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**CIVILIAN CONTRACTORS ON THE BATTLEFIELD: A  
PARTNERSHIP WITH COMMERCIAL INDUSTRY OR RECIPE FOR  
FAILURE?**

**BY**

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## ABSTRACT

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The U. S. Military is becoming increasingly dependent upon civilian commercial contractors to provide logistical support on the battlefield. Despite the current military philosophy on outsourcing, the increasing dependence of our war fighters on this support, the emphasis on partnership with the commercial industry, the Army and Joint Vision statements which stress "Focused Logistics" and " On Time Delivery", and the demands for multinational and host nation logistics support, these concepts and the use of civilians on the Battlefield remain highly volatile issues.. Little definitive policy guidance and training are provided. Commanders' and war fighters attitudes and training remain entrenched in the " Iron Mountain" paradigm. Contractor loyalty to the " almighty dollar" as opposed to support for/of the front-line soldier remains serious questions which will be difficult to test in a non-warfare environment. Budgetary constraints as well as technological advances will continue to drive policy in this direction and put pressure on the Logistics community to provide the necessary support. However, can we depend on paid contractors to meet the demands and face the stresses that our current military and non-contractor logisticians face? Failure in this area is not an option. Our American fighting forces require, deserve, and must have the best support to defeat any prospective enemy on any battlefield. This analysis will endeavor to address these issues and proposed solutions for ensuring the support necessary to help our soldiers maintain, survive, and win on the modern battlefield.



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## CIVILIAN CONTRACTORS ON THE BATTLEFIELD: A PARTNERSHIP WITH THE COMMERCIAL INDUSTRY OR RECIPE FOR FAILURE?

### BACKGROUND

The use of civilians to support military operations both at home or in foreign lands is not a new phenomenon. Private citizens, as well as businessmen, have long accompanied battling armies in the field and provided the necessary foodstuffs, provisions, ammunition, and sundries. The practice of procuring goods and services has long been a governmental function with armies meeting these needs through either appropriation of the necessary materials and goods from the lands they traveled through/conquered (foraging) or the use of funds set aside to purchase them from suitable contractors. Since the days of Alexander the Great and Genghis Khan, generals have led their armies into battle with civilians providing logistical support to meet the needs of their soldiers. By 1775, European governments and armies had been using a contract system for providing supplies and transport to their troops for more than 150 years. In more recent times, the employment of civilian contractors by a state to provide the necessary logistical support has been recognized in the laws of armed conflict as defined by the Laws of the Hague in 1907 and the Articles and Protocols of the Geneva Convention in 1949.<sup>1</sup> The philosophy on the use of civilians on the battlefield in "non-combatant roles" is a part of U.S. history from pre-Revolutionary War through Vietnam and the Desert Wars.

### U.S. HISTORY

WAR / CONFLICT	MILITARY	CIVILIAN	RATIO
Amer. Revolution	9,000	1,500 (est)	1:6.0
Mexican War	33,000	6,000 (est)	1:5.5
Civil War	1,000,000	200,000	1:5.0
World War I	2,000,000	85,000	1:2.4
World War II	5,400,000	734,000	1:7.4
Korean Conflict	393,000	156,000	1:2.5
Viet Nam War (Dec 69)	495,000	52,000	1:9.4
Gulf War (Feb 91)	490,000	*46,100	1:10.6

\*DOES NOT include Local Hire Foreign Nationals working under contracts<sup>2</sup>

U.S. history shows contractor support all the way back to George Washington's Continental Army. Civilians were employed to drive wagons, provide engineering and carpentry services, obtain foodstuffs, and provide medical services. The Continental Congress believed that these tasks could best be accomplished by using officers to purchase these goods and



services from civilians as it relieved soldiers from performing what were considered menial and non-soldierly duties while allowing them to focus on their primary mission, their war fighting responsibilities. Despite the Congress's concerns about profiteering, abuses by unscrupulous merchants, and poor transportation, the inability of the government to meet the needs of the Army forced a reliance on outside sources to provide the necessary goods and services.

Following the end of the Revolutionary War and into the 19th century, many of the contractors that both the government and the Army relied upon were often found to be both inefficient and corrupt. The collusion of dishonest contractors with army commanders, mismanagement and negligence on the part of supply contractors, and the failure of an overall contracting system to adequately feed, clothe, and otherwise support the soldier left an unhealthy climate throughout the Army.<sup>3</sup> By the War of 1812, there had been little improvement. Though arms and ammunition were being supplied from production at national arsenals, subsistence, clothing, and transportation were under a system of private contracting, and both were largely unsatisfactory due to a lack of adequate staff supervision by experienced logisticians within the Army Staff. These conditions were somewhat improved following the War of 1812 with Secretary of War John C. Calhoun's creation of the Quartermaster, Subsistence, Medical, and Ordnance bureaus of the Army Staff. By 1820, his efforts to end many of the evils of private contractors were further realized through his centralizing of subsistence procurement under the office of the Commissary General of Subsistence.<sup>4</sup>

The Army's logistics bureaus continued to develop effective procedures for dealing with both procurement and service contracts, and by 1846, with the beginning of the Mexican War, the Army's own system for the production and distribution of armaments, clothing, and other equipment was becoming increasingly effective. Experienced Army staff officers were able to avoid the most serious abuses of private contractors, but the rapid mobilization and movement of U.S. forces into Mexico put severe strains on the procurement and transportation systems. By the end of 1846, with the Army having entered Mexico, additional transport had to be hired to meet requirements along with civilian mechanics, teamsters, and laborers necessary to maintain the wagons. This resulted in significant issues being raised concerning the control and discipline of contractor personnel in the war fighting area. Contract teamsters proved extremely difficult to control and were highly resistive to post/camp disciplinary efforts (not unlike the modern truck driver in today's environment). It would take another 60 years before Congress would accept the recommendations of Quartermaster General Thomas Jesup, who urged the formation of a core of these types of workers under military control that " would be able to

perform these functions within the confines of proper military discipline and control", to become a reality.

The Civil War would further test the Army logistical bureaus and the existing procurement systems. The rapid mobilization and expanding requirements for both the Union and Confederate armies at the beginning of the war created considerable problems in obtaining the resources and services necessary to support these huge armies. Though freed slaves from the South provided a ready source of unskilled labor, construction and engineering projects, transportation, and labor services on or near the battlefield continued to be provided by private contractors. During the Civil War and post war period, the contracting and procurement system seemed to work well. There were few developments or improvements in contractor operations as the Army continued to use private contractors to provide supplies and services at frontier outposts. Throughout this period new companies sprang up as the United States continued its westward expansion; companies such as Wells Fargo and Majors and Waddell provided the government with wagon trains and civilian teamsters under individual contracts.<sup>5</sup> Of specific note was the increasing use during this period of the competitive public low bid process for awarding Army contracts, a process which would sometimes result in higher fees than might have been obtained through negotiation (not unlike today's results).

The Twentieth Century saw increasing responsibilities for the U.S. Army in overseas locations. At the same time, use of civilian contractors and procurement contract support in overseas areas pointed to the need for a review of how the Army would continue to perform its logistical tasks. By 1912, Army reorganization and reform created the Quartermaster Corps which responded to the long standing requirement for providing a body of both skilled and semi-skilled labor under military control and discipline that could be deployed to meet battlefield needs. This did not eliminate the need for private contractors on the battlefield but provided a ready source of uniformed logistical specialists to the Army to meet combat zone operational requirements, one that could be relied upon and was subject to military discipline. U.S. forces in World War I did use some French and Belgian contractors for extra labor, transport, and housekeeping functions. However, the Army found most of its logistical specialists in uniform during the war, and through the draft, formed specialized logistics units to function in the combat zones. The use of uniformed military personnel to provide and perform the logistics support missions required on the battlefield would be the dominant method used by the services until the Vietnam era. Until then, the military would continue as it always did between wars, putting logistics on the back burner while congressional cuts in defense spending forced strategic leaders and decisions based on the limited funding to be mainly used for active combat forces,

technological advances, weapons systems, and development of battlefield and warfighting theory.

World War II provided the basis for the development of the modern practice and theories supporting the operations of contractors on the battlefield. Events in Europe and the Far East during the 1930's indicated the growing need for defense materials and ordnance as most civilian firms and businesses became heavily engaged in war related projects. By mid 1941, the United States was deeply involved in providing military aid and assistance to the British through the Lend/Lease Program. With skilled workers at a premium given the massive mobilization requirements that faced the U.S., workers were hired individually or through contracts with private firms to provide support services to the burgeoning U.S. forces. In some cases, deferments from military service were given to workers involved in critical defense production areas. The lack of adequate numbers of service and support troops and units further complicated the situation and directly led to increasing contractor and private industry involvement. American contractors and manufacturers also realized two important points at this time; first, that not all the support to U.S. forces could be provided from the United States; and, second, that specialized technical representatives would be needed at the front or within close proximity thereof to assist in the operations and maintenance of equipment. The increased complexity and technological advances in aircraft, signal equipment, tanks, weaponry, and other support equipment made the presence of these "tech reps" critical to solving solutions to technical and operational problems discovered on the front lines. Early plans called for establishing Ordnance repair facilities to support allied operations in North Africa, the Near, and the Middle East. Though contracts were initially awarded to the overseas operations division of General Motors Corp. and the Ford Motor Co. for the construction of the facilities by early 1942 the War Department agreed that the contracts with the civilian firms should be limited to the construction of the facilities and the jobs taken over by military service units. Tables of Organization And Equipment (TO&Es) for the service units involved were soon developed. The initial requirement for 40,000 troops was soon reduced to fewer than 25,000 with a commitment to utilize native/foreign labor to the maximum extent possible. The use of civilian contractors to build and operate these facilities raised many of the same problems cited today with respect to the use of civilian contractors on the battlefield.<sup>6</sup> Ordnance Corps historian Lida Mayo wrote the following comments:

"More important was the fact that there were inherent dangers in the signing to a civilian contractor tasks that were essentially military. The contractor might abandon the work, or the employees could leave when they saw fit. Civilian workers in a combat area might be captured, in which case they did not have the

protection of military status, or they might be killed. And the very nature of ordnance material argued against Contract Operations, for the storage, issue, and repair of munitions was essentially to vital and operation, and too vulnerable to sabotage and security violations, to be entrusted to civilians."<sup>7</sup>

Following World War II, the Korean Conflict saw a greater reliance on contractors for services and support. This was the result of smaller mobilization requirements and the demands of supporting a theater of operations half way around the world. United Nations Forces were provided logistical support by a wide range of Japanese and Korean contractors, particularly in the areas of stevedoring, road and rail maintenance, and supply-carrying parties. Of specific concern was the lack of local hire labor supervisors and sufficient experienced contracting officers for the Army. This resulted in a lack of sound doctrine for the contracting for and management of a civilian labor work force in a foreign theater of operations and lead to confusion over responsibilities for the procurement, organization, training, assignment, administration of contract labor.<sup>8</sup>

By 1965 and throughout the eight-year Viet Nam War period, contractors on the battlefield had become a major part of the United States Army's logistical capabilities. These private contractors performed a variety of services within the theater that focused on five major areas: base operations; construction projects; water port and ground transportation operations; petroleum supply; and maintenance and technical support for aviation and high-technology systems. A lack of skilled labor in Vietnam also resulted in contractors hiring U.S. civilian and third country foreign nationals to perform labor-intensive tasks. By mid 1969, there were some 151 field service "tech" representatives totaling approximately 52,000 personnel. From the period 1965-1971 congressional construction appropriations totaled more than \$969 million. One of the principal construction contractors was the firm of Richardson-Morrison-Knudsen-Brown-Root-Jacobsen, the descendant of the Brown and Root Services Corporation, the principal Army battlefield contractor for the next 30 years. Vietnam served as the modern training ground for the use of these contractors raised the same old questions regarding international legal status, control and discipline of contractor personnel, force protection and security of contractors in combat zones, doctrine, and the procedures used by the Army to accommodate contractor operations and identify cost effectiveness. Contractors operating in the Vietnam theater were evaluated by the Joint Logistics Review Board in 1970. The board concluded that, " U.S. forces committed to conflict have never been better supplied the and those in Southeast Asia."<sup>9</sup>

Though the Gulf War lasted but a few weeks, the buildup of forces to combat the threat to world peace and security took more than six months. Over 95 percent of the equipment to be

used by the combat forces arrived via sealift on more than 350 different vessels. While U.S. soldiers drove most of the equipment (primarily the track vehicles) off the vessels and in and around the port areas, host nation contracts and contractor personnel were used as the primary stevedores for these coalition port operations. In addition, U.S. Army Materiel Command and Defense Logistics Agency maintenance contractors and equipment receipt/transfer personnel were primarily civilians (both DoD and private contractors). Increased technology and specialized weapons resulted in an even greater use of contractor personnel, many of whom arrived in theater at the same time or just prior to the deploying forces. The General Accounting Office Report to Congress in October 1994 (NSIAD-95-5), reported a total of only 14,391 combined DoD civilian and contractor personnel supporting theater wide operations.<sup>10</sup> Table 1 reflects an additional 31,700 contractor personnel added to the total. These were added based on information derived from an article by Col. Dwight E. Thomas, from the Center For Army Lessons Learned, Training Techniques, 1st Qtr, FY 01,<sup>11</sup> which stated contractors totals of civilians in the theater. The Gulf War was just the beginning of the trend toward increasing numbers of civilian personnel in a combat theater to support logistics and combat operations. Most analysts and military planners feel that these numbers will continue to increase as more and more functions are turned over to the private sector through competitive outsourcing, new technologies, increased shelf life of equipment, and changing logistics doctrine.

## DOWNSIZING

By the 1970's, the use of civilian contractors had become an acceptable means for augmenting military logistical functions and personnel. Three factors were to contribute greatly to this trend: First, the capabilities of Brown and Root Services and other civilian contractors to provide short notice, limited duration support to overseas military operations allowed planners to rethink combat service support personnel requirements. Second, reductions in defense budgets made this decision all the more necessary. Third, the reliance on contractors to provide maintenance for sophisticated weapons systems and equipment has grown.<sup>12</sup>

By fiscal year 1999, changes in the world security environment and DoD budgetary constraints led to continued reductions in both the military and civilian work forces. Military end-strengths were reduced by 33% from their 1987 peak levels. The problem with reducing military end-strengths was the supposition that many of these cuts were expected to come from the combat support functions, and that civilians/contractors would replace them. However, the simultaneous downsizing of civilians by over 30 percent left a tremendous hole in both

manpower and experience.<sup>13</sup> The only alternative to filling this void was increasing the privatization and outsourcing of these functions to civilian contractors.

There is also a fourth factor that is sometimes overlooked. As U.S. forces become more and more involved in foreign operations, host nation and congressionally mandated troops ceilings in the overseas theater limit the flexibility of the executive branch and the military to implement a strategy. By utilizing private contractors and civilians to provide combat service support to troops in the field, U.S. Government combat forces can be provided in greater numbers, the "iron mountain" can be reduced along with the "tooth to tail" personnel ratio. Overall Department of Defense manpower reductions have totaled more than 1 million personnel (700,000 personnel cuts in military manpower alone) since the end of the Cold War. These cuts occurred based on the anticipation of a commensurate reduction in operational requirements. Predicted OPTEMPO reductions have failed to materialize and operational requirements over the past five years have actually increased by nearly 300% with little chance of reduction in the foreseeable future as planners continue to envision greater numbers of small scale contingencies (SSCs) and multiple military operations other than war (MOOTW). It is therefore out of this necessity, manpower reductions and increases in operational requirements that the growing conceptualization of increased privatization and contractors on the battlefield has developed, a movement that has grown throughout all the services.

## GOVERNMENT OUTSOURCING

As previously shown in the historical analysis above, the contracting out of services to private contractors has been an option used by the government as both a management tool to meet routine and/or emergency requirements, and as a device to realign the public-private sector mix.<sup>14</sup> This civil sector involvement in military operations is called outsourcing, and is designed to transfer functions previously performed in-house to an outside/private/commercial industry provider.<sup>15</sup> Competition with the private sector in performing services that are not inherently governmental in nature has been expressly prohibited by regulations and the use of the private-sector is thereby mandated. Written guidance attesting to this requirement can be found in Bureau of the Budget Bulletin 55-4 which states:

"The federal government will not start or carry on any commercial activity to provide a service or product for its own use if such product or service can be procured from private enterprise through ordinary business channels."<sup>16</sup>

Additional guidance supporting and mandating use of the private sector are found in Federal Acquisition Circular 90-29:

"It is the policy of the government to ..... rely generally on private, commercial sources for supplies and services, if certain criteria are met while recognizing that some functions are inherently governmental and must be performed by government personnel....."<sup>17</sup>

To accomplish this, government acquisition functionaries typically request the office requiring the services to provide a statement addressing the specific requirements that the contract services or supplies are required for. This is called the "statement of work" or "performance work statement". Bids are then solicited from private suppliers and contracts are awarded based on either price (low bid) or quality of service to be provided. The objectives of this method of doing business are multi-purposed. Primarily and most frequently the objective is cost cutting, especially in view of current budgetary constraints. Secondly, the government may be obtaining supplies or services that are readily available in the commercial industry and therefore, not requiring any unique qualities. Third, is the opposite, that the government may be obtaining supplies or services for which there are unique, exclusive, or specific requirements that are not readily available and require a separate industrial base of support.

The overall objectives associated with these types of outsourcing/privatization are often; first, to improve the quality of the product and/or services provided to the government; second, afford the government the ability to reduce excess facilities/warehouses or eliminate manpower required to maintain overhead; and third, develop an industrial base for providing the necessary supplies and services to meet wartime requirements. To meet these objectives many external factors are involved; not the least of which are a supportive private/commercial market structure, governmental/political support, and effective political management and leadership.<sup>18</sup> Several problems become readily evident in this process, not the least of which is overcoming the influence of existing stakeholders, the strong desire to maintain the status quo in a given comfort zone, and of the generalization that privatization and outsourcing are always more cost-effective than conducting the operation with in-house assets.<sup>19</sup> While privatization does work effectively in some proven situations, in-house services and operations can successfully compete given the parameters of the requirement are well-defined, the staff is properly trained, and the oversight and management of the operation are consistent.<sup>20</sup> In terms of contractor performance on the battlefield, specific caution must be taken to ensure that regardless of cost and/or strong political support, positive public opinion is crucial to program a success, especially if the supply and/or service impacts on military performance, capabilities, or life.<sup>21</sup> Saving any amount of money at a cost of a service member's life is unacceptable, and cannot be justified in any political forum.

## CONTINGENCY CONTRACTING

The use of civilian contractors became an accepted means of augmenting Army logistical capabilities in/by the 1970's, especially when it came to the military conducting contingency operations, operations under short notice, or operations with limited objectives and duration.<sup>22</sup> By 1985, the Army formalized the concept under the title "Logistics Civil Augmentation Program (LOGCAP)" with proponentcy under the Deputy Chief of Staff for Logistics (DCSLOG). LOGCAP was initially designed to formalize Army procedures and relationships with civilian contractors who would provide the necessary logistical, medical, and engineering services on the future battlefield. To develop the required contract specifications, Army major commands and CINCs were individually queried to identify and provide information on the types and quantities of supplies and services contracted for during recent past contingencies and operations.

In 1992, LOGCAP was restructured to incorporate a single, worldwide services contract to preplan for theater facilities and logistics support services during war and contingency operations. The initial LOGCAP contracts were awarded in the mid 1980's to Brown & Root Services Corp., a Houston, TX, based subsidiary, part of the Halliburton Co. of Dallas, TX, and headed (in 1995) by former Defense Secretary Dick Cheney. The principal LOGCAP contract currently in effect was awarded in 1997 to Dyncorp Inc. of Reston, Va. The contract requires plans that will provide support in five broad categories of basic life-support and logistics services to soldiers; facilities, supplies, services, maintenance, and transportation. The fundamental objectives/goals of the contract and program are:

1. Plan during peacetime for the effective integration of contractor support during times of crisis.
2. Leverage existing global and regional corporate resources as facilities and logistical support multipliers.
3. Provide a quick reaction capability to contingency and crisis requirements.
4. Provide an alternative capability to meet facility and logistic services requirements.<sup>23</sup>

The initial concept of operations based on the requirements provided by major commands and CINCs was the development of a worldwide plan that covered 13 specific countries/regions. A cost reimbursement type contract was used with a base fee award structure. This provided the contractor with the minimal recovery of his costs, while at the same time, leaving him and the government the flexibility necessary to order the services required to meet the uncertainties that a contingency presents and still allow for contractor profit.<sup>24</sup>

This type contract is used because each contingency/operation is always created based on different circumstances and conditions. Attempting to write specifications and a detailed



statement of work to support the full spectrum of potential military involvement, and to be able to hold it contractor to definitive standards and performance levels for such a contract would have proved unmanageable, thus the cost reimbursement type contract provided the maximum flexibility to both parties for performing and managing the contract. Under the generic scenario, the contractor provides initial set up for the arrival of personnel and equipment at aerial and sea ports of debarkation and transports soldiers to rear area support bases and/or forward area base camps. The most critical points in this contract and the ones that provide the greatest concern to both the contractor and the military are those of security; the requirement for security to be provided to the contractor while in a hostile environment and the requirement for assurances that the contractor will provide the necessary services, regardless of what occurs.<sup>25</sup> The concerns over these issues are evident and were cited in the DoD Inspector General's Report, 1991, which stated:

"If contractors leave their jobs during a crisis or hostile situation, the readiness of vital defense systems and the ability of the Armed Forces to perform their assigned missions would be jeopardized."<sup>26</sup>

The statements of this report alone provide sufficient justification for relooking not only how we do business with civilian contractors, but for our continued efforts to rewrite current contract doctrine, train our strategic leaders on monitoring civilian contractor performance, and review how we provide security to the battlefield, train with the civilian contractors, and ensure their sustainment and quality of operations in the combat zone.

## **THE DEFENSE INDUSTRY**

The decline in both military and civilian personnel in the Defense Department over the past 10 years has been mirrored in the defense industry. As defense budgets declined or flattened, defense contractors began to look elsewhere to meet their stockholders needs. They eliminated defense related operations, sold off equipment used in the production of defense materials, and changed operations and production to become more profit oriented. Along with this refocusing of industrial operations came massive private industry reorganization and diversification, and numerous mergers and takeovers of smaller, less profitable firms and businesses by larger companies that depended less on defense procurement contracts. Since defense contracts were dwindling, and the majority of their work was no longer defense related, they were unable to sustain the industrial base essential to meet defense surge mandates. So called "hard-core" warfighting industry corporations all but disappeared; Hughes Aircraft, Grumman, Rockwell International, all longtime industry and defense giants, have been absorbed and/or merged with other diversified science and technology corporations.<sup>27</sup>

This impact has also been felt in the commercial ocean surface transportation industry. Commercial ocean shipping as well as the U.S. Maritime Industry and Merchant Marine Fleet have all been on a steady decline. The number of ships in the U.S. Merchant Marine Fleet has declined from a high of over 1,000 ships in 1955, to 331 by 1995.<sup>28</sup> Major commercial ocean shipping companies have also declined in the past 10 years, from over 40 different major ocean carriers to the current eight (8). Correspondingly, the Military Sealift Command has reduced its active dry cargo carrying ship assets to its present total of nine so as to avoid competition with the commercial industry.

Since the end of the Cold War, civilian employment in the defense industry has dropped by more than 2 million workers from a peak employment rate of 1,000 jobs per day during the mid '70s.<sup>29</sup> Despite these declines in both available companies to provide a competitive industrial base and the manpower necessary to meet anticipated workloads, defense industry leaders continue to argue about the impact of these reductions. A middle of the road attitude, however, supports the consolidation and reorganization of the industry but envisions some problems in meeting surge requirements and delivery of the necessary supplies/material to the field. The fact that the United States is the only recognized superpower in the world today, can also be used to develop the perspective that a long drawn-out military conflict will not occur, given that there are no rivals to our military and industrial might; thus the lack of a need for an extensive support base of both civilian and military personnel and materials. With this as the basis for determining the support necessary, reductions in defense spending are inevitable.

Since defense contractors have no control over the defense procurement dollar they must seek additional income through other sources: i.e., diversification. Thus, surge capability is anything but guaranteed.<sup>30</sup> Government concerns were twofold; first, the concern over the "bigness" of the company and whether it would become monopolistic; and second, would innovation and technological advances suffer as a result of the lack of competition. As mergers consumed smaller and secondary support companies and suppliers, the offshoot of these questions became would the military suffer or are U.S. service personnel lives being put in danger as a result of this drawdown. Ultimately, when businesses are faced with limited competition, prices have a tendency to rise and cost cutting measures are rarely taken into account.<sup>31</sup> To combat the given degradations resulting from the reduced size of the defense industry, a cooperative policy between the industry and the Defense Department was inevitable.

The development of this policy basically calls for a quid pro quo between the two organizations. Both must work together to ensure the dominance of both the U.S. defense industry and the U.S. military. The DoD has sought to break down the barriers to this

cooperation by developing a policy of dual use for technology and production. The dual-use concept requires greater use of commercial "off the shelf" technologies in defense systems and a transitioning from military specifications to commercial specifications where available and appropriate.<sup>32</sup> Thus, the needs of the manufacturing firms are supported in their development of technological advances while at the same time, the military is provided with the fruits of these same developments.

By the same token, the timely transportation of these goods to support our military overseas is dominated by the need for sufficient ocean/surface transportation assets of the proper type, size, and speed. Storage of these assets so they are available for use whenever needed is expensive. Maintenance of the ships, when they are not in use, is even more costly. The United States currently maintains over 300 vessels in this "reserve" status around the country at multiple locations. Some of these vessels have come from the acquisition of failed U.S. commercial carriers and have been used to modernize the Ready Reserve Fleet. To ensure availability of both vessels and crews, the Maritime Security Program (Public Law 104-239) was enacted in 1996, providing approximately \$97 million per year over ten-year period to build, with commercial industry (regardless of whether they are built in the United States or overseas), 47 new vessels.<sup>33</sup> The Voluntary Intermodal Sealift Agreement (VISA) is currently used by DoD to ensure availability of vessels to meet contingency deployments. This is a contractual agreement between the U.S. Government and commercial ocean carriers that do business with us. It requires a commitment from those commercial carriers who participate in the peacetime carriage of U.S. cargo to provide certain percentages of space on their vessels for U.S. military cargo during time of war or crisis.<sup>34</sup> These are but a few of the methods that are currently being used by the government in the face of a sharply declining availability of resources in the defense industrial base, supply sources, and transportation assets.

## **FOCUSED LOGISTICS**

The need for provisioning, maintaining, and resupplying troops has been the bane of every warfighting general since the days of Hannibal and Attila the Hun. Clausewitz recognized the importance of the living off the civilian sector in 19th century warfare when he stated:

"The modern way of provisioning the troops—using everything available in the locality, no matter to whom it belongs—falls into four categories: supplies furnished locally; troops requisitioning; general requisitioning; and depots."<sup>35</sup>

Following operations in Desert Storm, General H. Norman Schwarzkopf said,

"The loading and delivery of 560 ships with equipment for the Persian Gulf was an absolutely gigantic accomplishment, and I can't give credit enough to the logisticians and transporters who were able to pull this off."<sup>36</sup>

Focused Logistics is one of four key operational concepts detailed by the Chairman of the Joint Chiefs of Staff's in his Joint Vision 2010 document, a statement that provides the conceptual framework for America's Armed Forces conducting future military operations.<sup>37</sup> These four concepts; Dominant Maneuver, Precision Engagement, Full-Dimensional Protection, and Focused Logistics, are the cornerstones for achieving Full Spectrum Dominance on the future battlefield.<sup>38</sup> Logistics concepts will rely predominantly upon sophisticated and technologically advanced computer information systems to provide the necessary command-and-control, location identification, availability, and visibility of essential combat supplies required on the battlefield. This support to the warfighter will require a new organizational logistics structure, support paradigms, and a change in the way operational/tactical commanders think about logistical support to the battlefield.<sup>39</sup> It mandates extensive use of civilian contractors and relies heavily on civilian sector support, improved transportation and maintenance technologies, tailored logistics packages, rapid information flow, and delivery of sustainment directly to the tactical level of operations.<sup>40</sup> All this to be provided to the tactical commander without organic military resources to rely upon or a significant logistics tail to fall back on, a tall order for any warfighter or combat commander to swallow.<sup>41</sup>

Much of this civil sector support, especially that which is provided in overseas theaters, will be provided by host nation contractors. This host nation support may take any form, but will most likely involve the use of roads, facilities, aerial and seaports, overflight and landing rights, the purchase of basic foodstuffs/water, and/or information connectivity into host nation communications infrastructure.<sup>42</sup> We are faced with a growing dichotomy; the need for this increased civilian sector support and reduced logistics infrastructure, but the reality that many of the future technologies required to support this concept, are still in development. The question becomes whether or not today's strategic leader will accept the concept and develop plans that will accurately reflect his ability to perform on the battlefield.

The current reality and military culture would indicate that these concepts have yet to be accepted and that Joint Vision 2010 is not in touch with the physical realities of supply and transportation operations. If this is the case, then our plans do not reflect future operations and our leadership is not training to meet the needs of the future battlefield. DoD and military culture is, by its own admission, are highly adverse to risk taking, overly conservative, entrenched in the successes of the past, and resistant to change.<sup>43</sup> The overarching technical dependency

envisioned by Joint Vision 2010 runs counter to the current levels of training, established doctrine, and previous lessons learned from past exercises and operations during which demonstrated shortfalls in logistical support were continuously evident.

Current tactics and warfare developed from the Gulf War and as seen in Afghanistan, have been based on large-scale buildups of supplies and specialized munitions that are used in massive amounts to obtain immediate supremacy of forces in the operational area. In both wars, the U.S. ran the risk of running critically short of precision-guided munitions to support operations. The lack of sufficient stockpiles of these munitions and the inability of the industrial base to maintain or rapidly produce significant quantities could have proved costly had the fighting been conducted for a longer duration in the Gulf, or if the fighting had been against a more sophisticated force in the case of Afghanistan.

Systems failures are continuously augmented and overcome by the ingenuity of the U.S. soldier; operational failure is never accepted nor seen as an option. Of additional concern is the fact that dependency on host nation support elements and non-military civilian support organizations is tenuous; in particular, several commercial vessels chartered during the Gulf War to support the movement of military equipment into the theater, never arrived or were significantly delayed as a result of either the crew, the vessel master, or both deciding that they would not deliver the equipment or supplies loaded on board into the theater.<sup>44</sup>

These are the questions and realities that strategic and tactical commanders must face in their acceptance and implementation of Joint Vision 2010/2020 and the conceptualization and application of Focused Logistics. Leadership training and planning have not adjusted to this doctrine. Warfighters still plan and train without regard to the intricacies of the supply and transportation system; plans still are developed on overwhelming an enemy with military and industrial base support to the forces in theater with little regard for how they will arrive or whether or not they will even be available. This is the battle that must be fought and won; that between the old style and thought processes of our leaders and the new technology and its impact on the battlefield. If we are to use these new technologies, the contracts and contracting system that makes them effective must be taught to the new leaders so that we can focus on getting these packages to the field in a timely manner to sustain the force and win the battle.

## **MULTINATIONAL LOGISTICAL SUPPORT**

United States military forces are currently on a path that allows for the acceptance of greater risk in conducting military operations, specifically in the conduct of tactical logistics support and the development of corresponding doctrine to meet tactical logistics requirements

on the battlefield. In fact, the United States is reducing inventories, logistical capabilities, and infrastructure while in the process of examining alternatives, developing doctrine, depending upon non-military contractor developed/available technologies, and awaiting receipt of the advanced systems and technologies that are designed to support the Focused Logistics Programs.<sup>45</sup> Along with this, we are doing nothing to change the thought processes nor culture of our leadership by failing to consider the second and third order impacts of these actions on the force. We are in effect, counting on a multitude of alternative sources to provide sustainment before the doctrine, contracts, and plans are in place. Depending on obtaining or providing sustainment supplies from a yet to be determined ally is a dangerous process. Logistics support and long distance sustainment are similar to conducting combat operations in an overseas location; there is no magic pill or growth capability that is applicable or available just because you have a coalition or foreign partner. The United States has only one path currently available to it, and that is the use of LOGCAP. If we have the national will to send our soldiers, sailors, airmen, and Marines into harm's way we should also have the national will and the resources to ensure they are sustained and able to fight wherever that fight might be.<sup>46</sup> Thus the dichotomy; on the one hand we want to incorporate and utilize coalitions and allies to support and augment U.S. forces in overseas theaters, while at the same time our policies dictate that there should be a greater involvement of U.S. forces, one that would include support troops to provide the sustainment for our combat forces and/or for the coalition troops that we also have to provide the support to.

U.S. Presidential Decision Directives (PDDs) 25 and 56 provide the basis for clarifying national policy on the use of military forces in peacekeeping operations, SSCs, and other MOOTW scenarios. Yet, these also add to dilemma and the conflict. PDD 25 clarifies policy concerning how, when, where, and why we would intervene with military forces to support peacekeeping, regional stability, and the promotion of democracy.<sup>47</sup> It establishes six major tenets that make it clear that the primary mission of our armed forces is warfighting, and that peacekeeping is only a tool for preventing war.<sup>48</sup> These tenets are:

1. U.S. involvement must be selective, and effective.
2. Current cost for peacekeeping operations must be reduced.
3. Presidential authority will never relinquish command of U.S. forces; however, U.S. forces may be placed under operational control of a foreign commander when doing so "serves American security interests".
4. United Nations capability to manage and lead peacekeeping operations must be improved.

5. There must be " shared responsibility " among United States agencies to manage and fund United Nations led peacekeeping operations. DoD will take the lead when funding U.S. combat forces is involved and the State Department will lead when non-military actions are required. State Department will lead on all diplomacy matters.

6. Increased cooperation and information flow between the executive and legislative branches of government, and the American people is crucial. American public opinion and support is critical to success.<sup>49</sup>

PDD 56 focuses on defining the planning process after the decision to deploy has been made. It also directs a planning process to develop and rehearse the commitment of resources to ensure both tactical and joint warfighting support rehearsals and preparations are adequate to meet the needs of force structure being employed.<sup>50</sup> In considering the guidance that should apply when implementing these tenets for peacekeeping and overseas operations, the application and/or implementation of this force, and the logistics support that would be required to maintain and sustain it, requires a long-term commitment and effort. It also requires infrastructure to make it work or a capability to provide or have the infrastructure provided. The infusion of such a force into a foreign location and its sustainment in place must be a coordinated and cooperative effort with the coalition's and allied forces supporting the operation.

However, willingness to participate in coalitions by other than U.S. forces does not necessarily translate into multinational logistics support from others, nor does it translate into U.S. willingness to sustain the allied combat force contributions. In fact, many other nations will only provide combat forces to support a coalition operation if the United States does provide the necessary logistical support. Their willingness to participate depends on our providing that support. Another factor, and possibly the most important, is the question, are we willing to turn over the capability to provide the materiel, sustainment, and munitions necessary for our troops to fight and win on the future battlefield to another country? Nothing is more sensitive to our nation, nor its supporting public; do we risk leaving our troops and their support to the whims of others. If as a nation, we are willing to send our nation's life blood, our youth, as a commitment to peace and/or to promote democracy, should we also not be willing to commit the necessary funding and resources to sustain them. Strategic leaders are continuously trading logistics force structure to lessen forward battlefield footprint.<sup>51</sup> At the same time commanders believe in the reality of massive logistics and force to overwhelm an enemy. The dichotomy is evident. The emerging doctrine for the employment of multinational logistics support is yet to be completely accepted.

## TECHNOLOGY

Two different quotes serve as the foundation for discussion concerning the impacts of technology on logistics support to the modern battlefield. General Merrill McPeak, Chief of Staff of the U.S. Air Force during the Gulf War, stated, "The Gulf War was the first space war..... It was the first war of the space age." At the same time, Dr. Lawrence Korb, Assistant Undersecretary of Defense, stated, "If you've got enough time, American Logistics will always overwhelm you."<sup>52</sup> These two concepts show the diverse nature of the problem. McPeak belongs to the new generation of technicians, and his military thinking is based on the introduction of high-technology and computers, wherever possible, into smart systems, under computerized command-and-control networks, and integration both horizontally across the battlefield and vertically from the smallest fighting unit to central command. Dr. Korb's comments reflect the conservative nature of military thought and tradition, in that wars are won by logistics and organization, on fundamentals and mass, providing both robustness and resilience in operations against the expected surprises of an armed conflict.<sup>53</sup>

Regardless of the camp with which one most closely associates, there can be little doubt that the 21st Century is an age of technological advances and that our ability to defeat an enemy on the modern battlefield rests most closely with the ability of traditional warriors to become technically proficient in both the old and new worlds of combat. The shift in the civilian economy from mass-production industry to the high-tech industry, with its focus on technology and change as the basis for competitiveness and success, has caused a marked shift in the balance of power in the military from the warrior ethos to the technocrats.<sup>54</sup> The use of advanced technologies such as automated manifesting systems, laser card scanning, paperless transactions for procurement and movement, and electronic transfer of data directly from battlefield support systems to the combat delivery system are required to be supported.<sup>55</sup> To make this work during the Gulf War took six months; to establish command-and-control networks, accumulate supplies, and train and interweave civilian support personnel without interference from an enemy, the United States was able to mobilize on its own schedule, and determine the time and place for the final battle.<sup>56</sup>

Throughout the entire logistics and supply system, the United States and its allies were able to take the time to train, identify problems, and develop solutions that would not have otherwise been possible. High levels of redundancy in materiel, systems, and the technological advances necessary to support the warfighter were readily transferred to the theater to support combat operations. Logistical support units (as well as combat units) were stripped out of the European theater, National Guard, and Reserve units to provide the necessary manpower and



critical skills necessary to support the theater.<sup>57</sup> Military expertise, or lack thereof, in the highly technical areas of maintenance of high-tech weapons and communications systems forced the augmentation of key on site civilian sector contractors to provide the necessary expertise and equipment for diagnostic analysis and replacement of critical parts.<sup>58</sup> In many cases support roles and functions necessary for the buildup and conduct of the war were turned over to the civilian sector to conserve military manpower,<sup>59</sup> an alternative analysis here would also suggest that this was done to keep military manpower under politically dictated strength limits.

DoD reports noted, " the services put more electronics communications connectivity into the Gulf in 90 days than was put in Europe in the previous 40 years." <sup>60</sup> This highly electrified world and theater of operations produced a requirement for a military fighting force increasingly dependent upon interconnection and interdependence upon outside sources to ensure operability.<sup>61</sup> Regardless of the reasons, the lasting lessons from the Gulf War were the ones learned by the troops in day-to-day operations; that technologically, the real transition that was taking place was more a perception of combat than in the nature and structure of the warfare. The real transition is one of highly communicative, small units, quickly able to maneuver independently and strike at will.<sup>62</sup> The use of information warfare and electronics systems to mask and cover such movements will also play an important role. Though survival and/or victory on the modern battlefield may now come to depend more on who is able to fire the most accurate first shot, the challenge brought to leadership is that of incorporating this technology into doctrine, now! Training to meet the concepts that this technology brings and ensuring the leadership understands the cultural changes necessary to support that doctrine remain the key question to be answered by our future leaders in training.

### **THE NEW CONTRACTOR ON THE BATTLEFIELD**

The battlefields of the future will be distinctly different from those of the past. Soldiers, sailors, airmen, and Marines will have more advanced weapons systems, greater access to information, and increase quality of life. They will also have to share the battlefield with civilians in greater numbers than ever before considered. The Joint Force Commander will now not only have responsibility for planning and supporting his military forces, but he will now be responsible for integration of, ensuring the safety of, and maintaining discipline over a civilian work force that accompanies his military forces wherever they fight. The new warfighting commander will not have an option over whether to take these civilian forces with him to war; civilians will be essential for providing his sustainment, life-support, maintenance, weapons systems support, and support to many other technologically advanced systems used in the conduct of the war.<sup>63</sup>

## DISCIPLINE AND CONTROL

The joint forces commander has one and only one objective; that is to defeat the enemy he is facing. To do this he must have the total unquestioning support of the troops and personnel under his command. On the future battlefield this will include civilian forces, and the commander must have the confidence to know that the civilians will follow his orders immediately and without question. There are many different positions concerning the legal status of civilian contractors on the battlefield; suffice to say there are many gray areas and legal issues that must be resolved. Under Laws of Land Warfare, contractors are neither combatants nor non-combatants. They occupy a special niche called "civilians authorized to accompany the force." As such, they are entitled to some, but not all, of the protections afforded to combatants and some, but not all, of the protections afforded to non-combatants.

Contractor personnel are not authorized to engage in activities inconsistent with their status; i.e. they cannot perform purely military functions, participate in attacks on the enemy, nor occupy defensive positions on a perimeter. They cannot be deliberately targeted for military action and are not supposed to be performing functions in direct support of hostile operations on the frontlines.<sup>64</sup> These are very strict guidelines and provide definitive legal definitions. But on the modern battlefield such definitive guidelines are easily crossed; just as the depth of the linear battlefield has expanded, so has the necessary placement and involvement of civilian personnel within the designated battle space.

When combined military and civilian combat/support forces find themselves in countries where justice is based upon a biblical or Talmudic code -- an eye for an eye -- this question of legality takes on an even greater significance.<sup>65</sup> What brings a contractor to the battlefield is a legal contract, signed by two parties, with specific requirements that must be accomplished by the contractor for which the requesting party agrees to provide payment in return for services rendered. The Joint Forces/battlefield commander must fully understand the terms under which the contractor is on the battlefield and the concept that has brought him there.<sup>66</sup> Contractor personnel are not compelled by any oath, nor loyalty to any principle, to perform their designated functions. They are compelled by the terms and conditions of the contract under which they are operating and the motive for which the contract is awarded, profit. Of important note here, is also the understanding that the contractor/contractor employees enjoy a legal right to unilaterally terminate the contract rather than accept potential danger or hardships that they may be exposed to if required to operate in a combat zone.<sup>67</sup>

Thus, the battlefield commander cannot assume, without question, that he will have full availability of civilian contractors, let alone that they will even remain on the battlefield or in the

theater given the risks that they may be subject to. Couple all this with the facts that civilians cannot be compelled to deploy, remain in specifically designated areas, or perform certain missions, and that they are not subject to criminal punishment for refusing to do so, and the commander in the battle zone now faces the possibility of threats to maintaining his discipline and control from forces that are both inside and outside his organization.<sup>68</sup> Again we see the need for further combined training and operations with those who will be providing the support needed for achieving victory on the future battlefield.

## FORCE PROTECTION

The most significant command responsibility is the protection of one's troops before, during, and after the hostility period.<sup>69</sup> Since the Khobar Towers incident where a terrorist used a car bomb to severely damage the compound housing U.S. military personnel, killing 19 and injuring hundreds, force protection has been the number one priority and responsibility of commanders' worldwide. What is not often discussed is similar responsibility that commanders have to protect the growing number of civilian contractor personnel now being deployed to support operations in a combat theater of operations. Of additional concern are those government civilian personnel assigned to monitor contractor performance; in many cases they are forgotten about as well and must also be provided the appropriate level of force protection.<sup>70</sup>

The warfighting CINC must be able to critically assess the risk of using different types of contractors for the various security mission support elements. Significant here is the fact that the contract personnel from Third World countries may be providing the bulk of the security for U.S. forces, to include the security of their equipment and administrative facilities. This is a distinct shift from the Cold War era and has been primarily brought about as a result of force reductions, troop drawdowns, and the need to outsource support infrastructure to free funds and manpower for warfighting elements. These security forces are no longer organic to many of the active forces and are available only in the Reserves or National Guard. The CINC must, therefore, spend significant time and energy ensuring that force protection is provided and that the necessary trust is developed between the civilian security and fighting forces to ensure support to all personnel.<sup>71</sup> This force protection role may be the least understood, yet most important. The first time a commander fails to provide the security necessary and that failure results in a loss of life or capture of a civilian, the whole concept of civilians in a combat zone will be jeopardized. This could ultimately result in requirements for U.S. military personnel to perform contracted out civilian functions in order to be able to sustain forces in the field.<sup>72</sup> This also points toward the need for greater training of these elements together in a joint environment.

## CONCLUSION

The United States Government and the military services have used civilian contractors in the past to meet critical shortfalls in support. Based on the current political and technical environment in which we live, there is no doubt that the only conclusion that can be reached is that civilian contractor support to the battlefield and the combat zone is inevitable in even greater numbers in future operations. The Defense Science Board's recommendation is to contract out/outsourcing government functions to the maximum extent possible.<sup>73</sup> The Rand Corporation, however, points out that:

".... the commission implicitly promotes a rapid program of outsourcing that could lead to early failures. That is, if DoD pursues extensive expanded outsourcing without giving such factors adequate attention, it could fail to realize its expectations about performance and reduced costs. Such failures could discredit the notion of expanded outsourcing before such outsourcing has a chance to prove itself."<sup>74</sup>

The vision of power projection of the military services into numerous overseas combat zones is pervasive in current doctrine. Joint Vision 2010 and 2020 all visualize a force that must seize the initiative, dictate the tempo of operations, and maintain that high tempo over an extended period of time. The founders of this great nation envisioned a military fighting force capable of meeting the needs for defense of the nation and promoting democracy. They feared, however, the creation of a large standing army and thus, developed the system for the U.S. Army Reserves, the civilian soldier, who would meet his nation's needs in time of war. In today's environment, the socio-economic conditions (especially in Third World nations), the lack of a rival political superpower, and the technological advances of the 21st century, have all teamed up to force restructuring and reorganization of how the military does business. Several conclusions are blindingly clear however. First, outsourcing and civilian contracting will continue to increase. Though it is unclear as to whether they have generated the needed cost savings to support modernization, they have provided a means for reducing support infrastructure while enabling warfighting strength to stay at a higher level. Second, outsourcing and civilian contracting do not always produce the expected efficiencies or economies; second and third order effects continue to plague greater implementation of these activities.

Finally, we cannot let outsourcing and civilian contracting compromise our fighting forces nor our ability to fight and win the next war.<sup>75</sup> Security and force protection of both military and civilian forces is also critical, but the second and third order effects resulting from the outsourcing of these, and other functions, cannot be overlooked. With the growing use of civilian contractors on the battlefield, a relook of the applicable laws governing their operating on

the battlefield must be conducted. Cultural changes and paradigm shifts will be required if we are to meet the requirements and philosophical changes promulgated by our strategic leadership. DoD/military culture is conservative, risk averse, and not prone to risk taking but the technological advances of the 21st Century make change essential.<sup>76</sup> Without question, civilian augmentation programs are proven force multipliers. Civilian contractors have been increasingly tasked to provide the logistical support to military forces in contingency scenarios. It is crucial that Joint Doctrine be developed beyond Army Regulation 715-9, "Contractors Accompanying The Force", and Field Manual 100-21, "Contractors On The Battlefield" to meet the needs of this changing battlefield environment and provide the necessary guidance for their future employment.

## **RECOMMENDATIONS**

1. Institutionalize contractor support to the battlefield. Ensure operational and tactical commanders' are trained to understand contracts and the differences between having a soldier performing a function on the battlefield versus a civilian contractor.<sup>77</sup>
2. Contractors should never totally replace existing military force structure. They should always augment existing military capabilities and provide an additional option to the commander for meeting support requirements.<sup>78</sup>
3. Make compliance with the provisions of the Uniform Code of Military Justice a provision applicable in contracts when the contract requires civilian personnel to be assigned to combat zones. This provision would take effect in areas considered dangerous or hazardous and not just in cases where Congress declares war.<sup>79</sup>
4. Ensure contracts contain provisions for monitoring contractor readiness. If contractors are required in the battle space to deliver equipment and materials and provide maintenance support, then contractors should do the same thing with the military during exercises and tests to maintain and establish effective coordination between both the civilian and military side of the operation.<sup>80</sup>
5. Provide incentives for contractors to develop long-term relationships and commercially designed software packages that can be used to enhance military functions. Amend contract regulations to allow for longer terms and contracts; develop better Statements of Work and establish quality control measures such that low-cost is not the only, sole, or outweighing factor in awarding the contract.
6. To ensure the availability of sufficient deployment assets to meet contingency and/or major regional conflict transportation needs, develop contracts with commercial industry firms

that will allow for the construction and co-utilization of these assets after they're constructed and until they're needed to be placed into operation to support emergency operations. The current arrangement between the U.S. Government and the American railroad industry can serve as an example. U.S. government-owned rail cars are currently used by the commercial railroads; they, in turn, reimburse us for the use of these cars while we pay them for maintaining them in a serviceable condition.

7. Enforce greater interoperability between the services in the development, fielding, and use of systems designed for improving information flow and asset visibility.

This analysis has shown the increasing need for contracting and civilian contractors in support of our future military battlefield operations. I have also detailed how our actions in the past and as portrayed in our current planning for these future operations, do not correlate with this new doctrine, nor how the leadership and culture of our forces have changed to meet the new demands of the techno-battlefield. It is this cultural change that the warfighter must face if he is to succeed on the future battlefield. Contractors on the battlefield are essential to our future success, but they are no panacea, and if not approached in the right frame of reference nor adequately prepared for by tomorrow's leaders, they could be the cause of untold hardship and grief to our future leaders. If we are to succeed with them, we must understand and train with them. We must make them responsive and responsible to our commanders on the battlefield or we will not have the success we seek on that battlefield of the future.

WORD COUNT = 9,949



## ENDNOTES

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<sup>76</sup> Michaels, p. 24-25.

<sup>77</sup> Joe A. Fortner, "Managing, Deploying, Sustaining, And Protecting Contractors On The Battlefield", Army Logistician, Fort Lee, September/October 2000, p. 3-7.

<sup>78</sup> Ibid.

<sup>79</sup> MAJ James E. Althouse, " Contractors On The Battlefield: What Doctrine Says, And Doesn't Say ", as retrieved from the Internet, <http://www.almc.army.mil/ALOG?issues/NovDec98/MS323.htm> , 9 April 2002).

<sup>80</sup> Young.

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