AU/ACSC/130/2000-04

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

CONTRACTORS ON THE BATTLEFIELD

FORCE MULTIPLIERS OR FORCE DIVIDERS?

by

Kim M. Nelson, Major, USAF

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Advisor: Major Van Poindexter

Maxwell Air Force Base, Alabama

April 2000

DISTRIBUTION A:

Approved for public release; distribution is unlimited.

Air Command and Staff College
Maxwell AFB, Al 36112

Disclaimer

The views expressed in this academic research paper are those of the author and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

Contents

Page

DISCLAIMER ii

PREFACE iv

ABSTRACT v

INTRODUCTION 1

BACKGROUND 4
- Core Capabilities 5
- Focused Logistics 7

ISSUES ANALYSIS 10
- Principles of War 11
  - Unity of Command 11
  - Security 14
  - Simplicity 17
- Core Capabilities, Take Two 18
- Future Support 20

CONCLUSIONS/RECOMMENDATIONS 23
- Product Support 23
- Contract Development 25
- Employment 26
- Recommendations 27
  - Education and Training 28
  - Laws and Regulations 29

GLOSSARY 31

BIBLIOGRAPHY 33

Preface

The purpose of this research is to provide the reader with a greater understanding of the challenges posed to Program Managers when determining support aspects for various weapon systems. Program Managers are responsible for fielding systems to our fighting forces and determining the right mix of equipment and personnel required to support those systems. With the DoD's ever-increasing reliance on contractor support to maintain our systems, it is imperative that Program Managers, along with Contracting Officers and Combatant Commanders be educated and trained on the Laws, Regulations and Policies dealing with the use of Contractors on the Battlefield. This complicated issue must be addressed at every step in the acquisition cycle to ensure we don't leave our fighting forces unsupported during times of crisis.

I wish to thank Lt Col Lucy Yarbrough, Air Force Logistics Management Agency, for her assistance in helping me focus my objective for this research effort, and for providing excellent sources and information to help get me started. I also want to thank Maj Van Poindexter for graciously accepting to be my Research Advisor. Your sense of humor and positive attitude kept me engaged in the project and your guidance kept me on track. Go Rebels!

Abstract

The incorporation of commercial business practices into the military environment introduces new challenges to the acquisition and sustainment of DoD weapon systems. An increased reliance on contractor support has helped ease the burden on a heavily reduced force structure, but has left military commanders vulnerable to declaring a non-mission capable status during times of crisis.

In today's strategic environment, the role of the U.S. military has changed from a stand-alone Cold War superpower to a multinational coalition partner. Much of the force structure is involved in joint military operations other than war (MOOTW) all over the world. This sheds new light on the use of contractors, as they may be called upon to support military missions and be subjected to battlefield conditions during these "non-war" operations. This research examines the legal, regulatory, and policy procedures regarding the use of contractor support on the battlefield and discusses how the incorporation of civilian personnel violates the principles of war. It also describes the challenges facing personnel responsible for developing acquisition strategies and employment concepts that ensure full mission support of DoD weapon systems. Finally, recommendations to help address the issues and mitigate the risks associated with using contractors on the battlefield are discussed.

Part 1

Introduction

The significant problems we face cannot be solved at the same level of thinking we were at when we created them.

— Albert Einstein

Over the past decade, the Revolution in Military Affairs (RMA) has been complimented by what is referred to within the acquisition community as the Revolution in Business Affairs (RBA). Many commercial business practices have been adopted by the Department of Defense (DoD) in an effort to streamline the acquisition of our weapon systems and eliminate unnecessary bureaucratic processes. This streamlining brought with it significant cuts in personnel. The acquisition community has lost 42 percent of its workforce since 1989, and further reductions are planned.[1] In addition, personnel cuts across the armed services have left military leaders struggling to ensure operational readiness for the multitude of operations they will face in the 21st Century.

As the DoD continues to employ commercial practices to revolutionize its acquisition and sustainment processes, the reliance on contractor support for its weapon systems is rapidly increasing. Defense and commercial contractors perform such an extensive role in support of our military equipment that many critical systems cannot be operated without them. Investments in the specialized training required to maintain these complex, sophisticated weapon systems is not "economical" for the military to pursue. However, these economies need to be balanced with

the risks faced by battlefield commanders in the event contractors are not available to maintain deployed systems.

The U.S. military has relied on support from contractor/civilian personnel since the American Revolution. Throughout history, these personnel have remained an integral part of military operations. In today's environment, however, the role of the military has significantly changed. No longer are U.S. forces structured to defend the nation as they were during the Cold War. Now much of the force structure serves as a coalition partner supporting military operations other than war (MOOTW). This sheds new light on the use of contractors, as they may be called upon to support military missions under battlefield conditions during non-war operations. MOOTW introduces a whole host of legal and regulatory issues that must be addressed prior to subjecting civilian personnel to hostilities. Currently, acquisition training courses for Program Managers are virtually devoid of information with respect to these issues.

The acquisition and contracting communities need to adapt to these changes in force implementation and develop processes to train program managers and contracting officers to effectively structure program support strategies accordingly. Future programs and contracts must ensure weapon systems are designed, developed, produced and sustained with both contractor and military support in mind. Support contracts must be flexible enough to withstand the uncertainties faced in the battlefield and at the same time, guarantee readiness. The operational forces cannot afford the risk of a contract dispute during a crisis situation that leaves them vulnerable and unable to carry out their mission requirements. This paper describes the various issues associated with using "Contractors on the Battlefield" and provides information for program managers, contracting officers, and combatant commanders to consider to best ensure full mission capability in time of conflict.

Notes

[1] William S. Cohen, "Secretary of Defense Report to Congress Actions to Accelerate the Movement to the new workforce Vision", April 1998; on-line, Internet, 8 December 1999, available from http://www.acq.osd.mil/ar/912crpt.htm#2.

Part 2

Background

In total war, it is quite impossible to draw any precise line between military and non-military problems.

— Winston Churchill

Ever since the first revolutionaries took up arms to fight for American independence, civilians have readily supported military operations and have significantly contributed to military successes on the battlefield. DoD reliance on civilian technology and support has steadily increased throughout American history. During this past century, especially with respect to the late 1900s, "the role of civilians in support of military operations has evolved to encompass a full range of support from MOOTW to war."[1] As recently as 1999, contractor personnel manned stations for the Joint Surveillance Target Attack Radar System (JSTARS) in support of the UN peacekeeping effort, Operation Joint Endeavor over Bosnia[2]. Without these dedicated civilian professionals performing important surveillance functions, the effectiveness of the JSTARS to provide critical information to battlefield commanders would have been severely limited. Civilian support will continue to serve as a vital component to military operations in the years ahead.

As America ventures into the 21st Century, the military faces increased responsibilities all over the globe. Military missions cross the entire spectrum of crisis intervention from humanitarian assistance to peace operations to high intensity conflict[3]. This increased

responsibility to perform multiple missions has been coupled with an extensive decrease in force structure. In just the past 15 years, the armed forces have suffered a 30 percent loss in manpower along with a 40 percent cut in the defense budget and a 70 percent reduction of weapon systems acquisition. In addition, the U.S. has withdrawn two-thirds of the ground forces and three-fourths of the air forces from Europe, leaving a large void in the logistics infrastructure available for conducting overseas operations.[4] In view of these reductions, many tasks once performed by military members have been contracted out to private industry.

According to the Office of Management and Budget (OMB) Circular A-76, activities ranging from laundry services, to aircraft maintenance, to satellite tracking and data acquisition can be acquired through commercial sources. With this in mind, virtually any task appears acceptable for contracting with private industry. However, activities which are "so intimately related to the public interest as to mandate performance by Government employees" are not subject to the Circular. These include "management and direction of the Armed Services; and activities performed exclusively by military personnel who are subject to deployment in a combat, combat support or combat service support role."[5] Unless Congress has declared war, civilians, cannot be legally required to serve in combat situations. For this reason, military activities involving deployment to combat zones are considered government functions and must remain organic to the military. Organic activities include the actual weapon system operations and the logistics support capabilities required by those systems.

Core Capabilities

To ensure effective maintenance support is provided for deployment locations, the Services are required, by law, to maintain a core logistics capability. According to Title 10 US Code (USC) 2464, a core logistics capability includes "those capabilities that are necessary to

maintain and repair the weapon systems and other military equipment."[6] Contractors cannot serve in a combatant role; and, as a result, maintenance capabilities must remain organic to ensure combat readiness in the face of hostile action.

> It is essential for the national defense that the Department of Defense maintain a core logistics capability that is Government-owned and Government-operated...to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements. [7]

Improvements in the reliability and maintainability of weapon systems over the past 20 years have greatly helped the logistics workforce reduce repair times and maintain mission readiness. However, during these same years, technology has advanced far beyond the military's ability to train sufficient personnel to support these weapon systems. Operation and maintenance of state-of-the-art systems often requires extensive knowledge of system design, an expertise not readily available within the military ranks. This increased sophistication of weapon systems places a greater need for knowledgeable technicians to be close at hand during operations, thereby greatly increasing the risk of civilian contractor involvement in conflict.[8] As recently as Desert Storm, contractors were called upon to provide in-theater aircraft maintenance, transport and supply, thus straining the definition of essential military skills[9]. In Operation Desert Storm, 76 US contractors deployed with 969 military personnel to provide maintenance, technical assistance, and equipment support...a few went into Iraq and Kuwait with combat elements."[10]

Commanders are trained to do whatever it takes to effectively carry out the mission. This may compel them to use personnel from any available source to ensure success. However, even during a crisis situation, commanders must still adhere to the laws regarding the maintenance of core capabilities and the employment of civilian personnel. As outlined in DoD product support strategy, "Although each service has developed their own core definition and assessment process, the bottom line is that any action to outsource a logistics function that causes loss or

sufficient weakening or a core capability as defined under 10 U.S.C. 2464, does not meet the intent of the law."[11] Lessons learned during Desert Storm reflect a need to address the absence of a fully-functional, organic support capability. To help address the problems encountered during Desert Storm and to maintain force readiness in a changing strategic environment, the Joint Chiefs of Staff (JCS) developed a flexible new concept for employing the military instrument of power, one that specifically addresses the requirement to develop a more responsive logistics capability.

Focused Logistics

Joint Vision 2010 addresses four key operational concepts designed to effectively fight and win America's battles of the 21st century: Dominant Maneuver, Precision Engagement, Full-Dimensional Protection and Focused Logistics.[12] Focused Logistics is "the fusion of information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while enroute, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level of operations."[13] Or, as more succinctly defined in the 1996 Logistics Support Plan, a capability that is "flexible, mobile, integrated, compatible, and precise in targeting support to the point of need."[14] The JCS recognize that many civilian technologies and processes can be employed to make logistics more responsive. They expect defense agencies to "work jointly and integrate with the civilian sector, where required, to take advantage of advanced business practices, commercial economies, and global networks."[15]

Over the past decade, the DoD outsourced many of its logistics functions to the civilian workforce and has reported significant cost savings; however, the cost impact to operational readiness remains to be answered. Mr. Ron Orr, HQ USAF/IL, addressed the Air Command and

Staff College on 3 Feb 00 concerning the future of logistics. He perceived that the DoD became too enamored with outsourcing and went overboard with implementing business approaches during the 1990s.[16] Business contracting processes are not restrained by the numerous laws and regulations imposed on government contracting; hence, the improvements expected from the implementation of commercial practices are not always realized. Furthermore, business approaches cannot be directly applied to many of the missions the military executes. While aircraft maintenance can be readily accomplished by the civilian sector here in the continental United States (CONUS), civilian repair personnel cannot be required to accompany the aircraft into combat zones. A lack of support will leave combatant commanders unable to execute the required mission; an unacceptable end-product of outsourcing. "As much as we try to emulate and adopt commercial best practices, there will always be a non-commercial, unique warfighting aspect to the majority of DoD weapon systems."[17] Organic logistics capabilities must be maintained to support the battlefield commanders, ensure operational readiness, and successfully implement the concepts of Focused Logistics.

Notes

[1] Joint Publication (Joint Pub) 1-0, Doctrine for Personnel Support to Joint Operations, November 1998; Joint Electronic Library, "Joint Publications," CD-ROM, OC Incorporated, February 1999.

[2] *Air Force Background Papers*, (1997, reprint, Maxwell AFB, AL: Air University Press, 1999) Operational Forces Course Book (OFCB), 105.

[3] *National Military Strategy of the United States of America,* September 1997, 2.

[4] Defense Systems Management College, *Acquisition Logistics Guide*, 3rd ed.(Ft Belvoir: Defense Systems Management College, 1997), 1-5.

[5] Office of Management and Budget (OMB) Circular A-76, *Performance of Commercial Activities,* August 1983, 3.

[6] Title 10 USC, Section 2464 *Core Logistics Capabilities*, January 1999,on-line Internet, 8 December 1999, available from http://uscode.house.gov/usc.htm.

[7] Ibid.

[8] Major James E. Althouse, "Contractors on the Battlefield: What Doctrine says, and Doesn't Say," *Army Logistician* 30, no. 6 (November-December 1998):14-17.

Notes

[9] Lt Col Stephen E. Newbold "Competitive Sourcing and Privatization: An Essential USAF Strategy." *Air Force Journal of Logistics* 23, no. 1 (Spring 1999) 28-33.

[10] Eric A. Orsini and Lt Col Gary T. Bublitz, "Competitive Sourcing and Privatization: Risks on the Road Ahead?" *Army Logistician* 31, no. 1 (January-February 1999): 130-132.

[11] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 3.

[12] *Joint Vision 2010-America's Military: Shaping the Future*, 1995, 1.

[13] Ibid., 24.

[14] Defense Systems Management College, *Acquisition Logistics Guide*, 3rd ed.(Ft Belvoir: Defense Systems Management College, 1997), I-10.

[15] Joint Vision 2010, 24.

[16] Mr. Ron Orr, HQ USAF/IL, "Air Force Logistics Transformation" Lecture, Air Command and Staff College, Maxwell AFB, AL., 3 February 2000.

[17] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 56.

Part 3

Issues Analysis

Sound logistics forms the foundation for the development of strategic flexibility and mobility. If such flexibility is to be exercised and exploited, military command must have adequate control of its logistics support.

— Rear Admiral Henry E. Eccles

The DoD has successfully applied commercial practices across a broad range of functions to help improve efficiencies and reduce costs. While this is a positive step forward, not all proven commercial practices provide a best-value service to the military. In fact, over-utilizing these practices can negatively affect military readiness in time of conflict. DoD policies provide relative freedom to commercially contract for performance and management of all non-warfighter functions; those "performed outside the theater of conflict." Functions performed in-theater are intended to remain organic to military personnel. This intent is based on problems associated with using contractors on the battlefield.[1]

As previously noted, civilian contractors accompanied US troops onto the battlefield during Desert Storm. Operations in Somalia, Bosnia, and Haiti also saw employment of civilian personnel in hostile environments. This level of involvement creates multiple, complex issues for the combatant commanders to resolve. Command authority, force structure, status of forces, and force protection issues must be addressed before the contractors arrive in theater. These issues directly relate to the basic tenets concerning the proper conduct of military operations. These proven truths are known as the Principles of War.

Principles of War

The Principles of War apply to military operations at the strategic, operational, and tactical levels of war. According to Joint Pub 3-0, unity of command, objective, offensive, mass, maneuver, economy of force, security, surprise and simplicity are the "enduring bedrock of US military doctrine."[2] Use of civilian contractors on the battlefield violates the purpose of these principles, specifically with respect to unity of command, security, and simplicity.

Unity of Command

"The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective."[3] Joint Pub 4-0, *Doctrine for Logistic Support of Joint Operations* states, "Unity of command is essential to coordinate national and theater logistic operations. For a given area and for a given mission, a single command authority should be responsible for logistics."[4] Military personnel are subject to the Uniform Code of Military Justice (UCMJ) and obey the lawful orders of the commanders in charge. Civilians, on the other hand, do not follow this command structure unless the United States Congress declares war, an action not taken since World War II. As stated in Title 10 USC, civilian personnel subject to the UCMJ must meet the following criteria:

> "In time of war, persons serving with or accompanying an armed force in the field...and subject to any treaty or agreement to which the United States is or may be a party or to any accepted rule of international law, persons serving with, employed by, or accompanying the armed forces outside the United States."[5]

This lack of command authority over civilian contractors presents a burden on commanders who are accustomed to having their orders carried out. Instead, they have them measured against a contract to see if the action requested is permissible. This leaves room for contractor personnel to refuse tasks that do not meet contractual requirements. Past experience has shown the

viability of this issue. The lack of command authority over contractor maintenance personnel assigned to the Operational Support Agency (OSA) during Desert Storm resulted in mission success becoming dependent on whether or not requested support aligned with the contract.[6]

So what happens when contractor personnel refuse to carry out the orders of the commander? Since military law only applies during a declared war, the commander's hands are pretty much tied. As it now stands, their only recourse is to "have the contracting officer direct a contractor to remove an employee who does not conform."[7] Unfortunately, the commander's request still remains unfulfilled. This problem is exacerbated by the fact commanders are often unprepared to deal with this type of situation. Regulations regarding civilian deployment and mobilization plans fail to address those unique aspects of deployment associated with non-DoD personnel. "According to a study performed for the Army by the Rand Corporation in 1994, there has never been a central policy for deploying contract employees."[8] Hence, while attempting to conduct operations in threatening, hostile environments, commanders face a loss of control over their in-theater weapon system support personnel. This loss of control, inherent to the military-civilian relationship, may result in defeat, depending on the criticality of the functions performed and the inevitable fog and friction introduced during battle.[9]

Military authority over civilian personnel is virtually non-existent without a formal declaration of war, a declaration which is unlikely considering the strategic environment facing today's military. The DoD currently foresees "a near-term future in which regional conflicts persist but which is devoid of a major military threat as characterized by the 45-year Cold War."[10] In this volatile environment, commanders will need to take additional steps to maintain unity within their command. In some instances, civilian contractors "just said no" when asked to accompany the military into harms way, leaving a void in the logistics support structure. This

refusal would be unheard of in the military command structure; not so with civilian personnel. These contractor employees did not sign-up to "defend against all enemies foreign and domestic," so it is difficult to condemn them for a lack of patriotism or commitment. As one author noted, after conducting extensive research on operational support during Desert Storm, "The fact that some civilian contractors refused to deploy to the war zone should not have surprised anybody. This problem itself is enough to consider replacing the Contractor Logistics Support (CLS) system with Air Force maintenance personnel."[11] Statements such as this clearly outline a need to determine the military commander's authority to direct civilian personnel supporting his operations.

A detailed list of the functions performed by contractor personnel, integrated with other operational considerations, will provide the commander valuable information on which aspects of the operation are under his direct command, and which are not. This information will greatly assist in accomplishing an overall risk assessment of the situation and in driving alternative support concepts, such as training additional military personnel to fill potential vacancies. US forces must either learn to perform these functions or risk an inability to deploy.[12] Additional considerations, such as the potential to encounter weapons of mass destruction (WMD), only serve to magnify the risk of civilian non-deployment and further hinder the commander's ability to wage war.

In the mid-1980s, a scenario involving the use of chemical and biological (CB) weapons against US forces was presented to 21 general officers to obtain their assessment on the impact the attack would have on joint operations. The study concluded the following with regard to civilian personnel located in hostile territory:

> We believe there would be a significant reaction to CB attacks by the civilian and contractor workforce...resulting in a great reluctance to return to work...

> Specifically, we could not predict the availability of a civilian and contractor workforce to return to previously contaminated areas and resume work... Even where were subsequently given chemical defense gear and trained in its use, it is reasonable to estimate a minimum 30 percent degradation in worker availability and effectiveness.[13]

A loss of 30 percent effectiveness, resulting from an over-reliance on a civilian workforce which is vulnerable to CB weapons, illustrates a weakness in the US power projection and force buildup capability.[14] During Desert Storm, efforts were taken to help alleviate the fear of attack against civilian personnel and encourage them to remain in-theater. The C21 maintenance contractors were separated from military forces and housed in downtown Riyadh.[15] While this decreased their vulnerability to attack, it also separated them from the aircraft they maintained and the commander they served, further affecting the overall unity of command. Moving the contractors also attacked the principle of security as it raised issues concerning the military's ability to adequately protect them from enemy aggression.

Security

"The principle of security requires that friendly forces and their operations be protected from enemy action that could provide the enemy with unexpected advantage."[16] To date, the DoD has not fully addressed the problem of hostile action aimed at contractor personnel, whether it stems from small arms fire, or result from WMD. In the past, contractor personnel could remain fairly close to friendly lines and conduct their mission at a relatively safe distance from battlefield operations. Revolutions in technology, to include advanced weaponry, all but eliminated the concept of the linear battlefield.[17]

In-theater contractors, now regularly operating on the battlefield, require the same type of support guaranteed to military personnel. The responsibility for this support rests with the Component Commander. As stated in Joint Pub 1-0, *Doctrine for Personnel Support to Joint*

Operations, "DoD civilians and contractor employees deployed for military operations will be provided the same support and services provided their military counterparts;" and furthermore, that "Component Commanders will provide the necessary resources to support, train, clothe, equip, and sustain the civilian workforce in the operational area."[18] Commanders must ensure civilian contractors have received their required vaccinations and special training (for example, Self-Aid Buddy Care and Chemical Warfare) and be prepared to provide this training prior to allowing their entry into theater. Standard procedures for military personnel include regular training and vaccinations to ensure immediate deployment capability. For the most part, civilian agencies do not incorporate warfare training as part of their formal instruction programs. Civilian participation in battlefield operations not only presents the commander with additional protection considerations, it also brings civilian coverage under international agreements into question.

As a land-based service, army personnel are fairly likely to come into direct contact with the enemy. For this reason, providing security to civilian personnel is incumbent upon Army commanders more so than any other service. The Army has been wrestling with the issue for some time and has published policy for employing contractors on the battlefield. Field Manual 100-10-2 *Contracting Support on the Battlefield*, and AR 715-XX, *Army Contractors on the Battlefield*, attempt to define procedures for commanders faced with protecting civilian personnel. While these documents provide a good overview of the courses of action available to commanders using contracted support, they fail to fully clarify the protected status of the civilians they oversee in the event hostile forces are encountered.

> Contractor employees accompanying US Armed Forces may be subject to hostile action. If, captured, a contractor's status will depend upon the type of conflict, applicability of any relevant international agreements, and the nature of the hostile force...The full protections granted to Prisoners of War under the Geneva and

> Hague Conventions apply only during international armed conflicts between signatories to those conventions. Accordingly, these conventions are generally non-applicable during MOOTW. Therefore, contractor employee protection during MOOTW will depend on the specific circumstances of an operation. [19]

Combatant vs. non-combatant status must be clearly defined and legally supported prior to deploying contractor personnel into potentially hostile environments. Uncertainty presents an unacceptable risk. In the event of capture, contractors may face incarceration or death depending on their status and level of involvement. If the US fails to properly define their status, they will more than likely be at the mercy of the enemy. DoD documents drafted as recently as Aug 1999 state that contractors create "concerns" regarding status of forces agreements, and ask (rather than answer) the question, "Once civilians enter hostile territory, are they protected from attack, or not? Are they entitled to protect themselves, if threatened?[20] Even though these issue apply to international law probably more so than to service doctrine, the DoD clearly needs to do more to clarify the status of contractors on the battlefield, especially in light of the current strategic environment and its focus on MOOTW.[21]

Status of forces presents one security risk to the commander, and force protection presents yet another. Unit commanders authorized to use civilian contractor personnel are legally responsible for their protection. Even in situations where the US considers civilians noncombatants, their support of US operations may be seen by the enemy as active involvement in the conflict and subject them to direct or indirect attack.[22] To help minimize the risk of attack, the commander must assign ample security force protection to civilian personnel. He can also take more drastic steps to better ensure their safety. According to Joint Pub 1-0, "Civilians deployed to the operational area may be regarded by the enemy as combatants; therefore, combatant commanders may authorize the issue of weapons to DoD civilians and contractor employees on a by-exception basis for personal protection."[23] The arming of contractor

personnel obfuscates the distinction between military and civilians serving on the battlefield and challenges their noncombatant status. The confusion surrounding status of forces and force protection issues leads to a discussion on a third principle of war, the principle of simplicity.

Simplicity

Air Force Basic Doctrine defines simplicity as: "avoiding unnecessary complexity in organizing, preparing, planning, and conducting military operations." It also recognizes the complexity inherent in military operations, particularly joint operations, and recommends overcoming complexity through joint exercises and training to gain familiarity with proper procedures.[24] The complexities involved with deploying contractors on the battlefield shatter this concept of simplicity. Military training exercises, by design, do not account for all the maintenance and support provided by contractor personnel. This lack of training can lead to difficulties in conducting operations once forces are deployed and reliance on civilian personnel becomes evident. Joint Pub 4-0 stresses the need to train as a complete unit: "If leaders do not create and train an organization in peacetime that will work in war, the leadership will be burdened with urgent reorganization and training requirements at a time when they should be free to focus on the employment of that organization."[25] Joint Pub 4-0 also describes the ideal logistic organization as one that "would not require a fundamental change to manage the transition from peace to war to meet an emergency."[26] Current military organizations do not contain this ideal logistic organization, as fundamental changes will be required should civilians deploy without proper joint training, or worse yet be unable to deploy.

Hazardous conditions and international laws which prohibit US civilians from entering certain countries contribute to the readiness issue. In the event contractors are unable to deploy or can no longer provide their services, the entire logistic organization for those supported units

would be disrupted at a crucial moment. This disruption will diminish the unit's operational readiness and place an even greater burden on the commander and his troops. Faced with the absence of civilian personnel to perform required functions, commanders may attempt to increase overall combat effectiveness by realigning their organic resources to meet critical demands. However, measures taken to enhance combat power, such as shifting logistic manpower into combat units, may achieve just the opposite effect and upset the proper balance between logistic and combat forces, a balance crucial to conducting military operations.[27] Commanders at all levels must be prepared to deal with this situation and maintain proper balance despite the circumstances. Unfortunately, current doctrine makes it extremely difficult for commanders to prepare, as it fails to address the inevitability of contractor presence (or lack thereof) on the battlefield, especially with respect to the strategic environments under which military forces now deploy.[28] Complications affecting the units' ability to efficiently organize, prepare, plan, and conduct operations due to the uncertainties regarding availability of civilian contractor personnel introduce confusion to and negate the simplicity of the operation. Even though Joint Pub 4-0 clearly states, "The principles of logistics complement the principles of war," the introduction of contractors to the battlefield violates the principles of simplicity, security and unity of command.[29]

Core Capabilities, Take Two

To better align with the principles of war and protect against an inability to conduct operations, military forces will need to remain capable of performing the necessary functions and services required to operate and maintain their systems and supplies.[30] This takes us back to Title 10 USC 2464 and reinforces the intent behind its requirement for each service to maintain a core logistic capability. A DoD report, designed to help develop product support strategies,

emphasizes the need for this organic capability: "Organic depot maintenance is used as an effective second source to avoid total reliance on contractor support."[31] It also addresses the advantages of organic support should contractor support fail for whatever reason: "By maintaining the minimum capability necessary to support technical competence, the second source provides a fallback position should the contractor be unable to meet performance criteria."[32] Second source capabilities, especially in light of the risks associated with contractor support during contingency operations, are absolutely essential. For weapon systems, this means developing product support strategies that provide for military support in addition to CLS. Acquisition Policy reflects this view:

> It is DoD policy to maintain adequate core depot maintenance capabilities to provide effective and timely response to surge demands, ensure competitive capabilities, and sustain institutional expertise. Support concepts for new and modified systems shall maximize the use of contractor provided, long-term, total life-cycle logistics support that combines depot-level maintenance for non-core-related workload along with wholesale and selected retail materiel management functions (emphasis added).[33]

Although combatant commanders maintain responsibility for ensuring adequate support of fielded systems and personnel, program managers and contracting officers must also develop strategies and execute contracts that ensure support is there when needed. This requires education and training of the acquisition workforce concerning the benefits and risks associated with contracted support, particularly that support which places contractor personnel on the battlefield. As General A.C.P. Wavell once stated, "It takes little skill or imagination to see where you would like your army to be and when; it takes much more knowledge and hard work to know where you can place your forces and whether you can maintain them there."[34]

Future Support

The introduction of contractors to battlefield operations creates challenges for operational and support commanders alike. Dramatic changes in the strategic environment, to include the loss of a major Super Power threat in the European theater, has forced significant reductions in US force structure and diminished pre-positioned equipment and supplies overseas. The Air Force alone has been cut nearly 40 percent since 1986. These reductions have contributed to the need for additional personnel, particularly in the area of logistics, to support an increased involvement in contingency operations. Overseas support personnel catered to an average of 3,500 Air Force troops in 1989. By 1996, that average rose to 13,700.[35] Since the military no longer has the force structure to meet all its demands, additional support has to come from outside sources...enter the civilian contractor community.

The US civilian workforce has contributed outstanding support to the nation's military services. They have beyond the call of duty to staff defense depots, maintain weapon systems, and supply troops in peace time operations as well as war. Their dedication is a critical to the successful deployment and sustainment of US troops.[36] During Desert Storm:

> Industry executives estimated there were about one thousand contractor personnel at air bases, on aircraft carriers, and at other military facilities throughout the Gulf region. The primary role of these personnel was to assist military technicians in diagnosing and solving problems with weapons systems and in assessing and repairing battle damage. Without significant contributions by government civilians, contractors, and the hundreds and thousands of people working at plants and factories supplying everything from bottled water and desert camouflage uniforms to spare parts for the Abrahms main battle tank, the US's ability to successfully support a major military campaign in the gulf region would have been jeopardized.[37]

At a time when the nation's military was strong and robust, the US still relied on the support of one thousand contractor personnel. Imagine the workload requirement that would be placed on

them today with a military force structure that is only a shadow of what existed for the Persian Gulf crisis.

Requirements for civilian support will be an inevitable part of future military operations. This support, and back-up plans to ensure continued operations, must be determined prior to deployment. Joint Logistic Doctrine states, "Fully trained and equipped Combat Support and Combat Service Support (CS/CSS) elements must be available and deployed in adequate number to render immediate sustained support to the combat troops. A combat force without logistic support is immobile and powerless."[38] Obtaining this support from the civilian sector can enhance combat operations if accomplished smartly. Contractors provide new sources for supplies and services and also act as force multipliers for many functions. Their support also helps bridge the gaps to reach our deployed forces.[39] On the other hand, as demonstrated above, contracted support can be a deterrent to military operations if not appropriately applied.

Notes

[1] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 13.

[2] Joint Publication (Joint Pub) 3-0, *Doctrine for Joint Operations*, February 1995, Appendix A-1

[3] Ibid., Appendix A-2.

[4] Joint Pub 4-0, II-6

[5] Title 10 USC, Section 802, Chapter 47, "Uniform Code of Military Justice", 5 January 1999,on-line Internet, 8 December 1999, available from http://uscode.house.gov/usc.htm.

[6] Lt Col David D. Dyche, *Making Operational Support Airlift Ready for War*. Research Report No. AU-ARI-93-11. (Maxwell AFB AL: Air University Press 1995)186.

[7] Althouse, 15.

[8] Althouse, 16.

[9] Davidson, 13

[10] OMB Circular A-76, 2.

[11] Dyche, 185.

[12] *Assessment of the Impact of Chemical and Biological Weapons on Joint Operations in 2010: CB 2010 Study*. (1997; reprint, Maxwell AFB AL: Air University Press, 1999) OFCB 185.

[13] Ibid., 179.

Notes

[14] Ibid., 185.

[15] Dyche, 175.

[16] Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 18.

[17] Althouse, 14.

[18] Joint Pub 1-0, O-1.

[19] Army Field Manual (FM) 100-10-2, *Contracting Support on the Battlefield*, April 1999, Appendix F.

[20] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 13.

[21] Althouse, 17.

[22] Ibid.

[23] Joint Pub 1-0, O-2.

[24] AFDD 1, 21.

[25] Joint Pub 4-0, II-7.

[26] Ibid.

[27] Ibid., II-5.

[28] Althouse, 17.

[29] Joint Pub 4-0, II-1.

[30] Joe A. Fortner and Ron Jaeckle, Institutionalizing Contractors on the Battlefield." *Army Logistician* 30, no.6 (November-December 1998) 11-13.

[31] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 37.

[32] Ibid.

[33] DoD Regulation 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs*, March 1996, 17.

[34] Martin van Crevald *Supplying War, Logistics from Wallenstein to Patton,* (New York N.Y.: Cambridge University Press, 1977) 231.

[35] *Air Force Background Papers*, OFCB, 116.

[36] Captain Thomas J. Snyder and Captain Stella T. Smith, *The War in the Persian Gulf*, (1982, reprint, Maxwell AFB AL: Air University Press, 1999) OFCB, 313.

[37] Ibid.

[38] Joint Pub 4-0, II-5.

[39] FM 100-10-2, Appendix F.

Part 4

Conclusions/Recommendations

To a conscientious commander, time is the most vital factor in his planning. By proper foresight and correct preliminary action, he knows he can conserve the most precious elements he controls, the lives of his men. So he thinks ahead as far as he can.

— General Mathew B. Ridgway

Contractors will remain an integral part of future military support operations. The vital role they play in support of critical weapon systems may expose them to harmful situations. Unstable environments associated with operations other than war may quickly turn violent leaving civilian support personnel vulnerable to attack. It is incumbent upon military acquisition program managers, contracting officers, and combatant commanders to understand the ramifications of any decision that may place contractors on the battlefield and to determine the product support, contracting, and employment strategies that minimize the risk of such an occurrence.

Product Support

Acquisition Program Managers (PMs) are first in line to address contractor support requirements for new and modified weapon systems. They determine the applicability of competitive sourcing to their particular program and assess product support requirements.[1] PMs are responsible for addressing support concepts early in the system design process and for

delivering supportable systems to the warfighter. Alternative support concepts, along with their associated cost estimates, are determined at the program office via supportability analyses. "Supportability analyses shall form the basis for related design requirements included in the system specification and for subsequent decisions concerning how to most cost-effectively support the system over its entire life-cycle."[2] By and large, PMs are held to strict program budgets and are faced with continuous reprogramming directives. For this reason, when selecting the "optimum" product support strategy, cost-effectiveness often wins over military effectiveness.

The decision to forego a portion of combat support effectiveness in the interest of saving costs illustrates the difficulty in the decision making processes inherent to acquisition management. Decreases in functionality and design are frequently traded for reduced costs; however, this is not accomplished in the blind. Often, PMs must decide between implementing cost-savings measures and placing the survivability of their program at risk. Acquisition policy instructs PMs to ensure that systems can be cost-effectively supported and that they are "provided to the user with the necessary support infrastructure for achieving the user's peacetime and wartime readiness requirements."[3] This direction coincides with recent guidance for developing product support strategies which states, "Any review of product support strategies must first and foremost focus on the requirements of the warfighter. The ultimate results of any product support strategy must be a weapon system that meets or exceeds warfighter requirements at an affordable price."[4] The responsibility for deciding the trade-of between affordability and usability, to include the associated risks, lies with the PM. It is therefore imperative that the PM closely coordinate his acquisition plan with the using command to ensure system requirements are fully defined and risk factors fully understood prior to implementing a course of action.

Without this coordination, systems that fail to meet user requirements may be developed and deployed leaving the combatant commanders to deal with the support problems.

The task of deciding the appropriate support strategy has become even more difficult with the revolutionary advances in technology and the increased focus on joint and dual-use applications. Unfortunately, no "one size fits all" solution exists. "Each weapon system and Service will have their own unique requirements and constraints, all of which must be factored into the decision process necessary to drive an effective product support strategy.[5]

Contract Development

Just as no single strategy meets the PM's needs, no single contracting vehicle can accommodate all the necessary requirements for every circumstance. Each requirement must be understood and appropriate contracting language applied to ensure a usable product. This responsibility rests with the Contracting Officer (CO). While Joint Publications describing strategies for deployment and employment of operational forces abound, joint doctrine for contracting remains underdeveloped. As a result, contracting for support of joint operations is being conducted in a somewhat ad hoc fashion.[6]

Acquisition policy helps to clarify some of this confusion. DoD 5000.2-R states that commercial sources shall be used "when they are available, cost-effective, and can readily meet the users requirements."[7] It does not however, address contracting for civilian support on the battlefield. The Army has developed policy to help COs determine the appropriate course of action in the event they require contractor support in hostile environments. According to FM 100-10-2, "The following must be considered during the negotiating and drafting of any contract that requires the employment/deployment of civilian contractors to support U.S. Army operations/weapon systems:

- A plan to transition from peacetime operations to operations during conflict, war, and/or MOOTW, and a subsequent plan to transition back to peacetime
- A plan to transition mission accomplishment back to the government if the situation requires the removal of contractors."[8]

This policy implies that a military capability will exist to perform contractor functions in the event they are unable to carry out their mission.

Since the DoD prefers that military personnel perform all product support functions in the Area of Responsibility (AOR), the question may be asked as to why contractors would be hired in the first place. Current DoD reports describing product support strategy development states, "any function performed where troops are subject to deploy to the AOR would be excluded from performance by a commercial source of support."[9] Just like the PM, the CO has many conflicting recommendations to take under advisement when contracting for support; however, they must still comply with all applicable laws. Accommodating these sometimes contradictory requirements between the various laws, regulations, and available resources is implicit to contract development and negotiation[10] "Consequently, the art and science of writing contracts will become extremely critical to ensuring flexibility, sustainability, and survivability on the battlefield."[11]

Employment

Once the program manager has developed a viable support strategy and the contracting officer has executed the contract, responsibility transfers to combatant commander. Active involvement by the commander during both the strategy development and contracting phases should help minimize the problems encountered with contractor employment. There will not be time to nit-pick contract clauses during the conduct of military operations. Command and control of contractor personnel and their deployment conditions are dependent upon the terms

and conditions of the contract and the tactical situation.[12] Since the contract determines the extent of the commander's authority, he should influence the contacting process early to help operations run more smoothly once deployed. Resolving complex relationships and issues with command authority, force sustainment, and force protection prior to actual deployment will benefit both contractor personnel and the military units they support. An adjustable strategy combined with a flexible contract vehicle will also help ease the commander's ability to deal with the uncertainties inherent to military operations. "Commanders have enough to worry about in fighting a war; they do not need to be concerned about contracting. They need the flexibility to do what is needed, when it is needed, and to the degree it is needed. To have any less flexibility increases risk significantly."[13] The combatant commanders, contracting officers and program managers must work together to secure contractor support that improves effectiveness, maintains flexibility, and does not negatively impact mission capability. Intelligent contracting decisions require shared knowledge of user requirements, system support concepts, contract laws, and the employment environment.

Recommendations

Cultivating successful outsourcing requires fundamental improvements to DoD training and education programs, to include the incorporation of "Contractors on the Battlefield." Increasing the awareness of the complexities involved with placing civilians in hostile environments will allow program managers and contracting officers alike to affect product strategies early-on and acquire responsive support. Furthermore, with the dawning of a new century, the DoD must consider the applicability of statutory law with respect to civilian support in view of the Revolution in Military Affairs, the Revolution in Business Affairs, and the new strategic environment.

Education and Training

Joint Vision 2010 says it best with respect to the need for improved education and training programs to meet the needs of the future:

> "It is essential that our Joint Professional Military education (JPME) programs provide our warfighters with an understanding of strategic concepts in the future environment where military force will be applied, as well as an in-depth understanding of individual Service systems and how the integration of these systems enhance joint operations."[14]

Education programs for acquisition program managers cover basic program management concepts and conduct exercises in strategy development and contract negotiation. However, these courses lack information on the appropriate strategies and techniques for employing civilian contractors in support of contingency operations: information most program managers will require in the near future. The Advanced Program Manager's Course, taught at the Defense Systems Management College, covers issues with Contractor Logistic Support, but only as an optional elective. Integrating it into the main stream course material will help all course attendees develop better program and contract strategies for using CLS.

Training is also lacking in this area and the need exists to incorporate civilian personnel into joint exercises. By actively involving contractors, the military can gain better insight to, and appreciation for what they bring to the fight. Plus, it provides as an excellent opportunity to identify problem areas and modify procedures and/or contracts to correct them before actual deployment. Outsourcing and privatization issues will become increasingly prevalent as the military relies even more heavily on commercial services to meet their operational commitments. "Contractors on the Battlefield" training for program mangers, contracting officers, and commanders is essential to the military's future. As Joint Vision 2010 emphasizes, "Our education and training programs must prepare joint warriors to meet the challenges of the future battlespace."[15]

Laws and Regulations

Along with improved training and education, a review of the existing laws and regulations and their applicability to the new strategic environment is required. "While contracting for services is nothing new for the Army, incorporating contracting into doctrine as an essential element of force application is."[16] This statement is true for all the Services. Modifying Title 10 USC to grant UCMJ authority over civilians supporting military operations and MOOTW may increase unity of command and decrease force protection issues. Of course US Code cannot be arbitrarily changed to try and solve an operational command problem; however, the new strategic environment warrants an investigation of its applicability. Also, if Title 10 requires that each Service maintain a core logistic capability, then comply with the law and give the military the required personnel and infrastructure to maintain that capability. Examples abound of systems that cannot be operated without contractor support. JSTARS and Rivet Joint aircraft, two vital collection platforms, fit this description. Fortunately, contractor support personnel have willingly ventured out of their safety zones to maintain those systems. That may not always be the case. As two experienced logisticians so aptly put it, "The issue of "Contractors on the Battlefield" is clearly bigger than any functional area, bigger than any Service, and perhaps even bigger than DoD itself."[17]

Experience shows that operational readiness problems do not get resolved by simply replacing a downsized military force with civilian personnel. A one-to-one exchange does not exist. In fact, as illustrated throughout this paper, many new problems are introduced when civilians enter the battle zone. Fighting and winning the nation's wars is the military's job. The Services must be able to train, educate, and equip their forces to effectively carry out that job, no matter who accompanies them on the battlefield.

Notes

[1] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 12.

[2] DoD 5000.2-R, 4-4.

[3] Ibid.

[4] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 30.

[5] Ibid., 5.

[6] David L. Young, "Planning: The Key to Contractors on the Battlefield", *Army Logistician* 31 no. 3 (May-June 1999) 11-13.

[7] DoD 5000.2-R, 4-4.

[8] FM 100-10-2, Appendix F

[9] Department of Defense (DoD) Product Support Reengineering Implementation Team *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review)*, August 1999, 13.

[10] Fortner and Jaeckle, 13.

[11] Orsini and Bublitz, 131.

[12] FM 100-10-2 Appendix F.

[13] Orsini and Bublitz, 131.

[14] Joint Vision 2010, 30.

[15] Ibid.

[16] Fortner and Jaeckle, 13.

[17] Orsini and Bublitz, 132.

Glossary

ACSC	Air Command and Staff College
AFDD	Air Force Doctrine Document
CLS	Contractor Logistics Support
DOD	Department of Defense
DSMC	Defense Systems Management College
FAR	Federal Acquisition Regulation
FM	Field Manual
JCS	Joint Chiefs of Staff
RBA	Revolution in Business Affairs
RMA	Revolution in Military Affairs
USAF	United States Air Force
USC	United States Code

Contractor Logistics Support (CLS). The performance of maintenance and/or material management functions for a DoD system by a commercial activity. Historically done on an interim basis until systems support could be transitioned to a DoD organic capability. Current policy now allows for the provision of system support by contractors on a long-term basis.

CORE Depot Maintenance . The capability maintained within organic Defense depots to meet the readiness and sustainability requirements of weapon systems that support the joint Chiefs of Staff contingency scenario(s). CORE exists to minimize operational risks and to guarantee readiness for these weapon systems.

Focused Logistics. A Joint Chiefs of staff (JCS) initiative which seeks the fusion of information, logistics, and transportation technologies to provide rapid crisis response by allowing for the tracking and shifting of assets enroute and the delivery of tailored logistics and sustainment packages directly at the strategic, operational, or tactical level of operations.

host nation support. Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations

maintenance concept. A brief description of maintenance considerations, constraints, and plans for operational support of the system/equipment under development. A preliminary maintenance concept is developed and submitted as part of the preliminary system operational concept for each alternative solution candidate by the operating command with the assistance of the implementing and supporting commands. A major driver in designing the system/equipment and the support planned.

product support. The package of support functions needed to maintain the readiness and operational capability of weapon systems, subsystems, and support systems. The source of the support may be commercial or organic, but its primary focus is to optimize customer support and achieve maximum weapon system availability at the lowest Total Ownership Cost.

Revolution in Business Affairs (RBA). An effort to reengineer the DoD's business practices, shrink the department's supporting infrastructure and make the remaining infrastructure significantly more efficient. It includes not only reducing overhead and streamlining infrastructure but also taking maximum advantage of acquisition reform, outsourcing and privatizing a wide range of support activities when the necessary competitive conditions exist, leveraging commercial technology, dual-use technology and open systems, reducing unneeded specifications and standards, utilizing integrated product and process development and increasing cooperative programs with allies.

Revolution in Military Affairs (RMA). Dramatic changes in the art of warfare precipitated by rapid technological advances. Exploiting the RMA means not only acquiring new systems based on advanced technology but also developing the concepts, doctrine and organizations to fully utilize the new technologies in a way to dominate the battlefield.

Bibliography

Air Force Background Papers. 1997. Reprint, Maxwell AFB: Air University Press, 1999.
Air Force Doctrine Document (AFDD) 1, Air Force Basic Doctrine, September 1997.
Althouse, Major James E. "Contractors on the Battlefield: What Doctrine Says, and Doesn't Say" *Army Logistician* 30, no. 6 (November-December 1998), 14-17.
Army Field Manual (FM) 100-10-2, *Contracting Support on the Battlefield*, April 1999.
Assessment of the Impact of Chemical and Biological Weapons on Joint Operations in 2010: CB 2010 Study. 1997, Reprint, Maxwell AFB: Air University Press, 1999.

Cohen, William S., "Secretary of Defense Report to Congress Section 912: Actions to Accelerate the Movement to the New Workforce Vision." 1 April 1998, On-line. Internet, 8 December 1999. Available from http://www.acq.osd.mil/ar/912crpt.htm#2.

Defense Systems Management College Acquisition Logistics Guide, 3rd ed. Ft Belvoir: Defense Systems Management College Press, 1997.
Department of Defense (DoD) Product Support Reengineering Implementation Team. *Strategies for Product Support Through Competition (Preliminary Final Draft for DoD Review*, August 1999.
Department of Defense (DoD) Regulation 5000.2-R. *Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs*, 15 March 1996.
Dyche, Lt Col David D. *Making Operational Support Airlift Ready for War*. Research Report No. AU-ARI-93-11. Maxwell Air Force Base Ala,: Air University Press, 1995.

Fortner, Joe A. and Ron Jaeckle. Institutionalizing Contractors on the Battlefield." *Army Logistician* 30, no. 6 (November-December 1998), 11-13.

Joint Publication (Joint Pub) 1-0, Doctrine for Personnel Support to Joint Operations, November 1998. CD-ROM. Joint Electronic Library, February 1999.
Joint Publication (Joint Pub) 3-0, *Doctrine for Joint Operations*, February 1995.
Joint Publication (Joint Pub) 4-0, *Doctrine for Logistic Support of Joint Operations*, January 1995.
Joint Vision 2010-America's Military: Shaping the Future, 1995.

National Military Strategy of the United States of America, September 1997.
Newbold, Lt Col Stephen E. "Competitive Sourcing and Privatization: An Essential USAF Strategy." *Air Force Journal of Logistics* 23, no. 1 (Spring 1999) 28-33.

Office of Management and Budget (OMB) Circular A-76, *Performance of Commercial Activities*, 4 August 1983.
Orr, Ronald L., Headquarters USAF/IL. "Air Force Logistics Transformation." Lecture. Air Command and Staff College, Maxwell AFB, AL., 3 February 2000.
Orsini, Eric A. and Lt Col Gary T Bublitz. "Contractors on the Battlefield: Risks on the Road Ahead?" *Army Logistician* 31, no. 1 (January-February 1999) 130-132.

Snyder, Thomas J. and Captain Stella T. Smith. *The War in the Persian Gulf.* 1982, Reprint, Maxwell AFB, Air University Press, 1999.

Title 10, USC, Section 802, Chapter 47, "Uniform Code of Military Justice", 5 January 1999. Online. Internet, 8 December 1999 Available from http://uscode.house.gov/usc.htm
Title 10 USC, Section 2464, "Core Logistics Capabilities", 5 January 99. Online. Internet, 8 December 1999 Available from http://uscode.house.gov/usc.htm

Van Crevald, Martin *Supplying War: Logistics from Wallenstein to Patton*. New York N.Y.: Cambridge University Press, 1977.

Young, David L. "Planning: The Key to Contractors on the Battlefield.", *Army Logistician* 31, no. 3 (May-Jun 1999), 10-13.