define priorities and make difficult decisions on where to accept risk. This task can only be done by political leaders.

Diminished Role of the Services

Finally, many of those who believe that the pursuit of jointness has had a negative effect on the military also view the diminished role of the services

[61] Brown and Berger, 2021b; Brown and Berger, 2021a.

as the central negative consequence of the GNA.[62] The preceding sections have attempted to address several key aspects of this issue, but there are two remaining elements centered on changes in the services' roles since the GNA that are left to be explored. The first deals with the acquisition process. The second focuses on strategy and strategic planning. In both cases, the Navy has been more profoundly affected by GNA reforms in these areas than the Army, Marine Corps, and the Air Force—a fact that is regularly highlighted by naval experts in their discussions of the GNA and the impact of jointness on the U.S. military.

In addition to its focus on chain-of-command issues that ultimately removed the service chiefs from the operational chain of command, the GNA also sought to address a series of acquisition-related problems tied to corrupt and inefficient acquisition processes that involved fraud, poor outcomes, and budget shortfalls, among other problems.[63] The GNA attempted to rectify these problems by turning over responsibility to the service secretaries. The law was interpreted differently by each service and, ultimately, the Navy's changes were most dramatic in terms of the service chief's role. Although the Chief of Staff of the Air Force and Chief of Staff of the Army remained key parts of the acquisition process, the Department of the Navy's interpretation of the law "contributed to the view that the service chief was excluded from the process entirely."[64] The outcome left the Navy Secretary with responsibility for acquisition and relegated the Chief of Naval Operations to "determining what equipment the Navy needed but not for acquiring it."[65] The same division of labor has been reinforced by subsequent directives since passage of the GNA.[66] These changes, according to several

[62] Mackubin T. Owens, "The Use and Abuse of 'Jointness,'" *Marine Corps Gazette*, Vol. 81, No. 11, November 1997, pp. 50–59; Cropsey, 1993.

[63] Charles Nemfakos, Irv Blickstein, Aine Seitz McCarthy, and Jerry M. Sollinger, *The Perfect Storm: The Goldwater-Nichols Act and Its Effect on Navy Acquisition*, RAND Corporation, OP-308-NAVY, 2010, pp. 9–11.

[64] Nemfakos et al., 2010, pp. 15–16.

[65] Nemfakos et al., 2010, pp. 25–26.

[66] Shelby S. Oakley, *Navy Shipbuilding: Increasing Focus on Sustainment Early in the Acquisition Process Could Save Billions*, U.S. Government Accountability Office, GAO-20-2, March 2020, pp. 8–13.

experts, have had a significant negative impact on the Navy's force structure and development of new capabilities.[67]

Finally, the GNA placed responsibility for strategy development within the military under the purview of the CJCS and the Joint Staff and limited the services' roles. For the Navy, this was a significant development, particularly after the development of its Maritime Strategy in the 1980s and what many observers viewed as a renaissance in the Navy's perspectives on warfighting at sea. The role of jointness in planning and strategy development will be addressed in a later section of this report, but the primary criticism with current strategies is that they do not "explain fully how the armed forces will do things in the terrestrial, air, or nautical realms—let alone set priorities among those domains, or among the land, air, and sea arms."[68] The lack of specific attention to individual domains, the current and future challenges to the U.S. military in those domains, and the strategic imperatives facing the services has led to strategies that do little to clarify what the services are meant to do and how the United States can practically harness its advantages in these contested domains. One expert argued that the push for jointness in strategy development "connotes each armed service having a roughly equal claim on missions and taxpayer largesse."[69] Another contended that jointness has worked in terms of warfighting but has fallen short in the strategy arena.[70]

Unresolved Issues

Along with considering trade-offs and unintended consequences, it is necessary to consider those areas in which the results from GNA reforms have been either unclear or inconclusive. Previous chapters have highlighted those areas in which GNA reforms pushed forward joint initiatives which,

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[67] Dmitry Filipoff, "A Conversation with Steve Wills on the Decline of U.S. Navy Strategy," Center for International Maritime Security September 3, 2021; McGrath, 2010.

[68] James Holmes, "Why Jointness Makes for Bad Strategy, and Other Thoughts," *War on the Rocks*, July 15, 2015.

[69] Holmes, 2015.

[70] Grady, 2015.

in turn, improved the military's performance in critical areas. The military's success is not entirely attributable to jointness, and this study briefly outlines other contributing factors that played a role in that success. Also, the military's success has not been at all levels, leading to a paradox in which the U.S. military has been far more successful at fighting wars than it has been at winning them. One former Under Secretary of Defense for Intelligence (USDI) testified that "we have had considerable success at the tactical and operational levels, particularly in the counterterrorism arena and in turning around the situations in Iraq and Afghanistan, but much less at the strategic level."[71]

In two key areas—military advice and planning—the GNA attempted to rectify problems that political and defense leaders had understood for years and largely attributed to service parochialism and infighting.[72] Advice was often reduced to the lowest common denominator, requiring consensus and buy-in from all members of the JCS.[73] Strategic planning was similarly an enterprise dominated by the services who, like other parts of the Pentagon, were focused on programming and budgeting at the expense of developing realistic strategic plans and guidance capable of offering much-needed guidance.[74]

Some of the service dynamics that contributed to what the architects of GNA reforms believed to be the root problems in the delivery of military advice to the President and SECDEF and the practice of planning have clearly changed. Some experts have argued that these changes have been for the better, but others maintain that managerial jointness may come at the expense of a healthy service rivalry that helps propel new ideas and prevent groupthink.[75] Ultimately, the case for operational and tactical success and its relationship to jointness seems to be a more straightforward case, if not

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[71] Michael G. Vickers, "Improving the Pentagon's Development of Policy, Strategy and Plans," testimony before the U.S. Senate Committee on Armed Services, December 8, 2015, p. 2.

[72] Locher, 2001, pp. 97–99.

[73] Harvey M. Sapolsky, Eugene Gholz, and Caitlin Talmadge, *U.S. Defense Politics: The Origins of Security Policy*, 4th ed., Routledge, 2020, p. 41.

[74] Roman and Tarr, 1998, pp. 106–107; Locher, 2001, pp. 104–105.

[75] Sapolsky, Gholz, and Talmadge, 2020, p. 42.

a universally accepted one. Even in instances where experts have tended to have a negative view of the value of jointness on the U.S. military's improvement since 1986, they still concede that jointness in such areas as interoperability, operational planning, and tactical integration has led to positive outcomes and contributed significantly to greater effectiveness.[76] The same cannot be said regarding the delivery of military advice or in strategy development and planning. In both areas, former military leaders, defense civilians, and experts point out that DoD's processes in these areas have clearly improved; however, U.S. experiences in both Afghanistan and Iraq have engendered debates about the quality of the outcomes. Ultimately, these outcomes raise a critical question: Has the development of jointness improved the military's ability to advise the President and SECDEF, and its ability to plan?

Is Military Advice Really Better?

James Schlessinger, who was SECDEF from 1973 to 1975, once remarked that the military advice provided by the JCS was "generally irrelevant, normally unread, and almost always disregarded."[77] Within 20 years after the end of his tenure, one of Schlessinger's successors, Richard Cheney, and then–CJCS Army GEN John Shalikashvili would both attest to the improvements in military advice that followed the GNA.[78] Both Cheney and Shalikashvili pointed out that such issues as "lowest common denominator" and excessive review and coordination had been mitigated with the benefits reflected in the end product. One of the major contributors to success in this area has been the reorientation of the Joint Staff as a result of GNA reforms. First and foremost, after passage of the GNA, the Joint Staff's mission was to support the CJCS in his principal advisory capacity, which included a host of other functions related to strategic planning support to the SECDEF. A

[76] McGrath, 2010; Cropsey 2006; U.S. Senate, Committee on Armed Services, 2015, p. 22.

[77] Locher, 2001, pp. 103–104.

[78] Locher, 2001, pp. 109–110.

second development was that the CJCS no longer needed to coordinate his advice with the services or combatant commanders.[79]

Despite the favorable assessment from senior civilian and military leaders, recent testimony and analysis raises significant questions about how well this system is actually working. First and foremost, the lowest-common-denominator approach to advice and decisionmaking that GNA sought to eradicate has given way to what one former USDP has called the *tyranny of consensus*.[80] Likewise, a former combatant commander echoed these thoughts by pointing out that the same dynamics pervade many other national security decisionmaking processes, largely as a result of "seemingly endless review" to address the difficulties, concerns, and potential objections of various stakeholders.[81] In large part, the tyranny of consensus that has developed is a by-product of a massive expansion of staffs at all levels—OSD, the Joint Staff, services, and combatant commands—and an increased number of four-star level officers who are both empowered by and report directly to the SECDEF. It appears that the problems created by a lack of jointness—specifically, service parochialism—have given way to other types of parochialism that have emerged as a result of the pursuit of jointness. Previous sections of our report have highlighted several of these problems, but one expert has pointed out that "it is beyond dispute that jointness has contributed to a more effective fighting force in the field," but that "what is disputable is the impact that jointness has had on the breadth and depth of intellectual ferment within the Pentagon, particularly with respect to matters not immediately concerned with the application of force."[82]

Another factor that calls into question the favorable assessment of whether military advice has improved is based on the advice provided during recent wars, particularly Afghanistan and Iraq. Recent accounts of internal lessons-learned studies by the Special Inspector General for Afghanistan Reconstruction have highlighted numerous occasions during the war in Afghanistan where senior military and civilian officials pro-

[79] Locher, 2001, p. 110.

[80] Flournoy, 2015, p. 2.

[81] U.S. House of Representatives, Committee on Armed Services, 2016, p. 12.

[82] McGrath, 2010.

vided overly optimistic perspectives on progress. Most notably, on several occasions, senior military officers informed members of Congress and the White House that the military mission was achieving the nation's political objectives and victory was within sight.[83] As one retired U.S. Marine lieutenant general noted that many military leaders "acted timidly when their voices urgently needed to be heard" and that many of these same leaders chose not to act or voice their dissent with flawed rationales and plans.[84]

These cases show that the conclusions on the part of senior leaders about the quality of military advice are mixed. Although early assessments from the 1990s tended to emphasize process and process-oriented outcomes as a hallmark of improved advice, the military's experiences in Afghanistan and Iraq suggests that the quality of the advice itself was left wanting. Likewise, senior military leaders proved unwilling to provide realistic assessments and advice to political decisionmakers charged with determining priorities, objectives, and risk. Although a more detailed discussion on the subject of military advice is beyond the scope of this report, the concerns highlighted earlier indicate that the quality of strategic advice given to the United States' political leaders by the military has not improved as much as had originally been hoped by DoD leaders and may be a contributing factor to the United States' lack of strategic success in recent years.

The Problem of Strategy and Long-Term Planning

There has been widespread recognition in recent years that DoD strategy development problems have persisted and, in many cases, have either stagnated or remained the same despite the GNA and the development of a joint culture and organizations within the military. To be clear, strategy develop-

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[83] Craig Whitlock, *The Afghanistan Papers: A Secret History of the War*, Simon & Schuster, 2021a; Craig Whitlock, "Leaders Made Promises to Win but Struggled to Define the Endgame," *Washington Post*, April 15, 2021b; David E. Sanger, "White House Struggles to Gauge Afghan Success," *New York Times*, August 6, 2009; Craig Whitlock, Leslie Shapiro, and Armand Emamdjomeh, "The Afghanistan Papers: Read the Confidential Documents That Reveal a Secret History of the War in Afghanistan," *Washington Post*, December 9, 2019.

[84] Robert P. Kozloski, "Building the Purple Ford: An Affordable Approach to Jointness," *Naval War College Review*, Vol. 64, No. 4, 2012, p. 47.

ment is the domain of both civilian and military leaders, but improvements on either side of the equation are difficult to find. In a 2016 hearing examining progress since passage of the GNA and future directions, one prominent member of the House Committee on Armed Services commented that "we have general after general who retired that come sit before us and tell us [Washington] D.C. is now a strategy-free zone" and that "Andy Marshall would sit here and testify that a lack of strategy is probably our biggest threat."[85] Immediately after this statement, questioning a former combatant commander, the same House committee member pointed out that when the 2012 defense guidance was issued,

> [W]e had General Dunford testify it was based on four major faulty assumptions that, one, Russia was going to be cooperative; two, China was going to be cooperative; three, that ISIS wasn't going to be a problem; and four, we are going to be out of Afghanistan and Iraq.[86]

He continued pointing out that the ability to make decisions and set priorities based on these flawed strategies—he focused on procurement decisions—is a nearly impossible task, and those involved in the process widely acknowledge the weakness in these strategies.

In the same hearing, a former Under Secretary of Defense (Comptroller) contended that the process itself is flawed. According to him, "What we have done instead is to create mechanistic formulas and mechanistic papers like the QDR [Quadrennial Defense Review]. So, every time a budget changes we come up with a so-called new strategy."[87] An examination of National Security Strategies and National Defense Strategies since the end of the Cold War highlights this point. Strategy documents from before the 9/11 attacks generally focused on the threats of regional aggression (e.g., North Korea and Iraq), proliferation, ethnic conflict, and a wide range of transnational threats.[88] The 1997 QDR did present the idea that Russia and

[85] U.S. House of Representatives, Committee on Armed Services, 2016, p. 14. Andrew Marshall was the Director of the Office of Net Assessment in OSD from 1973 until 2015.

[86] U.S. House of Representatives, Committee on Armed Services, 2016, p. 14.

[87] U.S. House of Representatives, Committee on Armed Services, 2016, p. 15.

[88] Cohen, 1997, pp. 3–5.

China are seen by some as potential future competitors, but the report highlighted the internal challenges both countries faced and the desire to pursue greater cooperation with both.[89] A more direct reference to major power competition came in the 2001 QDR, which stated that "the potential exists for regional powers to develop sufficient capabilities to threaten stability in regions critical to U.S. interests" and further highlighted that "Asia is gradually emerging as a region susceptible to large-scale military competition."[90] The 2001 QDR also stated that "the possibility exists that a military competitor with a formidable resource base will emerge in the region," but it stopped short of explicitly referencing China in the body of the report.[91] The competitive references in the 1997 and 2001 QDRs changed substantially in post–9/11 strategies that either discussed China and Russia in passing or in niche areas of competition (e.g., cyber) or cooperation (e.g., military-to-military cooperation).[92] The response to 9/11 and the 2003 invasion of Iraq altered these preliminary references to strategic competition as later strategies placed far more attention on these documents, which focused more on cooperation as opposed to competition.[93] It was not until 2016 that either of these issues was formally addressed in either the National Security Strategy or National Defense Strategy, despite different organizations and senior leaders within DoD highlighting the importance of these two competitors.[94] An extensive examination of these strategies is beyond the

[89] Cohen, 1997, p. 5.

[90] Donald Rumsfeld, *Quadrennial Defense Review Report*, U.S. Department of Defense, September 30, 2001, p. 4.

[91] Rumsfeld, 2001, p. 4.

[92] Authors' analysis of the QDRs, National Military Strategy, and National Defense Strategy from 1997 to 2018 (see Mattis, 2018; Historical Office, Office of the Secretary of Defense, undated-a; Historical Office, Office of the Secretary of Defense, undated-b; and Historical Office, Office of the Secretary of Defense, undated-c).

[93] Authors' analysis of the QDRs, National Military Strategy, and National Defense Strategy from 1997 to 2018 (see Mattis, 2018; Historical Office, Office of the Secretary of Defense, undated-a; Historical Office, Office of the Secretary of Defense, undated-b; and Historical Office, Office of the Secretary of Defense, undated-c).

[94] Authors' analysis of the QDRs, National Military Strategy, and National Defense Strategy from 1997 to 2018 (see Mattis, 2018; Historical Office, Office of the Secretary

scope of this paper; however, they do demonstrate the point that the former USD Comptroller was making in his testimony. The failure or inability to identify these long-term challenges—whether by missing them altogether or constantly changing focus—creates risk by limiting the nation's ability to effectively prioritize and plan for threats and modernize forces based on those determinations.

Does this mean that the United States has failed strategically in the post–Cold War era? It does not. In a separate hearing on the GNA, a former USDI highlighted several strategic success that spanned both late Cold War and post–Cold War environments that included the United States' "covert war with the Soviets in Afghanistan; the shift to a deep/follow-on forces attack strategy against Soviet forces in Europe during the late 1970s; the strategy to drive Iraqi forces out of Kuwait; the air strategy that led to the Dayton Peace Accords; and the air-irregular ground campaign that toppled the Taliban after the 9/11 attacks."[95] In several cases, these examples of strategic success might be open to question. Similarly, the question of whether these successes are a function of strategic foresight or some other combination of factors (e.g., adversary weakness, overwhelming resource disparities) is one that is surely contestable.

Another question that is central to our report is whether jointness has contributed to either the success or failure of U.S. strategy since passage of the GNA. If one accepts the examples of success listed here, the cases identified span both pre- and post-GNA. Likewise, if one looks at strategic failures—for example, Vietnam and the Taliban's resurgence in Afghanistan post-withdrawal—those also cover periods before and after the GNA. The problems of strategy development that contributed to the view that the GNA was necessary—lack of attention, service parochialism, and a focus on programming and budgeting—have given way to a post–GNA environment that has traded those problems for new ones. As earlier sections in our report have highlighted, these new problems include the "tyranny of consensus," a proliferation of staffs and organizations with voices in the process, and an unwillingness to make hard decisions and outline priori-

of Defense, undated-a; Historical Office, Office of the Secretary of Defense, undated-b; and Historical Office, Office of the Secretary of Defense, undated-c).

95 Vickers, 2015, p. 3.

ties.[96] The GNA mandated the development of both the National Security Strategy and QDR, but as the former USDI argued in his testimony that "you can't mandate good strategy; good strategy is the exception rather than the rule; the problem is getting worse as consequential challenges to our national security significantly increase."[97] He went on to point out that the success and failure of strategies depends on the quality of the strategists and that "Goldwater-Nichols has done very little to address our growing strategy deficit; it has, in fact, contributed to it."[98]

Conclusions

This chapter has focused on the unforeseen developments that emerged out of the GNA and how those developments might temper the benefits that the U.S. military has derived from its pursuit of jointness. In some cases, the benefits have been clear, particularly in terms of operational and tactical effectiveness. That said, in many other critical areas, the impact of jointness is much less clear and, in certain areas, potentially detrimental to the United States' ability to maintain its competitive advantages. This factor is especially the case today as the United States is faced with two aggressive, ambitious competitors.

Competition is a two-sided dynamic. The previous discussions have overwhelmingly been focused on how senior U.S. civilian and military officials and experts view the United States' system. This turns out to be an assessment of the GNA and the strategic value of jointness against an ideal state of what should be; however, competition is not measured against an ideal state. The competitors' view of both themselves individually and the competition must be an important element in any type of assessment. The chapter that follows will examine China's perspective on the strategic value of jointness in an attempt to identify those areas that the United States' primary competitor finds to be most compelling.

[96] Flournoy, 2015, p. 2.

[97] Vickers, 2015, p. 4.

[98] Vickers, 2015, p. 4.

CHAPTER 6

Chinese Views on the Strategic Value of Jointness

The People's Liberation Army Reevaluates Its Progress

The attacks on the opening night of Desert Storm left a significant impression on the PLA. Subsequent PLA publications detailed the highly integrated U.S. attacks that employed Army attack helicopters, Air Force suppression of enemy air defense, electronic warfare, and attack aircraft, and Navy cruise missiles to target Saddam Hussein's "eyes and ears"—Iraq's early warning and surveillance, command and control, and air defenses.[1] PLA observers watched over the next month as U.S. and coalition air strikes dismantled Iraq's leadership facilities, critical infrastructure, economic capacity, and military forces.

The PLA's prewar assessments focused overwhelmingly on Iraq's assumed ground-force advantage and highlighted several ingrained biases in PLA military thinking.[2] These biases were forged in the PLA's own experiences in Korea and Vietnam and along its border with the Soviet Union. China's reform and modernization efforts in the 1980s further reinforced these biases, and just before Desert Storm, many leading PLA researchers were confident in China's modernization efforts that emphasized amassed ground forces and downplayed the importance of air, space, and naval power. Immediately following Desert Storm, the PRC's political and military lead-

[1] Lianshan, 2015, pp. 9–11; Zhang Yuliang, 2006, p. 76.

[2] Cozad et al., 2023, pp. 4–7.

ers were alarmed about where earlier PRC military reforms had taken the PLA and whether or not the PLA could compete against the world's modern militaries.[3] The United States' war in Iraq demonstrated clearly that the PLA remained woefully behind.

Subsequent United States operations in Kosovo, Iraq, and Afghanistan amplified several persistent military modernization trends, including the importance of information and information technology, advanced command and control systems, intelligence and surveillance, long-range precision strike, long-range mobility, and joint operations.[4] Although the PRC has devoted significant resources to developing technology and capabilities in each of these areas, joint operations has been a particular area of interest for the PLA since the early 1990s. The PLA has demonstrated its commitment to building jointness through a variety of military science research efforts, technology development, training, and doctrinal development programs that evolved over the past three decades.[5]

For China's military leaders, U.S. military operations have highlighted the immediate need to develop an effective joint force.[6] This imperative required the PLA to focus its earliest efforts on developing joint operations doctrine and building joint capabilities based on that doctrine. These efforts culminated in the Chinese Communist Party (CCP)'s Central Military Commission's 2020 release of the *Guidelines on Joint Operations of the Chinese People's Liberation Army (Trial)*, a document nearly two decades in the making.[7] Other continuing efforts are centered on building command structures and enhancing capacity for strategic planning and management, theater command, operational planning and staff functions, con-

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[3] Harlan W. Jencks, "Chinese Evaluations of 'Desert Storm': Implications for PRC Security," *Journal of East Asian Affairs*, Vol. 6, No. 2, Summer/Fall 1992, pp. 461–466.

[4] Huang Bin, *Research into the Kosovo War*, Liberation Army Publishing House, 2000; Wang Yongming, Liu Xiaoli, and Xiao Yunhua, *Research into the Iraq War*, Military Science Press, 2003.

[5] Cozad, 2019, pp. 211–214.

[6] Shou Xiaosong, 2013, p. 124.

[7] Xinhua announced the release of the guidelines on November 13, 2020, as quoted in David M. Finkelstein, *The PLA's New Joint Doctrine: The Capstone of the New Era Operations Regulations System*, Center for Naval Analyses, September 2021, pp. 1–8.

cept development, training, and personnel development.[8] A steady stream of PLA research and official statements argue that jointness is a critical element in preparing the PLA for military struggle and enabling it to support CCP objectives in an increasingly tense and competitive international environment.[9]

This chapter examines broad themes in the PLA's joint reform efforts to identify how Chinese political and military leaders view the strategic value of jointness. Over the past three decades, the PLA has devoted significant intellectual capital, technical capacity, and training focus to developing its own joint concepts from the strategic down to the tactical levels. These efforts have involved the development of new concepts of operation, command automation systems, organizations, and training standards to better equip the PLA's commanders and leaders with the tools necessary to compete against advanced militaries, particularly the United States. Theoretical exploration and extensive experimentation provide the basis for the PLA's incremental learning process. They also underpin current PLA education and training programs designed to cultivate talent and develop specific knowledge and skills for the PLA's officer corps. The PLA's 2016 reorganization demonstrates the PRC's commitment to jointness. Furthermore, the political capital and resources backing these reforms demonstrate PRC leaders' commitment, including Xi's, to developing jointness in the PLA.

Reforming and Reshaping the People's Liberation Army Joint Organization and Architecture

The PLA's interest in jointness developed in stages, most likely due to PRC leaders' perceived need to tackle the PLA's most immediate operational needs

[8] Joel Wuthnow, "A Brave New World for Chinese Joint Operations," *Journal of Strategic Studies*, Vol. 40, No. 1–2, January 2, 2017, pp. 174–184; Joel Wuthnow and Phillip C. Saunders, "A Modern Major General: Building Joint Commanders in the PLA," in Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N. D. Yang, and Joel Wuthnow, eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, 2019, pp. 296–299.

[9] State Council Information Office of the People's Republic of China, 2015; State Council Information Office of the People's Republic of China, 2019.

first. PLA military science researchers viewed the effectiveness of U.S. joint operations following the Cold War as a core requirement for future warfighting. A simple formulation soon followed. To compete with the United States and its allies (i.e., the world's advanced militaries), China had to adapt to a new way of fighting substantially different from its former models. The American military's ability to integrate and coordinate each service's unique capabilities and competencies enabled an exponential increase in firepower, lethality, and efficiency. This new method of warfare no longer relied on mechanized forces conducting prolonged operations to attrite an enemy's fielded forces. Rather, it relied on precision strikes against an enemy's most vital "key points" to systematically dismantle its ability to sense, organize, defend, and attack.[10] The joint force at the center of this new approach integrated capabilities and information in near real time, enabling vastly greater battlefield effects than traditional mechanized operations. Joint operations thus became closely tied to the PLA's emerging understanding of information systems–based system-of-systems warfare (subsequently referred to as *systems warfare*).[11]

As the United States demonstrated its joint capabilities over the past three decades, the PLA recognized it had only limited and dated experience with joint operations. Its only joint combat experience prior to the First Gulf War came from its Yijiangshan campaign in 1955.[12] The PLA's subsequent experiences have all been from exercises including large-scale joint landing exercises on the Liaodong Peninsula in 1955, the "801" and "802" series exercises in Northern China in the 1980s involving the PLA Army and Air Forces, and multiple joint exercises since the mid-1990s.[13] Because of the PLA's dearth of combat experience, its researchers have had no alternative other than close examination and study of U.S. doctrine and operations to derive lessons learned and best practices that the PLA could adapt for its own purposes. Since the early 1990s, the PLA has viewed the United States

[10] Zhang Yuliang, 2006, pp. 316–320; Lianshan, 2015, pp. 13–16.

[11] Wang Yongnan, *Exploring the Essentials of Gaining Victory in System Warfare*, National Defense University Press, 2015, pp. 17–18; Shou Xiaosong, 2013, pp. 124–125.

[12] Zhang Yuliang, 2006, p. 280.

[13] Zhang Yuliang, 2006, p. 280.

as the leader in joint theory and operations.[14] The U.S. military's joint structure, organization, information architecture, operational concepts, and personnel practices all played a formidable role in shaping the PLA's thinking on jointness.[15] PLA researchers continue to monitor American innovation and practice closely.

Ultimately, we can gauge the strategic value the PLA assigns to jointness based on the level of intellectual, material, and institutional resources it has devoted to developing its own joint system. Overall, these efforts span nearly 25 years and encompass multiple five-year plans and numbered research efforts.[16] Because the PLA sees future wars as clashes between operational systems and integrated joint operations as the central requirement for any effective operational system, PRC military leaders view developing a modern joint system as the primary imperative for competition in the military domain.[17] PRC publications have been clear over the years that their goal is not to mimic the American model of jointness.[18] They also are quick to point out that China's social, economic, political, and military realities are vastly different from those of the United States. Consequently, the PRC borrows many of its general concepts from American counterparts, but then adapts them to suit the PLA's organization and culture.

The following sections identify several thematic stages in the evolution of the PLA's joint system. Each stage highlights functional topics that reflect PLA concerns and priorities. For each of these areas, the PLA continues its efforts to develop and refine its organizations and concepts, and it

[14] Liu Wei, ed., *Theater Joint Operations Command*, 1st ed., National Defense University Publishing House, 2016, pp. 26–35.

[15] Each of the books cited in this chapter contains lengthy discussions on these areas.

[16] Numbered research efforts typically reflect priority research programs involving a wide variety of topics, including technology development and concepts of operations. These numbered research plans are resourced and at times connected to broader experimentation efforts.

[17] State Council Information Office of the People's Republic of China, 2015, p. 11.

[18] One recent example based on PLA experimentation with integrated joint operations-related concepts includes Lianshan (2015, pp. 17–23). The author acknowledges connections between Chinese and U.S. concepts, but he attempts to make clear distinctions between target-centric warfare and its U.S. analogs, including effects-based operations and network-centric warfare.

likely will continue to do so for the next several years. Ultimately, the findings highlighted in these sections will provide insight into the evolution of what the PLA values in jointness and its overarching priorities in its joint development.

The Development of People's Liberation Army Campaign Theory

Arguably the most important initial task in China's evolution toward jointness involved the PLA's efforts to develop joint theory and doctrine that could guide future education, training, and operations. This work began with an initial exploration of the combat environment that the PLA would confront following the Cold War. The outcome of this effort consisted of four studies published by the PLA's National Defense University. They collectively are known as the "Four Wars Series."[19] These books outlined four different combat environments consisting of landing operations, urban operations, mountain operations, and airborne operations, and the general missions and capabilities required to be successful in each. This initial research was prompted by a new set of Military Strategic Guidelines—in essence, China's National Military Strategy—published in 1993. The new guidelines were greatly influenced by U.S. performance in the first Gulf War. It redirected the PLA's planning and modernization focus away from China's northern border with the Soviet Union and toward local, high-tech operations in China's southeast, specifically Taiwan. It also directed the PLA to prepare for local wars under modern, high-tech conditions.[20]

The publication of these books in 1995 set the stage for the PLA's 95 Project that marked the PLA's initial effort to outline its understanding of joint operations at the campaign level of war.[21] Also, during this time window,

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[19] Cozad et al., 2023, p. 26.

[20] David Finkelstein, "China's National Military Strategy: An Overview of the 'Military Strategic Guidelines,'" in Andrew Scobell and Roy Kamphausen, eds., *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military*, Institute for Strategic Studies, May 2007, pp. 82–87.

[21] For an example of one of the key texts published under this program, see Wang Jiang Zhun and Lu Li Hua, *Operational Command in a Joint Campaign*, National Defense University Press, 1999. See also Cozad et al., 2023, p. 84.

the Central Military Commission (CMC) established the All Army Operations Regulations Committee to guide "hundreds of experts" in drafting the PLA's first joint operations regulation.[22] The crowning achievement in joint operations during this window was the publication of the *New Generation Operations Regulations* in 1999 and a series of PME publications based on that regulation that followed shortly afterward.[23] These publications included Science of Campaigns in 2000, followed by a range of teaching materials (e.g., *Campaign Theory Study Guide* 2002 edition), new editions (e.g., *Science of Campaigns* 2006 edition), and educational materials for PLA higher-education programs (*Lectures on the Science of Joint Campaigns* in 2012).[24] Later publications built on this foundation and provided an in-depth analysis of individual elements associated with the campaigns and operational activities outlined in the *Science of Campaigns*, including joint operations command, firepower strikes, information warfare, national air defense, and logistics and support, among many other subjects. Likewise, individual contributors and authors of these early volumes went on to serve as research leads and PME instructors involved in experiments, and later publications on such areas as theater command, systems warfare, new concepts of operation, and joint command.[25]

The level of importance attached to this project along with the resources and the longevity of its theoretical and doctrinal contributions demonstrate the PLA's seriousness in building its conceptual and educational baseline for jointness. One of the primary driving factors behind these studies was the PLA's attempt to define requirements for joint warfare to maximize its effectiveness in gaining initiative and responding to emerging situations

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22 Finkelstein, 2021, p. 49.

23 Finkelstein, 2021, p. 44.

24 Wang Houqing and Zhang Xingye, *Science of Campaigns*, 1st ed., May 2000, National Defense University Press, 2000; Bi Xinglin, *Campaign Theory Study Guide*, National Defense University Press, 2002; Li Yousheng, *Lectures on the Science of Joint Campaigns*, 2nd ed., Military Science Press, 2012; Zhang Yuliang, 2006.

25 For example, Dong Lianshan, author of *Target-Centric Warfare: The Path to Achieving Victory* (2015) also contributed to the 2000 and 2006 editions of *Science of Campaigns*. He was also the Deputy Director of PLA National Defense University's Department of Campaign Instruction and Research.

in an increasingly dynamic and unpredictable environment. The U.S. joint model demonstrated to Chinese leaders the importance of synchronizing and maximizing service capabilities to disable an enemy's combat system. The baseline developed under the 95 Project ultimately served as the underpinnings for the PLA's development of jointness at the strategic, operational, and tactical levels.

Integrated Joint Operations, Systems Warfare, and New Operational Concepts

Immediately following the release of the New Generation Operations Regulations and the completion of the 95 Project, the PLA initiated the *Five Year Plan on Headquarters Informatization Building, 2001–2005*.[26] The effort served as a practical mechanism for operationalizing and experimenting with key provisions of the new regulation and the wide array of foundational studies completed under the 95 Project. Its focus spanned a wide range of areas including headquarters work, development and use of command automation systems, tactical and operational integration for different types of forces and missions, and methods for joint training. The project also involved test units from both the Chengdu and Nanjing Military Regions tasked to explore different joint operational problems including the integration of air and ground forces and integrated firepower involving air and missile forces.[27] The final joint exercise—named Sharp Sword—involved

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[26] "Push Forward Revolution in Military Affairs with Chinese Characteristics, Build Informatized Command Organs—Excerpts of Advanced Typical Experiences from the All-Army Conference on Headquarters Building," *Jeifangjun Bao*, September 28, 2004, p. 3.

[27] Cheng Sixun, "Exploration and Practice of Integrated Training of Military Region Units: Part One," *Battle Flag News*, February 9, 2006a; Cheng Sixun, "Exploration and Practice of Integrated Training of Military Region Units: Part Two," *Battle Flag News*, February 10, 2006b; Cheng Sixun, "Exploration and Practice of Integrated Training of Military Region Units: Part Three," *Battle Flag News*, February 14, 2006c; Zhuang Lijun et al., "A Rapidly Expanding Transformation in the Training Domain," *Liberation Army Daily*, February 6, 2006; Zhang Wenping and Yan Wenbo, "Advance Phase of Second Artillery's Integrated Training Starts—Establishing Steering Group on Integrated Training, Organizing Trial Comprehensive Integration and Integrated Training, Conducting Theoretical Study on Integrated Combat and Training, and Exploring Characteristics and Laws of Integrated Training," *Rocket Forces News*, July 13, 2004,

a host of capabilities to include armor, aircraft, reconnaissance, electronic warfare, logistics, and armament support.[28] The parallel experiments in the Nanjing Military Region involving the PLAAF and Rocket Force were tasked with "joint training of services and arms to promote fusion, and joint training of services and arms to strengthen integration."[29]

In December 2005, shortly after Sharp Sword concluded, Hu Jintao, who was then the Chairman of the CMC, put forward a directive that made information systems–based system-of-systems operations the PLA's core operating concept.[30] Systems warfare was a prominent feature in the PLA's earliest thinking on jointness following their analysis of Desert Storm and subsequent U.S. operations. Many PLA publications discussed systems warfare as inextricably tied to both informatization—which had been enshrined as a core component of the PLA's enhanced Military Strategic Guidelines in 2004—and integrated joint operations, the central research issue in the *Five Year Plan on Headquarters' Informationization Building, 2001–2005*. The PRC's initial doctrine on joint campaigns explicitly discussed modern war as the confrontation between opposing operational systems and examined joint campaigns from both an administrative/organizational standpoint (i.e., service- and functional-oriented operations group) and a functional, systemic standpoint (i.e., specified operational systems).[31] Following Hu's directive, the PLA's efforts to push forward informatization and integrated joint operations converged under the systems warfare umbrella.

p. 1; Lu Feng and Ni Menzhi, "Mobile and Camouflaged Launches Using New Equipment Under Complex Weather and Terrain Conditions," *People's Front*, July 28, 2004.

[28] Mark Cozad and Astrid Stuth Cevallos, "Trends in PLA Air Force Joint Training: Assessing Progress in Integrated Joint Training" in Edmund J. Burke, Astrid Stuth Cevallos, Mark Cozad, and Timothy R. Heath, *Assessing the Training and Operational Proficiency of China's Aerospace Forces: Selections from the Inaugural Conference of the China Aerospace Studies Institute (CASI)*, RAND Corporation, CF-340-AF, October 20, 2016, p. 41.

[29] Zhuang Lijun, 2006.

[30] Ren Liansheng, "Preliminary Understanding of Information-System-Based System-of-Systems Operation Capabilities," *China Military Science*, 2010, No. 4, p. 26.

[31] Bi Xinglin, 2002; Ge Zhenfeng, ed., *Science of Strategy*, Military Science Press, 2001, p. 258.

The first operational concept developed as a result of the PLA's initial exploration of systems warfare theory was target-centric warfare. The idea was first articulated in 2009 and followed by numerous publications and a major experimentation program in the Jinan Military Region.[32] Over the next approximately five years, the PLA developed concepts, training methods, specialized training ranges, and combat methods that were eventually disseminated to the entire PLA, eventually becoming a pillar of PLA training. The PLA's effort to popularize the concept was significant and entailed detailed coverage in the PLA press, a dedicated movie produced by the PLA's production studio, and integration into other core initiatives that included development of the "combat power generation model" and the development of "new-type operational forces."[33] Similarly, target-centric warfare became part of a broader family of operational concepts known as the "four types of war," which also included information-firepower warfare, collective warfare, and control warfare.[34]

The jointness issues that emerged during this period were centered on the integration of elite forces in a manner that most effectively and efficiently allowed the PLA to focus its operational efforts. As both lessons learned and earlier research and experimentation efforts demonstrated, future wars would entail rapid consumption of precision weapons and require vast amounts of data and information technology support to forecast materiel requirements and coordinate operations across an expanding and increasingly complex battlespace.[35] The PLA's concept for generating combat power and employing "new types of operational forces" (i.e., elite forces) were closely tied to its systems warfare operational concepts and relied upon joint operations. The goal for PLA leaders was to develop a force that was tailorable, adaptable, and scalable based on the immediate operational objectives in a given phase of combat.[36] The PLA recognized its continued shortfalls in fielding an informatized force and continued to push

[32] Lianshan, 2015, p. 1.

[33] Cozad et al., 2023, pp. 78–87 and 97.

[34] Cozad et al., 2023, pp. 58–61.

[35] Wang Yongnan, 2015, p. 224.

[36] Wang Yongnan, 2015, p. 243.

for increased flexibility to ensure its ability to respond to a wide variety of threats and situations.

The emergence of systems warfare highlighted several additional areas in which jointness was essential for the PLA's future development. In addition to requirements for improved efficiency and responsiveness, the four types of warfare required a command structure capable of supporting both military and nonmilitary actions across the battlespace.[37] These concepts required a command structure that was operationally rather than solely administratively oriented and led by commanders with a knowledge of the PLA's full range of capabilities—not just their specific service specialties.[38] Similarly, the PLA required commanders and staff officers to develop the tools necessary for planning and commanding modern wars. This push for organizational change and improved talent became a major theme following the PLA's 2016 reforms.

The 2016 People's Liberation Army Reforms

PRC leaders had long recognized that the PLA's command structure was not optimized for modern warfare. Its main drawback was its continued focus on the administrative structure of the military regions, a vestige of the early days after the PRC's founding in 1949 when the CCP consolidated its power and set up strategic strong points to consolidate its rule following the civil war.[39] Over the years, the number of military regions decreased, but the relationship between the PLA's General Staff Department (GSD), the military services, and the military regions led to poor responsiveness and inefficiency in the structure and functioning of the PLA's wartime theaters of operation. Following the issuance of the PRC's Military Strategic Guidelines in 1993 and the PLA's shift in planning focus to Taiwan, it became apparent that the operational boundaries and relationship between military regions,

[37] Liu Wei, 2016, pp. 78–81.

[38] Liu Wei, 2016, p. 6.

[39] David M. Finkelstein, "Breaking the Paradigm: Drivers Behind the PLA's Current Period of Reform," in Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N. D. Yang, and Joel Wuthnow, *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, 2019.

in addition to their administrative role and the overarching authority of the GSD, created a highly centralized, bureaucratic structure unsuited for such a complex operation. Similarly, as the PLA began to develop new capabilities such as advanced cyber, space, and ISR capabilities, it realized the need for effectively integrating those tools into the PLA's overall structure.

In 2016, Xi Jinping was able to push forward arguably the most comprehensive reform and reorganization in the PLA's history. An in-depth discussion of all elements of this effort are beyond the scope of this report, but there are several elements that are particularly important when considering the PLA's pursuit of jointness.[40] First, the PLA disestablished the seven administratively oriented military regions and established five theater commands with operational control of the forces within their boundaries and responsibilities for operational planning based on the strategic direction toward which they were oriented. The new theater-oriented structure is intended to allow the PLA to plan and maintain readiness against a wide range of potential conflicts on it periphery. Although Taiwan remained the PLA's primary planning focus, the PLA now recognized the need to improve its responsiveness for potential crises or contingencies in other regional hot spots.

The second critical development for PLA jointness was the disestablishment of the General Departments under the PLA Chief of the General Staff, which included the GSD, General Political Department (GPD), General Logistics Department (GLD), and General Armaments Department (GAD). A key intended outcome for this change notionally was an end to the army-centric, stovepiped structure that the General Departments represented and a migration of their strategic management responsibilities to the CMC in a way that enabled the new theater commands to fulfill their strategic roles.[41] From an operational perspective, the CMC Joint Staff Department took over responsibilities for strategic management in a way roughly analogous to the United States Joint Staff. From a functional standpoint, the dissolution of the GSD also pushed operational responsibilities down to the theater commands and the GSD's role in overseeing PLA operations and

[40] For a comprehensive look at the Xi's reorganization of the PLA, see Saunders et al., 2019.

[41] Liu Wei, 2016, pp. 6–7.

planning. Other critical changes included the establishment of the Strategic Support Force, which incorporated the PLA's information, cyber, strategic intelligence, and space functions in one department and joint structures for both logistics and operational support. All of these changes were designed to improve jointness within the PLA by removing its cumbersome and stovepiped structure to ensure its improved readiness and responsiveness. At its core, these reforms are a radical shift for the PLA and have redefined roles, authorities, and responsibilities on a scale not seen since the PRC's founding.[42]

Cultivating Talent Through Education and Training

A final theme for the PLA's pursuit of jointness is that of talent development and training. Accompanying the PLA's reorganization and reform was a realization that to achieve improvements in readiness and capabilities, the PLA needed to cultivate its personnel for a joint environment.[43] Immediately following the PLA's reorganization, Xi Jinping inspected several sites, including the CMC Joint Staff Department, to reiterate the importance of jointness for the PLA. Similarly, the PLA press highlighted the challenges and shortcomings with the PLA's current personnel system and the need to develop staff officers and commanders with improved decisionmaking ability. One of the key legacies of the PLA's military region structure and strong General Departments was the lack of experience in its officer corps for performing command, staff, and planning functions.[44] In that old architecture, the central role played by the General Departments removed responsibility from subordinate staffs, particularly in terms of operational planning and command functions. The new organizational structure would require vastly different skill sets than previously.

The PLA recognized these mounting requirements and embarked on an effort to train personnel and improve the cultivation of its talent. A few notable areas for its development include the creation of course materials for theater command and staff practices, decisionmaking, and specific com-

[42] Finkelstein, 2019, pp. 45–46.

[43] Wuthnow and Saunders, 2019, pp. 295–296.

[44] Cozad, 2019, pp. 215–218.

mand functions in individual theaters. Similarly, the PLA published a series of books designed to aid in the advanced education of officers at both the PLA'S National Defense University and Academy of Military Sciences.[45]

A key feature of the PLA's jointness initiative is to develop a cadre of proficient officers and leaders capable of leading joint organizations. Joint exercises and major training events have been added to a new curriculum and training guidelines developed for PME institutions, most notably the PLA's National Defense University.[46] These efforts have received high-level attention, including visits by Xi Jinping to individual theater commands and the CMC's Joint Operations Center demonstrating the importance PLA leadership places on the subject.[47] This initiative is a major step away from the PLA's traditional practice of relying primarily on the army to run major command institutions. Since the early 2000s, the CMC has seen PLA officers from all services enter its ranks, although with Army officers still making up the vast majority of its members. Likewise, senior officers from the PLAAF and PLA Navy have taken roles as senior as CMC Vice Chairman and theater command.

What the People's Liberation Army Values in Jointness

China's push for jointness has progressed in stages, beginning with operational doctrine and general principles and gradually expanding toward a more comprehensive joint structure for strategic-level command. In addition, as the PRC developed its concept of jointness, several notable developments led the PLA to emphasize specific attributes. These were largely based on the development of noncontact and systems warfare along with

[45] Cozad, 2019, pp. 211–218.

[46] Cozad, 2019, pp. 211–218.

[47] Hua Xia, "Xi Stresses Joint Battle Command for Military Reform," Xinhua, April 20, 2016.

the reemergence of several territorial disputes along China's periphery.[48] The developments in how wars are fought pushed the PLA to seek ways to maximize its limited proportion of advanced weapons systems and its still-nascent level of informatization.[49] To compete, the PLA recognized that it needed to manage consumption of advanced precision weapons and deconflict commitments for its elite force groupings. Likewise, because of the range of potential territorial disputes it faced and the possibility of *chain reactions* (i.e., opportunistic advances by a rival claimant during a time of war or crisis), PRC leaders, including Xi Jinping, sought to have a force that was tailorable and ready for a wide range of potential contingencies.[50]

The following list is not comprehensive. It is drawn from sources that are widely cited or have been edited by leading PLA experts who have contributed to other major PLA operational research efforts. In addition, the Chinese literature available on jointness is predominantly focused on key issues of command and operational practice. Many of the PLA's reforms have emphasized elements associated with resource management, acquisition, political work, and civil-military relations, among other areas—however, in most cases, PLA literature has tended to focus its examination of jointness on issues directly related to warfighting. The subsequent sections highlight several areas of strategic value the PLA sees in jointness.

Efficiency

One of the key issues that has emerged in PLA writing on jointness has been the importance of efficiency in modern military operations.[51] High consumption of precision weapons and advanced delivery platforms is a key characteristic of modern wars, particularly noncontact operations. The PLA recognized that, because of its relative disadvantage in both overall

[48] State Council Information Office of the People's Republic of China, 2015. *Noncontact warfare* and *chain reactions* are discussed briefly, but a wider body of literature on these subjects dates back to the early 2000s.

[49] State Council Information Office of the People's Republic of China, 2019, p. 6.

[50] State Council Information Office of the People's Republic of China, 2015, p. 11.

[51] Efficiency is discussed frequently in PLA publications and regularly in the context of jointness and systems warfare. See the following for three examples: Zhang Yuliang, 2006, p. 122; Wang Yongnan, 2015, pp. 38–40; and Lianshan, 2015, p. 111.

technological advancement and numbers of modern systems, it had to make the best use and maintain the operational lives of its systems for as long as possible over the course of a particularly lethal and potentially protracted conflict. An advanced enemy, such as the United States, would have many resources at its disposal. For these reasons, jointness was seen as imperative for maximizing the contributions of each service as the PLA considered its strategies for systems warfare and disabling and defeating an enemy's operational system.[52]

Unity of Command

China's political and military leaders realized following U.S. operations in the 1990s that future wars would entail multiple simultaneous actions in many different domains. The complex mix of military, legal, informational, diplomatic, political, and economic activities required central orchestration. As early as 2010, PLA researchers developed in-depth studies on strategic command identifying the need for the nation's wartime leaders to synchronize their actions and harmonize them in accordance with Chinese war objectives.[53] The United States' ability to do so in its operations in Iraq, Kosovo, and Afghanistan proved this point. Likewise, the diverse sets of capabilities in modern militaries that operated over multiple domains and vast geographic areas magnified the need for joint oversight and command of PLA forces in future wars.[54] PLA concepts of operation stress the importance of unity of command—particularly for commanders at the opera-

[52] This theme has been carried forward from the PLA's earliest writings on joint campaigns, including Wang Houqing and Zhang Xingye, 2000, and Xue Xinglin, ed., *Campaign Theory Study Guide*, National Defense University Press, 2001. More-recent publications, such as Wang Yongnan, 2015, and Lianshan, 2015, are both detailed studies on this issue.

[53] For example, see Cha Jinlu, *Outline of Strategic Command*, Military Science Press, 2010. Issues of strategic management are also addressed in Liu Wei (2016, p. 6).

[54] The discussion of strategic defense based on multidimensional threats has been a key theme in Science of Strategy publications from both the National Defense University and Academy of Military Sciences. For example, see Peng Guangqian and Yao Youzhi, *The Science of Military Strategy*, Military Science Press, 2005, pp. 248–264. More recently, Liu Wei (2016, p. 13) addressed this point when authors highlighted the possibility of representatives being sent from the Supreme Command to theater commands to ensure unity of command.

tional level and below—as they attempt to push decisionmaking and initiative to lower echelons of command.[55]

Unity of Effort

Along with unity of command, unity of effort also received a substantial level of attention in PLA concept development and organizational reform. The U.S. model of joint operations provided the PLA with a template—albeit not an exact one for duplication—based on the high level of operational synchronization required for successful modern operations. In particular, PLA campaign theory recognized the importance of phasing and timing to ensure that all force groupings planned and executed their activities in a manner that supported phase, campaign, and war objectives.[56] Because of the compressed timelines for operations, the limited warning time that precedes modern wars, and the high consumption levels of critical materials, PLA efforts to develop their joint architecture have attempted to ensure a level of connectivity that allows commanders to coordinate and harmonize actions accordingly.[57]

Modernization

When the PLA witnessed Operation Desert Storm, its military reform effort had already been underway for the better part of a decade. PLA observations of Desert Storm showed how far behind the United States the PLA remained. Likewise, operations against Kosovo and Iraq later in the decade demonstrated that the PLA had had only limited success in closing that gap. Modernization became vitally important for China's military and political leaders and an essential element of future competition. Jointness was directly tied to PLA visions of modernization, whether independently or in relation to other critical modernization imperatives, including informatization and systems warfare.[58] In contrast to the United States, which arguably was already the world's most advanced military power when it embarked on

[55] Lianshan, 2015, p. 55; Wang Yongnan, 2015, p. 199.

[56] Liu Wei, 2016, pp. 13–15 and 54–55.

[57] Liu Wei, 2016, p. 55.

[58] State Council Information Office of the People's Republic of China, 2015, p. 11.

its push for jointness, the PLA was not, and recognized later that jointness was an essential piece of modernization and 21st-century warfare.

Readiness and Responsiveness

Fear of chain reactions and the lack of warning prior to the initiation of modern wars led to PRC leaders placing significant emphasis on readiness and responsiveness as a key value associated with jointness. This push for readiness was specifically embodied in PLA reform in 2016 as the PLA sought to shift away from its legacy military region, administratively oriented organization toward a theater command structure that maintained high readiness for the contingencies individual theaters were most likely to face.[59] Similarly, a major focus over the past 15 years for the PLA has been on joint exercises that ensure command staffs are prepared to execute operational plans and units have trained in the joint environments in which they will have to fight.[60]

Adaptability

Finally, the PLA has emphasized adaptability, but to a much lesser extent than responsiveness. Although the PLA is being asked to support a wider range of Chinese overseas objectives than at any time in the PRC's history, it has not taken on numerous commitments outside its established Military Strategic Guidelines. PLA objectives have evolved but remain focused on regional contingencies and territorial disputes. Although the ability to adapt to new environments and conditions is seen as an important part of the PLA's recent reforms—both in organizational structure and training—the PRC is not asking its military to conform or adapt to as wide a range of potential scenarios as the United States military has had to do.

[59] Liu Wei, 2016, p. 205.

[60] Mark Cozad, *PLA Joint Training and Implications for Future Expeditionary Capabilities*, RAND Corporation, CT-451, January 21, 2016, pp. 4–6.

Conclusion

China has shown great interest in developing jointness. Its senior political and civilian leaders—including Jiang Zemin, Hu Jintao, and Xi Jinping—have all overseen key elements and made direct statements regarding the importance of jointness in the PLA's modernization and reform programs dating back to the mid-1990s. The PLA's relative backwardness following the Cold War dictated that joint concepts had to be developed in a gradual, building-block approach. Theory development led to doctrine, which, in turn, led to experimentation and testing. The results have found their way into PLA combat methods and shaped PLA training in various areas. At the operational level, joint operations are imperative for competing militarily with the United States.

Jointness at the strategic level took longer to develop, most likely due to the perceived emergency presented by its inability to fight against modern militaries and the corresponding need to rapidly improve its warfighting capability. However, the initial stages of jointness did emerge as early as 2003 when CMC membership was expanded to include the commanders of the PLAAF, PLA Navy, and PLA Second Artillery Corps. The late effort to reform the military region structure should not be interpreted as a lack of resolve in instituting joint reform; rather, it illuminates the numerous political, bureaucratic, and cultural complexities that made this transition so complicated and difficult. Xi Jinping's determination to tackle this issue after assuming the role of CMC Chairman demonstrates the importance that he and other leaders of the PLA placed on jointness. Subsequent official policy statements, high-level pronouncements and visits, and education programs provide a few indicators of the organizational emphasis behind these PLA efforts. These, along with more than two decades of investment and development, are strong indicators of PRC leadership priorities and resolve when it comes to developing jointness in the PLA.

The PLA's push toward jointness is a clear signal of how Chinese leaders view the strategic value of jointness. Recent PLA publications highlight the increasingly competitive environment facing the PLA. The possibility of having to fight a war against the United States and its allies has proven to be an effective driver for PLA modernization. Although the PLA's views on what a war against the United States would entail have changed (e.g., lim-

ited regional or global conflict), its emphasis on the importance of jointness in any of these fights has not diminished. Systems warfare, informatization, and joint operations all remain critical components of the PLA's modernization and are critical pieces in building a PLA ready for competition at all levels from crisis to major power war.

CHAPTER 7

Jointness and Major Power Competition

The preceding chapters outlined the evolution of jointness and the impact it has had on the U.S. military and one of its key competitors, China. The pursuit of jointness was an integral part of the GNA—a set of reforms that attempted to address significant shortcomings in the way that the Pentagon was managed. These reforms entailed both civilian and military elements of DoD leadership, but this report's research focus is on jointness, one critical element of how the military functions. GNA advocates came to believe that one of the primary causes for the military failures that immediately preceded the reforms was a lack of jointness that prevented the services from effectively planning for and executing complex missions. Few officers had the experience necessary to plan and lead joint operations, and the end result was a military that was far less capable than what the nation's security required.

In the years after the GNA's passage and implementation, a great deal has changed. At the 30th anniversary of the law's passage, Congress—the driving force behind the original reforms—asked a wide variety of former senior civilian and military leaders and a host of experts on military affairs whether the key tenets of the GNA needed to be reconsidered in light of a changing international security environment.[1] All of the witnesses agreed—the GNA needed to be revisited. In some cases, the original objectives in the 1986 law have not been addressed. In others, GNA reforms were a source of several unintended consequences that may have created new problems as

[1] U.S. Senate, Committee on Armed Services, 2015; U.S. House of Representatives, Committee on Armed Services, 2016.

they attempted to alleviate others. Finally, several of the witnesses pointed out that DoD's decisionmaking processes were tied to legacy organizational structures that slowed or watered down decisions in ways that very well might give an advantage to the main U.S. competitors, Russia and China.[2]

Our report has examined many of these issues. First, by looking at the evolution of the GNA and the primary objectives behind the initial reforms. Second, our research identified the ways in which jointness has affected the military, both in terms of its largely positive effects and also those unintended consequences that have caused new problems. Third, we examined how the development of jointness has influenced China's views on warfare and its overall modernization efforts. This chapter will tie these findings together to address the question of what strategic value jointness provides the United States in its new era of strategic competition.

To frame our conclusions on strategic value, we use a general theory of value that examines key components defining an object's worth. We then ask whether the development of jointness constitutes a military innovation and, if so, what competitive advantage this distinction delivers to the United States. We also consider in this discussion the potential pitfalls associated with jointness and how they may detract or impede its strategic value. However, to understand the strategic value that jointness provides in the current competitive environment, it is necessary to examine whether the United States and China perceive jointness in similar ways.

How the United States and China Understand Jointness

In the pursuit of jointness, the United States had the first-mover advantage by being compelled by law with the GNA and then through multiple experiences in which the military gained valuable experience. Over the course of the 1990s, a considerable amount of discussion took place in the United States on concepts such as the revolution in military affairs, network-centric warfare, and effects-based operations—all of which either involved the core

[2] U.S. Senate, Committee on Armed Services, 2015, pp. 6 and 40.

hardware that enabled joint operations or systemic views of future warfare in which jointness was a central feature. Although the GNA focused on departmental reform that included developing jointness, the law's objectives regarding jointness became a core criteria in how the United States assessed its own capabilities. For many observers cited earlier in this report, jointness became a defining feature of the U.S. military's success because it enabled ever greater synergy, synchronization, coordination, and efficiency in each of the services' organic capabilities.

The PLA's interest in jointness largely followed this pattern, emphasizing the significant improvements that jointness enabled in the U.S. military's multiple operations. Over time, PLA studies tied to emerging operational concepts and command structures highlighted the importance of jointness and its connection to system-of-systems warfare. PLA military science researchers drew parallels between the PLA's own operational concepts and those earlier U.S. ideas, such as network-centric warfare and effects-based operations.[3] In many respects, many of the PLA's most significant goals in the realm of joint operations have been focused on developing an operational-level command structure analogous to the United States, an informatized military capable of gathering and disseminating timely operational information across the battlespace, and operational concepts that emphasize close cooperation between different PLA services in a variety of settings. At present, many of these desires are either in development or remain aspirations, but they reflect what the PLA is seeking from enhanced jointness.

From this perspective, the general goals and objectives that both the U.S. military and the PLA have for jointness are similar and overlap in many areas. However, the manner in which these objectives are implemented in both militaries differs based on the nature of their political systems, the roles they play within their respective political systems, and the core responsibilities that both militaries shoulder. One of the most important contrasts in this regard is the relative importance of internal security—a mission from which the U.S. military is largely excluded by law but one that serves as the most important mission for the PLA as the armed wing of the

[3] Lianshan, 2015, pp. 17–21; Liu Wei, 2016, pp. 347–349; Xiao Tianliang, ed., *Science of Strategy*, National Defense University Press, 2020, p. 5.

CCP. These internal security responsibilities have been termed the PLA's "domestic drag" because of the competing demand they place on the PLA that comes at the expense of and likely limits its ability to focus on critical joint missions.[4] Such differences are discussed in later sections of this chapter. They highlight that even though both militaries share a wide variety of common perceptions and objectives, the nature of their respective systems and the imperatives imposed on them by these systems likely will lead to varied outcomes.

Components of Value

An examination of the strategic value of jointness must necessarily begin with a breakdown of what constitutes value. For the purposes of this study, we define *value* as the benefits one receives from an offering or its features.[5] According to one theory of value, it is defined by a combination of factors. The first of these factors involves the sum of production inputs and labor required to produce a given product.[6] In terms of jointness, production inputs and labor can be viewed as the amount of leadership attention and resources the United States has placed on jointness since passage of the GNA. The second element of value is scarcity and is determined by the lack of a given resource's availability. Since the early 1990s, the United States has been the world's leading practitioner and beneficiary of jointness while its main competitors have lagged in this area. Viewed from this perspective, jointness can be considered a scarce commodity. The third and final element of value is defined by the advantages that the product conveys, both tangible and intangible.[7]

The three sections that follow will address the components of value as they relate to jointness. These are not intended to be quantitative assessments. Instead, they provide general qualitative overviews that could serve

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4 Andrew Scobell and Andrew Nathan, "China's Overstretched Military," *Washington Quarterly*, Vol. 34, No. 5, Fall 2012, pp. 135–148.

5 Meehan et al., 2012, p. 301.

6 Meehan et al., 2012.

7 Meehan et al., 2012.

as a starting point for more detailed analysis. They also provide a basis for comparison between the U.S. and Chinese progress in the joint arena. We only focus on the PLA in this section, as with the rest of the report. We did not address Russian views of jointness based on the scope of our research. A future comparison with the Russian Federation Armed Forces certainly is warranted.

Production Inputs and Labor

The first marker that provides insight into the value of jointness centers on investments in people, organizational structures, training, and operations. Essentially, each of these four areas relate to inputs (the joint personnel system and joint organizations) and labor (training and operations). The first two ensure that U.S. military personnel have the education and experience necessary to operate effectively and command joint organizations and operations. Joint organizations provide the structure and information architecture necessary for the joint system to plan and execute its responsibilities. Finally, in terms of labor, training provides the necessary skills for the joint force to operate together and perform specified missions. Operations should be considered as the application of skills in a real-world setting. This breakdown provides a framework for evaluating the production inputs and labor components of value.

Joint Personnel System

One of the baseline elements in the development of the U.S. joint system has been the education, training, and development of leaders capable of leading joint organizations. Previous examples in this report highlighted the negative impact of senior leaders and planners who did not have experience with other services' culture, missions, and capabilities. These shortcomings were core limitations—in some cases contributing to failure and in others making success considerably more difficult than it had to be. JPME and personnel management requirements put into place after the GNA, while far from perfect, have increased the numbers of joint qualified officers over time, but it is uncertain if the trend will continue.[8] One of the most notable

[8] Mayberry, Waggy, and Lawrence, 2019, pp. 20–23.

developments since the GNA has been the requirement for joint duty prior to promotion to flag rank.[9] Likewise, despite the problems discussed earlier with the growth of staffs—the Joint Staff and combatant commands, in particular—there are now much wider opportunities for joint experience for personnel at different stages in their careers, and the negative effects of joint service on promotion has largely disappeared. Similarly, senior leadership attention on such areas as JPME is focused on ensuring that these institutions are developing curricula tailored to the realities of the United States' security environment.

The United States' joint personnel management and education systems had significant attention across the board, including from Congress, the SECDEF, and the services—all of whom eventually bought into the system. By contrast, the PLA's development of a joint personnel system has lagged in two areas. First, the PLA has continued to face challenges in its talent management programs—a problem that extends back for the past two decades at least.[10] The PLA has developed programs to try to improve its human capital, but this still appears to be a major concern of senior PLA leaders. Similarly, the PLA has struggled to overcome the dominance of the PLA ground forces, a factor that has limited the promotion of senior PLAAF and Navy officers into command positions. A second issue that was made apparent following the PLA's 2016 reforms was that the PLA did not have the training and experience necessary to effectively staff their newly formed theater commands. This issue was taken up by no less than Xi Jinping, and soon after the establishment of the theater commands, the PLA developed new training and education programs at its National Defense University and instituted a series of training and exercise programs in each of the newly designated theaters.[11]

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9 Mayberry, Waggy, and Lawrence, 2019, p. 72.

10 Dennis J. Blasko, "The PLA Army After 'Below the Neck' Reforms: Contributing to China's Joint Warfighting, Deterrence and MOOTW Posture," *Journal of Strategic Studies*, Vol. 44, No. 2, December 27, 2019, pp. 7–8; Joel Wuthnow and Phillip C. Saunders, "From Green to Purple: Can the Chinese Military Become More Joint?" *War on the Rocks*, March 30, 2017.

11 Dai Feng and Cheng Yongliang, "Eastern Theater Focuses on Main Battle Roles as It Accelerates the Development of New-Type Combat Command Talent," *PLA Daily*,

Although it remains unclear how far the PLA has progressed in its development of joint-qualified leaders, several indicators suggest a significant amount of work remains. Although there have been cases in which non-ground force personnel have been designated for theater command, the overall command structures in these newly joint organizations remains overwhelmingly staffed by ground force officers.[12] Along those lines, internal PLA critiques have identified a host of issues that suggest the 2016 reforms have not yet fully taken root, including discussions about the lack of a joint culture, dissatisfaction with the new joint curriculum at National Defense University, and inadequate training programs.[13] Finally, it has only been six years since Xi initiated these reforms. Based on the PLA's history, culture, and organization, it may take many more years for the PLA's joint personnel development programs to take root in a meaningful way.

Joint Organizations

Another disparity in the U.S. and Chinese joint systems is the maturity of the joint organizations that comprise them. The most notable contrast is at the operational level and the difference between the United States' combatant commands and the PRC's theater commands. Both China and the United States have several additional joint organizations tasked with supporting different combat support functions and strategic domains. For instance, the United States has multiple combat support agencies tasked with supporting logistics, intelligence, and information systems, among others. The PLA organizations such as the Joint Logistics Support Force and the Strategic Support Force are tasked with supporting logistics and ISR, cyber, and space, respectively. Although all of these organizations deserve attention, we devoted our attention to the operational-level commands because of their central importance in both the U.S. and PRC joint structures. In addition, these commands serve as the core elements in how both militaries will

September 1, 2016; Huang Honggui and Meng Bin, "Towards Joint, Necessary to Form Links and Also Link in Spiritual," *PLA Daily*, April 22, 2016; Wang Jun and Shi Liu, "Push Forward 'Eight Changes' with Focus on Combat Functions," *PLA Daily*, March 23, 2016.

[12] Wuthnow and Saunders, 2017.

[13] Cozad et al., 2023, pp. 86–87.

fight in future wars. The ability to lead major combat operations has been highlighted by both sides as a core element in military competition.

The United States' combatant commands have a much longer history, but they had limited responsibility and authority prior to the GNA.[14] Each service's theater component commands had dual chains of command—one back to the service headquarters and the service chief and another to the combatant command. As we pointed out in a previous section, the arrangement created significant confusion and often left the combatant command CINCs with little "influence over the capabilities and readiness of the forces they commanded, some of which might ultimately be configured to fight a different type of war than envisaged by the heads of the unified commands in the near-term contingency plans they drafted."[15] After the GNA, this relationship changed dramatically, as the combatant commands were given great authority, and the service chiefs were removed from the operational chain of command. In Chapter 3, we pointed out the significant role the combatant commands have had on the U.S. military's ability to organize, plan for, and lead large-scale combat operations. Since 1991, the United States has conducted at least five large-scale operations at significant distances from the United States. These operations have also forced commanders to confront access issues, global logistics and communications, a wide array of allied and partner countries, and a host of military and nonmilitary missions. Furthermore, a significant number of U.S. personnel gained valuable planning and command experience over this period. None of these operations involved a peer or near-peer competitor; however, the operations did place the U.S. military in a situations in which it had to adapt and fight under various challenging and unexpected conditions.

The PLA's theater commands were instituted in 2016 and, in many respects, represent a significant departure from the previous military region command structure that existed from the PRC's founding until the reforms. The military region structure was initially designed to help the CCP maintain domestic control following the Chinese Civil War. The leadership for the military regions was exclusively army, with each region maintain-

[14] Jablonsky, 2010, pp. 311–314.

[15] Jablonsky, 2010, p. 313.

ing a military region air force and some maintaining a fleet. Planning and operational decisionmaking was managed through the GSD and personnel appointments through the GPD. The 2016 reforms marked a significant departure from this largely administrative, territorial defense focus. With the reforms, command authority and planning responsibilities were given to the theater commanders, a task for which they had neither the training nor the experience. This shift became an immediate pressing issue, as described in the previous section. Similarly, the PLA found that its approach to training was falling short of what was needed to prepare for modern wars.[16] The joint exercises that took place before the reforms were based on a command structure and command relationships that no longer existed, and the poor quality gained Xi's attention early in his tenure.[17] In recent years, the PLA has instituted several changes designed to improve training, build joint proficiency, and ensure compliance.

The most significant differentiator between the PLA and the U.S. military today when it comes to jointness is command experience at the operational level. The PLA has not conducted a large-scale combat operation since its invasion of Vietnam in 1979. Its experience managing joint operations in recent years has been through either exercises or disaster relief operations.[18] The PLA's current operations in the Gulf of Aden and in peacekeeping missions around the world are much smaller in scale and complexity than the types of operations they would be expected to perform in a conflict with the United States and its allies. PLA joint exercises may contribute to the development of experience and operational know-how, but it is far from certain how effectively these surrogates are at building command experience in the PLA. Comparatively speaking, the PLA recognizes that its joint exercise program is considerably smaller than the one executed annually by the

[16] Cheng Ronggui, "Combat-Guided Training, Soldiers Should Train as They Would Fight: A Series of Talks on the Commander in Chief's Order to Focus on Military Training," *Jiefangjun Bao*, January 15, 2020; Huang Cheng and Lu Feng, "Accurately Grasp the Focal Points for Effort on Combat-Realistic Training," *Jiefangjun Bao*, February 8, 2018; Wang Wensheng, "Speed Up the Process of Standardizing Joint Training," *Jiefangjun Bao*, August 13, 2019.

[17] Blasko, 2019, pp. 7–10.

[18] Liu Wei, 2016, pp. 311–312.

United States and its partners.[19] If we can believe the PLA's own critiques of the quality of its training and exercises, all indications are that it offers a poor substitute for the extensive real-world experience and advanced training the U.S. military has received.

Joint Doctrine and Training

Training and doctrine have proven to be a critical part in the development of jointness in both militaries. Both militaries have engaged in experimentation efforts over the past three decades and dedicated training programs and exercises designed to test concepts of operations and develop experience. The United States has had a well-developed training infrastructure that includes numerous test ranges, specialized training centers, and such exercises as those taking place at NTC, described in Chapter 3. The PLA has also invested significantly in advanced training centers over the past decade, using them as a means for testing new concepts of operation and providing advanced training for specialized tasks.[20]

The development of joint doctrine in both militaries provides an interesting contrast in how both of their primary concepts for joint operations emerged. The United States' experience with joint operations developed rapidly following Desert Storm and was a process of regular interaction between the services, particularly in such areas as CAS, integrated air operations, long-range precision strike, and special operations, among others. Beginning in the 1990s the United States had a combatant command dedicated to enhancing jointness.[21] Many of the PLA's early ideas about jointness were based on their observations of U.S. operations. Over time, the PLA developed own conceptual baseline, performed experimentation, and tried to popularize combat methods across the PLA. The PLA's concept development also led to its core ideas about campaigns and joint operations at the operational level of war. The most striking issue regarding the PLA's development of joint operations is that it took nearly 20 years before the *Guidelines on Joint Operations of the Chinese People's Liberation Army (Trial)* were

[19] Liu Wei, 2016, pp. 35–36.

[20] Lianshan, 2015, pp. 335–336.

[21] Liu Wei, 2016, p. 35.

announced in 2020.[22] The release was widely reported in both Chinese- and English-language media outlets, and the release was greeted with a great deal of fanfare and explanation from senior PLA officers.[23] At this point, supporting publications are likely to follow, and the extent of PLA progress in this area remains to be seen.

Joint Operations

The final element of the production inputs and labor associated with jointness is in operations. The previous sections have covered several related aspects of this element, but at its core, the experience of having developed its joint operations capabilities in a range of combat environments provides the United States with a significant potential advantage. This is a factor also recognized by the PLA. Since first observing Desert Storm, the PLA has discussed the benefits derived from joint operations, mainly in terms of the more efficient use of its forces, the synergy created by integrating different services' unique capabilities, and the flexibility it afforded by enabling the use of tailored force packages based on the nature of the objective and a recognition that objectives may change based on the phase of conflict and the circumstances at hand. Iraq's rigid application of its military during Desert Storm coupled with Chinese observers' incorrect predictions about the outcomes of that conflict, which were based largely on an outlook similar to Iraq's, demonstrated to PRC leaders that if China wanted to compete in the military arena, joint operations would be the PLA's ticket for admissions.

Because the PLA has not had any opportunities to refine its approach to joint operations in actual combat or operational deployments, it has been forced to go it alone based on its analysis of U.S. operations and its interactions with the Russian military. Ultimately, this factor leaves the PLA with an untested product and a large number of unknowns. These unknowns can generally be understood as the "unexpected situations" or "uncertain environments" that the PLA has attempted to introduce into its training.[24]

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[22] Finkelstein, 2021, p. 1.

[23] Finkelstein, 2021, pp. 4–8.

[24] Wang Xueping, "Exert Effort on Resolving the 'Five Unable' Problem of Command Personnel," *Jiefangjun Bao*, June 18, 2019; Xu Tongxuan, "Pursuing an Answer to the Question of How to Win Wars: A News Perspective on the Air Force's 'Red Sword-2017'

Similarly, these unknowns focus on processes that the PLA knows are essential to successful planning and execution—for instance, targeting, battle damage assessment, and dynamic tasking—but its only experience to date has been gained in experiments or exercises.[25] Most notably, these events have been developed and informed by military science analysis and training experts with no direct combat experience themselves in these areas.

The primary differentiator between the U.S. military and the PLA in the area of operations is the level of accrued knowledge the United States has built up over the past three decades and its ability to incorporate the lessons from its operations into its education and training programs. This dynamic goes back well before the GNA reforms. The establishment of NTC, Top Gun, and Red Flag all followed from the U.S. experience in Vietnam and the desire to either reorient training back toward the United States' main adversary or rectify poor performance in Vietnam. The process of building on previous combat experience has since been an important feature of how the American military prepares itself for future conflicts and ensures operational and tactical proficiency. This same process can be seen in how the United States continues to build on its experiences over the past 30 years with joint operations. At the operational level, the combatant commands execute multiple joint and combined exercises each year in their respective AORs. At the tactical level, efforts such as the one described in Chapter Three (NTC exercises involving CAS) also incorporate accrued experience from earlier operations.

Scarcity

Globally, the number of advanced militaries with robust efforts to develop their joint operations capabilities is extremely limited, and only a few—the United States and its key allies, such as the UK—have had extensive experience in combat over the past three decades. The United States has also

Series of Opposing-Forces Exercises," *Kongjun Bao*, December 15, 2017; Zhang Kunping, "Central Theater Command [TC] Closely Focuses on Combat When Tempering Joint Operations 'Braintrust'—100 Joint Campaign Staff in Martial Competition on the Same Stage," *Jiefangjun Bao*, December 16, 2017.

[25] Wang Yongnan, 2015.

developed a wide range of programs designed to capture lessons from these experiences with the goal of building on past successes. Although many efforts are service based, joint initiatives play a critical role in furthering operational and tactical integration. Compared with its most-capable rivals, the American military has gone to great lengths to develop, educate, and train its personnel in the joint arena to an extent not seen among its most capable rivals. The PLA has tried, but at this point its pursuit of jointness lags. Accordingly, the first indicator of scarcity is the limited number of peer rivals who have made significant strides in developing jointness over the past three decades.

How long this scarcity will exist remains an open question. There are indicators that help identify indicators of how and when this condition might change. First, the primary practitioner of jointness is the United States. The only other militaries that have developed meaningful and effective joint structures are U.S. allies, particular the UK, France, and other NATO allies. The United States' involvement in coalition operations over the past three decades likely has helped other militaries in this arena, even if only in niche areas. The United States' primary competitors lack significant combat experience—not to mention combat experience leading joint operations—and do not have access to the operational know-how available from those few nations that do. This factor might change for Russia based on its experiences in Ukraine, but that would require time to develop and proliferate lessons from that conflict, assuming that the Russian military is able to solve these problems. Second, at least in the case of China, there are significant structural issues—organizational culture and bureaucratic inertia—that limit their progress in the area of jointness. For example, in recent years, PLA media have described a series of problems related to the development of joint culture, the inability of units and commanders to implement complex joint training, and lingering effects of *bureaucratism* and *formalism* that is limiting the impact of reform.[26] The combination of

[26] Fan Jianghuai and Lei Bin, "Joint Operations: From 'Joint Forms' to 'Combined Spirit'—Interviews on the Building of a Strong Military Culture at a Certain Navy Joint Training Base," *Jiefangjun Bao*, April 29, 2021; Li Xuanliang and Mei Shixiong, "Xi Jinping Stresses at the Grassroots Building Meeting of the Central Military Commission to Carry Forward Excellent Tradition, Strengthen Reform and Innovation, and Pro-

these two factors—access to knowledge and structural impediments—may leave the United States with a significant advantage in the practice of joint operations for several years into the future.

Advantages Conveyed by the Product

Our consideration of the elements of value associated with jointness concludes with the advantages that jointness conveys. Early discussions in the report have highlighted the overall impact that jointness has had in modern warfare. In Chapter 3, we outlined those areas where jointness has played a role in improving the operational and tactical effectiveness of the American military. In Chapter 5, we examined what the PRC values out of jointness for the PLA. In Chapter 4, we highlighted the trade-offs and unintended consequences that factored into the GNA's original objectives and the system that emerged after its implementation. All three chapters identified certain aspects of warfare where jointness either has helped or could help or where it might hinder practitioners in the future. Such characteristics as unified command, efficiency, integration, synergy, adaptability, coherent strategy, and quality of decisions are all areas where jointness promises to provide advantages, irrespective of whether it has or not at this point. At their core, these are all issues that emerge from decisions about organizational structure, leadership emphasis, and the perceived costs or benefits associated with these changes. Both the U.S. and Chinese militaries face these issues, although the challenges differ for both for a variety of reasons.

Another way to conceptualize the advantages that jointness conveys is to consider both historical and foundational issues and the degree to which jointness should be considered a major military innovation and the associated impact that both of these factors carry along with them. Militaries are products of the societies and political systems they serve. From the standpoint of jointness, the United States' success to date and the PRC's limited progress suggest something more significant at play than simply the application of technical know-how, personnel talent, technology, experience, and the will to reform.

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mote Comprehensive Progress and Comprehensive Excellence in the Army's Grassroots Building," Xinhua, November 10, 2019.

The Importance of Legacy and Early Foundations

The long-term impact of organizational culture and structure has a profound influence on both the U.S. military and the PLA and must be considered in any evaluation of their progress and performance since their respective reforms. Both militaries had a variety of strategic and political factors that shaped their understanding of their respective missions, their relationships to their national political systems, and their organizational cultures. Early circumstances of organizational formation and structural choices are critical to any organization's future development and often difficult to change.[27] For the United States, these early foundations emerged from World War II and the immediate post–World War II environment in which the United States was deployed globally, was economically powerful, and was wrestling with questions about the future of warfare in the nuclear age. The PLA's foundations were most significantly shaped by decades as an insurgent movement followed by the multiyear Chinese Civil War culminating in the founding of the PRC. In this environment, the PLA's role as the armed branch of the CCP was paramount. The PLA was dominant, and its primary mission after 1949 was to ensure party control and stability and prevent foreign threats to the newly formed PRC. The PLA's focus expanded later based on perceived threats from the United States and Soviet Union—but, overall, these initial conditions had a formidable influence on the PLA's organizational structure until the 2016 reforms.

The United States' Early Foundations

These U.S. military's early foundations were based on four services that were co-equal branches of the military, and all had membership on the JCS. Similarly, the service chiefs each had an independent voice. Throughout the post–World War II era, the services regularly attempted to maintain their relevance to the nation's security by taking on new missions, reconsidering old ones, and ensuring that they maintained their share of the overall budget. Prior to the GNA, the relative weakness of the CJCS, the position's rotation among the services, and the JCS consensus-based advisory function prevented any single service from dominating.[28] Earlier attempts to

[27] Zegart, 2000, p. 43.

[28] Jablonsky, 2010, pp. 314–316.

strengthen the authority of the CJCS and the Joint Staff met with strong resistance from the Navy and Marine Corps, who argued that such a move would create a de facto general staff.[29] Each service took advantage of its political clout to carve out mission space and protect its share of the overall defense budget. The military's global footprint, its central focus on competition with the Soviet Union, the centrality of nuclear weapons to the United States' security, and the growth in the importance of air power all shaped how the services' interacted. This interservice dynamic was parochial, but it also ensured that individual services were not neglected and, in some cases, aided innovation through competition.

Our report has highlighted the impact of service parochialism prior to the GNA, but another key facet of these earlier circumstances was that the parochialism was not complete and did not preclude cases where the services worked together in highly productive ways. The three immediate examples often cited from the early 1980s that led to the GNA do show a lack of joint experience and interoperability issues; however, there are cases such as the development of AirLand Battle (Army and Air Force) and the Maritime Strategy (Navy and Marine Corps) that demonstrate a willingness and capability for the services to work together when strategic needs required it.

In the end, the GNA did not have the support of either the SECDEF or the services. GNA reforms were passed with White House support and imposed from top down, with both DoD and the military eventually accepting and even promoting jointness. The buy-in to the joint system came at an early stage and was also reinforced by provisions outlined in the GNA.

The PLA's Early Foundations

The PLA's early foundations were significantly different from the United States military's. First, the PLA that evolved out of World War II and the Chinese Civil War was overwhelmingly a ground force, a fact reflected in its most senior leaders and commanders over time. Furthermore, it was not just that the PLA ground forces had pride of place, Chinese strategic culture was oriented primarily inward and toward land threats. As a result, the PLA Navy did not carry the level of bureaucratic or strategic clout afforded to the ground forces. Similarly, the PLAAF was also significantly weaker bureau-

[29] Locher, 2004, pp. 72–73.

cratically, but, in addition, it had long been viewed with significant political skepticism that limited its role and the CCP's willingness to trust its leaders.[30] From a strategic leadership standpoint, the PLA has always been a party Army overseen by a CMC. This point was central to its organizational philosophy and its views on roles and missions. The CCP's protection and internal stability were long the PLA's primary focus. From a command and control perspective, the military was overseen by four general departments—the GSD, the GPD, GLD, and General Equipment Department GED (first known as GED and later GAD)—that, again, were army dominated. The dual party and general department leadership added several dimensions to the PLA missions, a development over time that necessitated the reforms and may be contributing to their measured implementation to date.

Based on this general backdrop, there are three considerations that are directly related to the PRC's efforts to build jointness in the PLA. The first consideration is that the PLA was tasked by the Party leadership to fulfill missions that were not tied to warfighting. These include support to civil projects, revenue-generating business enterprises, and stability maintenance, to name a few. The PLA's political role also created multiple forces that often pulled it in different directions. The Cultural Revolution did significant damage to the PLA, including its PME and training institutions. Tiananmen raised questions about the PLA's readiness to tackle its internal stability role. More-recent trends in the PLA began to deemphasize the CCP's political role and instead focused on the PLA as a professional, national army—a trend that led to Xi's reinstituting strict CCP oversight in the military from the earliest days of his tenure.[31]

Second, the services in the PLA very rarely operated jointly and were not expected to do so.[32] In contrast to the United States, the missions assigned to the PLA's services very rarely lent themselves to any type of cooperation, let

[30] Kenneth W. Allen, Cristina L. Garafola, and China Aerospace Studies Institute, *70 Years of the PLA Air Force*, China Aerospace Studies Institute, 2021, p. 68.

[31] Timothy R. Heath, *The Consolidation of Political Power in China Under Xi Jinping: Implications for the PLA and Domestic Security Forces: Addendum*, RAND Corporation, CT-503/1, 2019, pp. 4–6.

[32] Zhang Yuliang, 2006, p. 280.

alone joint operations. For instance, in the PLA's last major combat operation, Vietnam, neither the PLA Navy nor the PLAAF played any substantive role in the operation.[33] In peacetime, the division of missions did not lend itself to joint or cooperative efforts among the services. The PLAAF was focused on territorial air defense while the PLA Navy was focused primarily on coastal defense and operations close to the mainland. There was no driving force or requirements that raised the prospects for cooperation.

Finally, the PLA's command structure at the operational level was dominated by the military regions, PLA-dominated organizations that were not well suited to warfighting functions. The military regions were far more administratively focused, with individual military region commanders not responsible for operational planning in their theaters and no clear lines of authority between the different regions.

Impact of Legacy on the Pursuit of Jointness

The preceding sections provide insight into some of the most significant contrasts between organizational development for the U.S. and Chinese militaries and how those early conditions might affect the ability of either country to develop its own joint system. The United States has clearly had success to date—a fact reflected not only in its own examinations of its recent experiences but also based on a wide body of PLA literature on modern warfare. Both militaries see the benefits of jointness. Our research also suggests several preliminary findings on the development of jointness that may enhance the understanding of the strategic value of jointness in a competitive environment.

The most significant contrast between the U.S. military and the PLA in terms of joint development is the relative balance among the services. The U.S. system, by enabling the development of each of the services, has created a situation in which no single service dominates, and the thinking and experiences of the other services are considered in major leadership decisions. The CJCS and geographic combatant commanders are drawn from all four of the services.[34] The Joint Staff and the combatant command staffs

[33] Allen, Garafola, and China Aerospace Studies Institute, 2021, p. 80.

[34] Although all services are represented, some have argued that selection for combatant commands is limited by domain considerations, a factor that limits some services

also have significant representation from across the services. In contrast, the PLA ground force's dominance of military leadership positions remains a factor that detracts from the PLA's ability to build a joint culture and incorporate other service perspectives into strategic and operational planning. Although there has been some progress in this area in recent years, the PLA appears to be still largely overrepresented by the ground forces.

Another important contrast highlighted in the previous sections relates to systemic continuity. For the United States, the organizations most important to its joint structure have been the same for decades. The CJCS, JCS, Joint Staff, and combatant commands have all existed for long periods, notwithstanding the addition of new combatant commands in recent decades and the growth of staffs at all levels. The core elements of this command structure still bear a strong resemblance to those that have existed since the earliest days of the post–World War II era. The GNA changed the legal basis for responsibilities and authorities at senior levels. It also changed incentives by adding requirements for promotion based on joint duty. GNA did not fundamentally change the military's organizational structure in the same manner that Xi's 2016 reforms changed the PLA. By contrast, the PLA's 2016 reforms restructured the PLA on all levels and removed organizations that had been central to its military structure for many decades. In many respects, the PLA reforms were significantly more disruptive in that they created an entirely new system and organizational structures. In doing so, the reforms significantly disrupted the PLA's bureaucratic rhythms and overturned the well-entrenched interests of several long-term bureaucracies.

The PLA's 2016 reforms were, in many respects, a significant departure from much of the logic underpinning its system for decades. Although the PLA had spent considerable time and effort modernizing since the early 1990s, its readiness was low. The PLA structure that had largely been designed for regional/territorial defense missions was still based on an old model that harkened back to the early days of the PRC's founding. That structure was well suited for ensuring internal, regional control, but it was not designed to plan, lead, and fight modern wars. The PLA's lack of experi-

from being selected to command in specific regional commands (see Dave Deptula, "Pentagon Needs More Balanced Representation in Joint Service Leadership," *Forbes*, December 14, 2020).

ence at the operational level also was compounded by the central role played by the GSD in such areas as planning. Much of the decisionmaking authority that was given to the theater commands in 2016 resided outside the Military Regions prior to the reforms. The General Departments held much of this authority. Finally, with the abolition of the General Departments, many of the PLA's operational staff functions were moved to the newly created centers overseen by the CMC. These changes did suggest a real attempt to improve the representation from other PLA services in senior staff positions, but it also plainly aligned the military's new structure with a renewed focus on maintaining CCP oversight and control of the military.

Returning to the question of legacy issues and their influence on the advantages conveyed by jointness, the preceding examples demonstrate that the reforms within the U.S. military system, while major changes, did not completely overhaul the structure and the logic behind DoD and the U.S. military. The GNA modified authorities in a way that allowed the existing joint structures to operate more effectively but did not force the military to develop and navigate an entirely new bureaucracy designed for something quite different than its predecessor. For that reason, the U.S. military's joint transformation occurred rapidly after the law's passage in 1986. The PLA, on the other hand, has undergone a significant disruption by establishing new organizations that require it to educate and train new personnel and implement the oversight and management functions in the absence of the organizations traditionally tasked with these missions. The PLA's reform, which has been dubbed "the Chinese Goldwater-Nichols," is considerably more comprehensive and disruptive than the GNA, a factor that may ultimately work to the United States' competitive advantage in years to come.[35]

Jointness as an Innovation and Response

Military innovation has long been a core feature of strategic competition. Typically, discussions about innovation have focused predominantly on technological developments, but considering the development of jointness as a military innovation and its strategic value to the United States raises critical questions about the importance of technical competence, organiza-

[35] Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols?" *Joint Force Quarterly*, Vol. 82, Third Quarter 2016, pp. 68–75.

tional capacity, and culture. *Major military innovations* have been defined as "major changes in the conduct of warfare, relevant to leading military organizations, designed to increase the efficiency with which capabilities are converted to power."[36] Military innovations occur "when the production of military power changes, meaning the character and conduct of warfare change in some measurable way."[37] This understanding makes it clear that military innovation involves more than technology. It also requires a corresponding level of organizational capacity and institutional capability to absorb, tailor, or counter the new technologies and concepts associated with a major military innovation. Using this definition of *military innovation*, any discussion of jointness as an innovation necessarily must examine not only the United States' own perspectives regarding the value of jointness, but also U.S. competitors' assessments to determine the impact that jointness has had on modern warfare. In Chapter 5, we examined the PLA's views on the value of jointness and demonstrated that PRC military leaders view jointness as a core requirement for future warfare and a key element in PLA modernization imperatives involving integrated joint operations—specifically, informatized operations and systems warfare.

The Innovation Development Process

The development process for a military innovation is also a useful approach for understanding the early roots of jointness in the U.S. system and an understanding of how China's system has evolved in response. A general pattern for the development of military innovations involves both an incubation phase and a demonstration point.[38] The incubation phase is useful for distinguishing the technical and organizational development associated with the particular innovation. In some cases, the technologies—the tank, communication capabilities, and air power, for instance—are mature technologies well before the necessary organizational elements of a military innovation are in place. There is a process of discovery and experimentation that spurs thinking about the application of these technologies beyond their technical characteristics. The demonstration point occurs when the

[36] Horowitz, 2010, p. 22.

[37] Horowitz, 2010, p. 22.

[38] Horowitz, 2010, p. 24.

innovator is able to apply the innovations as the technological and organizational elements of the innovation have matured. A particular major military innovation's demonstration point becomes evident "when the potential of its full capabilities is reasonably known in the international system through an action by a first mover, rather than the capability merely being the subject of internal exercise or debates."[39]

The development of jointness in the United States' military generally conforms to this development pattern. The incubation period involved both technological and organizational developments that were essential to the demonstration point of joint operations. Beginning in the late 1970s, in large part due to failures in Vietnam and as a response to the hollowing of the American military, a series of new weapons systems and technologies entered service. Many of these systems would form the backbone of the force that would prove so successful in Desert Storm. Likewise, the U.S. military began its ambitious efforts to rethink its primary operational concepts, which led to solutions such as AirLand Battle and the Maritime Strategy. Early efforts provided a means for integrating these technological advances into overarching concepts that in many cases had significant multiservice components. Finally, the organizational component of the incubation period involved the passage and implementation of the GNA and a recalibration across all services in training practice and facilities that led to a revolution in military training with the development of NTC, Top Gun, and Red Flag.

The demonstration point for jointness occurred first during Desert Storm, but the importance of jointness as an innovation has been reestablished in most of the United States' subsequent operations. Many senior U.S. officials and military officers have commented on the role that jointness played in Desert Storm's success. The opening example from Chapter 3, subsequent examination of PLA discussions about the impact of jointness on modern warfare, and the inclusion of jointness as a key element in PLA military strategy and modernization, all demonstrate the PLA's recognition of jointness as an major military innovation and an imperative for fighting against the United States in any future war. Following the initial demonstra-

[39] Horowitz, 2010, pp. 23–24.

tion for joint operations in Desert Storm and future demonstration points that revealed further advancements by the U.S. military, the PLA has been enmeshed in its own development effort to build jointness in the PLA. At this point, the PLA remains in an incubation period where it is reorienting itself in the aftermath of a major reorganization and continued theoretical exploration, experimentation, technology development, and education. Most signs suggest that while the PLA has made hard decisions and shown progress, the PLA's progress in developing its joint operations capability remains limited.[40] Regardless, the PLA's commitment to developing its joint operations capability has not subsided. The PLA's newest organizations and concepts of operation are built around jointness.

Responding to Innovation

The choices available to the nations responding to military innovations vary for a variety of reasons. Generally, nations can choose to emulate a military innovation and tailor elements or components of the innovation to specific circumstances. Similarly, nations may consider that investment too costly, technologically challenging, or outside their organizational capacity and attempt to find a counter-capability to blunt the impact of the enemy's innovation.[41] Also, nations may choose to find strength in numbers and pursue cooperative arrangement or alliances that help mitigate the threat from an innovation.[42] In the PRC's case, it has chosen emulation, probably for several reasons. First, China has traditionally not had allies and partners, and the PRC's current relationships would offer little toward countering the impact of jointness on modern warfare. Second, although China clearly has invested in capabilities to mitigate and disrupt elements of the U.S. joint system, it may recognize that a strategy based solely on developing counters to this innovation would probably be unsuccessful because of the complexity of the U.S. system and the passive nature of the response. Therefore,

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[40] Cozad et al., 2023, pp. 4–7; Cozad, 2019, pp. 211–214; Wuthnow and Saunders, 2017; Michael S. Chase, Jeffrey Engstrom, Tai Ming Cheung, Kristen Gunness, Scott W. Harold, Susan Puska, and Samuel K. Berkowitz, *China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army (PLA)*, RAND Corporation, RR-893-USCC, February 13, 2015.

[41] Horowitz, 2010, pp. 26–27.

[42] Horowitz, 2010, p. 27.

the PLA's chosen strategy for responding to the development of jointness as an innovation has been to emulate it. A key part of this decision has been an understanding of what jointness represents in modern warfare. As early as 1999, shortly after the PLA had published its first teaching materials on operational-level joint warfare since the end of the Gulf War, PLA authors highlighted the fact that modern warfare was a contest of opposing operational systems.[43] Iraq's inability to counter this new systems-based approach to warfare doomed it to failure. Subsequent U.S. operations against different adversaries would reinforce this point.

The factors that shape the success of a strategy for responding to innovation include financial, technical, and organizational components.[44] The PLA has demonstrated that it has the resources available to support the financial costs of its recent changes. Likewise, it has made investments in training infrastructure, education, and new organizations in support of its new joint organizational structure. From a technological perspective, it also has access to the types of information technology and information systems to support its efforts. Of note, the development of the PLA's integrated command platform demonstrates that PLA's ability to leverage and integrate the technology at its disposal.[45] As discussed in the preceding section, the most challenging aspect of the PLA's response to jointness has been in the area of organization.

The organizational capital required for military innovation can be further broken down into three areas: (1) critical task focus, (2) experimentation resources, and (3) organizational age.[46] Critical task functions are typically derived from official strategy and planning documents. They provide insight into an organization's goals and help "frame and justify their actions, providing a central theme for motivating workers."[47] For the PLA, this translates into military strategies, defense white papers, and joint regulations or guidelines. Likewise, the PLA's critical task focus can also be

43 Xue Xinglin, 2001, p. 66.

44 Horowitz, 2010, pp. 35–39.

45 Liu Wei, 2016, p. 46.

46 Horowitz, 2010, pp. 35–37.

47 Horowitz, 2010, p. 35.

understood by senior-level statements and speeches that have highlighted over time the importance of jointness to the PLA's modernization. From a critical task focus, it is clear that jointness is, at a minimum, a stated goal of the PLA. When considered along with the investments described previously, it also demonstrates jointness to be an actual objective that is being supported by both words and resources.[48]

A second area of organizational capital includes resources devoted to experimentation. Investment in experimentation, which the PLA has demonstrated over time, shows a receptiveness to innovation, a willingness to consider new approaches, and potentially a capacity to integrate innovations.[49] The PLA's experimentation on jointness extends back to the 1990s with the 95 Project, which was an initial conceptual development effort supporting the PLA's initial joint campaign concepts for the operational level of war. Subsequent experimentation efforts focused on integrated joint operations, headquarters work, and new operational concepts such as target-centric warfare.[50] Assimilation of these concepts into the PLA demonstrated a commitment to the practical application of these experimental activities beyond just the experiments themselves. A critical question that has emerged in the experimentation process shows what may be a gap between the experimentation inputs and the practical outcome—specifically, the lack of actual experience in combat environments and the realism behind joint training events that follow.[51]

The third area of organizational capital is closely tied to the previous discussion regarding the PLA's legacy and the role that it plays in defining an organization's willingness and ability to adapt and embrace innovation. Based on the organization's founding conditions, which have a profound impact on its ability to change later, as organizations age they "acquire some

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[48] Russell L. Ackoff, Fred E. Emery, and Brent D. Ruben, *On Purposeful Systems: An Interdisciplinary Analysis of Individual and Social Behavior As a System of Purposeful Events*, Routledge, 2005.

[49] Horowitz, 2010, p. 37.

[50] Lianshan, 2015, p. 37.

[51] Chen Jun and Hou Jun, "Continuous Improvement of Joint Operations Experimental Capabilities," *Jiefangjun Bao*, April 9, 2019; Jiang Yamin, "On Warfighting Experimentation," *China Military Science*, No. 4, 2014, pp. 115–121.

degree of rigidity, independent of domestic politics and overall political centralization, throwing up barriers to transformation."[52] The desired changes in the PLA's culture and the major changes to how that organization is supposed to function represents a potentially significant challenge to innovation. As the new organization(s) struggle to redefine their relationships and responsibilities, it is likely that new bureaucratic power centers emerge and old practices linger, limiting the pace of reform.

The development of jointness in the United States and the PRC demonstrates several contrasts related to innovation and its implications for strategic competition. Both countries recognized the overall effect that jointness has had on modern war; however, in the PRC, the perceived shortfalls in capability because of the PLA's lack of jointness provided a strong incentive for China's military to attempt to emulate the United States. The risks associated with an alternative course of action were high based on the United States' recent record of operational and tactical success. Similarly, the fact that jointness was central to systems warfare—a connection that was tied to an objective condition or reality—compelled the PLA to adopt an emulation strategy as opposed to a counter-innovation or alliance-based approach. PLA strategists have viewed jointness as a requirement, not a luxury.

American advancements in jointness over the past three decades have provided some significant potential advantages, the most important of which is the first-mover advantage. The U.S. military became the first modern military to operationally implement meaningful joint operations in a way that other militaries recognized was an innovation that far surpassed earlier, more limited examples of joint operations. This innovation was not an inevitable consequence of U.S. military modernization during the late 1970s or 1980s, nor was it a calculated or planned outcome directed by the military. Instead, it was a political outcome resulting from a series of several factors—congressional dissatisfaction with DoD, recent military failures, and concern about the future of the U.S. military's much-needed defense reform—that coalesced in a short window of time and under favorable conditions. The problems that Goldwater-Nichols sought to remedy had long been recognized, but prior to the early- to mid-1980s, reformers

[52] Horowitz, 2010, p. 37.

simply did not have the political backing. Ultimately, the GNA provisions that contributed to Desert Storm's success were highly contingent and not a predetermined path.

In addition to being contingent, the U.S. development of jointness was based on foundational organizational structures that were present in the U.S. military and defense establishment, but not in others. As discussed earlier in this chapter, the organizational structure that eventually proved so successful for the United States existed before the GNA, but without the necessary authorities. It was also subject to the give-and-take dynamics of a democratic political system based on civilian control, negotiated outcomes, and governmental separation of powers. Political leaders in the American political system delegate significant responsibility to the military and generally trust that the military will follow orders. Likewise, the military, despite some bureaucratic resistance, follows civilian directives even in cases where change may be detrimental to organizational interests. What this points to is a system heavily based on trust that the military will follow orders and that the services acting jointly will fulfill their individual missions.[53]

Differences in the Chinese political system and its civil-military dynamics are significantly different—a fact that potentially has significant implications for the PLA's ability to successfully emulate. In civil-military relations, PRC civilian leadership has looked skeptically on PLA information and neither civilian nor military leaders have tended to be forthcoming with information.[54] As a result, planning and command have been highly centralized to ensure that lower-level commanders follow orders in a manner in line with the CCP's political objectives.[55] In addition, the imbalance between the services and the legacies of mistrust of the PLAAF and Navy raise questions about the extent to which PLA ground force senior officers and CCP senior

[53] J. P. Clark, "In Defense of a Big Idea for Joint Warfighting," *War on the Rocks*, December 22, 2016; Lawrence B. Wilkerson, "What Exactly Is Jointness?" *Joint Force Quarterly*, Summer 1997.

[54] "Achieving the Ability to Be Called Upon at Any Time, the Ability to Fight When One Comes, and the Ability to Win When One Fights—A Four-Part Discussion on Studying and Implementing the Spirit of the Speeches of Chairman Xi," *PLA Daily*, December 20, 2013.

[55] Cozad et al., 2023, p. 97.

leaders will bring other services into leadership positions. Accordingly, the level of trust that underpins the United States' joint system and has enabled the successful development of jointness may become a major challenge for a far less trusting and centralized PLA. While the examination in this paper suggests this might be the case, additional research is necessary to understand how significant this competitive advantage might be and its relationship to jointness.

The Pitfalls of Jointness for the U.S. Military

Jointness is recognized as providing several key strategic advantages—a factor that speaks directly to its strategic value. However, as discussed in Chapter 4, the implementation of the GNA was based on several trade-offs and, at times, the consequences of those trade-offs were unforeseen and not well understood. At the operational and tactical level, jointness is generally recognized as highly valuable and a significant potential advantage for the United States in the military aspects of strategic competition. Strategically, the impact of jointness is much less certain and in some areas, the consequences of earlier trade-offs under the GNA may have negative effects on the United States' overall competitiveness.

"Tyranny of the Now"

The tension between the interests of the service chiefs and the combatant commands can best be summed up in a letter from several members of Congress to the SECDEF and DEPSECDEF referenced earlier in this report that termed the issue of the "tyranny of the now"—a problem in which immediate operational needs are served at the expense of readiness and modernization.[56] The combatant commands have brought significant value to the United States since the GNA, but the most significant trade-off today is the impact that day-to-day operational requirements have on the services' ability to maintain readiness. The Navy has been hit particularly hard by these demands, but each service has had to contend with increased person-

[56] Wittman, Moulton, et al., 2021.

nel requirements and operating time (e.g., flight hours) and less time at their home station or involved in training. The imbalance between the services' ability to maintain readiness and current operational tasking has led to broader concerns from Congress and current and former senior defense and military officials. The negative impact on readiness has significant implications for the United States' ability to compete and maintain its competitive advantages into the future as the United States' primary competitor continues to modernize and bring new, modern equipment into its inventory.

The problem with balance has several contributing factors, including competing service-combatant command requirements; the current global force management system; and an unwillingness on the part of senior leaders to set priorities, identify risk, and make hard decisions. The first problem can be tied to jointness and is a consequence of the trade-offs involved with limiting the service chiefs' roles in the operational chain of command. That said, the situation prior to the GNA presented several shortcomings of its own. From this standpoint, the problem with the tyranny of the now has more to do with the failure to set strategic priorities and letting those priorities guide the development of a GFMAP that is more in line with the actual demand for forces among the different commands. There certainly will always be more demand than available forces, but setting priorities, determining where the United States can accept risk, and making strategic choices based on these criteria will help mitigate the effects that excessive demand is having on the long-term health and modernization of the services.

Setting Priorities

A key development with the rise of the combatant commands has been the growth of staffs to support the newly empowered combatant commanders. Staff sizes also increased across the board in OSD, the Joint Staff, and the services. The enhanced role of the combatant commands and the services' diminished role in routine global operations has created a much larger number of senior military officers—all 11 of whom report to the SECDEF—with operational command authority competing for resources. The geographic combatant commands typically provide the most significant demand, particularly those in INDOPACOM, CENTCOM, and

EUCOM. Based on the strategic importance of their regions and the nature of the threats that reside there, they carry significant weight in decisions on global force allocations. Similarly, for much of the past 20 years, there have been Joint Task Forces led by four-star generals commanding the wars in Iraq and Afghanistan. STRATCOM, SOCOM, SPACECOM, CYBERCOM, and TRANSCOM all have critical global demands, while NORTHCOM is tasked with defending the United States homeland. Although AFRICOM and SOUTHCOM tend to have less pull on resources, their regional responsibilities may change at any moment in the event of a crisis. In the end, the combatant commands all carry significant weight and have supporting staffs that are designed to help their respective commanders make the case for the resources they feel are necessary to accomplish their assigned missions.

Along these lines, the growth of staffs has caused great concern and may have significant negative consequences on a host of areas including innovation, adaptability, and the speed and quality of decisions. Staff growth has been a by-product of the United States' joint reforms. Therefore, it has added to the competition for resources, particularly in terms of the balance between infrastructure and staff growth and warfighting forces. The staffs are now much larger than at the time of the GNA, but the warfighting forces are 40 percent to 50 percent smaller, according to a former member of the DSB.[57] Along with the growth of staffs is the increasing perception that jointness requires that all parties be involved in the decisionmaking process. As a former USDP argued, the "over-emphasis on jointness in policy actually undermines the department's ability to respond quickly and effectively and strategically to some of the challenges we face."[58]

Negative Impact on Innovation

The growth of staffs provides an example of one common side effect in expanding bureaucracies. The main threat is that this growth often leads to organizational paralysis and stagnation. This issue was raised regularly in the hearings that marked the 30th anniversary of the GNA. The

[57] Maucione, 2015.

[58] Maucione, 2015.

primary concern was that the large numbers of participants involved in policy discussions would ultimately water down the outcomes—a dynamic that makes innovation difficult. Similarly, the quality of the outputs is also diminished because of what has been called the "tyranny of consensus" in which the organizations involved in deliberations strive to find answers that are acceptable to all of the participants. This phenomenon not only curtails the ability to set priorities and make difficult decisions but also limits the debate required to make breakthroughs on difficult problems.

Service parochialism has been held up as one of the core problems that diminished the military's effectiveness prior to the GNA, but service parochialism has not completely died out. One expert has argued that, instead, it has been replaced by the "tyranny of jointness."[59] In contrast to the tyranny of consensus, the tyranny of jointness seeks to ensure that the right joint balance is achieved at the expense of getting the services what they need to accomplish their assigned tasks.[60] The same criticism has been levied on other processes, including the development of the joint warfighting concept and an earlier iteration called Air-Sea Battle. In both cases, the attempts to ensure a balance of jointness was seen by dividing missions out regardless of particular mission competencies. In the latter, pushback from the Marine Corp and Army led to a new concept that essentially faded away until the new joint warfighting concept was directed by the SECDEF in 2019.[61] The original guidance for developing a new operating concept to counter China came in the 2012 QDR and directed both the Navy and Air Force to develop a new concept.[62] As this example demonstrates, the perceived need to balance jointness can slow down processes that have even been directed at the highest levels. In this case, approximately a decade was lost due to the tyranny of jointness.

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[59] Filipoff, 2021.

[60] Filipoff, 2021.

[61] J. Randy Forbes, "America's Asia Challenges: China, Air-Sea Battle and Beyond," *The National Interest*, June 9, 2014; Sydney J. Freedberg, Jr., "Army Shows Cheek, Elbows Its Way into AirSea Battle Hearing," *Breaking Defense*, October 11, 2013.

[62] Forbes, 2014; Frank Hoffman, "The Simmering Pottage: Air Sea Battle and QDR 2014," *War on the Rocks*, November 14, 2013; Marc V. Schanz, "AirSea Battle's Battle," *Air Force Magazine*, April 1, 2013.

The drag on innovation presents a problematic dichotomy. On one hand, jointness has proven to be an operational and tactical innovation in its own right. It has led the United States' primary competitor, China, to overhaul many aspects of how it conceptualizes and prepares for war. That overhaul has consumed a significant number of resources and senior-leader attention over the past three decades. On the other hand, jointness at the strategic level appears to have led to significant growth in the size of the bureaucracy overseeing the armed forces and DoD in such a way that may be holding back development on new operational concepts, forcing lowest common denominator decisions, and injecting new voices into the policy process that have done more to slow the pace and limit the quality of outputs from these processes.

Slow Decisionmaking

The final potential pitfall has been discussed in earlier sections. The most significant concern in this area is that the speed of decisionmaking becomes a critical factor with major power competitors, both of which have large force structures and geographic advantages. The growth of bureaucratic structures has had a demonstrated drag on performance over time in large organizations. The key question for this study is whether this is an attribute of jointness and, if so, might it detract from the strategic value that jointness provides. From a competitive standpoint, the growth of staffs that have emerged after GNA are a feature of the new joint system's evolution, and their growth runs the risk of slowing the United States' ability to formulate new strategies and operational concepts that allow it to respond or adapt, limiting the United States' ability to maintain decision advantage.

Conclusion

The strategic value of jointness has proven itself at the operational and tactical levels when considered against the three components of value outlined in this chapter—the production inputs and labor, the scarcity of the commodity, and the advantages it conveys. When comparing joint developments in the United States and China using these three criteria for understanding value, our research indicates that, from a competitive standpoint, various

factors suggest several areas where jointness provides the United States with significant advantages. That said, the PLA's limitations are not tied to shortages in resources, technology, or will. Instead, our examination of the legacy structures in both militaries suggests that systemic issues may be the most significant factors in the U.S. competitive advantage. This preliminary finding is interesting but requires more in-depth research.

Another consideration regarding the strategic value that jointness provides to the U.S. military is that the most-pronounced benefits have been at the operational and tactical levels. In essence, the benefits are centered on warfighting. At the strategic level, elements of jointness may be contributing to a series of problems limiting the United States' ability to compete. It is not clear that all of these limitations result from jointness as the only, or even the primary, cause. They appear to be problems caused by bureaucratization, processes that have not been adapted to meet current requirements, and an unwillingness to set priorities and limits on day-to-day operational missions. The potential pitfalls identified in this paper are largely focused on broader, strategic trade-offs, the most notable of which being those between near-term operational requirements and long-term concerns over readiness and modernization. Likewise, larger staffs and increased numbers of participants in the decisionmaking process have had effects similar to those in other large bureaucratic structures—lowest-common-denominator, consensus-driven decisions.

Ultimately, any determination on the strategic value of jointness must weigh the operational and tactical benefits against the question of strategic performance. In either case, both the success of the joint system at the lower levels and the inefficiency and mixed quality at the higher levels are not solely functions of jointness. Several other factors contribute to the successes and shortcomings of the United States' joint system.

CHAPTER 8

Conclusions

The pursuit of jointness has been a central theme in the U.S. military's development over the past three and a half decades. From the earliest organizational changes that made it possible after the GNA until today, the benefits of jointness have been demonstrated repeatedly in combat environments—a fact that the United States' main competitors have noticed and attempted to emulate. The contrast between U.S. military operations prior to the reforms and those that followed are stark. Prior to Desert Storm coordination, interoperability, unity of command, and unified operations were exceedingly complicated and difficult based on conflicting authorities and the lack of clearly delineated command relationships. Following Desert Storm, U.S. military operations fundamentally reshaped the way in which the United States' major competitors think about modern warfare. This rethinking was primarily due to the United States' ability to plan and manage large-scale operations at great distances from its own territory and integrate capabilities from across its services to conduct operations in diverse environments, against a wide array of threats. The United States also frequently operated with allies and partners, adding complexity to the operations and raising concerns among its competitors.

By no means have these operations been flawless. Nearly every after-action study, account, and testimony before Congress have recognized shortfalls and discussed areas where the United States needed to improve or develop solutions. Jointness also has not been the only factor contributing to the United States' operational success. In the years following the Cold War, the United States benefited from overwhelming technological advantages, relatively large numbers of well-trained professional forces, and gross imbalances with its adversaries in both resources and allies. There were no peer or near-peer competitors capable of challenging U.S. dominance, and

none of the United States' adversaries in these conflicts could be considered top-tier opponents in large-scale operations. For most of this period, the United States was fighting wars that would be almost certainly different from any future war involving one of the United States' major competitors, China or Russia. With this in mind, it might be tempting to explain away or downplay the United States' operational and tactical successes, particularly as they relate to jointness and joint operations.

These caveats should be acknowledged but not detract from the broader understanding of what progress jointness has enabled, particularly at the operational and tactical levels. First, as an initial reference, the U.S. military enjoyed overwhelming quantitative and qualitative advantages when it invaded Grenada in 1983 than at any time since—including an adversary that was much weaker and less capable than any it fought after 1991—but it still struggled. Despite outward success, that operation did much to convince U.S. political leaders that the time for reform had come. Second, even in acknowledging the caveats listed in this chapter, the U.S. military has conducted more and larger-scale operations in the past 30 years than both of its primary competitors combined. Finally, both competitors understand this reality and have framed jointness as one of the U.S. military's major strengths. The PRC is so convinced of the need for jointness to achieve its modernization objectives that it has put into place several major programs and initiatives over the past three decades to develop this capability. In the end, one should consider the difference between operations before and after the GNA and combine that perspective with an understanding that the United States' key competitors view jointness as a major military innovation requiring a response. These two factors together demonstrate that jointness has significantly aided the United States' military effectiveness and now provides a valuable tool for the military component of strategic competition.

Observers in the United States nearly all agree that jointness has significantly improved the military's performance since 1991. However, they frequently make a distinction about where these improvements have occurred. From their perspective, jointness has been an essential component for improving warfighting, but it has not improved strategy. Several observers cited in this report have pointed out that the United States has seen repeated operational and tactical success since 1991—but, strategically, the United States has struggled. These struggles have involved ambiguous outcomes

and entanglements in Iraq after the first Gulf War, the former Yugoslavia, poorly managed strategic relationships in the Middle East, post-conflict instability in Libya, the failure to recognize the negative strategic consequences of China increasingly aggressive rise, and two long and costly wars in Afghanistan and Iraq that diverted attention from other priorities and achieved questionable outcomes.

The Paradox of Jointness

These perspectives on operational and tactical success and strategic failure highlight a paradox that must be considered before understanding the strategic value of jointness. First, those areas where the United States has seen clear advantages emerge from the GNA have all been tied to the provisions in the law that dealt with jointness—clarifying the chain of command, empowering the combatant commanders, and removing the service chiefs from the chain of command. These changes have allowed combatant commanders and their service component commanders to plan more effectively and, in the end, synchronize and integrate individual components' capabilities in ways that greatly increased the U.S. military's effectiveness and lethality. This specific feature of the post-GNA U.S. military—the combatant commands—is the central focus in China's pursuit of jointness and arguably the most important and challenging element of its reorganization.

At the tactical level, service experiences in these operations have all led to greater levels of interoperability and breakthroughs in tactical integration in such areas as CAS, joint air operations, and special operations, to name a few. Prior to the GNA, these levels of tactical interoperability were limited largely due to service parochialism and inattention. The U.S. operations since the GNA's passage have forced this level of tactical integration out of operational necessity. Even more noteworthy is the development and availability of advanced ISR, space, and cyber resources for tactical users. GPS was hailed as a major breakthrough in Desert Storm. Since then, the availability of advanced capabilities at all levels of the joint force has increased exponentially. The PLA has also picked up on this development in much the same manner as it has with the combatant commanders. Its recent concepts of operation use these U.S. joint developments as conceptual starting points.

Both of these cases (i.e., operational command and tactical execution) highlight the impact that jointness has had on the U.S. military's effectiveness and the responses to these improvements from U.S. competitors.

In terms of what jointness contributes to the United States' strategy development process, it is clear to many former senior officers and officials, members of Congress, and experts that the GNA has not provided much help. The reasoning behind this conclusion is varied. At the center of this problem is the fact that the GNA objectives dealing with strategy and planning received much less attention than those tied to military effectiveness—a point that is widely agreed upon. As previously mentioned, the authority of the combatant commanders was of paramount concern. However, there have been many developments rooted in the GNA that these practitioners argue are part of the problem.

The most notable problem deals with bureaucratic tendencies and group decisionmaking dynamics. Following the GNA, staffs at all levels grew significantly—a development that led to a far larger number of entities being involved in the process of making strategy. Once these groups were in place, they became hard to reduce because of the value they provided to the senior leaders they served. At the same time, the inclusion of greater numbers of organizations and people into the process led to negative group tendencies in which the outputs are watered down by a desire to seek consensus. This development is particularly ironic because the pursuit of consensus prior to the GNA was a primary reason mentioned for the poor quality of advice provided by the JCS. Although the pursuit of consensus was acknowledged as a major problem, other issues also emerged, including the impact that larger decisionmaking groups have on the quality of outputs. For instance, several former officials and experts cited earlier in this report discussed the desire for equitable representation among the participants (i.e., rather than focusing on quality of output focusing on jointness as a gauge of success), the overly bureaucratic and sluggish processes, poor responsiveness, and the potential negative impact on innovation as major problems that have emerged due to the growth in staffs.

Another criticism was also based on the quality of strategy documents and the unwillingness of senior leaders to ensure the strategies reflect actual priorities and are used in the decisionmaking process. Furthermore, another criticism that has been levied on the process is that the strategy documents

produced through this joint process almost always lag real-world developments. Instead of providing a forward-looking means for DoD to plan for future threats, they frequently are more reflective of the current situation. This is particularly troubling given the significant costs of modernization and the need to provide a strategic rationale for defense investments, technology development, and system acquisition. A key theme in these criticisms was that today's military strategy suffered not from a bad process or lack of joint inclusion but from a lack of capable strategists.

The final strategic pitfall is DoD's overall management structure, which several former senior officials characterized as outdated, top-heavy, and overly centralized in both civilian and military components of DoD. Although this pitfall goes beyond what can be considered jointness, its impact on joint organizations is potentially significant. The primary concern in this area was that failure to adopt new reforms to modernize DoD's management structure could leave the United States at a competitive disadvantage. Underpinning this concern is an assumption that the United States' adversaries are capable of making decisions and acting on much-quicker timelines than the outdated U.S. structure. This competitive advantage, if it actually does exist, provides the United States' key competitors with the ability to routinely force the United States to react to conditions and circumstances they dictate.

In the area of strategy, it is hard to attribute these problems solely to jointness. As several observers cited in this report have noted, the growth of staffs since passage of the GNA does not necessarily support an agile, adaptable system designed to act quickly in the face of sophisticated adversary strategies. That said, another significant problem is at hand—the United States' ability to develop strategists and effectively execute long-term strategies. Although this discussion goes beyond the scope of this report, it must be noted that many of the problems with strategy development and execution existed before the GNA and persist today albeit because of different dynamics (e.g., the tension between services and combatant command requirements). Furthermore, a definitive answer regarding assumptions about U.S. competitors' abilities to formulate and execute strategic options more quickly than their U.S. counterparts is beyond the scope of this report, but our research for this report raises questions about its validity. This certainly is another issue worthy of further exploration.

Is Jointness a Competitive Advantage or an Albatross?

We have examined both the benefits and potential pitfalls of jointness. We now return to this study's core research questions. First, what value does the United States derive from DoD's jointness efforts? At its core, the net value of jointness (i.e., operational and tactical improvements versus ambiguous strategic impact) has been of great strategic value for the United States and will continue to provide significant value in the future, primarily through its contributions to warfighting. By applying the three criteria for determining value—production inputs and labor, scarcity, and advantages—it becomes apparent that the United States has invested heavily in developing the organizational structure and people required to make the joint system function. The contrast between the pre-GNA era and today is remarkable—so much so that many military and civilian officials who did not serve prior to the reforms most likely would have a hard time recognizing DoD and the military prior to 1986. There has also been broad buy-in and support since the early 1990s following the United States' operational successes. Most importantly, the organizations and structures that existed before were not completely overhauled or removed. Instead, GNA redrew lines of authority emphasizing a clear chain of command and delineation of responsibilities.

The scarcity of effective joint military systems globally also adds to the strategic value that jointness provides to the United States. To date, no other military has been as effective in implementing jointness on the scale that the U.S. military has despite the efforts by its main competitors, most notably China.[1] More specifically, militaries such as the PLA are attempting to apply new organizational structures analogous to those in the U.S. joint system,

[1] An in-depth global examination of joint operations is beyond the scope of this study. As earlier sections have pointed out, the United States has led multiple large-scale operations over the past three decades. Most of these have involved allies and partners, many of whom have made significant progress in the area of joint operations. That said, our team has not identified examples of joint operations on the scale of those led by the United States since 1991. For the United States' competitors, the same holds true. China has not been involved in combat since 1979, and Russian operations have either been smaller scale (Crimea and Syria) or have not been examples demonstrating progress in joint operations (Georgia and Ukraine in 2022).

but these attempts at organizational change have proven complicated and slow. Similarly, in terms of operational jointness, the United States' main competitor, China, has not been able to accomplish the level of operational and tactical integration found in the U.S. military. The United States' joint combat experience is still viewed as the standard by competitors.

Finally, where jointness provides the United States with distinct advantages (i.e., at the operational and tactical level), it does so, in part, because its joint system was developed in an American context—a fact that may make emulation more difficult for authoritarian competitors, such as China and Russia. There are two key elements that must be considered in this case. As mentioned earlier in this report, any military system is a product of the political system from which it emerges. The U.S. military is no different. Neither is the PLA. Therefore, the U.S. political system is itself based on competition and compromise. This is one of the key attributes that has prevented the emergence of a general staff and enabled the emergence of four roughly co-equal branches of the military.[2] No single service dominates, and all branches have had senior officers in key leadership positions, including the CJCS and at the combatant commands. Another element of the system is that it relies on trust. Political leaders in the United States generally trust the military to carry out its assigned missions and protect and uphold the U.S. Constitution. Likewise, the military generally trusts and defers to guidance from its political leaders. The military relies on these political leaders to outline objectives and provide strategic guidance. Finally, the services and various military organizations generally trust one another to fulfill their roles and missions and deliver the capabilities expected of them. Although much has been made of service parochialism, overarching trust is a common feature of the United States military. It also ensures that each of the services is capable of protecting its service interests.

These trust relationships are at times strained and certainly have been tested at various times in U.S. history, such as during Vietnam. However, by and large, these trust relationships permit the U.S. joint system to function. For this reason, the United States' competitors may find this element of jointness difficult to emulate. China's political system, for example, is

[2] With the recent addition of the much smaller U.S. Space Force as a fifth branch.

not high in trust and at times has been consumed with intraparty rivalries. Most recently, attempts to root out corruption and reinvigorate party leadership demonstrate a broad lack of systemic trust.[3] In a similar fashion, the lack of a competitive system has allowed one military service to dominate over time, making it difficult to find balance among the PLA's services, at a time when the capabilities of the PLAAF, Navy, and Rocket Force are critical to modern warfare.

The second research question this report has attempted to address is whether jointness provides the United States advantages in strategic competition. Overall, it does provide a significant advantage, but there are also looming problems based on the unintended consequences of some of the GNA reforms. By thinking of the innovative aspects of jointness, it becomes clear that the United States' main competitors see jointness as a major military innovation—an innovation they feel compelled to emulate regardless of their success in achieving this goal to date. The United States' major strategic advantage has been that it was the first mover in jointness and its ability over the intervening three decades to make refinements. The United States' competitors recognize this. Effectively employing a joint system is a complex technical feat. The first thing that U.S. adversaries have noticed is the high level of integration among ISR sensors, command and control systems, and combat forces. This integration represents the technical side of the problem. Perhaps even more complex is the organizational element of this innovation. This facet of the emulation problem that has proven extremely difficult for competitors such as China to solve. For this reason, the strategic value of jointness is demonstrated, in part, by the difficulty others have in replicating its complexity of the United States' operational and tactical successes—a factor that ultimately prevents them from achieving the same breakthroughs in integration, coordination, and synchronization that the United States has achieved.

[3] For additional details, see Roger Cliff, C*hina's Military Power: Assessing Current and Future Capabilities*, Cambridge University Press, 2015; and Kimberly Jackson, Andrew Scobell, Stephen Webber, and Logan Ma, *Command and Control in U.S. Naval Competition with China*, RAND Corporation, RR-A127-1, December 17, 2020.

Jointness as a Factor in Major Power Competition

There are numerous criteria that provide useful measures for relative strength in major power competition. They cut across all areas of national power and touch on such diverse factors as cultural strength, political stability, economic development, and technical innovation. Military capability is only one broad element among many, and highly complex in its own right. Jointness is one discrete element of military power, and its importance may not be agreed on universally, although this report argues that senior leaders in both the United States and China view jointness as a critical determinant of modern military power and essential to success in modern wars. Both countries have invested substantial time and resources into developing their joint systems for this reason. Accordingly, the United States' first-mover advantage and China's challenges with importing and adapting a system that was not specifically tailored to its national conditions provides distinct advantages to the United States that have proven difficult for the PLA to emulate despite their long-term efforts.

The primary advantage that the United States gains from jointness is at the operational and tactical levels. As earlier sections in this study outlined, the development of jointness in the U.S. military has enhanced its overall effectiveness in many areas, not least of which is command and control and a host of critical missions areas that will be crucial in any major power conflict in the future. China's views of both the importance of jointness in modern warfare and the United States' success in this area clearly demonstrate that jointness plays a critical role in the military competition. Like any major military innovation, joint operations represent a major advance in the employment of military power and one that U.S. competitors assess to be a prerequisite for future success.

The most significant contribution that jointness offers to the United States in the current period of major power competition is the ability to plan, command, coordinate, and synchronize complex operations at great distance among all of the U.S. military services. The United States, as highlighted earlier, is the only major military to have conducted modern, large-scale joint operations on a broad scale. In addition, the United States' ability to perform these missions on a global basis—due, in no small measure, to its joint architecture—provides another distinct advantage in various crises

in the Indo-Pacific region and on a global basis. China's modernization programs and defense reforms over the past three decades reflect the PLA's focus on not only attempting to counter these U.S. advantages—by developing capabilities to target command and control, logistics, and ISR—but also on actively seeking to build its own joint system capable of carrying out the same types of joint functions and tasks.

Although the United States has enjoyed an advantage in the area of joint operations, two major considerations should be factored into the United States' understanding of what strategic value jointness provides in major power competition. First, the development of jointness is not the sole reason for the improvements in the U.S. military's effectiveness in recent decades—an observation that we pointed out previously in this report. The overwhelming advantages presented by the United States' materiel and financial resources, its technological advancement, and the quality of its personnel are hard to overstate. This is especially true given the nature of the adversaries the United States has faced. The main contribution that jointness has made in the U.S. military system is that it provided a means for enhancing these advantages by synchronizing and harmonizing their application. From this standpoint, if these materiel and human advantages are diminished or negated, the overall impact of jointness may also be reduced.

The second consideration is that, despite the benefits jointness provides, the U.S. military is still called on to support a range of global missions. The impact of jointness on the military has not provided demonstrable improvement in either the development of strategy or in aiding strategic discipline. As a result, the strategic value of having a highly capable joint force may well be limited by a strategy development and implementation process that does not prioritize goals or make difficult decisions. For this reason, the characteristics of a future major power conflict—global versus regional, quick versus protracted, or total versus limited—will shape what joint operations will look like and which missions will become most important. The United States' and China's comprehensive planning and preparations for those differing scenarios will determine the relative importance of jointness amid a host of other imperatives that include the survivability and effectiveness of command and control, logistics, communications, and ISR, among many other capability areas.

Finally, this study is focused on understanding the strategic value of jointness in major power competition. It does not address other criteria for evaluating relative military strength. The research team did not intend to provide a comprehensive analysis of the overall military balance of the U.S.-China strategic competition. Accordingly, the PRC does have areas that related to issues discussed in this report where they have either sought to gain advantage or where they may have actual advantage based on their strategic objectives. China's concept of "People's War" has recently been connected to the idea of building "whole of nation" or "whole of society" strategies that will greatly enhance the resources available for conflict and the national resolve required to prevail.[4] Likewise, Beijing's longer-term planning has had far fewer competing priorities to contend with compared with the United States based on the United States' expansive global interests and alliance relationships. We did not consider either of these two issues—People's War and strategic focus—in this research, but both clearly merit greater attention in their relationship to major power competition.

Ensuring Competitive Advantage in the Future

Despite the many advantages that jointness provides to the United States, one final note of caution is merited. The U.S. military system has been enormously successful, and because of that success, its competitors have attempted to emulate it. However, as we identified earlier in this report, there are several areas where the U.S. joint system may work against its long-term competitiveness. The first and most significant problem is that the United States is facing tension between servicing near-term operational needs and long-term modernization and readiness. As we highlighted earlier in this report, this tension today is skewed toward the day-to-day requirements, and the result has been devastating to the U.S. military's readiness. Similarly, without a clear identification of priorities and understanding of what constitutes acceptable risks, there is little to guide current demands or inform senior leaders' decisions about the allocation of resources.

[4] DoD, *Military and Security Developments Involving the People's Republic of China*, 2021, p. 34.

Strategic competition requires focus, an attribute that cannot be attributed to the United States' strategy since the end of the Cold War. To effectively compete, the United States must understand its strengths and advantages and its weaknesses. Likewise, it must understand the same about its competitors. The strategic value that jointness provides is largely based on what it has delivered at the operational and tactical levels. In essence, warfighting. Its lack of success at the strategic level, however, presents long-term concerns for the United States' approach to strategic competition. Since the end of the Cold War, the United States has had little success in identifying and prioritizing its strategic needs. This factor has created problems today with efforts to modernize the joint force and maintain its readiness. For the United States to continue to benefit from the progress it has made in the area of jointness, it must have the technology, people, and resources necessary for tomorrow's conflicts. As mentioned several times in this report, jointness has been a major contributing factor to the United States' success, but it is not the only one. A highly effective joint structure that is forced to rely on legacy weapons systems and a force with poor readiness is unlikely to deliver the results necessary to ensure the United States' security or to fight against its primary competitors if the need should arise.

The current demand on the services is symptomatic of this problem, but it also signifies a larger deficiency in the American post–Cold War system—an inability to clearly identify long-term threats and develop effective strategies to address them. The United States has been distracted on too many occasions and allowed itself to become fixated on the security environment of the day at the expense of understanding and planning for the reemergence of long-term historical realities. Sacrificing readiness and modernization for the questionable benefits of small-scale competitive success leaves the services in a position where they may be unable to deliver the forces necessary to capitalize on the strategic value that jointness provides. This dynamic was most telling over the past three decades, with the all-too-late realization that major powers, such as China and Russia, would reemerge as strategic realities and competitors. For the United States to benefit from the strategic value that jointness does provide in this competitive environment, it must address the strategy dilemma—an area that has challenged the United States for decades and one that has not been solved through the development of jointness.

Abbreviations

AFRICOM	U.S. Africa Command
AOR	area of responsibility
ATO	air tasking order
C4	command, control, communications, and computers
CAS	close air support
CCP	Chinese Communist Party
CENTCOM	U.S. Central Command
CINC	commander-in-chief
CMC	Central Military Commission
CJCS	Chairman of the Joint Chiefs of Staff
CJTF	Combined Joint Task Force
CYBERCOM	U.S. Cyber Command
DEPSECDEF	Deputy Secretary of Defense
DoD	U.S. Department of Defense
DOPMA	Defense Officer Personnel Management Act
EUCOM	U.S. European Command
FY	fiscal year
GAD	General Armaments Department
GAO	U.S. Government Accountability Office
GFMAP	Global Force Management Allocation Plan
GLD	General Logistics Department
GNA	Goldwater-Nichols Act
GPD	General Political Department
GPS	Global Positioning System
GSD	General Staff Department
INDOPACOM	Indo-Pacific Command
ISIS	Islamic State of Iraq and Syria
ISR	intelligence, surveillance, and reconnaissance

JADC2	Joint All-Domain Command and Control
JCS	Joint Chiefs of Staff
JDA	joint duty assignment
JFACC	Joint Force Air Component Commander
JFMCC	Joint Force Maritime Component Commander
JOM	Joint Officer Management Program
JP	Joint Publication
JPME	joint professional military education
JQS	Joint Qualification System
JTAC	joint terminal attack controller
MMI	major military innovation
NATO	North Atlantic Treaty Organization
NDAA	National Defense Authorization Act
NORTHCOM	Northern Command
NSC	National Security Council
NTC	National Training Center
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OIR	Operation Inherent Resolve
ONW	Operation Northern Watch
OPNAV	Office of the Chief of Naval Operations
OSW	Operation Southern Watch
OSD	Office of the Secretary of Defense
PACOM	Pacific Command
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PME	professional military education
PRC	People's Republic of China
QDR	Quadrennial Defense Review
RFF	request for forces
SASC	Senate Armed Service Committee
SECDEF	Secretary of Defense

SOCOM	Special Operations Command
SOUTHCOM	Southern Command
SPACECOM	U.S. Space Command
STRATCOM	U.S. Strategic Command
TACP	tactical air control party
TRANSCOM	U.S. Transportation Command
TTP	tactics, techniques, and procedures
UK	United Kingdom
USDI	Under Secretary of Defense for Intelligence
USDP	Under Secretary of Defense for Policy
VCJCS	Vice Chairman of the Joint Chiefs of Staff
WMD	weapon of mass destruction

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For more than 30 years, the U.S. Department of Defense (DoD) has placed substantial emphasis on *jointness*. Whether in bolstering the relative influence of such joint organizations as combatant commands, requiring joint service for senior-level promotions, or achieving cross-service interoperability between operational units, jointness is valued conceptually from the strategic to the tactical levels. However, in practice, the value of jointness remains unmeasured and ill-defined, particularly as it relates to strategic competition. Many questions remain about the true utility of jointness to DoD goals, potential negative ramifications of jointness as it was implemented following the passage of the Goldwater-Nichols Act (GNA), and how the pursuit of jointness affects DoD's ability to innovate and adapt to future challenges. Moreover, it is not currently understood how jointness affects competitive advantage relative to the United States' primary adversaries. This study seeks to examine whether the assumption that jointness is inherently valuable is correct, and if so, in what ways. Understanding what aspects of jointness are most valuable and why can help DoD compete more effectively against its adversaries and maximize the United States' competitive military advantages.

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