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Does Service Interdependence Take Jointness Too Far?

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

27 May 2008

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Abstract

Over the course of the last two decades, the Department of Defense has made tremendous progress in its abilities to defend and advance the national security interests of the United States in peace and war. Much of this success can be attributed to the Goldwater-Nichols Department of Defense Reorganization Act of 1986 and the continued emphasis of the department to achieve increased levels of Service integration to support and improve the warfighting effectiveness of joint force commanders.

The ability to effectively employ joint forces has increased the lethality, agility, and operational precision of the United States military. Combat operations in the contemporary operational environment underscore the necessity to effectively organize the collective capabilities of the respective Services comprising the military, our traditional allies, ever-changing coalition partners, and the interagency in order to advance American security interests across the globe.

There are, however, limits to the benefits of jointness. The U.S. military risks crossing a point of diminishing returns where the doctrine of Service integration that was wisely mandated through the implementation of the Goldwater-Nichols Act is interpolated forward to achieve Service interdependence. Ever-increasing levels of Service interdependence can reduce the cumulative and qualitative benefits realized through the Goldwater-Nichols Act. Service interdependence can adversely affect the abilities of the respective Services to execute tasks and functions within their core competencies and unnecessarily increases the complexity of force employment and sustainment at the operational level of war.

Introduction

Over the course of the last two decades, the Department of Defense has made tremendous progress in its abilities to defend and advance the national security interests of the United States in peace and war. The U.S. military has become more able, more agile, and more precise in the application of lethal and non-lethal military capabilities against adversaries and in support of friends and coalition partners. Much of this success can be attributed to the Goldwater-Nichols Department of Defense Reorganization Act of 1986 and the continued emphasis of the department to achieve increased levels of Service integration to support and improve the warfighting effectiveness of joint force commanders.

Military operations in the contemporary operational environment underscore the necessity to effectively organize the collective capabilities of the respective Services comprising the U.S. military, our traditional allies, ever-changing coalition partners, and the interagency in order to advance American security interests across the globe. In addition to maintaining and improving the warfighting capabilities necessary to defeat enemy states in traditional conflicts, our military must also be capable of defeating asymmetric threats posed by terrorists, trans-national criminals, and other non-state actors. Defeating these varying adversaries requires agile, expeditionary, combined-arms capable forces that are able to maximize the collective strengths of individual Services, combatant commands, and other government agencies and multinational partners.¹

There are often significant operational advantages to be realized through the employment of joint forces to prosecute major operations. These include complementary capabilities, increased flexibility in the employment of subordinate formations, and the exploitation of enemy vulnerabilities through the asymmetric employment of friendly forces.² There are also disadvantages realized through the employment of joint forces.

They include incongruent battlefield tactics, techniques, and procedures, parochialism, differences in the decision-making and planning process, differences in doctrine, and lack of interoperability and commonly agreed operational terms.³

The U.S. military risks crossing a point of diminishing returns where the doctrine of Service integration that was wisely mandated through the implementation of the Goldwater-Nichols Act is extended to include Service interdependence. The concept of Service interdependence builds on the proven theory that by organizing and employing joint capabilities we can often fight better. Interdependence theory offers that in order to fight, we must seek inter-Service reliance through joint employment of specialized Service capabilities.⁴ Ever-increasing levels of Service interdependence and specialization risks reducing the cumulative and qualitative benefits realized through the Goldwater-Nichols Act. Service interdependence can adversely affect the abilities of the respective Services to execute tasks and functions within their core competencies and unnecessarily increases the complexity of force employment and sustainment at the operational level of war.

Origins of Jointness and the Goldwater-Nichols Act

The pragmatic necessity of interdependence between the various elements of a nation's military has existed as long as there have been armies and navies. Navies often played significant roles in the conduct of land warfare by transporting and sustaining troops in distant expeditions and engaging the maritime forces of the enemy.⁵ Armies have been called upon to seize or secure terrain for advanced naval bases or anchorages to shelter or sustain a fleet during operations. Joint operations in the American military are nearly as old as the nation itself. It was the complementary effects of sea and land actions that ultimately led to General Washington's defeat of Lord Cornwallis at Yorktown in October 1781.⁶ During World War II, major land and naval operations were mostly joint or combined

operations with many of them characterized by the operational integration of air, land, sea, and amphibious forces.⁷ These traditional roles continue today as navies may be employed to continue the functions cited above, interdict an antagonist's commerce, provide an amphibious capability to affect forcible entry on hostile shores, or project offensive strike power through naval surface or aviation fires. Land forces may be called upon to seize or defend naval and air bases in support of sea or air services. For all practical purposes, some Service interdependence is absolutely necessary to prosecute war.

The Goldwater-Nichols Act was born out of pragmatic necessity to address and correct organizational, authoritative, and Service culture dichotomies that had fundamentally limited the ability of the United States to plan, resource, and conduct effective military operations. Only six years earlier, the American president and military had been humbled after a complex, multi-Service air, land, and sea operation to free 53 American hostages held by Islamic militants in Iran ended in complete and public failure at a remote airstrip named Desert One. The debacle of OPERATION EAGLE CLAW in April 1980 failed to liberate the hostages, took the lives of eight American servicemen, destroyed eight military aircraft, and demonstrated the inability of the U.S. military to effectively assemble, organize, and employ the layered capabilities of its Services to execute complex military activities in support of strategic policy objectives.⁸

At its crux, the Goldwater-Nichols legislation sought to prevent operational failures such as EAGLE CLAW from recurring. It was designed to reorganize the Defense Department; strengthen the precept of civilian control of the military; improve the military advice provided to the President, National Security Council, and Secretary of Defense; strike a balance between the authorities and responsibilities of regional and unified combatant commanders; clarify the roles and functions of the individual Services; strengthen the role of

the Chairman of the Joint Chiefs of Staff; increase attention to the promulgation of national military strategy and contingency planning; and facilitate more efficient use of defense resources.⁹ The purposes of the legislation have largely been achieved. Early evidence of the act's positive impact on the organization and employment of U.S. military capability was readily demonstrated by the performance of the military in combat shortly following its inception. The overwhelming tactical and operational successes of OPERATION JUST CAUSE and OPERATION DESERT STORM / DESERT SHIELD demonstrated the extent to which the act had increased the effectiveness and operational unity of the armed forces.¹⁰

Despite the successes realized through the employment of the U.S. military in these operations, it is important to understand that each of these conflicts was fought largely along Service lines with the integration of capabilities when and where required. For example, in DESERT STORM, the Army fought in its sector to the west, the Marines in the east, the Navy in the Persian Gulf, and the Air Force preferring to attack deep strategic targets in Iraq in pursuit of air-war-specific objectives.¹¹ The actual operational advantage realized by the American military and its Coalition partners in this conflict was not jointness in and for itself. The true benefit of jointness was the organization and employment of combined-arms warfighting capabilities that could rapidly and effectively be brought to bear on the enemy.¹² As explained by researchers from the Center for Naval Analyses following the Gulf War, "the ultimate goal of jointness is an effective combined-arms operation, which is harmony of action with an inspired integration of effort."¹³ Thus, while the temporary organization and employment of forces from two or more military departments is often necessary, it is only an organizational means to achieving the desired method of prosecuting effective combined-arms warfare to accomplish an objective.

Calls for Increased Interdependence Between the Services

Building on historical inter-Service linkages and the tangible benefits realized through the Goldwater-Nichols Act, a growing constituency within the nation's officer corps has advocated markedly increasing interdependence between the Services.¹⁴ This will change the manner in which the United States plans for, organizes, equips, and prosecutes war. Nested within the predominantly Air Force-driven concept of effects based operations, Service interdependence, in theory, offers that the U.S. military "must seek interservice reliance, recognizing that this affords us the ability to specialize in, and to capitalize on, individual Service strengths."¹⁵ The effects based approach to warfighting focuses on improving the ability to shape an adversary's behavior, decision cycle, and or capabilities through the integrated application of focused instruments of national power. The concept seeks to connect strategic and operational objectives with operational and tactical tasks by identifying and targeting desired effects within the operational environment.¹⁶

Many military professionals are, appropriately, very skeptical of the operational utility of effects based operations and its potential impact on the collective warfighting capabilities of the joint force.¹⁷ Often, the desired effects are not properly aligned against a center of gravity or linked to operational or strategic objectives. As a result, it is difficult to determine if means are, in fact, linked to desired ends. For example, the commander of the Eighth Air Force, a proponent of the concept, argues that effects based operations were successfully employed during the Iraqi elections in 2005. He illustrates this point claiming that the desired effects called for encouraging the populace to vote and discouraging adversaries from disrupting the process. The general offers that the presence of Air Force aircraft near polling places and suspected troubled areas demonstrated the coalition forces' resolve that the elections would proceed without incident. He acknowledges that the

contribution of air patrols to achieving the desired effects cannot be definitively assessed but insists that the effects were realized through the combined actions of a joint force.¹⁸

This argument lacks military credibility and simple good sense. During the Iraqi constitutional referendum and national elections, Iraqi Security Forces and Coalition military formations achieved local security in and around polling centers through a robust series of inner and outer security cordons. Significant material and manpower resources were procured, aligned, and employed to cordon the areas, harden polling centers and polling sites, and restrict the movement of the populace and potential terrorists within, and between, Iraqi cities before, during, and immediately following the elections. Local security and operational protection for the Iraqi elections were planned over the course of six months and achieved primarily, some would argue exclusively, through the layered and persistent presence of Iraqi and Coalition ground forces.

Claims that the effects based application of airpower enabled successful Iraqi elections should stand as a warning for the credibility of tailoring Service capabilities provided to joint force commanders around the effects based operations concept. Moreover, the coupling of Service interdependence to this unproven concept can markedly change the organization and employment of military capabilities at the operational and tactical levels of war. Achieving effects is not synonymous with accomplishing an objective. General Norman Schwarzkopf addressed this distinction nearly two decades ago when a subordinate commander failed to seize and retain Safwan during the final hours of OPERATION DESERT STORM. He angrily remarked "there is not a military commander in the entire world who would claim he had taken an objective by flying over it."¹⁹

Proponents of effects based operations and increased Service interdependence rightly identify that "individual services do not fight wars- combatant commands fight wars under

the unifying vision of a joint force commander.”²⁰ This is entirely correct, and a key element of the Goldwater-Nichols legislation. However, the credibility of this point is quickly negated through their further assertions that allowing the Services to develop redundant capabilities reduces warfighting effectiveness, produces capability gaps, and rejects the premise of joint fighting.²¹ The history of warfare demonstrates the military risk of eliminating redundancies in capabilities and capacities. Operational and organizational redundancies are necessary in combat. These redundancies enable the continued prosecution of sequential and simultaneous operations across the breadth and depth of the operational area in the dynamic, fluid, and often chaotic environment of combat.

The fact that major operations and campaigns are conducted under the command of a joint force commander does not necessarily mean that all operations and tactical actions are necessarily best accomplished through a joint force. Detailed analysis of the objective, the operational environment, the location, strength, capabilities, and disposition of enemy, friendly, and neutral formations, and other factors determine the force capabilities necessary to meet the objective. Based on these variables, the joint force commander may determine that the most effective and simplest means to accomplish his objective is through the capabilities of a single Service or those of a single military department. For example, Marine Expeditionary Units (Special Operations Capable), deployed from Navy ships, are extensively trained to conduct noncombatant evacuation operations, often in remote locations under austere conditions.²² A multi-department force is usually not needed to successfully accomplish this operational objective. However, interdependence theorists would offer that this type of operation is more effectively accomplished through the organization and employment of an integrated joint force. This demonstrates a fundamental incongruence in the argument that interdependence is a necessary prerequisite for operational effectiveness.

Emergence of Interdependence in Joint Doctrine

Despite the practical concerns pertaining to Service interdependence driven by proponents of effects based operations cited above, the concept has established a foothold within the doctrinal lexicon of the Department of Defense. Joint Publication 1, the capstone publication for all joint doctrine, details explicitly that “all Service components contribute their distinct capabilities to the joint campaign; however, their interdependence is critical to overall joint effectiveness.”²³ Joint Pub 3-0, Operations, makes the same assertions.²⁴

This should be of particular concern to the Services and military departments. These entities organize, build, train, deploy, and sustain the forces that are received, task organized, and employed by joint force commanders.²⁵ Increased Service interdependence can markedly change the roles, missions, capabilities, doctrine, organization, manning, equipping, and training of the Services. If left unchecked, would interdependence theorists advocate that all Marine and Navy fixed wing aviation functions, personnel, and equipment be aligned within the Air Force? This would fundamentally reduce the warfighting capabilities the Navy and Marines Corps provide to joint commanders. It would increase the requirement for battlefield unit integration to perform most combined-arms operations. However, would these operations be conducted more effectively simply because they were conducted by a joint force vice a combined-arms capable single-Service force? Analysts from the Center of Naval Analyses offer caution on this point stating, “Ironically, operations often fail to use the optimum force, in the name of jointness. If using a single-service force is best, then multi-service forces should not be used solely to achieve the appearance of jointness. All too often, we see operations planned using ‘Little League rules’ – everyone must play.”²⁶

Much of the emphasis behind the emergence of interdependence in recent doctrine can be attributed to the natural desire of any bureaucracy to seek efficiencies in order to reduce costs. Although it is not a profit-oriented enterprise, the Department of Defense must also balance operational risk against fiscal constraints.²⁷ Interdependence proponents offer that efficiencies can be realized without sacrificing effectiveness. They target apparent redundant capabilities between the Services as the means to achieve these efficiencies. However, military redundancies are not designed to be efficient. They are designed for military effectiveness and in the chaotic, violent environment of war, business models offering increased productivity through efficiencies are not always best.²⁸

Adverse Impacts on Service Capabilities

While the military departments and their respective Services must contend with the concept of interdependence and its potential impact on doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF), joint force commanders must be cognizant of these elements and their impact on the forces and capabilities provided by the Services. Increased Service interdependence can actually decrease the warfighting capabilities of Service force modules provided to joint force commanders for employment. A clear example of this is seen in the emerging organizational method for planning and executing counter explosive hazard operations in support of strategic, operational, and tactical mobility, countermobility, and protection. This concept advocates creating a separate operational headquarters, such as a joint task force, to employ all Explosive Ordnance Disposal (EOD) forces for long-duration, large-scale operations to centrally manage the counter Improvised Explosive Device (IED) fight throughout the operational area.²⁹ This operational level headquarters would then allocate EOD capability to tactical commanders for employment in battlefield tasks.

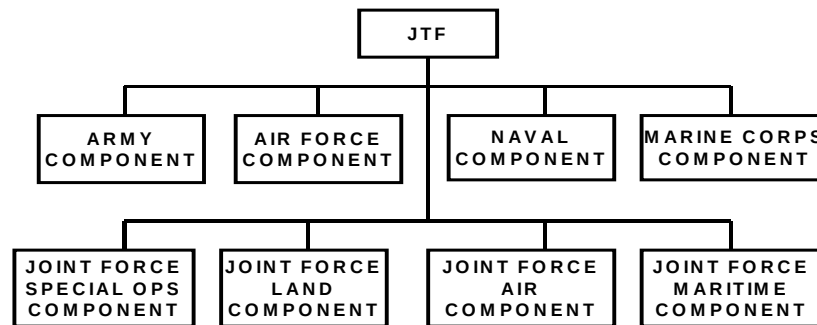
Presently, each Service possesses and deploys organic EOD assets in order to prosecute military operations.³⁰ The breaching, clearance, or rendering safe of explosive hazards including mines, unexploded ordnance, and IEDs are essential to the tactical maneuver, operational movement, and operational protection of the joint force. An organizational construct that detaches EOD capabilities from the Service components in order to assemble, organize, and employ a joint EOD task force unnecessarily creates interdependence between the Services. This needlessly increases staff coordination between multiple levels of command, disrupts the tempo of operations, and recklessly degrades the abilities of the Services to effectively, safely, and rapidly execute tasks and battlefield functions necessary to move, maneuver, and protect forces. Moreover, this concept also contradicts the doctrinal and practical precepts of maintaining the tactical and operational integrity of Service organizations³¹ to create battlefield interdependency at the expense of tactical and operational effectiveness.

Effects on Operational Employment and Sustainment

The tailoring of Service capabilities to achieve ever-increasing levels of interdependence unnecessarily increases the complexity of planning and executing combat operations. In many cases, the nature of the objective, the enemy threat, and the geographic and diplomatic characteristics of the operational environment necessitate the employment of joint forces. In other instances, mission analysis may determine that a single Service is best suited to conduct a major operation. The task organization of a military force should always reflect the organization necessary to best accomplish the objective.

Despite this simple objective-driven approach to force organization and employment, joint forces are often organized to achieve maximum Service integration and interdependence with consideration of the objective a seemingly secondary concern. For example, as detailed

in the figure below, most joint task forces are organized with a combination of Service and functional component commands and subordinate task forces.³²



Joint forces always contain Service components to execute administrative, logistics support, and training responsibilities.³³ The establishment of joint-Service functional component commands within the joint task force markedly increases Service interdependence and operational complexity for these commanders and their subordinate units. This requires increased coordination between more headquarters within the joint task force for the duration of operations. This becomes particularly difficult when it is necessary to coordinate and deconflict a variety of operational activities across multiple functional domains.

For example, the Joint Force Air Component Commander (JFACC) is usually the area air defense commander and airspace control authority for the joint operations area.³⁴ Each Service employs offensive and defensive counterair capabilities. Marine Air-Ground Task Force (MAGTF) commanders retain OPCON of organic aviation assets to support the MAGTF. The Army Air and Missile Defense Command conducts theater air and missile defense operations that must be internally coordinated and also integrated to support the

protection needs of the joint force.³⁵ At the same time, the land Services employ mortars, artillery, and rockets, via the air domain that is traversed by friendly aircraft from multiple Services. As the area air defense commander, the JFACC could even exercise TACON of Navy air and missile defense systems operating from the maritime domain. Theoretically, the JFACC could have functional and/or coordination responsibilities for each of these activities.

While it certainly increases interdependency, does the establishment of this joint functional component command necessarily increase effectiveness? It can be argued that it would be simpler and more effective to organize the task force along Service lines in accordance with the tactical tasks necessary to accomplish operational objectives. Effective combined-arms integration and deconfliction could be achieved through clear mission orders and command and support relationships between the task force components.

In addition to the organization and coordination challenges detailed above, Service interdependence also increases the complexity and operational risk of combat operations and can often lead to battlefield failure. For example, during the battle for An Nasirayah in Iraq on 23 March 2003, two U.S. Air Force A-10 pilots mistook amphibious assault vehicles (AAV) belonging to 1st Battalion 2d Marines for Iraqi armored personnel carriers. After coordinating with ground personnel who could not see the vehicles, the pilots made multiple passes through the engagement area strafing with 30mm cannons, firing three Maverick missiles, and dropping eight bombs on U.S. Marines. There were multiple investigations conducted to determine the cause of this fratricide. However, it is still not known how many of the 18 Marines killed that day were lost to the A-10s.³⁶ This example is not intended to suggest that joint-Service air-ground actions should not occur. They are often necessary.

However, it does demonstrate that multi-Service capabilities cannot always be rapidly organized, integrated, and employed without increasing operational risk.

In addition to increasing the complexity of force employment in military operations, Service interdependence also increases the complexity of operational sustainment. Joint Publication 4-0 rightly identifies that each Service is responsible for the logistic support of its own forces and "wherever feasible, peacetime chains of command and staffs should be organized during peacetime just as they would be in wartime to avoid reorganization during war [*sic*]."³⁷ Increased Service interdependence violates these concepts and increases the complexity of sustaining forces conducting operations. The Services possess and employ a wide variety of equipment procured through different acquisition channels. These assets are supported by equally independent and varying supply streams and maintenance processes. As a result, the employment of interdependent joint forces multiplicatively increases the complexity of planning and conducting the sustainment actions necessary to keep these platforms functioning.

The complexity of this challenge is readily visible upon examination of the fuel required to sustain military operations. The DoD Instruction for the Management of Energy Commodities shows that each of the Services utilizes different types of fuel to support their equipment.³⁸ Consequently, if an interdependent combined-arms force was organized from air, land, and maritime forces to conduct a military operation in an austere environment, the joint task force commander would need to coordinate with the respective Service components and the Defense Energy Support Center to ensure the timely and effective procurement, movement, receipt, storage, dispensing, quality assurance testing, and necessary disposal of multiple fuel products to support the interdependent Services. This can adversely impact

operational tempo and serves as only one of the many examples of how interdependence can significantly increase the complexity and level of effort needed to sustain military operations.

Conclusions

The Goldwater-Nichols Act has significantly improved the collective abilities of combatant commanders and the military Services to defend and advance the national security interests of the United States. The tangible benefits of the legislation have been evidenced in multiple operational endeavors in peace and war. The legislation has been good for combatant commanders, good for the Services, and good for the defense of our nation. The collective capabilities of the Services have produced operational synergies that far exceed the quantitative sum of their individual contributions.

Despite the combat proven utility of employing the layered, complementary, and occasionally redundant capabilities of the respective Services in support of joint operations, a growing constituency of senior officers argues that the military must increase interdependence between the Services. Nested within the nebulous concept of effects based operations, interdependence theory offers that in order to fight best, the military must always fight joint. As detailed previously, this argument mistakenly links the doctrinal and organizational concepts of jointness with the military pragmatisms of effective combined-arms integration.

Interdependence theory promotes the opportunity to realize fiscal efficiencies through the specialization and centralization of functions within the separate Services. However, it does not acknowledge the increase in operational risk to military operations resulting from this organization and employment concept. It discounts the battlefield necessity of materiel and functional redundancy in order to ensure continuity of effort to counter the factors of time, space, force, friction, and enemy action that are ever-present in military operations.

Current doctrine contains inconsistencies in regard to Service interdependence. While the concept is championed, in vague generalities, in several recent publications, other basic doctrinal works clearly demonstrate the dichotomy between interdependence and the practical manner in which the United States organizes, plans for, and conducts military operations. As a result, joint force commanders must address and remedy these incongruencies during the planning, execution, and sustainment of operations. Interdependence increases internal planning requirements, complexity, organizational friction, and opportunities for battlefield failure for joint force commanders as they conduct operations in support of policy objectives.

Joint task forces should be the lowest level to command and control joint forces. The organization of joint functional component commands within operational-tactical level joint task forces unnecessarily increases the complexity of command and support relationships within the task force. It also increases the complexity of planning, executing, and sustaining combat operations across the air, land, maritime, and special operations domains of the joint operations area. In some instances, there may not be forces from multiple military departments assigned to a joint functional component command. In these cases, the organization is not, by definition, a joint command.³⁹ This begs the question as to whether some commanders seek designation as a “joint” command for other than tactical reasons.

In order to build and deploy operationally effective and relevant formations to be employed by joint force commanders, it is necessary for the Services to train as they fight. Interdependent, multi-Service force modules cannot simply be aggregated after arriving in a crisis area and be expected to conduct military operations with the precision and capability of a well-honed combined-arms combat team. Instead, proficiency in combined-arms operations must be ingrained in the culture, doctrine, training, leadership, and education of

each of the Services. Interdependence theory inhibits this, as increased interdependence will facilitate increased Service specialization.

Recommendations

Joint force commanders must understand the potential impacts of interdependence on the task organization and employment of forces to accomplish objectives spanning the range of military operations. The proven necessity of basic Service interdependence and the multiplicative benefits realized through the operationally appropriate employment of multi-Service task forces cannot be disputed. However, commanders must be aware of the potential second and third order effects resulting from ever-increasing levels of Service interdependence and how they effect force organization, planning, execution, sustainment, and risk for operations within their areas of responsibility.

The task organization of joint forces should be determined based on the most effective means to accomplish the operational objective. Functional component commands should not be organized and employed within operational-tactical level joint task forces. Instead, the joint task force commander should serve as the operational integrator; tasking Service components to execute tactical actions necessary to achieve operational objectives. Effective combined-arms integration should be accomplished through mission type orders and clear delineation of command and support relationships between the Service components throughout operations across the joint operations area.

Joint forces must train as they fight. Existing Chairman Joint Chiefs of Staff-sponsored training exercises must be expanded to require increased tactical integration of each Services' combat, combat support, and combat sustainment forces. The enduring goal should be realistic, effective, and continuous combined-arms training involving tactical formations and operational level component staffs from each of the Services. This will better

enable the effective task organization, employment, and sustainment of mission appropriate single-Service or joint-Service forces to accomplish military objectives in support of policy.

There are practical limits to the benefits of jointness and Service interdependence. Congress, the Secretary of Defense, the Services, and the unified combatant commanders must come to a specific consensus regarding the way ahead for Service interdependence and its intended impact on the application of U.S. military capabilities across the range of military operations. The results of this analysis, discourse, and ultimate policy decisions should be codified in public law. The proven success of the Goldwater-Nichols Act demonstrates that this is the most effective way to ensure that warfighting capabilities of combatant commanders are preserved while the respective Services tailor DOTMLPF activities in support of the former. Our political and senior military leaders must ensure that increased Service interdependence does not reduce the collective capabilities, agility, and precision of the forces employed by joint commanders in defense of our nation.

NOTES

- ¹ Chairman, U.S. Joint Chiefs of Staff, *The National Military Strategy of the United States of America: A Strategy for Today; A Vision for Tomorrow* (Washington, DC: CJCS, 2004), 15.
- ² Milan Vego, *Joint Operational Warfare* (Newport, RI: Naval War College, 2007), V-99.
- ³ Ibid.
- ⁴ David A. Deptula, "Toward Restructuring National Security," *Strategic Studies Quarterly* 1, no. 2 (Winter 2007): 13.
- ⁵ Vego, *Joint Operational Warfare*, V-97.
- ⁶ John Selby, *The Road to Yorktown* (New York: St Martin's Press, 1976), 186.
- ⁷ Vego, *Joint Operational Warfare*, V-99.
- ⁸ Daniel P. Bolger, *Americans at War: 1975–1986, An Era of Violent Peace* (Novato, CA: Presidio Press, 1988), 121, 133. The joint task force that was organized to execute OPERATION EAGLE CLAW contained representation from each of the military Services. However, many of the key participants and subordinate units had never trained together, rehearsed collective tasks, or even met before the operation commenced. During subsequent congressional investigation and testimony, some planners and participants claimed that the mission was organized to specifically accommodate participation from each of the military Services.
- ⁹ James R. Locher III, "Taking stock of Goldwater-Nichols," *Joint Force Quarterly*, 1 April 2003, 34-35.
- ¹⁰ Ibid, 39.
- ¹¹ Michael P. Noonan and Mark R. Lewis, "Conquering the Elements: Thoughts on Joint Force (Re)Organization," *Parameters* 33, no. 3 (October 2003): 34.
- ¹² Marvin Pokrant, *DESERT STORM at Sea: What the Navy Really Did* (Westport, CT: Greenwood Press, 1999), 281.
- ¹³ Ibid, 291.
- ¹⁴ Deptula, "Toward Restructuring National Security," 11. Another endorsement of increased Service interdependence can be found in the writings of the Senior Mentor to the Joint Warfighting Center, U.S. Joint Forces Command and can be located at Gary Luck, "Insights on Joint Operations: the Art and Science, Best Practices" (Special Insert, Norfolk, VA: Joint Warfighting Center, JFC, September, 2006), 13.
- ¹⁵ Deptula, "Toward Restructuring National Security," 13.
- ¹⁶ Robert J. Elder, "Effects-Based Operations: A Command Philosophy," *Air & Space Power Journal*, 1 April 2007, 11. The concept of effects based operations is envisioned to apply primarily at the operational and strategic levels of war and have minimum impact on how tactical commanders apply capabilities and forces to accomplish battlefield tasks that contribute to achieving overall operational objectives.
- ¹⁷ Christopher J. Castelli, "Van Riper, Mattis Criticize Joint Staff's Force Development Process," *InsideDefense.com*, 23 January 2006, http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=NAVY-19-3-1 (accessed 2 April 2008).
- ¹⁸ Elder, "Effects-Based Operations: Command Philosophy," 14.
- ¹⁹ Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The Inside Story of the Conflict in the Gulf* (Boston, MA: Little, Brown and Company, 1995), 442.
- ²⁰ Deptula, "Toward Restructuring National Security," 11.
- ²¹ Ibid, 12.
- ²² Chairman, U.S. Joint Chiefs of Staff, *Noncombatant Evacuation Operations*, Joint Publication (JP) 3-68 (Washington, DC: CJCS, 22 January 2007), I-4.
- ²³ Chairman, U.S. Joint Chiefs of Staff, *Doctrine for the Armed Forces of the United States*, Joint Publication (JP) 1, (Washington, DC: CJCS, 14 May 2007), I-2.
- ²⁴ Chairman, U.S. Joint Chiefs of Staff, *Joint Operations*, Joint Publication (JP) 3-0 (Washington, DC: CJCS, 17 September 2006, Incorporating Change 1, 13 February 2008), II-11.
- ²⁵ U.S. Department of Defense, *Functions of the Department of Defense and Its Major Components*, Department of Defense Directive (DODD) 5100.1 (Washington, DC: DoD, 1 August, 2002), 11.
- ²⁶ Pokrant, *DESERT STORM at Sea*, 288.
- ²⁷ U.S. Department of Defense, *The National Defense Strategy of the United States* (Washington, DC: Office of the Secretary of Defense, March 2005), 11.
- ²⁸ Christopher R. Paparone and James A. Crupi, "What is Joint Interdependence Anyway?" *Military Review*, 1 July 2004, 41.

²⁹ Chairman, U.S. Joint Chiefs of Staff, Barriers, Obstacles, and Mine Warfare for Joint Operations, Joint Publication (JP) 3-15 (Washington, DC: CJCS, 26 April 2007), G-9.

³⁰ Chairman, U.S. Joint Chiefs of Staff, Joint Engineer Operations, Joint Publication (JP) 3-34 (Washington, DC: CJCS, 13 February 2007), IV-4.

³¹ Chairman, U.S. Joint Chiefs of Staff, Joint Task Force Headquarters, Joint Publication (JP) 3-33 (Washington, DC: CJCS, 16 February 2007), I-1. This publication details, “CJTFs have full authority to assign missions, redirect efforts, and direct coordination among subordinate commanders. CJTFs should allow Service tactical and operational groupings to function generally as they were designed. The intent is to meet the needs of CJTFs, while maintaining the tactical and operational integrity of Service organizations. The manner in which CJTFs organize their forces directly affects joint force operational responsiveness and versatility.”

³² Ibid, III-1.

³³ Ibid. In this example, functional component commanders exercise command of joint forces conducting similar military tasks in the respective air, land, maritime, and special operations domains. This can be advantageous when unity of command is of primary consideration. Through this organizational method, tactical commanders receive operational tasking through one component commander, and administrative, sustainment, and training support taskings through another.

³⁴ Ibid, III-5.

³⁵ Chairman, U.S. Joint Chiefs of Staff, Countering Air and Missile Threats, Joint Publication (JP) 3-01 (Washington, DC: CJCS, 5 February 2007), II-4.

³⁶ Michael R. Gordon and Bernard E. Trainor, *Cobra II: The Inside Story of the Invasion and Occupation of Iraq* (New York: Pantheon Books, 2006), 249-251. While fratricide is an ever-present risk in war that cannot be eliminated, Service interdependence can markedly increase the frequency of its occurrence. All Marine officers, including aviators, attend six-months of infantry-based training before attending training in their specific military occupational field. They undergo extensive field-based instruction and training utilizing AAVs. Despite battlefield friction or the ever-present fog of war, Marine aviators would not mistake AAVs for Iraqi vehicles.

³⁷ Chairman, U.S. Joint Chiefs of Staff, Doctrine for Logistic Support of Joint Operations, Joint Publication (JP) 4-0 (Washington, DC: CJCS, 6 April 2000), II-6.

³⁸ U.S. Department of Defense, DoD Management Policy for Energy Commodities and Related Services, Department of Defense Directive (DODD) 4140.25 (Washington, DC: DoD, 12 April, 2004), 3. The primary fuel for land-based air and ground forces in all theaters is JP-8. The primary fuel for sea-based aircraft is a high-flash kerosene-based fuel, labeled JP-5. Conventionally powered ships use a distillate-type fuel known as F-76 for propulsion. Combatant commanders will designate the type of fuel for use on the battlefield depending on fuel availability and equipment to be used within the theater. However, it is not a seamless transition from one fuel type to another. The “conversion process” between fuel types requires intensive phased maintenance efforts and can impact the mechanical performance of some military equipment. This sustainment issue can directly impact operational tempo and must be considered during operational planning.

³⁹ Chairman, U.S. Joint Chiefs of Staff, The Department of Defense Dictionary of Military and Associated Terms, Joint Publication (JP) 1-02 (Washington, DC: CJCS, 12 April 2001 (As Amended Through 12 July 2007)), 287.

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- ² Milan Vego, *Joint Operational Warfare* (Newport, RI: Naval War College, 2007), V-99.
- ³ Ibid.
- ⁴ David A. Deptula, "Toward Restructuring National Security," *Strategic Studies Quarterly* 1, no. 2 (Winter 2007): 13.
- ⁵ Vego, *Joint Operational Warfare*, V-97.
- ⁶ John Selby, *The Road to Yorktown* (New York: St Martin's Press, 1976), 186.
- ⁷ Vego, *Joint Operational Warfare*, V-99.
- ⁸ Daniel P. Bolger, *Americans at War: 1975–1986, An Era of Violent Peace* (Novato, CA: Presidio Press, 1988), 121, 133. The joint task force that was organized to execute OPERATION EAGLE CLAW contained representation from each of the military Services. However, many of the key participants and subordinate units had never trained together, rehearsed collective tasks, or even met before the operation commenced. During subsequent congressional investigation and testimony, some planners and participants claimed that the mission was organized to specifically accommodate participation from each of the military Services.
- ⁹ James R. Locher III, "Taking stock of Goldwater-Nichols," *Joint Force Quarterly*, 1 April 2003, 34-35.
- ¹⁰ Ibid, 39.
- ¹¹ Michael P. Noonan and Mark R. Lewis, "Conquering the Elements: Thoughts on Joint Force (Re)Organization," *Parameters* 33, no. 3 (October 2003): 34.
- ¹² Marvin Pokrant, *DESERT STORM at Sea: What the Navy Really Did* (Westport, CT: Greenwood Press, 1999), 281.
- ¹³ Ibid, 291.
- ¹⁴ Deptula, "Toward Restructuring National Security," 11. Another endorsement of increased Service interdependence can be found in the writings of the Senior Mentor to the Joint Warfighting Center, U.S. Joint Forces Command and can be located at Gary Luck, "Insights on Joint Operations: the Art and Science, Best Practices" (Special Insert, Norfolk, VA: Joint Warfighting Center, JFC, September, 2006), 13.
- ¹⁵ Deptula, "Toward Restructuring National Security," 13.
- ¹⁶ Robert J. Elder, "Effects-Based Operations: A Command Philosophy," *Air & Space Power Journal*, 1 April 2007, 11. The concept of effects based operations is envisioned to apply primarily at the operational and strategic levels of war and have minimum impact on how tactical commanders apply capabilities and forces to accomplish battlefield tasks that contribute to achieving overall operational objectives.
- ¹⁷ Christopher J. Castelli, "Van Riper, Mattis Criticize Joint Staff's Force Development Process," *InsideDefense.com*, 23 January 2006, http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=NAVY-19-3-1 (accessed 2 April 2008).
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²⁸ Christopher R. Paparone and James A. Crupi, "What is Joint Interdependence Anyway?" *Military Review*, 1 July 2004, 41.

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