

Contracting Effects on Logistics Capabilities and Readiness

**A Monograph
by
MAJ Dennis J Ortiz
U.S. Army**



**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

AY 2012-001

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 16-03-2012	2. REPORT TYPE SAMS Monograph	3. DATES COVERED (From - To) JUN 2011-MAY 2012
--	---	--

4. TITLE AND SUBTITLE Contracting Effects on Logistics Capabilities and Readiness	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S) Major Dennis J. Ortiz	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies 250 Gibson Avenue Fort Leavenworth, KS 66027-2301	8. PERFORMING ORG REPORT NUMBER
--	--

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College ATTN: ATZL-SWD-GD Fort Leavenworth, KS 66027-2301	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT
Contractors now approach a 1:1 ratio on the modern battlefield since the Bosnia War. In 1992, contractor use was the choice of last resort, now contractors are a viable and necessary option on the battlefield. The steady decrease of military logistics and a military cultural shift on contracting have created readiness and experience challenges for our future logistics leaders. The purpose of this research is to cover how private military companies have grown and became integral in our logistics structure in the past twenty years and how that relates to impacts on military readiness. The study used the elements of logistics, namely distribution, supply, field services, transportation, maintenance, and general engineering services as a measure of operational logistics performance in Operation Joint Endeavor and Operation Iraqi Freedom. The research found that contracting operational logistics since the advent of LOGCAP in 1992 has steadily decreased the use of military logistics at the operational level due to technology advances, military force caps, and overreliance. In summation, contracting private military companies have caused capability and readiness effects on operational logistics that have created gaps in the Army's logistics structure, thus affecting how the United States Army conducts future conflicts.

15. SUBJECT TERMS
Operational Logistics, Private Military Companies

16. SECURITY CLASSIFICATION OF: Unclassified			17. LIMITATION OF ABSTRACT (U)	18. NUMBER OF PAGES 49	19a. NAME OF RESPONSIBLE PERSON Thomas C. Graves
a. REPORT (U)	b. ABSTRACT (U)	c. THIS PAGE (U)			19b. PHONE NUMBER (include area code) 913-758-3302

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

MAJ Dennis Jose Ortiz

Title of Monograph: Contracting Effects on Logistics Capabilities and Readiness

Approved by:

Bruce E. Stanley, Ph.D. Monograph Director

Mark D. Collins, LTC (P), LG Second Reader

Thomas C. Graves, COL, IN Director,
School of Advanced
Military Studies

Robert F. Baumann, Ph.D. Director,
Graduate Degree
Programs

Disclaimer: Opinions, conclusions, and recommendations expressed or implied within are solely those of the author, and do not represent the views of the US Army School of Advanced Military Studies, the US Army Command and General Staff College, the United States Army, the Department of Defense, or any other US government agency. Cleared for public release: distribution unlimited.

Abstract

Contracting Effects on Logistics Capabilities and Readiness by MAJ Dennis J. Ortiz, U.S. Army, 49 pages.

Contractors now approach a 1:1 ratio on the modern battlefield since the Bosnia War. In 1992, contractor use was the choice of last resort, now contractors are a viable and necessary option on the battlefield. The steady decrease of military logistics and a military cultural shift on contracting have created readiness and experience challenges for our future logistics leaders. The purpose of this research is to cover how private military companies have grown and became integral in our logistics structure in the past twenty years and how that relates to impacts on military readiness. The study used the elements of logistics, namely distribution, supply, field services, transportation, maintenance, and general engineering services as a measure of operational logistics performance in Operation Joint Endeavor and Operation Iraqi Freedom. The research found that contracting operational logistics since the advent of LOGCAP in 1992 has steadily decreased the use of military logistics at the operational level due to technology advances, military force caps, and overreliance. In summation, contracting private military companies have caused capability and readiness effects on operational logistics that have created gaps in the Army's logistics structure, thus affecting how the United States Army conducts future conflicts.

Table of Contents

INTRODUCTION.....	1
LITERATURE REVIEW.....	3
Historical Background on Outsourcing.....	3
Outsourcing Theory.....	5
Key Concepts.....	6
Application of the Theory: Private Military Companies.....	7
Application of the Theory and the Knowledge Gap.....	9
Summary.....	11
METHODOLOGY.....	11
Selection of significant cases.....	12
Instrumentation.....	12
Data Collection.....	13
Data Analysis.....	14
Summary.....	14
ANALYSIS.....	15
Case Selection.....	15
Questions.....	16
Operation Joint Endeavor.....	16
Military Logistics Performance in Operation Joint Endeavor.....	18
Private Military Companies Performance in Operation Joint Endeavor.....	23
Operation Joint Endeavor Summary.....	25
Operation Iraqi Freedom.....	26
Military Logistics Performance in Operation Iraqi Freedom.....	28
Private Military Companies Performance in Operation Iraqi Freedom.....	34
Operation Iraqi Freedom Summary.....	38
Substitution effects on logistics competencies.....	38
Cross Case Analysis and Findings.....	42
Hypothesis.....	45
CONCLUSION.....	46
BIBLIOGRAPHY.....	50

INTRODUCTION

In 2011, the Commission on Wartime Contracting issued their final report on contract use in Iraq and Afghanistan. The study was an anticipated report on the use of contracting in both the Afghanistan and Iraq wars. The report identified that the overreliance on contracting and the lack of contractor oversight led to fraud, waste and abuse. Overreliance of contractor support has a long-term effect on the readiness of the U.S. Army's future leaders.

In the past, private military companies have augmented U.S. military logistics capacity and likely will continue to fill capability gaps during future campaigns. In 1992, private military companies used in the Logistics Civil Augmentation Program (LOGCAP) were considered programs of last resort after military and host nation support. In 2011, current Army doctrine recognizes that operational contracting, such as LOGCAP, is a permanent part of our total force structure and will affect how we fight future wars.¹ The current operational logistics structure is losing relevancy in a future that is gradually minimizing and replacing capability, capacity, and personnel with private military companies. With looming future decisions for an Army drawdown and continued logistics capacity reductions, the dependence on private military companies may cause negative impacts, such as decreased military readiness and eroded logistics core competencies, that could have lasting implications on how the Army conducts operations in the future. Therefore, the thesis of this paper is that the U.S. Army must restore an effective balance that addresses readiness and capability, and the logistics structure must remain intact to build

¹ U.S. Army, *Army, Tactics, Techniques and Procedures Manual (ATTP) 4-10, Operational Contract Support Tactics, Techniques, and Procedures, 2011* (Washington D.C.: Headquarters, Department of the Army, June 2011), iii.

operational logistics capacity to meet future demands and conflicts. The tested hypothesis recognizes that the overreliance on contractors has long-term effects on operational logistics readiness, and the associated research question asks, how can the U.S. Army maximize its ability to support and sustain future operations while balancing the fiscal benefits of using contractors and the readiness benefits of maintaining organic logistics capabilities?

This study contributes to the growing literature on private military companies and contracting by comparing private military companies' performance to operational logistics performance and the substitution effect of private military companies on military operational logistics over time. Acknowledging and understanding the growth and reliance on private military companies should lead deploying U.S. forces to plan, prepare, and execute courses of action that mitigate fraud, waste, and abuse. It should also lead to commanders and staffs at all levels incorporating private military companies into planning.

Assumptions made during the research for this paper include the projected U.S. Army drawdown from 2012 to 2017. The research is limited by classification and therefore uses only open source information. The research is delimited to the period 1995–2011. It is also limited to the definition of private military companies, logistics core competencies, and does not include definitions that define competencies inherently governmental. The methodology does not take into account the rotation of logistics units in Afghanistan, Iraq or other missions to determine the true experience level of the force at the operational level.

The research is organized as follows. First, there is a literature review encompassing private military companies, the state of military operational logistics, and substitution effects of the private sector. Second, is the paper's research methodology, a structured focused comparison of two case studies in the use of contracting, instrumentation, data collection, and data analysis.

Third, is the analysis section comparing Operation Joint Endeavor and Operation Iraqi Freedom growth of private military companies and decreased role of military operational logistics. Finally, is a summary of the main points of the argument, and key conclusions.

LITERATURE REVIEW

This section presents the rationale for conducting research on private military companies and their effects on military readiness. The literature review seeks to highlight the current literature trends discussing the growth and dependency of private military companies, noted by historians and political scientists, and the knowledge gap on military readiness. First, this literature review considers the growth of privatization in the Department of Defense (DOD) to provide context to why private military companies are an attractive option and to understand how the government increased the role of private military companies. Second, this literature review considers the overarching theory behind the employment of private military contractors. Third, this review considers certain key concepts needed to understand the theory in action, and concludes with existing literature on private military contractors, while exposing the gap on contractor effects on military readiness, one that this study will attempt to fill.

Historical Background on Outsourcing

In the face of budget cuts, the Department of Defense has often sought ways to cut waste and inefficiency. In the past twenty years, this trend has led to substantial outsourcing to meet those demands. Numerous authors have pointed to current privatization and outsourcing trends beginning in the 1980s with substantial growth in the late 1990s and 2000s. The biggest impetus

to this trend was the Clinton Administration's National Performance Review.² The focus of the review was to "provide a government that worked better and cost less."³ The review evolved into the National Partnership for Reinventing Government and focused on government core competencies to reduce waste and cost. In 2001, The Bush administration introduced "the President's Management Agenda" which identified competitive sourcing as a component to enhance government effectiveness.⁴ All these reforms and reviews in the government provided an avenue for increased outsourcing and paved the way for cuts in DOD.

The U.S. Army took the biggest brunt in the reduction of personnel in the 1990s. During the reduction of the armed services in the 1990s, the Army shrunk in size from 56 brigade combat teams (BCTs) to 46 BCTs, while all other forces reduced disproportionately to the BCT during the reduction.⁵ In the early 1990s, the Department of Defense considered the risk for future combat operations and decided to outsource or privatize some military functions to maintain combat power and to achieve efficiency in other areas.⁶ Indeed, the logistics structure took the biggest hit in reduction.⁷ As government policies evolved to reduce cost and size of the government, private military companies grew to meet future demands.

² Valerie B. Grasso, Congressional Research Service, *Defense Outsourcing: The OMB Circular A-76 Policy*, (Washington D.C.: Government Printing Office, 2005), 1.

³ Ibid.

⁴ Ibid.

⁵ Laura Dickinson, *Outsourcing War & Peace: Preserving Public Values in a World of Privatized Foreign Affairs* (Yale: Yale University Press, 2011), 30-39.

⁶ Ibid.

⁷ Ibid.

Outsourcing Theory

In order to achieve effective use of government resources and eliminate waste, government agencies must identify core competencies before privatizing in-house functions. The necessity to rely on core competence allows organizations to concentrate all of its limited resources on its core strengths, and outsource competencies that do not strengthen these core strengths to private organizations.⁸ The American theory of outsourcing is to gain a competitive advantage and reduce waste, so organizations must identify core competencies and outsource non-core competencies. The results would provide cheaper services than in-house services as well as higher quality service because services are then now specialized through an outside source.⁹ The reason the theory materialized was to allow for corporations to compete and survive globally after the end of the Cold War, where the removal of barriers to cheap labor occurred. In theory, privatization complemented the globalization trend of the 1990s, the notion of competitive prices would reduce government waste and the private sector would maximize efficiency.¹⁰ Clearly, the American theory of outsourcing underpins this study and others works attempting to solve the problem of providing more services with less goods and resources.

⁸ Prahalad, C.K. and Hamel, G., (1990) *The Core Competence of the Corporation*, Harvard Business Review (v. 68, no. 3), 79–91.

⁹ Ibid.

¹⁰ P.W. Singer, *Corporate Warriors: The Rise of Privatized Military Industry* (Ithica: Cornell University Press, 2008), 67.

Key Concepts

Central to understanding this theory are some key concepts and definitions that require clarification and elaboration. The following definitions employ both doctrinal and non-doctrinal references to clarify meaning and intent. The terms of outsourcing and privatization, Army logistics core competencies, and private military companies are defined below, and serve as standards throughout the remainder of this work.

First, privatization is an important concept because it is a theory that led to the implementation of private military companies. Outsourcing is “the transfer of a support function traditionally performed by an in-house organization to an outside service provider.”¹¹

Outsourcing is a concept that combines numerous theories based on the stage of your business model, but government outsourcing is derived from one main concept core competency.¹²

Privatization is “when the government ceases to provide goods or services”.¹³ For the purpose of this paper, privatization and outsourcing are interchangeable.

Second, Army logistics core competencies are an important concept to identify competencies inherently governmental for the logistics community. The concept of Army logistics core competencies is important in this research to identify gaps in the current operational logistics structure. The United States Army logistics’ primary purpose, its core competencies, is

¹¹ Grasso, *Defense Outsourcing: The OMB Circular A-76 Policy*, 2.

¹² Prahalad and Hamel, *The Core Competence of the Corporation*, 79–91.

¹³ Grasso, *Defense Outsourcing: The OMB Circular A-76 Policy*, 2.

to maintain combat power and enable strategic and operational reach.¹⁴ These logistics core competencies are supply, field services, maintenance, transportation, distribution, operational contract support, and general engineering support.¹⁵ However, in the concept of logistics, outsourcing augmented or expanded the capability and capacity to accomplish logistics at the operational level to replace non-core competencies.

Finally, private military companies have many meanings, but the research refers primarily to the logistics companies. The concept of private military companies is to provide additional capacity to an all-volunteer force. Private military companies are “corporate bodies that specialize in the provision of military skills, including combat operations, strategic planning, intelligence, risk assessment, operational support, training, and technical skills.”¹⁶ They are “for profit” businesses that once conducted services considered exclusive to government.¹⁷ For the purpose of this paper, the focus is on operational support and technical skills.

Application of the Theory: Private Military Companies

Private military company growth is the byproduct of the outsourcing concept. There are numerous books and articles arguing for and against the use of private military companies. According to Carafano, private military companies are here to stay and provide two important elements government in-house capability cannot provide, private sector innovation and

¹⁴ U.S. Army, *Field Manual (FM) 4-0, Sustainment, 2010* (Washington D.C.: Headquarters, Department of the Army, 2010), 1-1.

¹⁵ Ibid.

¹⁶ Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 8.

¹⁷ Ibid.

capacity.¹⁸ He argues free markets have eclipsed the government in research and development, thus providing future conflicts with capability that the government could not provide on its own. The majority of the new technology used in the current conflicts is developed from the private sector and not the government. Private military companies provide cutting-edge technology, capabilities, and services.

Carafano's second argument for private military companies is capacity. Globalization has increased the capacity of the private sector to provide capabilities to a Department of Defense that can no longer provide globally without private companies.¹⁹ Globalization has created an environment where private companies can provide services and capabilities "better, faster, and cheaper"²⁰ than the government. Numerous authors point to another indirect positive effect on contracting, which is less military forces deployed. According to Wulf, outsourcing private military companies to complete certain tasks becomes more "politically attractive" than tasking the United States Army.²¹ "Public awareness and criticism when 'body bags' return home has an effect on government decision-making. It is less controversial to send contractors than uniformed soldiers."²²

¹⁸ James J. Carafano, *Private Sector, Public Wars: Contractors in Combat-Afghanistan, Iraq, and Future Conflicts* (Praeger Security International, 2008), 118-122.

¹⁹ *Ibid.*, 120-121.

²⁰ *Ibid.*, 120.

²¹ Herbert Wulf, "Privatization of Security, International Interventions, and the Democratic Control of Armed Forces," in *Private Military and Security Companies: Ethics, Policies, and Civil-Military Relations*, ed. Andrew Alexandra, Deane-Peter Baker, and Marina Caparini (New York: Routledge Press, 2008), 193.

²² *Ibid.*, 193.

There are also authors who argue against private military companies on two principles, accountability and rising cost of contracting. Accountability is the primary argument many authors argue against privatization. The government lacked the oversight on ensuring accountability on both monetary and ethical measures.²³ Contractors did not follow UCMJ action for crimes committed in a unit's area of operations until 2007 under the John Warner National Defense Authorization Act.²⁴ However, according to Verkuil, legal implications are now catching up with the use of contractors.²⁵

The rising cost of contractors, due to demand of protracted conflicts in the Balkans, Iraq, and Afghanistan, have not met the concept of "better, faster, and cheaper" than the military.²⁶ The goal of for-profit organizations is to make money, which leads to the lack of transparency and overcharging of services.²⁷

Application of the Theory and the Knowledge Gap

The arguments for and against private military companies have a direct effect on military readiness; however, one argument against private military companies has not been debated and

²³ Christopher Kinsey, "Private Security Companies and Corporate Social Responsibility" in *Private Military and Security Companies: Ethics, Policies, and Civil-Military Relations*, ed. Andrew Alexandra, Deane-Peter Baker, and Marina Caparini (New York: Routledge Press, 2008), 81-82.

²⁴ David C. Hammond, "The First Prosecution of a Contractor Under the UCMJ: Lessons for Service Contractors", *Service Contractors* (Fall 2008): 33.

²⁵ Paul Verkuil, *Outsourcing Sovereignty: Why Privatization of Government Functions Threatens Democracy and What we can do About it* (New York: Cambridge University Press, 2007), 25-28.

²⁶ Elke Krahnemann, "The New Model Soldier and Civil-Military Relations" in *Private Military and Security Companies: Ethics, Policies, and Civil-Military Relations*, ed. Andrew Alexandra, Deane-Peter Baker, and Marina Caparini (New York: Routledge Press, 2008), 248.

²⁷ Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 155.

that is the readiness of our military. As discussed, the political decisions of mobilizing Army Reserve logistics units versus outsourcing, the perception of efficiency from private military companies, and private technological innovation have a lasting impact on the readiness of the U.S. Army. Eighty percent of the United States Army logistics force structure is in the United States Army Reserve or National Guard.²⁸ The large number of logistics reserve forces versus active duty forces hampered the U.S. Army's ability to train and react to contingencies around the world. Extended use of contractors leads to lost competency from depending, which increases cost and reduces efficiency.²⁹

There have been attempts to address this in many different forms, from identifying the Army's logistics core competencies, combat readiness in battlefield operations, and bringing additional active duty force structure from the reserves. U.S. Air Force employee Robertson's 2000 research paper addressed combat readiness and contractors' effects on battlefield operations.³⁰ She warned of this effect before both wars in Afghanistan and Iraq. U.S. Army Lieutenant Colonel Burnham's 2005 research paper described how the military was too dependent on contracting, could not sustain itself, and recommended growth of active duty logistic forces to meet this growing demand and challenge.³¹ Combined, this growing body of

²⁸ Barry Richards, Mary Lane, and Joe Demby "Sustainment Force Structure Book" (Presentation, Force Development Directorate, Sustainment Center of Excellence, Fort Lee, VA 2011).

²⁹ Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 78.

³⁰ Cinthia Robertson, "Outsourcing: An Impact to Readiness?" (Research Paper, U.S. Air Command and Staff College, 2000), viii.

³¹ Lieutenant Colonel Paul Burnham, "Increasing Combat Support and Combat Service Support Units in the U.S Military" (Research Paper, U.S. Army War College, 2005), iii.

knowledge continues to prove very useful, but no article addresses contracting's effect on organic logistics readiness.

Summary

The dependence on private military companies for logistics continues to grow as technology advances in the private sector, resulting in a loss of core competency and readiness. The literature addresses the growth of private military companies and the rising cost, legal implications, and effects on the United States Army's readiness. Some sources address the current logistics active duty force structure versus capacity and the capability required for future conflicts. Historical literature and reports from the Commission of Wartime Contracting provide an effective narrative describing how the Army got to this point in time. However, no author addresses the private military companies' effects on operational logistics readiness, nor is any author providing recommendations for the U.S. military on how to address these concerns in the future. This monograph intends to fill part of the gap in literature on this topic. By focusing on the active duty logistics structure to meet future conflicts, this paper provides historical context and practical recommendations for future deployments.

METHODOLOGY

The primary goal of this study is to test the research question of how can the U.S. Army maximize its ability to support and sustain future operations while balancing the fiscal benefits of using contractors and the readiness benefits of maintaining organic logistics capabilities. This topic lends itself to qualitative analysis because it requires analysis of the effects of private military companies in our force structure long-term. This section has four components: selection of significant cases, instrumentation, data collection, and data analysis.

Selection of significant cases

This research analyzes the growth of private military companies to deployed U.S. forces during the last 30 years. First, it explores the growth through a historical example of conflicts during the rise of privatization of government during the 1980s and 1990s while the military decreased in the 1990s, compared to private military companies' growth during both Operation Enduring Freedom and Operation Iraqi Freedom. Then, it explores the impact through future conflicts and budget cuts. The primary events evaluated in this monograph are Operation Joint Endeavor and Operation Iraqi Freedom. Both events illustrate incredible growth in private military companies and their effects on military operations. Operation Joint Endeavor is the first conflict that has endured past one year, and occurred after the Cold War drawdown of the United States military. Operation Iraqi Freedom (Iraq) and Operation Enduring Freedom (Afghanistan) are the most recent conflicts demonstrating the explosive growth in contracting and the effects on our military operations.

Instrumentation

This section describes the instrumentation by which the paper evaluates the growth of private military companies during conflicts of five years or more and the effect on Army's operational logistics capabilities. The first step is a direct comparison of growth of private military companies to the length of conflicts. This step traces the decisions made to outsource components of the military to meet budgetary military drawdowns in the 1990s. This demonstrates the increased role of private military companies during low intensity conflicts. A comparison of Operation Joint Endeavor with Operation Iraqi Freedom demonstrates the reliance on contractors through operational logistics, the same structures significantly cut during the

drawdown of the 1990s. The next model used is to compare current Army operational logistics structure versus contracting in two historical examples with the U.S. Army's logistics functions. The logistics functions are supply, field services, maintenance, transportation, distribution, operational contract support, and general engineering support.³² The purpose is to demonstrate the Army's ability to maintain combat power and enable strategic and operational reach.

Data Collection

Historical data, professional journals, and the reports from the Commission for Wartime Contracting provide the data for this research. Historical data applies to the discussion of privatization ideology and the growth of private military companies from the 1990s to the present. Professional journals capture the challenges of incorporating contractors on the battlefield. The reports from the Commission on Wartime Contracting compose the bulk of the research data. The Commission of Wartime Contracting is "an independent, bipartisan legislative commission established to study wartime contracting in Iraq and Afghanistan. Created in Section 841 of the National Defense Authorization Act for Fiscal Year 2008, this eight-member Commission is mandated by Congress to study federal agency contracting for the reconstruction, logistical support of coalition forces, and the performance of security functions, in Iraq and Afghanistan."³³ All data collected is necessary to gain a proper historical context and understand how private military contractors affect long-term U.S. military operations.

³² FM 4-0, 1-4.

³³ U.S. Congress. Commission on Wartime Contracting in Afghanistan and Iraq, "Commission on Wartime Contracting," U.S. Congress. <http://www.wartimecontracting.gov> (accessed 28 October 2011).

Data Analysis

In this section, the research demonstrates how the data provides understanding and acknowledgement of the U.S. Army's reliance on contracting at the operational logistics level. The comparison of Operation Joint Endeavor and Operation Iraqi Freedom to contracting growth incorporates common themes from historical data. It demonstrates how the reduction in force during the 1990s has developed a reliance on contracting to fill in the gaps in the logistics structure. The scale for this analysis is yes or no, in that it either does, or does not provide the understanding claimed. The increase in contracting to fill those gaps in operational logistics has reduced logistics competencies and capabilities at the operational level. The scale for this analysis is also yes or no, in that contracting has reduced the role of units operating at the operational level or not. The logistics functions analysis of current U.S. doctrine frames the research in order to identify gaps and make recommendations to the U.S. Army logistics community to aid in training and readiness for future conflicts. The scale for this analysis is increase or decrease in principle capability at the operational level.

Summary

This section restated the purpose for this research. It then detailed the research methodology. The approach has three parts, beginning with an analysis of the rise of privatization compared to increase of private military contractors during wartime. It then covers possible long-term effects on operational logistics in the U.S. Army. It concludes with a review of the principles of sustainment and how it relates to the current operating structure across the military.

ANALYSIS

This study intends to investigate the U.S. Army's ability to support and sustain future operations while balancing the fiscal benefits of using contractors and the readiness benefits of maintaining organic logistics capabilities. It provides the results of historical research and reviews of multiple books, journals, and reports from the Commission of Wartime Contracting. The research achieves its intended purpose by exploring how the growth of contracting use in Operation Joint Endeavor compares to growth in Operation Iraqi Freedom. In addition, it conducts a logistics focused analysis of the United States military in order to identify its strengths and weaknesses in addressing future operations. Finally, it provides recommendations for steps to improve military readiness in the logistics area.

Case Selection

The two case studies in this monograph explore the growth of private military companies and the reduction of active duty military logistics units. Both case studies provide examples of the substitution of competencies for various reasons, primarily military force caps and cost. The Operation Joint Endeavor case study provides an example of the effects of a post-Cold War military logistics structure and the success of Operation Desert Storm. The Operation Joint Endeavor peacekeeping mission also provides the first example of a prolonged peacekeeping operation with the concept of distribution based logistics and LOGCAP in a stability operation.

The Operation Iraqi Freedom case study provides an example of contracting use and distribution based logistics in a prolonged combat operation. This case study observes the challenges of distribution based logistics in a combat environment and the effects on substitution. This case study explores the use of contracting versus military logistics in the first three years of

the operation. Then, the case study will explore the substitution of military logistics for contracting from 2002 to 2011.

Questions

To conduct the analysis it is important to answer or explore the following three questions. First, what key logistics competencies did the U.S. Army perform? This question is important to determine contract use as a substitution or to meet demands that do not exist in the current Army force structure. Second, what key logistics competencies did the private military companies perform? This question will demonstrate the effects of force structure reductions in the 1990s, and contracting as a substitution for active duty or reserve forces. In addition, how did substitution affect logistics competencies? Third, this question address the challenges of military force cap in both operations and the cost of substituting military logistics. Finally, the research concludes with an analysis of logistics functions along with recommendations for improvement.

Operation Joint Endeavor

This section explains the performance of U.S. Army logistics and private military companies during 1995–1996, an important period of the war because the conditions set logistics operations for the remaining duration of the peacekeeping mission. The U.S. military strength during this time was approximately 16,500 soldiers, a smaller population than the Iraq war, but significant because private military contractors supplemented the military force.³⁴ This case study will show the rise in use of private military contractors and the success in the use of private

³⁴Stanley Cherrie, “Task Force Eagle”, *Military Review* (1997): 66.

military contractors that set assumptions for the use in Iraq and overreliance versus the use of reserve or active component operational logistics.

Overview of Events

After four years of bloody conflict in the Bosnia Civil War, the warring parties and respective United Nation states signed the Dayton Peace accords in December 1995.³⁵ Task Force Eagle, comprising of 1st Armored Division and multinational units, formed in November 1995.³⁶ Operation Joint Endeavor began on 16 December, a NATO-led multinational force known as the Implementation Force (IFOR). Operation Joint Endeavor was the largest military operation conducted through NATO.³⁷ This operation was NATO's "first-ever ground force operation, its first-ever deployment out of area" which has implications for the use of military logistics.³⁸

Operation Joint Endeavor ended on 20 December 1996. The need for a peacekeeping force extended military operations in Bosnia under a stabilization force (SFOR) led by 1st Infantry Division. The operation was renamed Operation Joint Guard and U.S forces reduced from approximately 16,500 soldiers to 8,900 soldiers.³⁹ The Bosnia mission ended officially in November 2004.⁴⁰

³⁵ U.S. Department of Defense, *Lessons from Bosnia: The IFOR Experience*, (Office of the Assistant Secretary of Defense, Command & Control Research Program, 1998), 48.

³⁶ U.S. Army, *Armed Peacekeepers in Bosnia*, (U.S. Army Command and General Staff College, 2004), 75.

³⁷ *Lessons from Bosnia: The IFOR Experience*, 48.

³⁸ *Ibid.*, xxiii.

³⁹ U.S. Army, *Operations in Bosnia-Herzegovina*, Armed Forces Europe Pamphlet (AE) 525-100 (Stuggart: Government Printing Office, 2003), 22-24.

⁴⁰ Jason Austin, "U.S. Peacekeepers Complete Bosnia Mission", *National Guard* (2004): 9.

Military Logistics Performance in Operation Joint Endeavor

This section explains the performance of U.S. Army logistics from September 1995 to September 1997. During this period, the 21st Theater Sustainment Command provided operational logistics to Task Force Eagle under U.S. Army Europe.⁴¹ This was a NATO led operation, one that required logistics support at the operational level multi-nationally; however, due to Title 10 requirements, 21st TSC provided ground operational logistics to Task Force Eagle. The 21st TSC established an intermediate staging base in Hungary and provided reception, staging, onward movement & integration for Task Force Eagle.⁴² The 21st TSC performed operational logistics outside the Bosnia area of operations, primarily because of military force caps and the NATO command and control force structure, thus the increased reliance on contracting to perform operational logistics in Bosnia. This section will cover military logistics performance at the operational level in six areas: distribution, supply, field services, transportation, maintenance, and general engineering support.

Distribution

The distribution network in Europe was robust due to years of American presence in Europe. Lines of communication across Europe into Bosnia were short and robust, allowing for flexibility in the system in the event an error occurred during operations.⁴³ The 21st TSC was responsible for distribution for Task Force Eagle and was responsible for establishing an

⁴¹ *Armed Peacekeepers in Bosnia*, 73.

⁴² *Operations in Bosnia-Herzegovina*, 16-18.

⁴³ William N. Farnen, "Ad Hoc Logistics in Bosnia", *Joint Force Quarterly* (2000): 42.

intermediate staging base to accomplish this task. The intermediate staging base was established in Hungary for numerous reasons, such as limitations on troop levels in Bosnia, good infrastructure, and country agreements.⁴⁴ At the onset of operations, 21st TSC had limitations on in-transit visibility of supplies throughout the system. The time phased force deployment list (TPFDL) constantly changed manually at the beginning of the operation. There was no visibility of equipment and supplies at times because of the lack of in-transit visibility. The introduction of radio frequency tags to track equipment and supplies alleviated some of the visibility issues.⁴⁵ This created initial chaos on the distribution system and reduced customer confidence in the system. The lack of customer confidence led to an increased use of other providers or other means to receive support.⁴⁶

Field Services

One of the concepts employed for the first time in Operation Joint Endeavor was the Quartermaster Force Provider module. The Force Provider module or Company concept was borne out of operations and experiences during Operation Desert Storm.⁴⁷ The living conditions of Army soldiers compared to the Air Force were alarming, and senior leaders wanted to address

⁴⁴ *Armed Peacekeepers in Bosnia*, 74.

⁴⁵ Kenneth King, "Operation Desert Shield: Thunder Storms of Logistics: Did We do any Better during Post Cold War Interventions?" (Research Paper, U.S. Army War College, 2007), 14.

⁴⁶ *Ibid.*, 11, 17.

⁴⁷ U.S. Army, *Field Manual (FM) 4-20.07, Quartermaster Force Provider Company, 2008* (Washington D.C.: Headquarters, Department of the Army, August 2008), 1-1.

this condition through the development of the Force Provider Company.⁴⁸ The module contained basing requirements of billeting, dining, shower, latrine, laundry, and morale, welfare, and recreation facilities for 550 soldiers.⁴⁹ In 1996, there were only 12 modules in the Army; six of those modules were in Bosnia.⁵⁰ The concept in principle was to use military engineering assets to prep the base site, logistics personnel to operate and maintain the site, and the host unit to operate the site. Nevertheless, once the modules arrived in Bosnia, LOGCAP provided these services instead. The modules provided these capabilities for 25 percent of U.S. forces in Bosnia, the shortfall met through LOGCAP.⁵¹ The military logistics community lost an opportunity to private military companies in providing the whole force provider concept. Without the components of engineering, logistics service personnel, and the willingness of the host unit to perform certain base operation tasks, the force provider concept could not function properly. During Operation Joint Endeavor, there was one Force Provider Company on active duty; now only one remains in the U.S. Army reserves.⁵²

⁴⁸ U.S. Army, *Field Manual (FM) 42-414, Tactics, Techniques, and Procedures of a Quartermaster Field Service Company, Direct Support, 1998* (Washington D.C.: Headquarters, Department of the Army, July 1998), 1-8.

⁴⁹ Tim Lindsay; James McLaughlin; Norm Bruneau (1997) "Force Provider deploys to Bosnia", *Army Logistician*, (1997): 18.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Lindsay, et al., "Force Provider deploys to Bosnia", *Army Logistician* 18; Richards, et al., "Sustainment Force Structure Book," 9.

Transportation

The effects to the changes in the TPFDD caused numerous delays and chaos in the beginning of the operation.⁵³ Rail movement was the primary method to move equipment and supplies to the area of operations.⁵⁴ This led to unforeseen challenges when the French railroad unions went on strike at the beginning of the operation.⁵⁵ The 37th Transportation Command alleviated this problem through road convoys. However, convoys through Europe had a cost as well. Convoy authorizations required numerous approvals through many countries, thus delaying shipment.⁵⁶ The mismanagement of the supply lines of communication created a disparity in customer confidence in military logistics, thus providing opportunities for private military companies.

Supply, Maintenance, and General Engineering Support

Operation Joint Endeavor saw numerous innovations to meet the challenges of a peacekeeping mission in Europe. Military logistics introduced portable bag water in the peacekeeping mission to alleviate the need for bottled water in the Bosnia area of operations. This reduced the need for contracted bottled water in theater, a very high cost item, with water

⁵³ John Collins & Stephen Koons, "Deploying for Operation Joint Endeavor," *Army Logistician*, (1997): 40.

⁵⁴ *Armed Peacekeepers in Bosnia*, 76.

⁵⁵ Collins and Koons, "Deploying for Operation Joint Endeavor," *Army Logistician*, 40.

⁵⁶ Bruce E. Akard, "Strategic Deployment: An Analysis of How the United States Army Europe Deployed VII Corps to Southwest Asia and the 1ST Armored Division to Bosnia" (Master's Thesis, U.S. Army Command and General Staff College, 1997), 54.

produced in theater and shipped using military assets.⁵⁷ Food operations changed considerably to meet the challenges of supporting Operation Joint Endeavor.⁵⁸ These changes included Defense Distribution Depot Europe (DDDE) activities delivering directly from depot to the intermediate staging base, previously unseen, changes in loading/offloading configuration/procedures, and contracting commercial reefer vans instead of trailers which allowed for quicker turnaround of assets and mobility.⁵⁹

The need for general engineering support in the initial stages of Operation Joint Endeavor was very high in terms of improving runways, and building base camps. The requirement far outpaced the capability.⁶⁰ Military force caps increased the pressure of a limited deployment of military engineering assets to allow Task Force Eagle to deploy and conduct peacekeeping operations. These factors led to a minimal role of military engineers and a high reliance on private military companies.

Summary

The performance of military logistics during the initial phase of Operation Joint Endeavor demonstrated the challenges of a convoluted command and control structure. The military assets were available to accomplish the task, but customer confidence in the system was lacking at the onset of operations. In addition, military force caps limited the employment of operational

⁵⁷ Jino Choi, "Bag water for Operation Joint Endeavor", *Army Logistician*, (1997): 41.

⁵⁸ Anthony Kral and Drefus Lane, "Food for Operation Joint Endeavor," *Army Logistician*, (1996): 36-40.

⁵⁹ *Ibid.*, 40.

⁶⁰ U.S. Congress, *Contingency Operations Opportunities to Improve the Logistics Civil Augmentation Program*, (Washington, DC: Government Printing Office, 1997), 4.

logistics units into theater. Multinational units and their lack of a robust logistics force structure, military force caps, and environmental factors allowed for LOGCAP to increase their role in Bosnia.

Private Military Companies Performance in Operation Joint Endeavor

This section explains the performance of private military companies from September 1995 to September 1997. Military logistics provides initial response and sustained operations where private military companies focus on the duration of the campaign. During this period, Kellogg, Brown & Root (KBR) operated the LOGCAP contract for the Department of Defense.⁶¹ KBR was initially brought into Bosnia to provide base camp operations, and grew to support supply, maintenance, and transportation operations in the first two years.⁶² The initial estimate for the first year was \$350.2 million; however, the estimated cost was \$461.5 million.⁶³ Due to the scope of the contract, KBR's performance is evaluated in this case study. In Bosnia, contractors outnumbered soldiers two to one, due to military caps and mandated reductions in force.⁶⁴ The total number of KBR contractors in Bosnia replaced approximately 8,900 logistics soldiers.⁶⁵ This section will evaluate KBR in distribution, supply, field service, transportation, maintenance, and general engineering support.

⁶¹ Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 138.

⁶² Billy Davis, "Our logistics Failure: The Military's Overreliance upon Sustainment Contracting", (Master's Thesis, U.S. Joint Forces Staff College, 2011), 48.

⁶³ *Contingency Operations Opportunities to Improve the LOGCAP*, 4.

⁶⁴ Raymond Kimball, *Beyond Blackwater: Contractors on the Battlefield*, 13 Oct 2007, <http://bobrowen.com/nymas/blackwater%20kimball.html> (accessed 12 Mar 12).

⁶⁵ Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 146.

The initial focus for KBR services in Bosnia was base construction due to military force caps and lack of engineering resources.⁶⁶ The LOGCAP service contract built 19 bases and upgraded all 34 bases in the Bosnia area of operations.⁶⁷ Army officials cite the quality of service and resources that Army units lacked as the primary reason for the use of LOGCAP in basing.⁶⁸ As the base camps increased, the areas of maintenance, transportation, and field services such as laundry and food service became a necessity to outsource to KBR.

These necessary services included billeting, shower/latrine, maintenance, laundry, and dining services.⁶⁹ Distribution, supply, field service, transportation, maintenance, and general engineering support are interdependent; thus, mission creep becomes a phenomenon of rising cost and overreliance on contracting support. KBR provided additional transportation services and material handling equipment and services at railheads in Bosnia, Hungary, and Croatia.⁷⁰ The military force caps, and smaller multinational logistics infrastructure created a need for maintaining base camps and transportation services. These areas grew significantly in the first year, the cost difference in estimate versus actual was an additional \$111.3 million.⁷¹

⁶⁶ *Contingency Operations Opportunities to Improve the LOGCAP*, 8.

⁶⁷ *Ibid.*, 10.

⁶⁸ *Ibid.*, 9.

⁶⁹ *Ibid.*, 10.

⁷⁰ *Ibid.*, 15.

⁷¹ *Ibid.*, 10.

Summary

The use of KBR during Operation Joint Endeavor and Kosovo reduced the military logistics commitment by approximately 8,900 soldiers, the size of a sustainment brigade and engineer brigade combined.⁷² The need for an additional 8,900 private military contractors to support 16,000 soldiers demonstrates the requirement for a huge contingency of logisticians to maintain the force. The complexities of a multi-national force required a need for a universal force such as contracting.⁷³ Singer asserts, “The accomplishment of Brown & Root in providing superior, rapid logistics and engineering services has clearly established a template for future military interventions.”⁷⁴ However, there were numerous concerns over the rising cost and oversight of the LOGCAP contract.⁷⁵ Most of the logistics competencies are interdependent, thus creating an overreliance on contracting.

Operation Joint Endeavor Summary

This section addressed both questions posed earlier on performance of military logistics and the performance of private military companies. The use of LOGCAP set a precedent in the use of private military companies in military operations. The use of KBR during the initial operation was essential in supporting all multi-national units and national government agencies

⁷² Singer, *Corporate Warriors: The Rise of Privatized Military Industry*, 146.

⁷³ *Ibid.*, 143.

⁷⁴ *Ibid.*, 146.

⁷⁵ *Contingency Operations Opportunities to Improve the LOGCAP*, 4; U.S. Congress, “Bosnia: Cost are Exceeding DOD’s Estimate,” *Government Accounting Office* (Washington, D.C.: Government Printing Office, 1996); U.S. Congress, “Bosnia: Cost Estimating has Improved, but Operational Changes will Affect Current Estimates,” *Government Accounting Office* (Washington, D.C.: Government Printing Office, 1997)

operating in the Balkans. The lack of host nation support, allied support, and other military services led to the use of LOGCAP in Bosnia. In 1995, LOGCAP was considered “the choice of the last resort.”⁷⁶

The introduction of the Force Provider Company could not compete with private industry. KBR provided services and infrastructure fast, without military restrictions, and reduced the need for additional soldiers. However, the quality of service came with a price. Cost continued to rise as mission creep continued and U.S. forces drew down in Bosnia. Logistics competencies are interdependent and complementary. Once the basing mission was complete, the need to maintain and sustain these bases became a necessity. The management of private military companies proved daunting in this case.⁷⁷ All these factors set a template for future operations, tested in a combat environment Operation Iraqi Freedom.

Operation Iraqi Freedom

This section will explain the performance of U.S. Army logistics and private military companies in 2003–2005, an important period of the war because the conditions set logistics operations for the remaining duration of the war. There are numerous writings on the subject of private military companies in Operation Iraqi Freedom, thus the selection of this case study for

⁷⁶ Contingency Operations Opportunities to Improve LOGCAP, 7.

⁷⁷ U.S. Congress, “Bosnia: Cost are Exceeding DOD’s Estimate,” *Government Accounting Office* (Washington, D.C.: Government Printing Office, 1996); U.S. Congress, “Bosnia: Cost Estimating has Improved, but Operational Changes will Affect Current Estimates,” *Government Accounting Office* (Washington, D.C.: Government Printing Office, 1997)

analysis. The success of distribution based logistics and contracting during the Bosnia war set the conditions for contracting use in Iraq.

Overview of Events

After Operation Desert Storm ended in March 1991, the United States had a presence in Kuwait to deter Iraq from further aggression in the region. The infrastructure was in place based on the ongoing missions in the Middle East enforcing Iraq sanctions.⁷⁸ In September 2002, reception, staging, onward movement, and integration (RSOI) infrastructure improvements began in Kuwait in preparation for war.⁷⁹ There are three U.S. justifications for invading Iraq: Saddam Hussein's weapons of mass destruction program, the regime change of a dictator who started two previous wars, and stability to Iraq and the Middle East thus reducing violent Islamist extremism.⁸⁰

Operation Iraqi Freedom comprised four major phases to achieve these justifications. The four major phases were Preparation, Shaping the Battlespace, Decisive Offensive Operations, and Post Hostilities.⁸¹ The preparation phase set the condition for the invasion of Iraq. This phase consisted of RSOI infrastructure improvements, increased no-fly zone enforcement, and interdiction of possible theater ballistic missiles and weapons of mass destruction. The shaping the battlespace phase began the degradation of Iraqi command and control, security forces, and

⁷⁸ Gregory Fontenot, E.J. Degen, and David Tohn, *On Point* (Leavenworth: Combat Institute Press, 2004), xxii.

⁷⁹ *Ibid.*, 32.

⁸⁰ Geoffrey Parker, *The Cambridge Illustrated History of Warfare Revised and Updated*, (New York: Cambridge University Press, 2009), 378-379.

⁸¹ Fontenot, et al., *On Point*, xxiii.

seizing key terrain.⁸² The decisive operations phase consisted of major combat operations and the ouster of the Saddam Hussein regime. In addition, the post-hostilities phase involved humanitarian and stability operations. Operation Iraqi Freedom was renamed Operation New Dawn in September 2010 and marked a new chapter in the Iraq War.⁸³ The Iraq War ended on 15 December 2011.

Military Logistics Performance in Operation Iraqi Freedom

This section explains the performance of U.S. Army logistics during September 2002 to January 2005. During this period, the 377th Theater Sustainment Command operated operational logistics for the theater with 3rd Corps Support Command conducting operations in Iraq, followed by 13th Corps Support Command, and then 1st Corps Support Command.⁸⁴ The performance of the military logistics units were mixed during the initial operation from September 2002 to January 2005. The complexity, size, and tempo of operations put significant strains on the logistics system. In addition to the scale of the operation, only one country, Kuwait, allowed the use of ports for the rapid buildup.⁸⁵ This section covers the performance of U.S. Army logistics using these key logistics functions of distribution, supply, field services, movement, and maintenance.

⁸² Fontenot, et al., *On Point*, xxiii.

⁸³ Greg Jaffe, "War in Iraq will be called 'Operation New Dawn' to Reflect Reduced U.S. Role", *Washington Post*, 19 February 2010.

⁸⁴ Donald Wright, and Timothy Reese, *On Point II*, (Leavenworth: Combat Institute Press, 2008), 498.

⁸⁵ Fontenot, et al., *On Point*, 408-409.

Distribution

U.S. Army logistics during the initial campaign in Operation Iraqi Freedom operated under distribution based logistics (DBL). DBL, also known as “just in time logistics,” is based on the premise of providing the optimal amount of logistics without the significant overhead of unwanted supplies.⁸⁶ The success of DBL in peacetime operations in the Balkans and other parts of the world during the 1990s tests the theory with success on a small scale.⁸⁷ However, DBL required the technology to track and see all aspects of logistics from user to strategic assets in CONUS, but not all units in theater had this capability.⁸⁸ In 2003, as part of Army transformation, the logistics community switched to DBL, but the whole community did not have systems in place to meet the demands DBL would have on the logistics system.

Supply

The 377th Theater Support Command fuel plan is considered a success in sustaining the force. During the initial phase of the operation, the 377th TSC received approval for seven reserve petroleum support companies required for the push into Iraq.⁸⁹ Five of the seven arrived and the petroleum infrastructure was in place before the invasion in March 2003. The effort paid off, as the assets were available to receive, move, store, and most importantly distribute fuel at all

⁸⁶ Wright, et al., *On Point II* 492.

⁸⁷ Wright, et al., *On Point II* 493.

⁸⁸ Wright, et al., *On Point II* 501.

⁸⁹ Eric Peltz, John Halliday, Marc Robbins, and Kenneth Giradini, “Sustainment of Army Forces in Operation Iraqi Freedom” (RAND Corporation, 2005), 12.

levels. Not all other commodities received the same level of support in the distribution or movement.

All other types of supply considered dry cargo took huge amounts of transportation assets for delivery. Requisition of supplies became a challenge as units were in transition to DBL systems. Distance between systems made FM transmission unfeasible and internet connections were rudimentary at this stage. Incompatibility of logistics systems and the different levels of automations available to active, guard, and reserve units led to greater friction across the Iraqi Theater.⁹⁰ These factors led to significant delays in supplies.

Distance and a lean truck system affected the supply lines during the initial operation. Over time, more trucks were available for resupply, but as the units continued to push into Iraq, the lines of communication lengthened, thus negating any gains in time from increased trucks.

Field Services

The logistics community did not deploy a robust element to meet the demands for field services. The only exception was water production. During the initial operation, reverse osmosis water purification units (ROWPU) were available for bulk water production with the planning assumption that production began five days after the line of departure. However, as the battle began to unfold, the ability to distribute bulk water and resupply was not as efficient as moving water bottles across the battlefield.⁹¹ Bulk water production was available, not the means of transporting huge amounts of water and then to distribute it to many different locations like the

⁹⁰ Wright, et al., *On Point II*, 501.

⁹¹ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 24.

convenience of bottled water. The initial assumption was to provide bulk water to units, however bottled water was easier to transport in small quantities and redistribute across the battlefield. Bulk water in bottled form took over sixty-seven percent of movement assets because of this change in transport mode.⁹² This led to cascading effects to the use of trucks for other commodities such as spare parts, barrier materials, and other supplies.

Laundry and bath and food service units were available during the initial operation and were successful in augmenting units that did not have access to LOGCAP services. When the deployment continued past 90 days, the demand for these services grew as the pace of new forward operating bases across Iraq increased significantly. The major challenge for field services was distribution of services to support numerous forward operating bases across the area of operations. These units were structured to provide bulk support and not tailored to support numerous forward operating bases.

Transportation

Fuel movement was a success, but other elements of supply were a challenge in movement through Iraq. The availability of fuel distribution units during the initial operations allowed for uninterrupted support. However, success in the movement of other assets into Iraq met significant challenges to the logistic supply chain.

The biggest challenge and strain to the logistics system was movement of supplies across Iraq. The requirement for transportation assets were never met solely through military logistics units. Force flow and the request for forces (RFF) process affected the availability of movement

⁹² Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 24.

assets during the initial phase of the operation. The majority of military logistics units are in the National Guard or Army Reserve, which take 90 to 120 days to mobilize and arrive in theater.⁹³ Forty percent of 3rd Corps Support Command was reserve or guard units.⁹⁴ During the initial phase, 3rd COSCOM had twenty percent of their initial requirement of movement assets to accomplish their tasks.⁹⁵ The majority of their assets arrived after major combat operations began on 19 March 2003. All logistics companies above division were tracked on a force flow chart individually. This factor caused confusion regarding availability of units in theater as battalion headquarters arrived without subordinate units. These factors affected availability of movement assets to meet the logistical demands of the operating force in Iraq. The majority of 377th TSC movement assets came from host nation support or KBR to meet these demands.⁹⁶ The lack of transportation assets adversely effected other classes of supply such as water distribution, class III (packaged petroleum), and class IX (repair parts), thus increasing the need for contractor support for other services such as food services and water/ice production.

Maintenance

Overall, units' military readiness in Operation Iraqi Freedom sustained a high rate during the initial 90 days. Limited truck availability for spare parts resupply, minimal maintenance of equipment, and requisition challenges led to maintenance problems in the following months of the first year. During July 2003, V Corps reported all combat system falling below 80 percent and

⁹³ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 23.

⁹⁴ Wright, et al., *On Point*, 499.

⁹⁵ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 21.

⁹⁶ *Ibid.*, 73-76.

logistics assets falling below 85 percent readiness.⁹⁷ Compounding the problem was the lack of transportation assets to meet the demands and requisition irregularities at all levels.

The requisition of class IX repair parts faced numerous challenges in Iraq. The Kuwait warehouses were well stocked and robust in parts during the build-up due to conditions set after Desert Storm. Some units were able to draw authorized stockage list (ASL) packages from Kuwait, but the draw depleted emergency supplies from the warehouses in Kuwait for other units. ASL replenishment was affected in three ways: a lack of transportation assets allocated to spare parts; the inability to send transactions through the stand army retail supply system (SARSS) due to a lack of a communication infrastructure; and unit moves throughout Iraq.⁹⁸ The need for bottled water in the Iraq Theater put a significant strain on transportation assets. The inability to transfer data through internet or FM communications put a significant delay in processing requisitions. In addition, the constant moves of certain units led to parts arriving in the wrong locations across the theater.

Summary

The performance of military logistics during the initial phase of Operation Iraqi Freedom proved that active duty, reserve, and guard readiness mix and capability to meet operational demand was no longer feasible for long-term operations. The majority of the logistics structure resides in the National Guard and the Army Reserve, thus delaying a quick response to a large-scale major combat operation. Distribution Based Logistics' focus on efficiency over

⁹⁷ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 53-54.

⁹⁸ *Ibid.*, 38.

effectiveness and success in the Bosnia war hid the true nature of military logistics support.

Military force caps created a substitution effect on military logistics and infrastructure.

Military force caps, Distribution Based Logistics, attacks on logistics convoys, long lines of communications into Iraq from Kuwait, and the delay in the reserve logistics unit buildup all led to an increased reliance on contractors to conduct logistics operations.

Private Military Companies Performance in Operation Iraqi Freedom

This section explains the performance of private military companies from September 2002 to January 2005. During this period, KBR operated LOGCAP for the theater with host nation support in Kuwait and Iraq.⁹⁹ Before Operation Iraqi Freedom commenced in 2003, there was host nation support and LOGCAP established in Kuwait to support a rapid build-up.¹⁰⁰ KBR's performance of operational logistics units was controversial during the initial build-up from September 2002 to January 2005. The start-up cost, inflexible contract demands, and delays in service put a significant strain on the logistics system. In this section, the performance of private military companies is covered using these key logistics functions of field services, movement, maintenance, and general engineering support.

Background

Private military companies, such as LOGCAP, had a presence in Kuwait before the war began in March 2003. From 2003 to 2007, the Department of Defense (DOD) awarded 76 billion

⁹⁹ Wright, et al., *On Point*, 499.

¹⁰⁰ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 46.

dollars worth of contracts in Iraq, and LOGCAP in Iraq accounted for 22 billion dollars.¹⁰¹ DOD awarded LOGCAP III to KBR from 2001 to 2004 which also covered both the Afghanistan and Iraq Theater of operations.¹⁰² Due to the scope and size of the contract, the majority of the private military contractor performances in this paper cover LOGCAP. In Iraq, LOGCAP provided air-terminal and airfield operations; ammunition storage and supply; basing to include construction and maintenance, electric power generation, food service and dining facilities, hazardous materials management, laundry services, operations, water and ice distribution; communications and information technology; equipment maintenance; firefighting services; fuel distribution; morale, welfare, and recreation; property management; and transportation.¹⁰³ Other than military logistics, LOGCAP is the primary means of support to Army personnel.¹⁰⁴

A Congressional Budget Office study in 2005 determined that military units could perform the same task at the cost associated with LOGCAP during wartime, but the cost to manage such a unit during peacetime would require more funds than contractors.¹⁰⁵ The importance of understanding the cost is to compare how relying on contractor support hurt military logistics readiness in the long term.

¹⁰¹ U.S. Congress, *Contractors' Support of U.S. Operations in Iraq* (Washington, DC: Government Printing Office, 2008), 9.

¹⁰² U.S. Congress, *Logistics Support for Deployed Military Forces* (Washington, DC: Government Printing Office, 2005), 26.

¹⁰³ Ibid.

¹⁰⁴ *Contractors' Support of U.S. Operations in Iraq*, 12.

¹⁰⁵ Ibid., 13.

Field Services

Field services range from food service to laundry and bath, and can vary greatly in performance based on headcount. KBR and host nation support provided these services in Kuwait during the buildup of forces without any significant issues, as the headcount was large enough to support the requirement. The majority of the services LOGCAP provided in Iraq were field services related such as dining facilities, laundry services, and shower points. The Army took the biggest risk in this area of logistics. During offensive operations, the military logistics planning focus and effort fell on class I (subsistence), class III (bulk fuel), and class V (ammunition).¹⁰⁶ Theater planners did not cover field service tasks in the initial operations of Operation Iraqi Freedom such as basing requirements until after May 2003.¹⁰⁷ In order to receive LOGCAP services at a Forward Operating Base, the base had to have approximately 3,000 personnel on hand.¹⁰⁸ Numerous bases fell below the required threshold and these services did not reach all users on the battlefield, thus, units augmented field services through military logistics units or unit ingenuity.

Transportation

There was an immediate need for transportation assets to meet the logistical needs of the operating force in Iraq. Force caps and delays in deployment of logistics forces led to an

¹⁰⁶ FM 4-0, 4-4.

¹⁰⁷ Carafano, *Private Sector, Public Wars: Contractors in Combat-Afghanistan, Iraq, and Future Conflicts*, 83.

¹⁰⁸ Karen E. LeDoux, "LOGCAP 102: An Operational Planner's Guide," *Army Logistician*, (2005), http://www.almc.army.mil/alog/issues/JulAug05/logcap_102.html (accessed March 11, 2012).

increased role of private contractors to meet the capability gap. Host nation and LOGCAP provided the bulk of movement of supplies into Iraq from Kuwait through the visibility of 377th TSC.¹⁰⁹ The increased role of contractors transporting supplies in theater led to an increased need for force protection of the logistics convoys.

Maintenance and General Engineering Support

There was a significant reliance on contracting support for maintenance of combat systems. At the start of Operation Iraqi Freedom, 30 percent of combat systems received contracted maintenance.¹¹⁰ As the war progressed, commercial off the shelf equipment, newly fielded systems, and equipment upgrades increased the need for contractor support in maintaining these new systems. Maintenance contracts were second to field services in contracts. The majority of military logistics and engineers are in the national guard and reserves. The limitations of military engineer support existed from the beginning of Operation Iraqi Freedom. LOGCAP, as part of the base support contract, delivered on all engineer support at FOBs. This, in turn, allowed military assets to focus on smaller FOBs or host nation support for construction projects.

Summary

The private contractors are available to meet the demands in a combat theater. However, the flexibility to meet an ever-changing environment is not available with such an approach. There are many regulations in place that are designed to prevent fraud, waste and abuse, but slow

¹⁰⁹ Peltz, et al., *Sustainment of Army Forces in Operation Iraqi Freedom*, 73-76.

¹¹⁰ Wright, et al., *On Point*, 408-409.

down the process of support to the warfighter. Numerous bases that were too small to receive LOGCAP support, caused animosity between units due to the levels of support. The attractiveness and access of another provider on the battlefield, contracting, is too great and ripe for abuse leading to high start-up cost, reliance on contractors, and lack of accountability.¹¹¹

Operation Iraqi Freedom Summary

This section addressed both questions posed earlier regarding performance of military logistics and private military companies. The Operation Iraqi Freedom case study is unique in the scope and scale of contract use in combat operations. The performance of military logistics units at the advent of major combat operations were mixed due to numerous causes such as the transition to distribution based logistics, military force cap, and operational demands. The availability and reliance of contracting to fill those gaps were important to the overall campaign, but at what cost? Substituting logistics competencies at the operational level caused overreliance, costly fraud, and waste. There are hidden costs, such as increased security requirements and possible funneling of cash to insurgent and criminal groups.

Substitution effects on logistics competencies

This section will cover the effects of substitution on logistics competencies during Operation Joint Endeavor from 1995 to 1997 and Operation Iraqi Freedom from 2002 to 2011. In Operation Iraqi Freedom, substitution began immediately after operations commenced in March 2003 to meet logistics demands on the military logistics system. The previous two questions

¹¹¹ Carafano, *Private Sector, Public Wars: Contractors in Combat-Afghanistan, Iraq, and Future Conflicts*, 84.

addressed performance in 2002 to 2005, but to capture the effects of substitution, a longer period of contractor performance is evaluated. The Commission on Wartime Contracting is the primary source of information for this section. Military logistics replaced with private military companies is substitution in this context and there are two driving factors for substitution: military force caps and the assumption of cost savings.

Military Force Caps

A military force cap is a significant measure that constrains logistics planning and operations during the initial phases of a war. The reason for statutory and budgetary limits on military personnel is primarily a political decision. Political pressures domestically and the cost of an all-volunteer force constrained leaders to a smaller force. Military force cap directly led to increased use of private military companies to meet operational demands.

An example of the military force cap effect on military logistics is a snapshot of logistics personnel in December 2004. Based on a Congressional Budget Office study in December 2004, there were 45,800 logistics personnel serving in Operation Iraqi Freedom and 38,305 contracting personnel conducting logistics.¹¹² The average boots on the ground for fiscal year 2004 was 130,600.¹¹³ In order to meet the logistics demands, almost half of the logistical support came from contracting. Although there were 45,800 logisticians in theater, the numbers do not tell the real story of how military force caps affect military logistics. The majority of those logisticians is

¹¹² *Logistics Support for Deployed Military Forces*, 4-5.

¹¹³ Amy Belasco, *Troop Levels in the Afghan and Iraq Wars, FY2001-FY2012: Cost and Other Potential Issues*, (Washington D.C.: Government Printing Press, 2 July 2009), 35.

considered tactical logisticians and operated at the tactical level, brigade and below. The military logistics shortage or risk is at the area support or operational level, where the majority of the contractors reside in operations. These force caps have a cascading effect on support to the warfighter. Contracting support, such as LOGCAP, provides the bulk of their services on forward operating bases of 3,000 personnel or more. Brigade Support Battalions performed the majority of tactical logistics at forward operating bases below 3,000 personnel. Thus, most military personnel performing operations at the tactical level were not receiving support from the huge contracts such as LOGCAP that military logistics units could provide on an area support basis.

Cost of substitution

One of the primary reasons for using private military companies is cost savings versus military logistics units. According to the Commission on Wartime Contracting, the total cost of DOD contracting in Iraq and Afghanistan from 2002 to 2011 was over \$166 billion.¹¹⁴ Logistics support services, food procurement, maintenance, fuel, and support services provide the bulk of the contracts, over 44 percent or \$85.6 billion.¹¹⁵ Although these numbers seem high, there is considerable cost savings in services from host nation and third-country nationals versus military personnel.¹¹⁶ U.S. citizens employed in a similar skill to the military cost approximately the same and not considered effective cost savings. Compared to a cost estimate, contracting start-up costs

¹¹⁴ U.S. Congress, *Transforming Wartime Contracting: Controlling cost, reducing risks*, by Commission on Wartime Contracting (August 2011), 28.

¹¹⁵ *Ibid.*, 29.

¹¹⁶ *Ibid.*, 235.

are very high and assumes a long-term logistics solution. It is a steep initial investment, most likely not replaced with a military logistics unit once in place.

The initial investment in contracting infrastructure and support creates two subsequent costly effects: overreliance on contractors; and fraud, waste, and abuse. The Commission on Wartime Contracting defined contractor overreliance through four indicators: extending functions that law or regulation requires government personnel to perform; creates unreasonable risks to mission objectives; erodes government's ability to perform core capabilities; or overwhelms the government's ability to effectively manage and oversee contractors".¹¹⁷ The use of contractors at the operational level over time creates a reliance on their abilities to perform missions originally governmental in nature. The Commission on Wartime Contracting states, "relying on contractors for so much professional and technical expertise eventually leads to the government's losing much of its mission-essential organic capability".¹¹⁸ Thus, at the operational level, one can argue that military logistics is losing capability in technical and professional expertise, along with mission essential training.

The second major costly effect of substitution is fraud, waste, and abuse. Fraud and waste estimates in Iraq from 2002 to 2011 are between \$31 billion and \$60 billion.¹¹⁹ The major cause is "monitoring and correcting poor performance."¹²⁰ There are numerous cases of contractors

¹¹⁷ *Transforming Wartime Contracting: Controlling cost, reducing risks, by Commission on Wartime Contracting*, 19.

¹¹⁸ *Ibid.*, 25.

¹¹⁹ *Ibid.*, 32.

¹²⁰ *Ibid.*, 69.

paying insurgent groups for protection in order to complete projects.¹²¹ The use of private military companies allowed the risk of money diversion to the same insurgent groups attacking host nation government and U.S. military targets. Lack of proper security for contract projects or services caused massive waste in contracting use. These unanticipated security costs increased expenses by 25 percent and led to waste due to abandoned projects.¹²²

Summary

The substitution of military logistics has numerous operational implications. Two main reasons for contractor use and substitution are limits on military units and the assumption of cost effectiveness.¹²³ However, the substitution effect causes two costly effects on operations in overreliance and fraud, waste, and abuse.

Cross Case Analysis and Findings

This section compares both case studies to determine overreliance on contractors or increased use of operational logistics during both conflicts. Both case studies provide a unique perspective on the use of contracting and operational logistics. Operation Joint Endeavor was a NATO-led peacekeeping mission with a force cap of approximately 16,000 soldiers in Bosnia. Operation Iraqi Freedom was a U.S.- led combat mission averaging over 150,000 soldiers in theater. The Operation Joint Endeavor ratio of private military contractors to military logistics

¹²¹ *Transforming Wartime Contracting: Controlling cost, reducing risks, by Commission on Wartime Contracting*, 73.

¹²² *Ibid.*, 74.

¹²³ *Ibid.*, 28.

personnel in 1995 was significant, 8,900 contractors to 5,500 U.S. Army logistics personnel. The Operation Iraqi Freedom ratio of private military companies to military logistics personnel in 2004 was 1:1, at 45,800 logistics personnel compared to 38,305 LOGCAP personnel alone.¹²⁴

What Key logistics competencies did the U.S. Army perform?

The U.S. Army performed all logistics competencies in both case studies, but distribution seemed mostly inherently governmental and not significantly outsourced to private military companies. In both case studies, the U.S. Army performed operational logistics at a military force cap, and a delicate balance of maneuver forces and logistics support during initial operations. In Operation Joint Endeavor, most of the operations were conducted outside of Bosnia due to military force caps, thus leading to a higher number of private military companies in Bosnia than military operational logistics. In Operation Iraqi Freedom, the demand for services exceeded military logistics capability and required private military companies.

What key logistics competencies did the private military companies perform?

In Operation Joint Endeavor, LOGCAP began as a supplement to engineering support required building basing for IFOR forces. Engineering support in terms of repair and construction were used extensively through contracting to meet the demands of the environment. Over 8,121 contractors provided general engineering support during the surge in Iraq.¹²⁵

¹²⁴ *Logistics Support for Deployed Military Forces*, 5.

¹²⁵ *Contractors' Support of U.S. Operations in Iraq*, 1-2.

In Operation Iraqi Freedom, at the operational level, 377th TSC contracted trucks and material handling equipment to augment military logistics and meet demands of the environment. In 2004, an equivalent of eleven transportation companies was provided by LOGCAP. Over 8,121 contractors provided transportation services in Iraq during initial combat operations.¹²⁶ During the height of the surge in Iraq (2008), over 89,335 contractors conducted field services.¹²⁷

How did substitution affect logistics competencies?

Both cases exhibit overreliance on contractors as defined by the Commission on Wartime Contracting. The main cause of substitution is military force caps. In Operation Joint Endeavor, the military force cap in 1995 was approximately 16,500 soldiers and in Operation Iraqi Freedom, in 2003 the military force cap was approximately 150,000 soldiers. Both cases limit the deployment of military logistics for combat power to meet operational objectives.

Both cases suggested contract oversight reform. In 1997, a GAO study recommended changes to the Army for proper oversight of LOGCAP contracts to reduce fraud, waste, and abuse.¹²⁸ The Army Corps of Engineers was the lead agency on contract oversight in 1995. In 2011, the Commission on Wartime Contracting recommended changes to oversight on contracting, a “total force doctrine.”¹²⁹ The Army Materiel Command is the current lead agency for proper oversight of LOGCAP. Current Army doctrine recognizes the lack of oversight on

¹²⁶ *Contractors’ Support of U.S. Operations in Iraq*, 1-2.

¹²⁷ *Ibid.*

¹²⁸ *Contingency Operations: Opportunities to Improve LOGCAP*, 4.

¹²⁹ *Transforming Wartime Contracting: Controlling cost, reducing risks*, by Commission on Wartime Contracting, 169.

private military companies and now offers an additional skill identifier for contract oversight. However, this skill is only at operational logistics units such as expeditionary sustainment commands.¹³⁰ This change fails to address contracting oversight at all levels and relegates this function as an additional duty at the highest levels of logistics commands. The evidence from both cases suggests that this hypothesis is supported. Table 1 summarizes the findings.

	Operation Joint Endeavor	Operation Iraqi Freedom
Use of Private Military Companies	~8,900	~38,305
Use of Military Logistics	~4,000	~48500
Military Performance	Limited capacity in Bosnia due to Military Force Caps; lack sufficient engineering support support for Bosnia mission.	Demand for logistics increased over time; military force caps limit the growth of operational logistics to meet demand.
PMC Performance	Increased need for general engineering support to build bases and meet demand; led to mission creep in other logistics competencies interdependent to basing such as field services maintenance and transportation.	PMC use increased to meet demands of the environment over time, disparities over support based on security and size of force at numerous locations.
Substitution effect	Decreased use of military logistics in Bosnia; increased use of private military contractors to meet demand for service, which led to unforeseen higher costs.	Decreased use of military logistics in Iraq due to overreliance on contractors; military lacked oversight on contracts which led to fraud,waste, and abuse totalling up to \$60 billion dollars.

Table 1 Summary of Findings from the Case Studies

Hypothesis

This monograph’s hypothesis asserts that the U.S Army must restore an effective balance that addresses readiness and capability, and the logistics structure must remain intact to build operational logistics capacity to meet future demands and conflicts. The hypothesis assumes the

¹³⁰ ATTP 4-10, 2-5.

requirement for a force less dependent on contracting and able to sustain operations past 90 days in conflict. The hypothesis also assumes the use of contractors will continue and require proper oversight to combat fraud, waste, and abuse; increased cost on the operation; and increased security requirements for these services.

The demand for operational logistics in the past 11 years increased to meet the demands of two wars in Afghanistan and Iraq. At the same time, logistics infrastructure has grown at the tactical level, and yet it decreased at the operational level.¹³¹ The decrease of operational logistics puts a demand on the logistics infrastructure and fuels a constant demand on contracting services. The Army will reduce force structure from 565,000 personnel to 490,000 from 2012 to 2017, thus leading to more cuts in operational level logistics.¹³² The evidence from both cases suggests that the hypothesis is supported. Table 2 summarizes the findings.

	Operation Joint Endeavor	Operation Iraqi Freedom	Hypothesis Outcome
Use of PMC/ Military Logistics	Supported	Supported	Supported
Retain Military Readiness	Mixed Outcome	Supported	Supported
Logistics Core Competencies	Mixed Outcome	Supported	Supported

Table 2 Summary of Hypothesis Findings

CONCLUSION

Overreliance on contractors during prolonged conflicts affects overall readiness of the U.S. Army’s operational logistics. Substitution immediately began to take effect in Operation

¹³¹ Davis, “Our Logistics Failure: The Military's Overreliance Upon Sustainment Contracting,” 41; Richards, et al., “Sustainment Force Structure Book”.

¹³² NBC 17 News, “Pentagon Outlines plans to Reduce Size of Military,” NBC 17 News, <http://www2.nbc17.com/news/2012/jan/26/pentagon-outlines-plans-reduce-size-military-ar-1861354/> (accessed March 14, 2012).

Iraqi Freedom due to experiences in Bosnia, military force caps, and increased demands on operational logistics. The importance of this study is the understanding that contracting operational logistics since the advent of LOGCAP in 1992 has steadily decreased the use of military logistics at the operational level. The initial purpose of LOGCAP in 1992 was a tool the force used as the last resort, but is now apparently a necessity and established in doctrine.¹³³

This paper began by outlining the research's background and importance, reviewing the primary literature covering this topic, and then outlining a methodology for research. The analysis consisted of a comparison of Operation Joint Endeavor and Operation Iraqi Freedom through logistics core competencies. Then, it provided effects of substitution on military logistics with private military companies such as LOGCAP. Finally, it provided an analysis of overreliance of contractors on operational logistics.

First, a comparison of Operation Joint Endeavor and Operation Iraqi Freedom demonstrated the growth of private military companies at the military logistics operational level. In the Operation Joint Endeavor case, the U.S. Army force was significantly smaller and constrained by military force caps for Bosnia. In Operation Iraqi Freedom, the demand for services based on the increase in basing and security led to the need for contracting. Military force caps played a key role in both cases.

Second, the research showed the effects of substitution on military logistics. Contracting use is contributed to many factors such as military force caps, mission creep, and overreliance on contracting. First, military force caps are imposed during the initial planning stages of an

¹³³ *Contingency Operations Opportunities to Improve the LOGCAP*, 4; ATTP 4-10, iii.

operation, thus creating hard decisions on the right mix of personnel for the operation. Second, mission creep is a direct result of contractor use. Most logistics competencies are interdependent and require each other to work effectively. Contracting one competency creates opportunities for services in other competencies. Third, the overreliance of private military companies effect military readiness. In the past twenty years, operational logistics took the biggest hit in reductions, and the biggest challenge the U.S. Army logistics community will face in the operational environment is military readiness.

Finally, an analysis of private military companies and military logistics provided understanding of the need for maintaining a balance that meets future needs. The proper balance of military logistics at the tactical and operational level is key to reduce the need for contracting at the operational level. The use of contracting will not go away as it is a necessity, but doctrine and infrastructure has not caught up with this reality. The loss of capability at the operational level will cause a disconnect between operators at the strategic and tactical level.

This research did not address all possible concerns relating to the overreliance on contractors and its effects on military operational logistics. However, the following research topics are encouraged. First, an analysis of base logistics and the effects on current doctrine is indicated. This research could identify the effects that basing has on operational logistics built for expeditionary and offensive operations, and demonstrate the growth of private military companies to meet the gaps. Second, researchers could investigate incorporating contracting officers at the brigade or division organization to grow them and support needed expertise to meet future challenges of private military companies in an operational environment.

A third research possibility is the steady mobilization/demobilization of U.S. Army reserve operational logistics units to maintain proficiency. This ability will provide readiness and

experience at the operational level, as most of the U.S. Army's Operational logistics reside in the U.S. Army Reserves. Ultimately, the U.S. Army may lose a capability over time and may not have the flexibility to meet the needs of a future threat that private military companies may not be able to deliver. Therefore, the U.S. military logistics community needs to address capabilities for future wars through the current infrastructure; otherwise, the potential exists that it may lose the ability to provide flexibility and anticipation, two key principles of logistics.

BIBLIOGRAPHY

Books

- Adams, Gordon. *The Politics of Defense Contracting: The Iron Triangle*. New Brunswick, NJ: Transaction Books, 1982.
- Alexandra, Andrew, Deane-Peter Baker, and Marina Caparini. *Private Military and Security Companies*. New York: Routledge, 2008.
- Avant, Deborah. *The Market for Force: The Consequences of Privatizing Security*. Cambridge, UK: Cambridge University Press, 2005.
- Baumann, Robert F., George W. Gawrych, and Walter E. Kretchik. *Armed Peacekeepers in Bosnia*. Historical, Fort Leavenworth: U.S. Army Command and General Staff College Combat Institute Press, 2004.
- Baye, Michael R. *Managerial Economics and Business Strategy*. New York: McGraw-Hill/ Irwin, 2010.
- Carafano, James Jay. *Private Sector, Public Wars: Contractors in Combat: Afghanistan, Iraq, and Future Conflicts*. Westport, CT: Praeger Security International, 2008.
- Dickinson, Laura. *Outsourcing War & Peace: Preserving Public Values in a World of Privatized Foreign Affairs*. New Haven, CT: Yale University Press, 2011.
- Fontenot, Gregory, E J Degen, and David Tohn. *On Point*. Leavenworth: Combat Studies Institute Press, 2004.
- Kane, Thomas. *Military Logistics and Strategic Performance*. London: Frank Cass Publishers, 2001.
- Krahmann, Elke. *States, Citizens, and the Privatization of Security*. Cambridge, UK: Cambridge University Press, 2010.
- Krishnan, Armin. *War as Business: Technological Change and Military Service Contracting*. Burlington, VT: Ashgate, 2008.
- Pagonis, William. *Moving Mountains*. Boston: Harvard Business School Press, 1992.
- Parker, Geoffrey. *The Cambridge Illustrated History of Warfare: The Triumph of the West Revised and Updated*. New York: Cambridge University Press, 2009.
- Rasor, Dina. *Betraying Our Troops: The Destructive Results of Privatizing War*. New York: Palgrave Macmillian, 2007.
- Singer, P.W. *Corporate Warriors: The Rise of the Privatized Military Industry*. Ithica, NY: Cornell University Press, 2003.
- Stranger, Allison. *One Nation Under Contract*. New Haven, CT: Yale University Press, 2009.
- Verkuil, Paul. *Outsourcing Sovereignty*. Cambridge: Cambridge University Press, 2007.

Wright, Donald, and Timothy Reese. *On Point II*. Leavenworth: Combat Studies Institute Press, 2008.

Articles

Associated Press. *NBC 17*. January 26, 2012.

<http://www2.nbc17.com/news/2012/jan/26/pentagon-outlines-plans-reduce-size-military-ar-1861354/> (accessed March 14, 2012).

Austin, Jason. "U.S. Peacekeepers Complete Bosnia Mission." *National Guard*, December 2004: 12.

Brower, Michael J. "DOD Outsourcing and Privatization." *Military Review*, Sep 1998: 64-66.

Cancian. "Contractors: The New Element of Military Force Structure." *Parameters*, 2008: 61-77.

Cherrie, Stanley F. "Task Force Eagle." *Military Review*, July/ August 1997: 63-72.

Choi, Jinoo V. "Bag Water for Operation Joint Endeavor." *Army Logistician*, September/October 1997: 40-41.

Collins, John W., and J Stephen Koons. "Deploying for Joint Endeavor." *Army Logistician*, May/June 1997: 38-40.

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

Hammond, David C. "The First Prosecution of a Contractor under the UCMJ: Lessons for Service Contractors." *Service Contractor*, Fall 2008: 33-34.

Jaffe, Greg. *WashingtonPost.com*. February 19, 2010. <http://www.washingtonpost.com> (accessed 01 02, 2012).

Kral, Anthony H., and Drefus Lane. "Food for Operation Joint Endeavor." *Army Logistician*, November/ December 1996: 36-40.

LeDoux, Karen E. "LOGCAP 102: An Operational Planners Guide." *Army Logistician*. September 2005. http://www.almc.army.mil/alog/issues/JulAug05/logcap_102.html (accessed March 11, 2012).

Lindsay, Tim, James J McLaughlin, and Norm Bruneau. "Force Provider Deploys to Bosnia." *Army Logistician*, May/ June 1997: 18-23.

Prahalad, C K, and G Hamel. "The Core Competence of the Corporation." *Harvard Business Review*, 1990: 79-91.

Reports

Belasco, Amy. *Troop Levels in the Afghan and Iraq Wars, FY2001-FY2012: Cost and Other Potential Issues*. Research, Washington, D.C.: Congressional Research Service, 2009.

Camm, Frank. *Expanding private production of defense services*. Santa Monica, CA: Rand, 1996.

- Camm, Frank, and Victoria A. Greenfield. *How Should Army Use Contractors on the Battlefield?* Monograph, Santa Monica: RAND Corporation, 2005.
- Command & Control Research Program. *Lessons from Bosnia: The IFOR Experience*. Research, Washington, D.C.: CCRP, 1998.
- Commission on Wartime Contracting in Iraq and Afghanistan. *At What Cost? Contingency Contracting in Iraq and Afghanistan*. Research, Arlington: Commission on Wartime Contracting in Iraq and Afghanistan, 2009.
- Commission on Wartime Contracting in Iraq and Afghanistan. *At What Risk? Correcting overreliance on contractors in contingency operations*. Research, Arlington: Commission on Wartime Contracting in Iraq and Afghanistan, 2011.
- Commission on Wartime Contracting in Iraq and Afghanistan. *Transforming Wartime Contracting: Controlling costs, reducing risks*. Research, Arlington: Commission on Wartime Contracting in Iraq and Afghanistan, 2011.
- Congressional Budget Office. *Contractor's Support of U.S. Operations in Iraq*. Research, Washington D.C.: Congress of the United States Congressional Budget Office, 2008.
- Congressional Budget Office. *Logistics Support for Deployed Military Forces*. Research, Washington D.C.: Congress of the United States Congressional Budget Office, 2005.
- Government Accounting Office. *Bosnia: Cost Estimating has Improved, but Operational Changes will Affect Current Estimates*. Research, Washington D.C.: National Security and Affairs Division, 1997.
- Government Accounting Office. *Bosnia: Costs are Exceeding DOD's Estimate*. Research, Washinton, D.C.: Natonal Security and International Affairs Division, 1996.
- Government Accounting Office. *Contingency Operations: Opportunities to Improve the Logistics Civil Augmentation Program*. Research, Washington, D.C.: National Security and International Affairs Division, 1997.
- Grasso, Valerie Bailey. *Defense Outsourcing: The OMB Circular A-76 Policy*. Washington D.C. : Congressional Research Service The Library of Congress, 2005.
- Greenfield, Victoria A., and Frank Camm. *Risk Management and Performance in the Balkans Support Contract*. Monograph, Santa Monica: RAND Corporation, 2005.
- Heddell, Gordon S. *Defense Department Outsourcing*. Congressional Testimony, Washington D.C.: U.S. Congress, 2009, 17.
- Office of the Deputy Assistant Secretary of Defense. *Archived CENTCOM Reports: Contracting In Iraq and Afghanistan*. August 2008.
http://wwwacq.osd.mil/log/ps/archvd_CENTCOM.html (accessed 02 12, 2012).
- Peltz, Eric, M. John Halliday, L. Marc Robbins, and Kenneth J. Girardini. *Sustainment of army forces in Operation Iraqi Freedom: battlefield logistics and effects on operations*. Monograph, Santa Monica: RAND, 2005.

Field Manuals

- U.S. Army. "Maintenance Operations." *ATTP 4-33*. Washington, D.C., March 18, 2011.
- . "Operational Contract Support Tactics, Techniques, and Procedures." *ATTP 4-10*. June 2011.
- . "Quartermaster Force Provider Company." *FM 4-20.07*. August 2008.
- . "Sustainment." *FM 4-0*. March 2010.
- . "Tactics, Techniques, and Procedures for Quartermaster Field Service Company, Direct Support." *FM 42-414*. Washington, D.C., Jul 3, 1998.
- . "The U.S. Army in Bosnia and Herzegovina." *U.S. Army in Europe 525-100*. Heidelberg, October 7, 2003.

Unpublished Sources

- Akard, Bruce. "Strategic Deployment: An Analysis of How the United States Army Europe Deployed VII Corps to Southwest Asia and the 1st Armored Division to Bosnia." Fort Leavenworth: U.S. Army Command and General Staff College, June 7, 1997.
- Burnham, Paul. *Increasing Combat Support and Combat Support Units in the U.S. Military*. Research Paper, Carlisle: U.S. Army War College, 2005.
- Davis, Billy. *Our Logistics Failure: The Military's Overreliance Upon Sustainment Contracting*. Master's Thesis, Norfolk: Joint Advanced Warfighting School, 2011.
- Fontaine, Richard, and John Nagl. *Contracting in Conflicts: The Path to Reform*. Research, Washington, D.C.: Center for a New American Security, 2010.
- Hammes, T.X. *Private Contractors in the Conflict Zones: The Good, the Bad, and the Strategic Impact*. Research, Washington, D.C.: Institute for National Strategic Studies, 2010.
- Kimball, Raymond. *bobrowen.com*. October 13, 2007.
<http://bobrowen.com/mymas/blackwater%20kimball.html> (accessed March 11, 2012).
- King, Kenneth Ervin. "Operation Desert Shield: The understorms of Logistics: Did We Do Any Better During Post Cold War Interventions?" Carlisle Barracks: U.S. Army War College, March 30, 2007.
- Richards, Barry, Mary Lane, and Joe Demby. *Sustainment Force Structure Book 2011*. Fort Lee, June 1, 2011.
- Robertson, Cinthia. *Outsourcing: An Impact on Readiness?* Monograph, Maxwell AB: Air Command and Staff College, 2000.
- Williams, Michelle. *Outsourcing: Reforms Imperative to Restoring Military Capabilities*. Monograph, Quantico: United States Marine Corps Command and Staff College, 2008.