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Sustaining Joint and Combined Operations

“Reflections on the Adequacy of Doctrine”

By /par Colonel Carla Coulson

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ABSTRACT

Sustaining Joint and Combined Operations - “Reflections on the Adequacy of Doctrine”

This essay takes a critical look at the current joint logistics doctrine of the United States (US) and asks the question, “Does this doctrine provide the Joint Force Commander (JFC) with sufficient means to sustain theater forces?” Areas of focus include doctrinal integration of sustainment functions, the integration/meshing of US joint and service doctrine; and doctrinal provision for the command and control of sustainment functions in the joint and combined theater. The essay concludes that current US joint logistics doctrine does not provide the JFC with sufficient means to sustain theater forces and proposes, among other things, the doctrinal integration of sustainment functions. In addition, it looks at components of the emerging logistical doctrine of the North Atlantic Treaty Organization and the Canadian Forces’ National Military Support Capability concept as viable considerations for future joint logistical doctrine development within the US Armed Forces.

INTRODUCTION

The importance of the ability of the Joint Force Commander (JFC) to sustain theater forces, joint and/or combined, in a manner that adequately supports the successful execution of the operation plan(s) cannot be understated. For, sustainment is the largest contributor in defining the commander's operational reach. Today we speak of power projection platforms that serve to quickly deliver our warfighters or peacekeepers into a variety of joint and combined operations world-wide. Time to plan for the wide range of operations (war and operations other than war (OOTW)) will likely be brief. Joint Publication (JP) 1, *Joint Warfare of the Armed Forces of the United States*, states:

Logistics sets the campaign's operational limits. The lead time needed to arrange logistics support and resolve logistics concerns requires continuous integration of logistic considerations in the planning process. This is especially critical when planning time is short. Constant coordination...is a prerequisite for ensuring timely command awareness and oversight of deployment, readiness, and sustainment issues in the theater of war.¹

Continuous integration, constant coordination, command awareness, oversight of sustainment issues.... How well does doctrine support these tenets?

Does the current United States (US) joint logistical doctrine provide the JFC with sufficient means to sustain theater forces? Does it provide for the integration of sustainment functions and the synchronization of support between services? Does it provide for adequate command and control of sustainment functions in a theater of operations?

AIM

It is the aim of this essay to successfully argue and conclude that current joint US logistics doctrine does not provide the JFC with sufficient means to sustain theater forces in war or OOTW. To accomplish this aim, the essay looks closely at the doctrinal integration of sustainment functions, the integration/meshing of joint and service doctrines and the doctrinal treatment of command and control of sustainment functions within the joint and combined theater. The intent of this essay is not to provide a detailed dissection of doctrinal publications, but to point out where current logistics doctrine is inconsistent within its own confines, and fragmented with regards to the functions of sustainment and command and control thereof. Having identified doctrinal deficiencies, the essay proposes revisions to doctrine based on lessons learned from recent joint and combined operations; the operational template that is poised to transform the US Armed Forces, Joint Vision (JV) 2020; the components of the emerging logistical doctrine of the North Atlantic Treaty Organization (NATO); and the conceptual National Military Support Capability (NMSC) of the Canadian Forces (CF).

DEFINITIONS

Definitions are required for the terms of “sustainment”, “joint logistics” and “logistics”. They are used throughout this essay. With regards to these definitions, much inconsistency exists among and within a variety of references. The joint doctrine of the US defines the terms as follows:

Sustainment is the provision of personnel, logistics and other support required to maintain and prolong operations or combat until successful accomplishment and revision of the mission or national objective.²

Joint Logistics is the art of carrying out, by a joint force commander and staff, logistic operations to support the protection, movement, maneuver, firepower and sustainment of operating forces of two or more military departments of the same nation.³

Logistics is the science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services.⁴

The definitions proposed for logistics and joint logistics are acceptable for use in this essay. However, sustainment of a joint force should not be defined as just the provision of support to an operation, it is the coordinated provision of support that ensures the right things get the right place at the right time. For the purpose of arguing the thesis of this essay, **sustainment** is defined as the coordinated provision of all resources supporting the JFC in a campaign or theater of operations. Sustainment functions would then include, but not be limited to the following: personnel support; the logistics functions of health services, materiel supply and maintenance, civil engineering services, transportation; and other support activities.⁵ Sustainment exists in three phases of an operation.....pre-operations, operations and post-operations.

In addition, the term “joint force commander” is used throughout the essay. In the US context, this term equates to a “combatant commander”, not a “joint task force (JTF) commander”. This is important to note because the authorities, with regards to logistics, of a combatant commander differ from those of a JTF commander.

When the focus of the discussion moves to NATO, the term “combined joint task force” (CJTF) describes the operational force. The CF uses JTF to describe its joint force.

INTEGRATION OF SUSTAINMENT FUNCTIONS

The former Commander-in-Chief (CINC) of the US Pacific Command, Admiral Joseph W. Prueher, stated in his 1997 article on joint doctrine, "...doctrine segregated by functions is unwieldy for a (JTF) staff trying to integrate joint capabilities and staff functions."⁶ Admiral Prueher calls for the abandonment of the joint doctrine hierarchy and cites it as a potential impediment in the implementation of then JV 2010, now JV 2020. He suggests doctrine developed on the basis of mission or task.⁷

JV 2020 has as its supporting and historical document, *Focused Logistics-A Joint Logistics Roadmap*. The "Roadmap" augments JV 2010, the 1996 foundation document for JV 2020, and describes "focused logistics" as follows:

...the fusion of logistics information and transportation technologies for rapid crisis response; deployment and sustainment; the ability to track and shift units, equipment and supplies while en route, and delivery of tailored logistics packages and sustainment directly to the warfighter.⁸

It goes on to say:

Logistics systems envisioned by Focused Logistics will include refined techniques for ensuring combat readiness and sustainment. The goal is "full spectrum support" from deployment through redeployment, reconstitution or forward deployment...⁹

Further support for the notion of "full spectrum support" can be found in *Joint Vision 2020: America's Military: Preparing for Tomorrow*. It states:

Focused Logistics is the ability to provide the joint force the right personnel, equipment, and supplies in the right place, at the right time and in the right quantity, across the full range of military operations...Through transformational innovations to organizations and processes, focused logistics will provide the joint warfighter with support for all functions.¹⁰

Interestingly, a comment at the bottom of the front page of AFDD 2-4 states:

This document complements related discussion found in Joint Publications (JP) 1-0, *Doctrine for Personnel Support to Joint Operations*; JP 4-0, *Doctrine for Logistics Support of Joint Operations*; and JP 6-0, *Doctrine for Command, Control, and Computer (C4) Systems Support to Joint Operations*.¹¹

There are three US joint publications supporting one Air Force document that provides integrated doctrine for sustainment support to the commander. A similar approach at the

joint level would lessen the friction caused by the ad hoc integration of sustainment functions required during a crisis in the theater of operations.

If one concludes that there is a growing need to revise logistics doctrine such that all sustainment functions are integrated and visible to the JFC, how might a joint force proceed? A relevant case study can be made of the US joint deployment process. Lessons learned from US deployments to Southwest Asia, Somalia, Haiti and the Balkans led the Department of Defense (DoD) to rethink how it implements deployment of personnel into a theater of operations. A Deployment Process Special Action Group was established and later institutionalized as the Deployment Division of the (joint staff) J-4.¹² The Division published a Joint Chiefs of Staff instruction that contained policies and procedures for implementing improvements to the joint deployment process.¹³ The Division's early efforts to improve the joint deployment process led to the realization that what was needed was a joint deployment doctrine, a doctrine focused on a multi-functional mission rather than a traditional staff function.¹⁴ As a result, Joint Publication 3-35, *Joint Deployment and Redeployment Operations* was approved in September of 1999. Furthermore, the Division built a strong case for the designation of a "joint deployment process owner".¹⁵ The following is taken from an article by Commander Robert C. Bronson of the Joint Staff, J-4, Deployment Division:

In August 1997, a white paper was prepared... making the case for a joint deployment process owner. It stated that 'to produce a seamless joint deployment process, someone must pull together in a coherent manner DoD's current collection of plans, programs, and organizations for deployment planning and execution. A critical element in the successful process improvement effort, and a critical element in a well-managed process, is an individual who is responsible for process performance.' In essence, DoD needed a deployment process owner.¹⁶

Needless to say, DoD did get a deployment process owner. In 1998, the Commander, Joint Forces Command was designated CINC deployment. When DoD notes that there are deficiencies in joint processes, for example the integration of sustainment functions, and decides that it is prudent to fix them, the manner in which the US joint deployment process was addressed would be a most fitting model.

Today the CF are using a similar review process to develop a NMSC of which a CF Joint Support Group (JSG) will be a central element. Unlike the joint logistics doctrine of the US, that puts the responsibility for sustainment functions squarely on the Services and the Service Component Commanders, Canadian joint doctrine provides for support to all elements of the CF. The current CF joint and combined logistics doctrine, B-GG-005-004/AF-007, *Logistics Doctrine for CF Joint and Combined Operations*, calls for the formation of a Canadian Support Group (CSG). The doctrine excludes the very important sustainment function of health services and also the functions of civil engineering support, communications and information systems support and security and military police support. Support to the JTF for these functions is provided by various

other organizations. The newly published NMSC support concept states that the existing CF sustainment structure is deficient in that it does not provide a single organization that is capable of supporting deployed contingents. It goes on to say that recent experiences of distant deployments to austere environments with limited multi-national cooperation have created a situation where operational success is more dependent on combat support and combat service support capabilities than ever before.¹⁷ And, the “CF capability to generate, deploy, and sustain military engineer support, combat support and combat service support is critically deficient.”¹⁸ Indeed, reviews done on how well the CF were sustained during peacekeeping missions in the former Yugoslavia have raised concerns. Deficiencies in personnel support, poor medical support, a lack of water and even reuse of body bags were identified as sustainment issues.¹⁹

The proposed JSG will perform a wide range of support functions to include: training the force; planning for force employment; deployment and theater activation; sustainment of operations and mission termination.²⁰ The approach to operational sustainment the CF is taking is similar to that of the US Air Force, and mimics JV 2020 in the recognition of the importance of providing the commander the right personnel, equipment and supplies at the right location, time and quantity to support the operation. The NMSC concept is to be implemented by 2003. Canada has set aside \$65 million (Canadian) to be used to develop a plan to generate this capability.²¹

US JOINT AND SERVICE DOCTRINAL CONSIDERATIONS

The Goldwater-Nichols Act of 1986 was the direct result of US joint force issues that surfaced during the Grenada conflict. One of the sustainment-related issues in Grenada was the inability of the Army and the Navy to communicate on radios that used different frequencies.²² A lack of commonality, driven by four different service acquisition and procurement systems, remains an issue.

Unlike the doctrine of the CF that provides for joint operational level logistical support to all elements of a joint force, US logistics doctrine, per Title 10 of the US Code, requires each service to supply (and sustain) itself. In a theater of operation, however, the JFC (combatant commander) does have directive authority for logistics. Directive authority may be delegated to subordinate commanders, i.e. JTF commanders, for common support capabilities only.²³ Personnel doctrine also requires the services to train and man their forces. The JFC (combatant commander) exercises combatant command (COCOM) (command authority) over assigned forces.²⁴ However, under COCOM, the Services normally retain authority for personnel support.²⁵ Given this arrangement and the authorities of the JFC, the component commanders remain primarily responsible to ensure the right person gets to the right place at the right time and with the right equipment to effectively execute operations plans. The JFC prioritizes requirements, allocates resources, and ensures the distribution of resources. Knowing that each service

wants to sustain itself, and that the legal and doctrinal basis for this type of arrangement are unlikely to be changed in the foreseeable future, one might ask, “What are the implications of such an arrangement with regards to providing the US JFC sufficient means to sustain theater forces?”

As a result of the differences in the way the services staff, operate, resource and sustain themselves there exists a certain lack of understanding between the service departments, and a resulting inability to communicate with a common language. As Admiral Robert Carney, a former Chief of Naval Operations, stated in his address to the Naval War College in 1948 on the subject of logistical planning for war, “One of the greatest bars to effective planning has been the lack of an inter-service Esperanto which will permit us to discuss our needs and deficiencies in terms that are mutually understandable.”²⁶ Unfortunately, it does not appear that there have been notable improvements in the services’ ability to communicate with each other since 1948. Service doctrines integrate sustainment functions to a large degree, but there is little similarity in their various approaches to logistics doctrine and little evidence of cross-fertilization of common ground.

As illustrated by the Army and Navy’s inability to communicate via radio in Grenada and some beliefs that the US maintains four air forces, stovepipe service acquisition and logistics organizations procure what they want, when they want, frequently without regard to commonality, compatibility and duplication. The result is competition among the services for limited resources. This competition may be favorable in a peacetime environment, but is not in an operational environment.²⁷ In addition, the resultant inefficiencies in the supplying of a joint force could burden the JFC and the operation with a large and immobile sustainment footprint. In the Gulf War, it is thought that the service component commanders each brought enough ammunition, of all types, to the fight to destroy the Iraqi Army with their own forces.²⁸ As Martin Van Creveld states in *Supplying War (Logistics from Wallenstein to Patton)*:

...Rather most armies seem to have prepared their campaigns as best they could on an ad hoc basis, making great, if uncoordinated, efforts to gather together the largest possible number of tactical vehicles, trucks of all descriptions, railway troops etc., while giving little, if any, thought to the ‘ideal’ combination which, in theory, would have carried them the furthest.²⁹

In addition, multiple logistics organizations and command and control elements do not promote the principle of unity of effort, further increasing the friction associated with sustaining theater forces. JV 2020 sets the course for focused logistics systems that are faster, integrated, flexible and inherently reliable. It envisions centralized planning and decentralized execution with the use of tailored and modular sustainment packages.³⁰ *Focused Logistics-A Joint Logistics Roadmap* states:

Focused Logistics will require logisticians to more fully examine the big picture (joint and combined operations) vice maintaining functional and/or Service stovepipes as other concepts of JV 2010 are developed...Increased emphasis on precision in our logistics processes will have the effect of producing more capable forces...Moreover, it will bridge the gap between logistics and operations to truly achieve one common picture...These technological innovations have implications for joint doctrine.³¹

Clearly with or without revised joint doctrine, US forces must make an effort toward operating in a joint and combined environment where sustainment functions are integrated, coordinated and synchronized between participating services. In the environment that JV 2020 envisions, operational success may depend upon it. NATO logistics doctrine puts it this way. "...the greater the degree of standardization of equipment, procedures and doctrine, the greater the degree of cooperation, mutual understanding and mission success."³²

COMMAND AND CONTROL OF SUPPORT TO THE JFC

The ad hoc establishment of command and control organizations, with the responsibility to plan and execute theater logistics in a joint and combined environment, amplifies the ad hoc approach to logistics at the operational level. The need for a theater support command during the Gulf War forced the CINC to establish the 22d Support Command (Provisional).³³ As a result of the challenges of sustaining forces in today's distant and austere operating environments, the CF is establishing a NMSC that will put in place a single operational level support agency, the JSG. The JSG Commander (JSGC) will report directly to the JTF Commander (JTFC).³⁴ In 1995, realizing the need for a logistical planning headquarters to support possible involvement in actions in the former Yugoslavia, NATO gave the United States the lead to put together a staff to begin work. The elements of that staff, pulled from the US European Command (EUCOM) and the continental US and later augmented with logisticians from contributing nations, became the headquarters for the NATO Commander for Support in the Balkans.³⁵ Revisions made to US doctrine since the Gulf War and coalition operations in the former Yugoslavia reflect consideration for the establishment of a theater logistics headquarters and supporting elements. But, does the doctrine go far enough? Does it support the tenets of JV 2020? Can we look to the CF and NATO for possible remedies to our command and control issues?

Dr. David Schrady writes at length about the need for logistical command and control systems in a 1999 article published in the *Naval War College Review*. In it he states:

...logistics...must be included in the command and control systems of the joint force commander. Logistics has generally not been afforded this recognition. It has been seen as an administrative aspect of military operations rather than an operational and tactical component of combat. Running out of fuel or ordnance in combat, however, is painfully operational.³⁶

A logistical case study of the Gulf War illustrates the need for a theater support command. There were many logistical challenges and issues including: use of irrelevant planning factors, prioritization of shipments and in-theater distribution, negotiation of HNS agreements, forecasting capability, the formulation of information from fragmented and meaningless data, and the inability to provide the JFC with a comprehensive logistics picture. Lieutenant General Pagonis, a US Army officer who became recognized as the theater logistician for the JFC, was never able to bring the other US services or the coalition forces into the fold. Therefore, General Schwarzkopf did not have a single and authoritative logistics point of contact.³⁷ The lack of a single command authority on logistics did not lead to catastrophe, but it could have.

US joint logistics doctrine is not clear on the command and control issue. Under the heading of “Command and Control of Logistics” in the section on logistics principles, the doctrine calls for a single command authority to best attain unity of effort.³⁸ It goes on to say that peacetime organizations should look like wartime organizations to avoid reorganization during war.³⁹ Two inconsistencies stand out. The first is that the doctrine calls for a single command authority, but does not establish one other than the JFC. The second issue is that the establishment of a theater support command has always been ad hoc in nature. Unless the US establishes a standing joint support command, this will not change. Wartime and peacetime logistics organizations will not look alike.

Appendix B of the doctrine discusses organizational considerations. The doctrine states that “Lessons learned have identified the need to utilize a logistic management process that provides a unified focus and optimizes support to deployed forces.”⁴⁰ It goes on to say the CINC may put in place a Joint Theater Logistics Management organization to “fuse movement control and materiel management to integrate and synergize the logistic capability of the force.”⁴¹ The doctrine falls far short of establishing an organization responsible for the command and control of joint or coalition logistics support.

The essay’s focus on theater command and control of “logistics functions” versus “sustainment” has been intentional. There remain two issues at play, one being the establishment of a command and control support element, the other the need to integrate the responsibility for all sustainment functions into its charter. One only needs to look to the US Army to see how this might be done.

US Army logistics includes the functions of manning, arming, fueling, fixing, moving and sustaining the force.⁴² In emerging doctrine, Field Manual 63-4, *Theater Support Command* (TSC), the Army will eliminate the need for logistics stovepipes such

as an Engineer Command, Personnel Command, Medical Command and so on.⁴³ The concept of a TSC centralizes all Army logistics functions (including personnel) under one authority. This organization, when augmented with representatives of other US services and coalition forces, would serve quite satisfactorily as the theater CINC's single authority for sustainment. Concerns about the size of such an organization and its footprint may be mitigated based on the doctrine's proposed modularity and dispersion through decentralization.⁴⁴

The US may also look to the CF or NATO for possible remedies that promote unity of command for support to a theater of operations. As mentioned above, when formed, the CF's JSGC will report directly to the JTFC. A separate and unique Joint Operations Group (JOG) will also be formed with its commander also reporting to the JTFC. This is not completely unlike previous CF organizational structures in which the commander of an element would have a Chief of Staff for Operations and a Chief of Staff for Support. Both models recognize the need for the commander, be it at the operational or tactical level, to have a single point of contact for the provision of support to an area of operations.

NATO's logistical doctrine, as with all of its doctrine, continues to emerge. What served the alliance well during the years of the Cold War, cannot be applied to NATO out-of-area operations, such as NATO's current involvement in the Balkans. The complexities of employing a CJTF outside of the NATO area, in operations that could range from humanitarian relief to low-intensity conflict, present numerous challenges for the alliance.⁴⁵ Nonetheless, NATO has published new doctrine that appears to be fairly clear and traditional along the functional lines of operations, intelligence, logistics, personnel, and so on.⁴⁶

In January of 1998, NATO published allied joint logistics doctrine in the form of a coordinating draft. The focus of the doctrine is similar to that of US joint logistics doctrine. In lieu of providing for the sustainment and support of contributing nations (CN), the doctrine functions to establish a means to coordinate the support among nations, for CNs are ultimately responsible for the support to deployed units. It also establishes, among other things, various command and control organizations that facilitate the coordination and arrangement of Host Nation Support (HNS) agreements and/or local contracts, and the coordination and arrangement for common supplies and services or other multi-national logistics requirements.⁴⁷ Of note is that the sustainment function of personnel and the proposed function of communication and information services are not included in the doctrine. It does, however, incorporate the function of health services. The doctrine appears to adequately cover logistical support to the operational commander whether the operation is within NATO, or outside of NATO's area of responsibility. It provides for a rather robust command and control structure that will likely be essential when NATO forces operate outside of the territories of NATO nations.

The doctrine provides for logistics command and control elements on an as needed basis. The deployable activities, such as a logistics command and control organization, are created in response to a commitment of NATO forces.⁴⁸ The commander of such a logistics headquarters reports to the Deputy NATO Chief of Staff for Support who reports directly to the NATO Commander. Major General William Farnen, US Army (Retired) and former Commander for NATO logistics in Bosnia, makes the case in a recent article in the *Joint Forces Quarterly* that NATO needs a full time logistics headquarters. In the article he suggests that “national logistics” may not always suit the requirements of a multi-national environment. He cites synergies that can be achieved by the centralization of funds, services and contracts.⁴⁹ He also discusses how difficult it is to put together an ad hoc logistical planning and execution headquarters to respond quickly to the very complex and demanding world of an alliance environment.⁵⁰ Nonetheless, it appears the authors of NATO doctrine are quite aware of the importance of having adequate theater logistical command and control. The doctrine is detailed and unambiguous with regards to how such an organization would be established and states that it would likely be put together from a designated “parent” NATO nation headquarters. This took place in the Balkans when EUCOM, supported by Allied Forces Central Command (AFCENT), took the logistics lead for NATO efforts.⁵¹

The emerging logistics doctrine of NATO and the CF’s sustainment and support concept of establishing a JSG appear to fully consider the requirement to have a command and control organization responsible for the coordination of support functions in a joint and/or combined theater. The US doctrine, however, is ambiguous and unclear on this point. The *Focused Logistics Roadmap*, published a few years prior to the latest US joint logistics doctrine, calls for a Joint Theater Logistics Command and Control (JTLCC) organization.⁵² The document goes on to say that the “organization would be an operational logistics support command expandable to a bonafide Joint Support Command (JSC) working directly for the CINC.”⁵³ There is nothing of this concept in the April 2000 US joint logistics doctrine. One wonders what became of it. An obvious fix to the current US joint logistics doctrine might be designation of the US Army’s new TSC as the peacetime JTLCC organization that could expand to a JSC as required for support to a theater of operations.

CONCLUSIONS

Even though the current US joint logistics doctrine is “very current”, it needs revision. It does not integrate all sustainment functions, address coordination or endorse cooperation between services, provide for theater command and control of sustainment functions, provide for a single authoritative logistics point of contact, or adequately espouse and endorse the tenets of JV 2020. Lessons learned from recent conflicts are not

incorporated to any degree. US joint doctrinal publications across the spectrum of J-staff functions show little, if any, integration of sustainment functions. The existing joint logistics doctrine of the US does not serve the JFC well, lessen the friction of sustaining a theater fighting force, or do anything to move away from the ad hoc manner in which logistics is approached in times of crisis. On the other hand, the emerging logistics doctrine of NATO is a good example of comprehensive and unambiguous doctrine that provides for unity of command. And, it appears the CF is well on its way to addressing the integration and coordination of sustainment functions with the concept of a theater JSG.

Current US joint logistics doctrine does not provide the JFC with sufficient means to sustain theater forces. Doctrine must be dynamic and adaptable to the needs of the JFC. Changes in the way we will fight future wars and keep the peace will require changes to our organizational structures and doctrine. JV 2020 clearly suggests this will be the case, and even goes into some detail as to what doctrinal changes may need to be made. In the US, it is the ever-present resistance to change and lack of service initiatives for anything that promotes “jointness” that is, in part, holding up progress. Strong leadership and unity of effort among the Service Chiefs is what is required to embrace the tenets of focused logistics and make it more than a vision.

Solutions to doctrinal sustainment issues do exist. They exist in the manner in which the US Joint Forces Command is fixing the deployment process, in the US Air Force doctrine that integrates all sustainment functions, in the emerging US Army doctrine that provides for a TSC that also integrates sustainment functions, in JV 2020’s concept of “focused logistics”, in the clear and unambiguous way in which NATO doctrine is written and in the CF’s endorsement of establishment of a JSG. A formal review of existing US joint doctrine, with an eye toward JV 2020 and improvements that will ensure the JFC sufficient means to sustain joint and combined forces over a broad spectrum of operations, should be taken on by the Chairman of the Joint Chiefs of Staff. The US Joint Forces Command could take the lead in performing such a task. Wholehearted endorsement of such an approach by the CINCs (unified and specified), as well as the Service Chiefs, would be crucial to its success.

¹ United States Department of Defense, Joint Publication 1, *Joint Warfare of the Armed Forces of the United States* (Washington: US Government Printing Office, 1995) IV-1 to IV-2.

² United States Department of Defense, Joint Publication 4-0, *Doctrine for Logistic Support of Joint Operations* (Washington: US Government Printing Office, 1999) GL-13. Hereafter JP 4-0.

³ Ibid GL-9.

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- 4 Ibid GL-10.
- 5 JP 4-0 V.
- 6 Admiral Joseph W. Prueher, “Rethinking the Joint Doctrine Hierarchy”, *Joint Forces Quarterly* (Winter 1996-97) 43.
- 7 Ibid 45.
- 8 United States Office of the Chairman of the Joint Chiefs of Staff, *Focused Logistics-A Joint Logistics Roadmap* (Washington: US Government Printing Office, 1996) i. Hereafter Roadmap.
- 9 Ibid ii.
- 10 United States Office of the Chairman of the Joint Chiefs of Staff, *Joint Vision 2020: America’s Military: Preparing for Tomorrow* (Washington: US Government Printing Office, 2000) 30.
- 11 United States Secretary of the Air Force, Air Force Doctrine Document 2-4, *Combat Support* (Washington: US Government Printing Office, 1999) cover.
- 12 Commander Robert C. Bronson, “Improving the Joint Deployment Process”, *Army Logistician* (Jul/Aug 00) 1. <http://www.almc.army.mil/alog/JulAug00/MS562.htm>
- 13 Ibid.
- 14 Ibid 3.
- 15 Ibid 3.
- 16 Ibid 3.
- 17 Canada, Department of National Defence, *National Military Support Capability: NMSC Support Concept (draft)* (Ottawa: Department of National Defence, 2000) 3. Hereafter NMSC Support Concept.
- 18 Ibid 2.
- 19 Captain (N) Bryn Weadon, “Canada’s Joint Sustainment Co-ordination Capabilities” (Draft) (Oct 00) 10.
- 20 NMSC Support Concept 6-8.

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- 21 Ibid 11.
- 22 Nolan P. Welborn, “CINC Support Command”, *Army Logistician* (May/Jun 99)
38.
- 23 JP 4-0 I-6.
- 24 JP 1-0 II-2.
- 25 Ibid II-1.
- 26 Vice Admiral Robert B. Carney, “Logistical Planning for War”, *National War
College Review* (Winter 1998) 13.
- 27 Lieutenant Colonel Gary R. Engel, “Joint and Combined Theater Logistics”,
Army Logistician (May/Jun 99) 36.
- 28 Ibid.
- 29 Martin Van Creveld, *Supplying War (Logistics from Wallenstein to Patton)*
(Cambridge: Cambridge UP, 1977) 236.
- 30 Engel 35.
- 31 Roadmap i-iv.
- 32 North Atlantic Treaty Organization, APJ-4 Coordinating Draft, *Allied Joint
Logistics Doctrine* (North Atlantic Treaty Organization/Euro-Atlantic Partnership
Council 1998) 1-21. Hereafter AJP-4.
- 33 Engel 35.
- 34 NMSC Support Concept 8.
- 35 William N. Farnen, “Wanted: A NATO Logistics Headquarters”, *Joint Forces
Quarterly* (Spring 1998) 63.
- 36 David Schrady, “Combatant Logistics Command and Control for the Joint Force
Commander”, *Naval War College Review* (Summer 1999) 50.
- 37 Ibid 62.
- 38 JP 4-0 II-6.
- 39 Ibid.

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- 40 JP 4-0 B-1.
- 41 Ibid.
- 42 United States Secretary of the Army, Field Manual 100-5, *Operations* (Washington:US Government Printing Office, 1993) 12-13.
<<http://www.adtld.army.mil/cgi-bin/atdl.dll/fm/100-5/100-512ahtm>>
- 43 Engel 35.
- 44 Ibid.
- 45 Thomas Cooke, “NATO CJTF Doctrine”, *Parameters*. XXVIII no. 4 (Winter 1998-99) 126.
- 46 Ibid.
- 47 AJP-4 1-26.
- 48 AJP-4 1-21.
- 49 William N. Farnen, “Ad Hoc Logistics in Bosnia”, *Joint Forces Quarterly* (Autumn/Winter 1999-2000) 42.
- 50 William N. Farnen, “Wanted: A NATO Logistics Headquarters”, *Joint Forces Quarterly* (Spring 1998) 66.
- 51 Cooke 128.
- 52 Roadmap 23.
- 53 Ibid.

BIBLIOGRAPHY

Bainbridge, Joseph R. "Toward a Multinational Future." *Army Logistician* 32 no. 5 (September-October 2000): <http://www.almc.army.mil/alog/SepOct00/MS540.htm>

Belgium. North Atlantic Treaty Organization. *Allied Joint Logistics Doctrine: AJP-4 Coordinating Draft*. Brussels: North Atlantic Treaty Organization/Euro-Atlantic Partnership Council, 1998.

Bissett, Bruce E. "Logistic Pillars at the Operational Level of War and the Role of the Joint Force Commander." Essay Naval War College, 1996.

Boatright Rodney L. "Combat Support Doctrine: Where We've Been, Where We Are and Where We Should Be Going." *Air Force Journal of Logistics* 16 no. 3 (Summer 1992): 14-17.

Bronson, Robert C. "Improving the Joint Deployment Process." *Army Logistician* (July-August 2000): <http://www.almc.army.mil/alog/JulAug00/MS562.htm>

Caldwell, Michael P. "Operational Logistics 2010." Essay US Army War College, 1997.

Canada. Department of National Defence. *Canadian Forces Operations: B-GG-005-004/AF-000*. Ottawa: National Defence, 1997.

Canada. Department of National Defence. *Logistics Doctrine for the CF Joint and Combined Forces, Chapter 1-General: B-GG-005-004/AF-013*. Ottawa: National Defence, 1998.

Canada. Department of National Defence. *National Military Support Capability: NMSC Support Concept (draft)*. Ottawa, National Defence, 2000.

Carney, Robert B. "Logistical Planning for War." *Naval War College Review* 51 no. 1 (Winter 1998): 7-15.

Cooke, Thomas. "NATO CJTF Doctrine: The Naked Emperor." *Parameters* XXVIII no.4 (Winter 1998-1999): 124-142.

Di Genio, John. "Sustaining Combat in Korea." *Army Logistician* 32 no. 1 (January-February 2000): 6-9.

Engel, Gary R. "Joint and Combined Theater Logistics-The Future Reality." *Army Logistician* 31 no. 3 (May-June 1999): 34-37.

Farmen, William N. "Wanted: A NATO Logistics Headquarters." *Joint Forces Quarterly* (Spring 1998): 62-66.

Farmen, William N. "Ad Hoc Logistics in Bosnia." *Joint Logistics Quarterly* (Autumn-Winter 1999-2000): 36-42.

Garrett, Stephen F. "Synchronizing Battlefield Logistics." *Military Review* 77 no. 2 (March-April 1997): 19-22.

Grau, Lester W. and Timothy L. Thomas. "Soft Log and Concrete Canyons: Russian Urban Combat Logistics in Grozny." *Marine Corps Gazette* 83 no. 10 (October 1999): 67-75.

Higgins, Peter J. "Joint Operations and Logistics Support." *Army Logistician* 30 no. 3 (May-June 1998): 18-20.

Marquardt, Kent S. "Devising Operational Logistics Doctrine." *Army Logistician* 32 no. 1 (January-February 2000): 28-33.

Paparone, Christopher R. "How Does the Gulf War Measure Up?" *Army Logistician* 30 no. 5 (September-October 1998): <http://www.almc.army.mil/alog/SepOct98/MS309.htm>

Prueher, Joseph W. "Rethinking the Joint Doctrine Hierarchy." *Joint Forces Quarterly* (Winter 1996-97): 42-45.

Reich, John M. "Force XXI Sustainment Operations." *Military Review* 76 no. 4 (July-August 1996): 48-51.

Schrady, David. "Combatant Logistics Command and Control for the Joint Commander." *Naval War College Review* 52 no. 3 (Summer 1999): 49-75.

Taylor, William L. "Joint Total Asset Visibility: Foundation of Focused Logistics." *Army Logistician* 32 no. 3 (May-June 2000): <http://www.almc.army.mil/alog/MayJune00/MS537.htm>

United States. Department of Defense. *Joint Publication 1: Joint Warfare of the Armed Forces of the United States*. Washington: US Government Printing Office, 1995.

United States. Department of Defense. *Joint Publication 1-0: Doctrine for Personnel Support to Joint Operations*. Washington: US Government Printing Office, 1998.

United States. Department of Defense. *Joint Publication 4-0: Doctrine for Logistics Support of Joint Operations*. Washington: US Government Printing Office, 2000.

United States. Office of the Chairman of the Joint Chiefs of Staff. *Focused Logistics-A Joint Logistics Roadmap*. Washington: US Government Printing Office, 1997.

United States. Office of the Chairman of the Joint Chiefs of Staff. *Joint Vision 2020*. Washington: US Government Printing Office, 2000.

United States. Department of the Air Force. *Air Force Doctrine Document 2-4: Combat Support*. Washington: US Government Printing Office, 1999.

United States. Department of the Army. *Field Manual 100-5: Operations*. Washington: US Government Printing Office, 1993.

Van Creveld, Martin. *Supplying War (Logistics from Wallenstein to Patton)*. Cambridge: Cambridge University Press, 1977.

Weadon, Bryn. "Canada's Joint Sustainment Co-ordination Capabilities." Draft Essay Canadian Forces College, 2000.

Welborn, Nolan P. "CINC Support Command." *Army Logistician* 31 no. 3 (May-June 1999): 38-41.

Wells, George William Jr. "Leadership and the Theater Support Command." *Army Logistician* 32 no. 5 (September-October 2000):
<http://www.almc.army.mil/alog/SepOct00/MS547.htm>

Wilhelm, Karen S. "Historical Perspective in the Future of Military Logistics." *Air Force Journal of Logistics* 21 no. 3 (1997): 36-39.

Wilson, Johnnie E. ...(et al.). "Our Revolution In Military Logistics - Supporting the 21st Century Soldier." *Army Logistician* 31 no. 1 (January-February): 3-6.

Witt, Jeffrey D. and Shawn P. Feigenbaum. "Extending the Logistics Revolution at the Operational and Tactical Levels." *Army Logistician* 31 no 1 (January-February 1999): 41-43.