NAVAL POSTGRADUATE SCHOOL
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THESIS

**CONTRACTORS ON THE BATTLEFIELD:
A CASE STUDY OF THE AIRBORNE RECONNAISSANCE LOW (ARL)
LIFE-CYCLE LOGISTICS SUPPORT CONTRACT –
MARCH 2000 THROUGH AUGUST 2001**

by

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December 2001

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13. ABSTRACT

Contractors have consistently contributed to successful military operations. The goal of this thesis is to provide an assessment of the life-cycle logistics support contract for Airborne Reconnaissance Low (ARL).

The ARL performs a reconnaissance mission in support of other than military missions. This is not "war" in the traditional sense of the word; however, every deployment presents unique problems associated with the location and the mission.

Based on the developmental nature and unique missions of the ARL, support contracts were originally awarded as "time and material" efforts. However, in December 1999, the Fixed Wing Product Management Office (FWPMO), Aviation and Missile Command (AMCOM), assumed responsibility for the aircraft and awarded a firm-fixed price contract for logistics support. The contract was awarded to Avtel Services, who was the subcontractor on the previous time and material contract. Avtel transitioned into the role of the prime contractor on 1 March 2000. This thesis analyzes the Acquisition Strategy and Contracting Strategy issues encountered when contracting lifecycle-logistics support for aging low-density aircraft regularly deployed to austere remote areas.

The conclusions and recommendations of this thesis should benefit government and industry personnel currently operating in or planning to operate in hostile environments.

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LIFE-CYCLE LOGISTICS SUPPORT CONTRACT –
MARCH 2000 THROUGH AUGUST 2001**

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Submitted in partial fulfillment of the
requirements for the degree of

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

A. BENEFITS OF RESEARCH

Contractors have historically been significant contributors to successful mission accomplishment in the United States (U.S.) military. With downsizing and restructuring, contractors are deemed to play an ever-increasing role in the accomplishment of "critical" missions in the future. This study will address experiences with life-cycle contractor logistics support (LCCS) contractors, along with a survey of personnel who have been in this environment in the past.

The researcher proposes to investigate the topic of contractors on the battlefield - specifically, the issues associated with the LCCS of the Airborne Reconnaissance Low (ARL) airframe.

The key element to contracting for exactly what the Government needs and/or wants is defining the requirement. The goal of this thesis is to assist the Government in how to better understand its requirements. Additionally, situations and issues will be analyzed that should be of assistance when the Government chooses to award an LCCS contract to acquire those services. The results of this analysis should benefit Government and industry as they attempt to meet the demands associated with LCCS acquisition.

B. RESEARCH OBJECTIVE

The objective of this research is to portray both the Government and contractor roles and responsibilities as they pertain to aircraft LCCS. When the Army chose to award a fixed-price contract for the maintenance support of these aircraft, assumptions were made concerning the capabilities of contractors to effectively support a military program. The past eighteen months have provided lessons learned regarding the contractor logistics support (CLS) philosophy.

C. RESEARCH QUESTIONS

1. Primary Research Question

What are the impacts to military systems when civilian contractors are responsible for life-cycle logistics support in hostile environments?

2. Subsidiary Research Questions

What is the Government's mission/role?

What critical issues does the Government need to address?

What is the contractor's mission/role?

What critical issues does industry need to address?

D. SCOPE AND ORGANIZATION

A synopsis of the history of contractors on the battlefield, as well as a synopsis of the ARL program is included. The U.S. Army Aviation and Missile Command (AMCOM) contract management philosophy is addressed. The specific requirements of the contract, including readiness and mission accomplishment criteria, are covered. The researcher also includes a section titled "Questions for Further Study."

E. METHODOLOGY

1. Literature Search

Articles from Defense-related publications and websites

Federal Acquisition Regulations

Army Regulations and Manuals

2. Data Collection

Surveys/discussions with defense contractors and military personnel

After-action reports

Unsolicited data from units

II. BACKGROUND

A. CONCEPT

1. Contract

Initially, logistics support of the Airborne Reconnaissance Low (ARL) airframe was performed under a U.S. Army Communications-Electronics Command (CECOM) "cost-plus" (Time and Materials) contract. This type of contract guarantees that the contractor will be reimbursed for all "allowable" and properly "allocable" costs incurred in performance of the contract. A "Limitation of Cost" clause is usually included in such contracts to limit the Government's obligation to pay costs over a prescribed limit unless certain procedures are followed.[1]

The recent U.S. Army Aviation and Missile Command (AMCOM) contract is a fixed-price, commonly referred to as firm-fixed price (FFP), contract. In this type of contract, the Government and the contractor agree on a fixed price for timely delivery of an end-item or a defined service in accordance with written specifications [the Statement of Work (SOW)]. The contractor must execute the requirements of the SOW in accordance with the contract within the fixed price. Under the AMCOM ARL contract, Avtel Services, Incorporated, Mojave, California, is required to maintain the aircraft in accordance with the Army's Operator Minimum Equipment List (MEL) at a ninety percent Mission Capable (MC) rate per aircraft per month.

2. Contractors in U.S. History

As far back as General Washington's Continental Army, civilians were employed to drive wagons; provide architectural, engineering and carpentry services; obtain foodstuffs; and provide medical services. The Continental Congress believed that civilians should accomplish these tasks to allow soldiers to be with their units and focus on their war-fighting responsibilities. It made sense to use civilians to accomplish these logistical tasks, as those tasks either were considered too menial for soldiers or were well-established or specialized functions readily available in commercial industry.[2]

By World War II, civilian workers, hired either individually or through commercial firms, provided support services in all theaters. During the Korean Conflict, contractors provided services ranging from stevedoring (loading/unloading ships in port), to road and rail maintenance, to transportation. In Vietnam, contractors provided a major portion of logistical capabilities available within zones of operation, providing construction, base operations, water and ground transportation, petroleum supply, and maintenance/technical support of high-technology systems.

The Vietnam Conflict changed the role of the contractor. These contractors performed some of the same responsibilities as, and worked side-by-side with, deployed soldiers. These contractors were no longer relegated to basic support tasks. They were technical specialists – experts in the tools of war. The increasing complexity of military equipment and hardware contributed to this development. Since Vietnam, an increasing number of contractors have supported both logistical and combat operations.

During the Gulf War, the Government Accounting Office (GAO) estimates that, in addition to 5,000 U.S. Government civilians, there were 9,200 contractor employees deployed in support of U.S. Forces, providing maintenance for high-tech equipment as well as water, food, construction, and other services. The increase in contingency operations has seen an exponential growth in required contractor support: at one point in Bosnia, our uniformed Army presence was 6,000 – supported by 5,900 civilian contractors.[3]

3. The Changing World Environment

"During the last decade, the only constant on the military landscape has been change."[4] Although the U.S. is no longer faced with nuclear survival, as was the case in 40-plus years of nuclear standoff with the Soviet Union, in many ways the world is far more complex than during the years of the Cold War. Cold War bipolar alliances have given way to a world where regional interests dominate. "Today, terrorism and the threat of nuclear, biological, and chemical (NBC) weapons proliferation – along with renewed national, ethnic, and religious rivalries – dominate the international scene."[5]

> U.S. Forces and budgets are down 40 percent relative to where they were in 1989. For the Army, that equates to 111 combat brigades reduced to

> 63. Yet, since that time, the U.S. Army has deployed troops on 36 occasions, compared to ten deployments during the 40-year Cold War. The use of contractors to support military operations is no longer a 'nice to have.' Their support is no longer an adjunct, ad hoc, add-on to supplement a capability. Contractor support is an essential, vital part of our force projection capability—and increasing in its importance.[6]

Following the end of the Cold War, approximately one million persons (military and civilian) were eliminated Department of Defense (DoD)-wide. At the same time, all the Services have seen an increase in operating tempo (OPTEMPO). This has necessitated increased use of contractor personnel to perform jobs previously held by those military and civilian personnel. Our country's National Security Strategy, which was published in December 1999, states:

> Our strategy is founded on continued U.S. engagement and leadership abroad…We cannot lead abroad unless we devote the necessary resources to military, diplomatic, intelligence, and other efforts.' Addressing military activities, the strategy continues, 'Strategic mobility is a key element of our strategy.[7]

"Today's realities – a changing international scene, budgetary difficulties, force structure imbalances, and new operational concepts – demand innovative solutions that will ensure that war-fighter support is not diminished."[8] Civilian leaders are charged by the citizens of this country to build a smaller, more efficient military. Therefore, it is unlikely that you will see a recommendation from the DoD to fight force structure cuts or downsizing efforts. "The DoD is already well down the road in privatization and competitive outsourcing efforts, as it should be."[9]

B. THE ARL ACQUISITION AND CONTRACTING TEAM

1. U.S. Army Intelligence and Security Command (INSCOM)

Headquarters, INSCOM, Fort Belvoir, Virginia, is responsible for oversight of the entire ARL program. INSCOM is the proponent for development of the Program Objectives Memorandum (POM) for the ARL airframe maintenance program. AMCOM does have an opportunity to provide input to INSCOM regarding ARL airframe sustainment.

Other key INSCOM players in the administration and execution of the contract are the INSCOM Contracting Officer's Representatives (CORs). The intent of the SOW was to delegate oversight of the routine, daily LCCS oversight to a central point of contact: the INSCOM Logistics Training Division Corps Level (G-4) COR. The primary liaison between on-site life-cycle contractor logistics support (LCCS) personnel and the Army is the on-site COR. INSCOM also provides funds for two support contractors who assist the COR at each unit.

2. Aviation And Missile Command (AMCOM)

The Fixed Wing Product Management Office (FWPMO) provides one Department of the Army (DA) civilian, Assistant Product Manager, who is responsible for the daily program management functions associated with the ARL airframe LCCS contract. FWPMO also provides one DA Civilian Program Analyst, who is responsible for monitoring the financial status of the program.

One support contractor, working within the FWPMO, performs duties associated with general aircraft maintenance, aircraft record keeping, Government Furnished Property (GFP) management, and field interface. FWPMO also employs, in a part-time capacity, two support contractors. One of these individuals provides financial management expertise, and the other monitors contractual compliance and Over and Above (O&A) Work Request submissions from the contractor.

The AMCOM Research, Development, and Engineering Center (RDEC) provides engineering support, both DA civilian and contractor, to address Airworthiness Release (AWR)/airframe issues.

AMCOM also provides Acquisition Center personnel who perform daily contract administration and Procuring Contracting Officer (PCO) responsibilities.

3. Program Manager, Aerial Common Sensor (PM-ACS)

PM-ACS is the office responsible for developing and fielding the Primary Mission Equipment (PME) for the ARL program. PM-ACS is located at Fort Monmouth, New Jersey, and Mount Weather, Virginia, and is part of Program Executive Office-Intelligence, Electronic Warfare, and Sensors (PEO-IEWS). Initially, the Program

Manager-ARL, PM-ACS, had total oversight of the ARL program; however, in 1999, DA directed that the airframe maintenance responsibility be transferred to AMCOM. PM-ACS continues to contract for and oversee installation of all airframe modifications for ARL.

4. Defense Contract Management Agency (DCMA)

DCMA provides support to the ARL program in the form of the Administrative Contracting Officer (ACO), located adjacent to Avtel's corporate headquarters in Mojave, California. Also in the Mojave area are DCMA contract administrators and GFP/Government Furnished Equipment (GFE) management personnel. DCMA also supports the ARL program with a representative located in the Dallas Region, who monitors the quality control and procedures of an Avtel subcontractor, Dallas Airmotive, who is responsible for repairs and overhauls of the ARL's Pratt and Whitney PT6A-50 turbo-prop engines.

5. Avtel Services Incorporated

Avtel's corporate facility is located in Mojave, California. Avtel's primary interface with the FWPMO is the Avtel ARL Program Manager, who is physically located at Headland, Alabama. The contractor's on-site leads (equivalent to site managers) at Camp Humphreys, South Korea, and Fort Bliss, Texas, are responsible for maintaining liaison with on-site Army and other ARL contractor personnel. During deployments, on-site leads may or may not deploy with the unit.

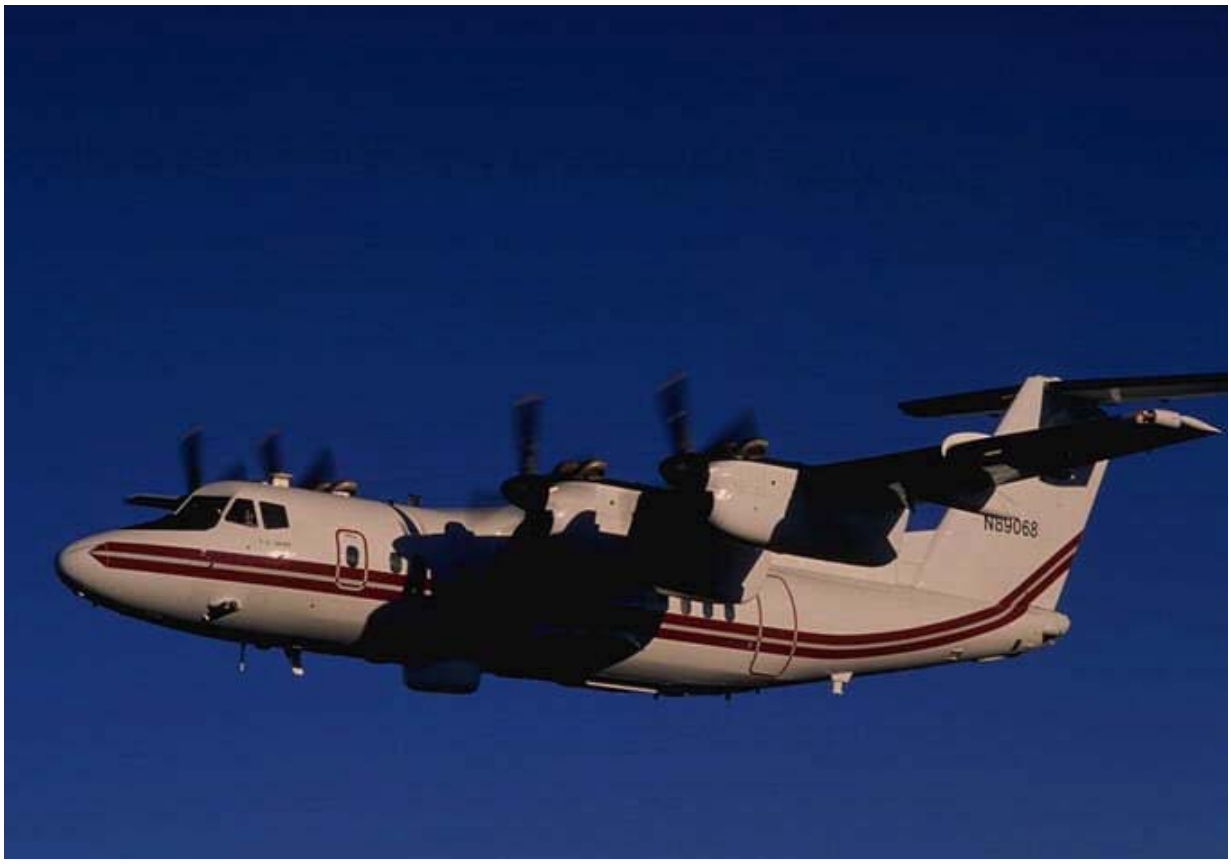

Figure 1: Airborne Reconnaissance Low Multi Function (ARL-M) Aircraft (From U.S. Army)

C. THE SYSTEM

1. System History

ARL is a multifunction, day/night, and all-weather reconnaissance aircraft developed and fielded by the Army in support of an urgent requirement for a low-profile intelligence-gathering aircraft. The ARL system accommodates diverse mission requirements through the implementation of an open systems architecture and modular, reconfigurable mission sensors.

The ARL airframe is a commercial DeHavilland Dash 7 (DHC-7) multi-engine, dual pilot aircraft modified to operate for extended missions. The ARL carries a

maximum of eight crewmembers. The aircraft provides greater than 1,600 nautical mile range mission capability. It operates at a cruise speed of 220 knots and can loiter at a speed as low as 110 knots. The aircraft is capable of taking off, fully-loaded, under high/hot conditions from an unimproved runway and can climb to a maximum of 20,400 feet above sea level. The aircraft is equipped with a suite of Aircraft Survivability Equipment (ASE) suitable for countering the threat expected in its theater of operation.

PEO-IEWS, along with Headquarters, INSCOM, responding to a 1991 Commander in Chief (CINC) South urgent Statement of Need (SON), procured, modified, and delivered three DHC-7 low profile Special Electronic Mission Aircraft (SEMA), to assist in counter-drug operations.

The original maintenance concept was total Contractor Logistics Support (CLS), to include airframe and PME. The first three aircraft were modified at Field Aviation in Toronto, Canada. Two were modified for Signals Intelligence (SIGINT) and one was modified for Imagery Intelligence (IMINT). These aircraft were fielded to the Army in 1993.

The original SON identified a requirement for nine ARL aircraft, along with integrating both SIGINT and IMINT onto one platform. These ARL Multi-Function (ARL-M) aircraft were developed in 1995. During the final production stages of the first two ARL-M aircraft, the CINC Pacific identified a requirement for Moving Target Indicator (MTI) radar in Korea. Two ARL-M aircraft arrived at Camp Humphreys to begin the MTI mission support when the Army's OV-1D Mohawk was retired in September 1996. In the summer of 1997, a third ARL-M aircraft was fielded to Camp Humphreys to allow for surge contingencies and other mission support requirements.

Two ARL-M aircraft were fielded to Fort Bliss in 1999 and 2000, bringing the total to eight mission aircraft. One additional aircraft, modified to replicate the mission aircraft cockpit for training continuity, was fielded at Fort Bliss in 2000 as a training aircraft. The one SIGINT aircraft was scheduled for upgrade to ARL-M in FY 99; however, it was destroyed in a crash in July 1999, while performing a SEMA mission. Congressional funding to replace the crashed aircraft has been secured, and the ninth ARL-M aircraft acquired. This aircraft is scheduled to field to Fort Bliss in 2003.

2. Contract History

The ARL program originated as a "Black Project" under the direction of the PEO-IEWS, Fort Monmouth, New Jersey. The ARL airframe has never utilized U.S. Army maintainers, i.e., "Green Suit" maintenance. Initially, the logistics support for the airframe was covered under the ARL's system production contract. At that time, CECOM managed the ARL support contracts for PEO-IEWS. Based on the developmental nature and unique missions of the ARL, these support contracts were awarded as "time and material" efforts.

In 1999, DA directed that the FWPMO, AMCOM, Redstone Arsenal, Alabama, would manage all Army fixed wing aircraft. Based upon this directive, AMCOM released a Request for Proposal (RFP) for an FFP contract for ARL airframe LCCS support. The FFP contract was awarded in December 1999 to Avtel Services, Incorporated, a small business, and the previous subcontractor on the CECOM-managed time and materials contract. Avtel completed a sixty-day transition period and assumed the role of prime LCCS contractor on 1 March 2000.

D. SYSTEM CONCEPT OF OPERATIONS

1. Camp Humphreys, Republic of South Korea

The 3rd Military Intelligence (MI) Battalion (BN) beddown base is considered a permanent beddown base, with a minimum requirement to deploy. However, the contractor must be prepared to support two 15-day deployments and one 30-day deployment, or a combination of 60-days' deployment within the unit's current theater of operations per year. For Korean wartime operations, the contractor must ensure all essential personnel are identified and prepared to support the mission in the event of war. During time of war and at the direction of the on-site COR, the contractor must support either a split-based operation or an operation from an alternative site. The Unit Commander and COR must ensure that the contractor receives appropriate NBC training as well as equipment and preparedness training in the event of conflict. Evacuation information and training is provided to the LCCS contractors and their family members.

2. Biggs Army Airfield, Fort Bliss, Texas

The 204th MI BN, located at Fort Bliss, Texas, operates in a different environment. This unit is required to support Southern Command (SOUTHCOM) requirements. The contractor is responsible for maintaining the aircraft while on a flyaway (deployment) mission. Removing the aircraft and crew from its normal base to conduct a specific mission constitutes a deployment. A deployment may be in the Continental U.S. (CONUS) or Outside the Continental U.S. (OCONUS). The SOW estimated the deployment periods at eight deployments of approximately 25 days' each per aircraft per year in support of these SOUTHCOM requirements. However, the mission schedule changed to 45-day missions early in calendar year 2000. Despite the change in number of days, the aircraft do not exceed the total of 200 mission days per year per aircraft for deployments, as stated in the SOW. It should be noted, however, that this 200-day limitation does not affect the number of days per year the individual contractors may be deployed, only the aircraft. The same mechanics tend to deploy each time the aircraft deploy.

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[1] Arnavas and Ruberry

[2] Zamparelli

[3] Campbell

[4] Rainey, Scott, and Reichard

[5] Newbold 44

[6] Campbell

[7] Higgins 1

[8] Newbold 45

[9] Zamparelli

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III. DATA

A. DATA

1. The Thesis Questionnaire

The primary source of data for this thesis is taken from comments collected from the personnel who actually support or have supported the Airborne Reconnaissance Low (ARL) program in the field. At Appendix A-1 is a copy of the questionnaire that was prepared and forwarded to civilian and military members of the ARL community for their comments. Copies of their responses are at Appendixes A-2 through A-9.

2. Unsolicited Response

In addition to responding to the Thesis Questionnaire, one individual submitted a list of nine areas that he/she felt warrant the Government's attention concerning this contract. This listing is provided at Appendix B.

3. Experiences of Other Aviation and Missile Command (AMCOM) Program Management Office (PMO) Representatives

The researcher contacted representatives of other AMCOM PMOs to solicit their experiences with contractors on the battlefield.

4. Government Documents

Fixed Wing Product Management Office (FWPMO) files contain historical accounts of ARL successes/shortcomings. The Internet provides a wealth of information on subjects ranging from program management to determining the types of personal items that may be required during a deployment.

5. Regulatory Guidance

Contracting is performed in accordance with the Federal Acquisition Regulation (FAR), Agency Acquisition Regulations, and Public Law. Additionally, aircraft maintenance is performed in accordance with Federal Aviation Authority (FAA)

Regulations and military procedures. When operating in a foreign environment, the regulations of the host nation Government, as negotiated by the U.S., apply.

B. RESEARCH QUESTIONS

As a result of this analysis, the researcher will answer the following questions:

1. What is the Government's mission/role?
2. What critical issues does the Government need to address?
3. What is the contractor's mission/role?
4. What critical issues does industry need to address?

C. THESIS GOAL

What are the impacts to military systems when civilian contractors are responsible for life-cycle logistics support in hostile environments?

1. Readiness

The ARL must be capable of deployment on scheduled/unscheduled exercises, within critical time constraints. Often these exercises include missions in "hostile" environments.

2. Mission Capable (MC) Rates

During the past eighteen (18) months, Avtel Services, Incorporated, the life-cycle contractor logistics support (LCCS) provider, has consistently maintained the average MC rates at each site, as portrayed in Table 1. Although the trainer aircraft is located at Fort Bliss, it is not a mission aircraft; therefore, its MC rate is not included in the calculations of Table 1.

Month	Fort Bliss	Camp Humphreys
March 2000	96	88
April 2000	98	97
May 2000	99	99.8
June 2000	97	96
July 2000	96	99.6
August 2000	99	99
September 2000	82	99
October 2000	94	95
November 2000	99.8	99
December 2000	99	99.8
January 2001	98	96
February 2001	97	97
March 2001	97	93
April 2001	98	96
May 2001	99	86
June 2001	99	93
July 2001	80	86
August 2001	98	93

Table 1. Mission Capable Rates (Percentages) March 2000–August 2001

For the purposes of reporting times (MC rates) under the ARL LCCS contract, a special reporting category, Non-Reporting Time (NRT), is added to the standard categories contained in

Army Regulation (AR)-700-138. NRT is time required to perform certain scheduled maintenance events as addressed in Statement of Work (SOW) Section 6.11.1, Army-imposed modifications or special inspections, FAA-imposed mandatory Airworthiness Directives, repair crash damage, or replacement time for cycle limited components at the cycle change time. NRT is allowed for scheduled inspection events, but is not universally allowed for all scheduled maintenance events addressed in the maintenance manuals. The Government retains the right to approve/disapprove NRT for those instances not specifically addressed in the SOW.

IV. ANALYSIS OF CONTRACTOR LOGISTICS SUPORT (CLS) MISSION EFFECTIVENESS

A. DATA

The following paragraphs address the data that was reviewed for the purpose of preparing this thesis.

1. The Thesis Questionnaire

Provided at Appendixes A2-A9 are the questionnaire responses received from civilian contractor and active and retired military personnel associated with, or formerly associated with, the Airborne Reconnaissance Low (ARL) program. These individuals have deployed to Korea, Colombia, Bolivia, Panama, Bosnia, Venezuela, Peru, Puerto Rico, Somalia, and Ecuador while supporting ARL. Only one negative response concerning ARL CLS was received. These comments came from an individual who had been associated with the program under the former Communications-Electronics Command (CECOM) contract. The responses of these personnel are used to formulate the answers to the primary and secondary research questions.

2. Unsolicited Response

Attached at Appendix B is a response from one of the Contracting Officer's Representatives (CORs) concerning maintenance operations at Fort Bliss. A major concern of this COR is that there is no single point of contact for the ARL system [aircraft plus Primary Mission Equipment (PME)]. Four logistics support contractors on four different contracts create an administrative dilemma for the CORs. This presents problems when trying to resolve differences between the support contractors as to which is responsible when the location and/or area of responsibility is not specifically addressed within their respective contracts.

Fixed Wing Product Management Office (FWPMO) can offer interpretation of the Aviation and Missile Command (AMCOM) life-cycle contractor logistics support (LCCS) contract; however, the responsibility for different commodities is allocated among different Major Commands (MACOMs) per Department of the Army (DA)

direction. FWPMO can serve as facilitator for contractors to resolve issues or make decisions as far as the AMCOM contract is concerned. Communication is the key to managing any disagreements. FWPMO; Program Manager, Aerial Common Sensor (PM-ACS); and the individual support contractors strive to keep each other and the units informed of all potential problem areas as soon as they are identified.

The respondent also affirms the major philosophical difference between Government and contractor support: The Government's focus is to meet the mission requirements (readiness), while the contractor "is in it for the money."

Of additional concern to this respondent is that the COR cannot supervise contractors, nor can he/she contractually obligate the U.S. Government. He/she may provide technical advice, validate the necessity of contractual efforts, and may sign off on completed actions. The respondent considers this situation detrimental to the effective stewardship of the maintenance contract.

The COR is the "eyes and ears" of the MACOM regarding contractor performance. FWPMO and Intelligence and Security Command (INSCOM) rely heavily on the COR's experience and expertise. As the CORs are usually military personnel, continuity of support at the sites is difficult to maintain. In an effort to augment staffing, INSCOM hired two support contractors – one stationed at each site to undertake specific, limited tasks, when CORs are deployed or otherwise unavailable. The researcher has observed that these individuals as are extremely valuable to the program. They are often the key and only communications links for the Government at the sites.

3. Experiences of Other AMCOM Program Management Office (PMO) Representatives

Remarks were solicited from other PMOs concerning deployment of contractor personnel for logistics support during Operation Desert Shield/Desert Storm. Representatives of the Aviation Missile and Rockets PMO [formerly Air-to-Ground Missile Systems (AGMS) PMO] responded as follows:

a. HELLFIRE

AGMS (which manages the HELLFIRE Missile System) did not have a CLS contract for missile maintenance; however, the PMO's engineering services contract was modified to provide one technician in the theater of operations. This contractor provided consultant and maintenance support to the units in Saudi Arabia. He performed in an outstanding manner, under harsh conditions. This individual, a retired E-8, was in close proximity to hostile fire while in Saudi Arabia. He received Nuclear, Biological, and Chemical (NBC) training and equipment prior to his deployment. His presence and technical expertise greatly enhanced the mission accomplishment.

b. Bradley Fighting Vehicle System (BFVS)

This researcher contacted retired Lieutenant Colonel Steve Takacs via phone. Mr. Takacs was involved in the deployment of the BFVS during Desert Storm. He responded that the contractors initially deployed with the 24th Division. All the personnel support training was conducted in the Continental United States (CONUS). He cautioned that many contractors "sign up and go;" however, it would be prudent of the Government to ensure that they are not operating with a "Foreign Legion concept of CLS." One FMC contractor, who was also in the military reserves, was actually decorated for bravery. He was not supposed to be under fire. Contractors were to remain in the Division rear.

They experienced communications, transportation, and housing problems. His former employer, United Defense – Limited Partnership (UDLP) (which included the former FMC) also deployed to Somalia and Bosnia. The transportation issue was never resolved in Bosnia; however, Satellite Communications (SATCOM) phones were available. In Bosnia, the Government would not allow the company to purchase excess military vehicles, so they were forced to go to Heidelberg, Germany, to rent Ford Broncos (equivalent to U.S. Ford Explorers). They were also equipped with better SATCOM phones and even provided assistance to the Army.

Mr. Takacs cautioned that many contractors are selling capability, but no contractor has yet been seriously injured in these scenarios. He is concerned about who will be ultimately held liable for either the death or permanent disability of those

individuals. Self-insurance means different things to different readers. He believes that events associated with these types of scenarios will be the test of the system.

c. Army Tactical Missile Systems (ATACMS)

The ATACMS PMO responded to the request; however, their system did not deploy with contractor support during this operation.

4. Government Documents

A vast amount of data was available to the researcher in the FWPMO reference files.

The Internet proved a valuable tool in performing this research. There are numerous articles relating to contractors on the battlefield; however, none were found that parallel the ARL's peculiar mission and maintenance requirements.

Another useful resource is the Defense Acquisition Deskbook (DAD), which is available via either the Internet or compact disk. The DAD is a repository of Government data that assists the acquisition professional in developing and administering acquisition-related activities.

5. Regulatory Guidance

ARL differs from many weapon systems programs, as all logistics support must be performed in accordance with applicable Federal Aviation Administration (FAA) Regulations, using Military Standards as guidance. Military readiness reporting requirements and inspections are governed by Army Regulations. At Appendix C is a listing of the regulatory guidance addressed in the AMCOM ARL contract. The majority of these regulations deal with aircraft maintenance and reporting requirements.

The basis for system acquisition is found in Public Law (Title 10, U.S. Code) and the Federal Acquisition Regulation (FAR). The ARL LCCS contract specifies what the Government is required to provide the contractor to assist in the successful accomplishment of their contractual obligations.

The FAR was established to codify uniform policies for acquisition of supplies and services by executive agencies. The FAR does not specifically address the issue of

contractors on the battlefield; however, it does provide the basis for Government contracting and checks and balances for the equitable execution of the contract. The Defense FARs (DFARs) also offers no specific direction regarding contractors on the battlefield.

DA Pamphlet (PAM) 715-16, "Contractor Deployment Guide," was developed to inform contractor employees, contracting officers, and Field Commanders of the current policies and procedures that may affect the deployment of contractor employees. DA PAM 715-16 provides guidance on command and control; the Statement of Work (SOW); supervision of contractor personnel; logistics support and legal assistance; deployment and travel; processing; supply; vehicle and equipment operation; customs processing and entrance and exit requirements; medical and dental care; morale, welfare, recreation and support services; the Status of Forces Agreement (SOFA) to include the Uniform Code of Military Justice and discipline of contractor employees; conduct; and hostage aid.

> Status-of-forces agreements may cover a wide range of issues impacting the use of contractors in military operations. SOFAs were created between the United States and host nations to define the rights, immunities, and duties of the force, its members, and family members. These agreements established the legal obligations to be followed when operating within or in-transit through a particular nation. SOFAs can establish legal obligations independent of contract provisions and apportion criminal jurisdiction between the United States and the receiving nation. In addition, these agreements can address civil jurisdiction, claims, taxes, duties, services provided to each party, and procuring supplies and local employees. Moreover, SOFAs can also define the legal status (e.g., host nation criminal and civil jurisdiction) and legal obligations (e.g., taxes, customs, etc.) of contractors and contractor personnel in a host nation. [1]

Department of Defense Instruction (DODI) 3020.37, "Continuation of Essential Department of Defense (DoD) Contractor Services During Crises," implements DoD policy, assigns responsibilities, and prescribes procedures to provide reasonable assurance of the continuation of essential services provided by DoD contractors, including services provided to Foreign Military Sales (FMS) customers, during crisis situations. The following definitions are found in DODI 3020.37:

- Emergency Essential Support. Support and services, which, if not immediately available, would impair the performance of the Army's mobilization and wartime operations mission. These are considered emergency-essential because the Army cannot obtain them with current military, Department of the Army civilian, or assured Host Nation Support (HNS) resources.[2]

- Essential Contractor Service is a service provided by a firm or an individual under contract to the Department of Defense to support vital systems including ships owned, leased, or operated in support of military missions or roles at sea and associated support activities including installation, garrison, and base support services considered of utmost importance to the U.S. mobilization and wartime mission. That includes services provided to FMS customers under the Security Assistance Program. Those services are essential because of the following:

  - DoD Components may not have military or DoD civilian employees to perform these services immediately.

  - The effectiveness of defense systems or operations may be seriously impaired, and interruption is unacceptable when those services are not available immediately.[3]

Although not specifically referenced in the contract, the researcher found the information in the following documents informative:

- Army Regulation (AR) 715-9, Contractors Accompanying the Force, prescribes the policies, procedures, and responsibilities for managing and using contractors deployed to support Army requirements. This regulation addresses the types of logistics support associated with the Logistics Civil Augmentation Program (LOGCAP), rather than the contractor life-cycle logistics support program for a weapon system.

- Field Manual (FM) 100-21, "Contractors on the Battlefield," describes the considerations and responsibilities involved in planning for contractor support. It addresses areas of risk, support to the contractors, contractor deployment and redeployment, and provides a detailed discussion of managing contractors in an

operational theater. It is intended for commanders and their staffs, as well as for Project Management Offices (PMOs)/Program Executive Offices (PEOs) who plan, manage, and use contractors in a theater of operations.

B. RESEARCH QUESTIONS

1. What is the Government's mission/role?

Prior to the award, it is the Government's responsibility to define its requirements and develop the most effective SOW possible to meet the users' requirements. During the proposal evaluation process, the Government must assess the contractors' abilities to execute the SOW requirements. Following contract award, the Government is responsible for oversight and administration of the contract within budgetary and contractual constraints.

According to the Defense Systems Management College (DSMC) Program Managers' Tool Kit, the Program Manager (PM) is responsible for:

- Accepting program direction from acquisition executives and implementing it expeditiously and conscientiously;
- Managing their programs to the best of their abilities within approved resources;
- Being customer-focused and providing the user with the best, most cost-effective systems or capabilities;
- Innovating, striving for optimal solutions, seeking better ways to manage, and providing lessons-learned to those who follow;
- Being candid about program status, including risks and problems as well as potential solutions and likely outcomes;
- Preparing thorough estimates of financial and personnel resources that will be required to manage the program; and
- Identifying weaknesses in the acquisition process and proposing solutions.

It is the Product Manager's responsibility to ensure on a daily basis that the contractor is in compliance with the contract. Within FWPMO, this involves monitoring daily flying hour reports and performing technical analysis and validation of the contractor's performance. FWPMO scrutinizes the funds obligations on the contract and ensures that the contractor does not inadvertently exceed funding thresholds. Planning

for success is critical and, as always, the primary goals of the PM include the successful management of cost, schedule, and performance within contractual and legal parameters.

Operating from the AMCOM Acquisition Center, the Procuring Contracting Officer (PCO) is the only Government representative who can make contractual commitments for the Government regarding the LCCS contract. Although the Acquisition Center is not a direct report to the FWPMO, the AMCOM PCO's office works closely with the FWPMO in evaluating contractual performance. Modifications or changes to the contract are coordinated between the Acquisition Center and FWPMO.

The AMCOM PCO's office is responsible for executing contract modifications, monitoring contract funds status, and updating the Government's past performance files for the LCCS contractor. Past performance is a critical evaluation factor in awarding Government contracts and requires serious evaluation actions by the entire acquisition team.

With the continuing "right-sizing" of the Army, vacant DA civilian personnel spaces are routinely unfilled to meet downsizing goals. This has resulted in the addition of in-house contractor support to perform daily operations and administration of non-inherently Governmental functions. The FWPMO relies heavily on the experience and expertise of these individuals, the majority of whom are retired military aviators, on the ARL program.

As previously stated, the INSCOM G-4 assumes responsibility for the fiscal requirements determination for the entire ARL program. The G-4 prepares the Program Objectives Memorandum (POM) submissions each summer. The INSCOM G-4 COR is the point of contact for the site COR on routine issues.

The INSCOM G-3 Office is the operational decision-making and coordination authority for the program. Unit operations are critical to the success of the ARL program, but are not under the purview of the FWPMO. The current ARL Government Flight Representative (GFR) resides within the G-3 office. The GFR is responsible for surveillance of all contractor aircraft flight and ground operations involving Government aircraft and other aircraft for which the Government assumes at least some of the risk of loss. All flights and procedures for ground operations of installed engines and/or

propeller(s), engaging of rotors, taxi, and towing of Government aircraft conducted by the contractor are subject to final approval by the GFR. When the contractor is not acting in accordance with procedures prescribed in the contract, test plans, AR 95-20, or other applicable directives, or if safety is jeopardized, the GFR may withdraw approval of the flights and/or procedures.[4]

The Government is required to provide the contractor with official notice for temporary scheduled operational support (i.e., deployments), in writing, not later than twenty-one days prior to deployment. The on-site COR provides the contractor with all required information concerning equipment, support, and facilities available at a new forward operational area. The Government provides transportation of the contractor's equipment and personnel. Contractor personnel also assist in the preparations for each deployment prior to commencing operations (and also in the subsequent recovery prior to return to the beddown base).

One respondent stated: "The supported unit understands the importance of contractor support during deployments to hostile environments. We include the contractors in pre-deployment briefings and require the deploying employees to participate in the Soldier Readiness Program (SRP) prior to each movement."

In the Republic of South Korea, the U.S. Government offers Government medical and dental services and facilities, as available and on a reimbursable basis, to the contractors and eligible family members. The Government also takes on the responsibility of evacuating the contractors' family members in the event of escalated hostilities. The contractors are trained in NBC procedures and issued the appropriate gear for that environment. This is critical, as the threat from North Korea and China is an ever-present concern. The Government also must closely monitor the SOFA requirements and changes in the Republic of South Korea.

It should be further noted that INSCOM also found it necessary to place "in-house" contractors at the unit-level to assist in operations and administration of the program. The intent of these personnel is to augment the military COR positions and to provide continuity. They have no contractual authority and serve in an advisory and administrative capacity only.

Under the purview of the PEO Intelligence, Electronic Warfare and Sensors (IEW&S), PM-ACS oversees the acquisition of the aircraft and the initial and subsequent modifications to the ARL platforms. Within the PM-ACS, the PM-ARL is the focal point for the program. Other than an occasional consulting role, FWPMO is not included in the execution of these aircraft acquisition and modification contracts.

Following the modification or upgrade, the airframe LCCS contractor performs a records audit. The unit then accepts the plane from the modification contractors. This is a tenuous area of ARL system management. One reply to the questionnaire indicated that the modification contractor was not adequately supporting the LCCS maintainer's needs, e.g., the modification contractor was not providing post-installation training or adequate drawing packages following the modifications. This situation appears to be close to resolution. The modification contractors pledge their support to the LCCS contractor; however, FWPMO has no authority over the modification contract.

2. What critical issues does the Government need to address?

The decision was made to contract for Mission Capable (MC) rate rather than for a specific percent of mission accomplishments. However, if the MC rate is above 90 percent, but the aircraft cannot accomplish a required mission, the unit is not receiving the desired service. The issue of adequately and succinctly defining the requirement again becomes critical. Is a 90 percent MC rate what the Government really wants, or do we want to accomplish missions 100 percent of the time?

Contractors propose on work efforts based on estimates provided by the Government. Original estimates were for the flying hour program to average approximately 160 flying hours per month per aircraft. The ARL LCCS contract contains a clause that provides renegotiation terms in the event that the aircraft do not meet fifty (50) percent of the projected flying hours (i.e., 160 per month per aircraft). Unfortunately, due to a shortage of ARL pilots and the long lead-times associated with applying the aircraft/PME modifications, these flying hours have not materialized at Fort Bliss. In February 2001, the criteria to renegotiate the fixed price flying hour rate were met. AMCOM and the Defense Contract Management Agency (DCMA) recently evaluated the contractor's proposal for an increased flying hour rate at Fort Bliss.

Following telephonic negotiations between the AMCOM PCO's office and Avtel corporate personnel, the flying hour rates for the remainder of 2001 (Option Year One) and the last three option years were increased.

Of critical concern to the Government is the deployment scenario that exists at Fort Bliss. The respect and concern of the ARL pilots and the CORs is indicative of the close bond that exists between the pilots and the maintainers. In response to the questionnaire, one respondent stated: "Ensure all contractors are designated essential." Essential contractor services are those services provided by a firm or an individual under contract to the DoD to support vital systems. These services are essential because DoD components may not have military or DoD civilian employees to perform these services immediately, or the effectiveness of defense systems or operations may be seriously impaired, and interruption is unacceptable when those services are not available immediately.[5]

Another respondent stated: "The contractors receive medicines, security briefings, etc., in the same manner as the soldiers of the unit. However, other post support agencies [Adjutant General (AG)-Personnel] are not knowledgeable on the role of the contractors during deployments. We have experienced difficulty in obtaining identification cards for contractors. We also experienced other problems when dealing with support agencies on the local military post. Education of all agencies on the role of contractor support is the solution to these types of problems."

In an attempt to alleviate this problem, FWPMO routinely prepares letters to the AG office requesting the identification cards be issued on a yearly basis. Following each deployment, the contractor collects and stores the cards until the next deployment. AMCOM explores every opportunity to make the unit's deployment situation more efficient and effective.

One respondent commented: "Deployments tend to be quite restrictive regarding personal time, i.e., Army commanders restrict contractors based on their own troops failed conduct. The Army has not yet definitized how contractors will be accommodated in differing theaters and situations. Some locations permit access to Commissary and PX facilities, while others do not. Joint Travel Regulations (JTRs) do not cover all aspects of

contractor needs, yet contracts are tied to JTRs. There needs to be better flexibility and less bureaucracy. (The researcher understands the "bureaucracy" in this case means that the personnel who are responsible for performing the support to the contractors do not understand the importance of these contractors. Their performance is essential to the success of the program.) Army commanders tend to treat and expect contractors to act as soldiers. An education program needs broad presentation so everyone, contractors and commanders, know the rules."

The unit commander is ultimately responsible for the well being of all personnel under his command, contractor as well as Government. Many unpopular restrictions, including one prohibiting the consumption of alcoholic beverages, have been imposed on the personnel when traveling to the Southern Command (SOUTHCOM) deployment site. During the last deployment, however, the unit commander relaxed the restrictions somewhat to allow off-duty contractors a less stringent period for recreation and relaxation.

At Camp Humphreys, a new concern has developed concerning a U.S. Forces Korea (USFK) Regulation. The USFK Regulation states that dependents of contractors may be approved for Command Sponsorship, i.e., rights and entitlements of contractors and their families to U.S. Government facilities, only if the contract period is for more than one year. This complicates the support of the contractors who are on a contract that extends from 1 January through 31 December of a calendar year. Personnel who may be hired on during the year automatically do not qualify under the USFK Regulation. A contract with a base year plus multiple year options is not viewed as a multi-year contract, but as a contract with a duration of less than one year. The U.S. Government looks at these contracts as multi-year, as no competition for follow-on support is conducted until the final option year of the contract, assuming the contractor does not default or is not terminated for cause. This USFK interpretation may affect the contractor's hiring and retention capabilities should the U.S. Government be unable to reach an agreement with the South Korean Government on this issue.

Contractor compensation continues to be an issue with regards to personnel. The contract contains a Hazardous Pay clause. In the event an employee is required to travel

to and work in a hostile area, the contractor is required to pay at the percentage authorized a hostile area differential, as outlined in U.S. Code 37, or current hostile location. A "hostile area" may be defined as:

"Military Operations Other Than War" connotes conditions ranging from humanitarian and peacekeeping operations, through heightened international tensions or states of military readiness and periods of armed conflict.[6] or

"Crisis Situation" may be any emergency so declared by the National Command Authority (NCA) or the overseas Combatant Commander, whether or not U.S. Armed Forces are involved, minimally encompassing civil unrest or insurrection, civil war, civil disorder, terrorism, hostilities buildup, wartime conditions, disasters, or international conflict presenting a serious thereat to DoD interests.[7]

This "hostile area" differential amounts to 15 percent (15%) of the employee's yearly salary for the duration of such travel and work assignment in the designated hostile area. The Government cannot direct the contractor's corporate headquarters to pay these individuals higher wages during deployments or even mandate that they pay deployment bonuses. It would seem a prudent contractor strategy to take care of their personnel, or as one respondent stated: "Provide adequate monetary incentive…"

The contractors who are based in South Korea receive tax exemptions that are not available to the contractors who deploy with SOUTHCOM. The Fort Bliss site was formerly located in Panama, where the tax exemption was also permitted. The cost of living in Panama was quite low, and several of the technicians had family ties to the area. The unit was relocated to El Paso, Texas, in late 1999. Following the relocation, more than half of the contractor's personnel resigned. Several were transferred to South Korea. Many individuals did not want to live in the El Paso area, and without any monetary incentive, the deployment requirement became much more unattractive. Although it is difficult to formulate the reasons many individuals chose to leave the program, the bottom line appears to be financial.

3. What is the contractor's mission/role?

The Contract Data Requirements List (CDRL) (see Appendix D) defines the data "deliverables" that the contractor must provide to the Government under the ARL contract. The data is used for numerous project tasks. The data is used to apprise the Government of the status of the fleet (MC rate and total flying hours per month), and the plans that the contractor has developed that portray the management philosophy the contractor envisions for the success of the program. Most importantly, the data is used to determine the operational and support (O&S) costs of the aircraft per year (prorated across the fleet).

Another critical element to the contractor's success is maintaining the 90 percent per aircraft per month MC rate. The contractor is required to utilize or provide all capabilities, services, materials (to include aircraft spare and repair parts), and personnel necessary to meet the requirements of the contract. The SOW defines and provides the basis for the required tasks. The contractor is expected to perform all system maintenance, to include all supplies, services, and GFP necessary to maintain the aircraft and its interfaces to the PME subsystems. The quality assurance functions associated with removal, installation, and weight and balance requirements for the PME components also must be accomplished.

The contractor is responsible for daily pre-mission functions, post-mission functions, and all scheduled and unscheduled maintenance actions, to include inspections as outlined in the original equipment manufacturer (OEM) (DeHavilland/Bombardier) inspection and maintenance manuals and guides. Additionally, the contractor must maintain all aircraft/systems records in accordance with military regulations.

Deployments add to the complexity of the ARL program. The contractor is expected to routinely deploy, and must provide support to the Government at deployed areas of operations. Additionally, the contractor must be prepared to relocate to a new beddown base (i.e., where the aircraft are stored and maintained) area of operations or forward operational area, on either a temporary or permanent basis, as directed by the Government for an undetermined period. Historically, up to three locations have been simultaneously supported from a single beddown base as a result of deployments.

The contractor is required to provide a contingency plan for continued services in the event of wartime or other crisis situation as defined in DODI 3020.37 and DA PAM 715-16. The contractor also must provide a hiring plan that ensures personnel hired under this contract are fully aware of the deployment scenarios and that employees will comply with their responsibilities as Essential Contract Personnel per DODI 3020.37.

The contractor's contingency and hiring plans detail how the contractor plans to backfill vacant positions. In the event an employee terminates due to a crisis situation or the refusal of area of operations-required vaccinations/immunizations, the contractor is required to replace the employee at no cost to the Government.

The contractor is required to maintain a company security clearance and individuals also must have U.S. Government Secret security clearances. Acquiring security clearances has proven to be difficult due to the high turnover rate of employees at Fort Bliss. There is a significant backlog of requests for security clearances at the Defense Industrial Security Clearance Office (DISCO), which may be directly related to the outsourcing of DoD security services.

Although the Government does not mandate a maximum number of employees at each site, minimum manning levels (24 at Fort Bliss and 20 at Camp Humphreys) are contractually required to support the aircraft at each site. The unit and the contractor's site lead determine the best mix and number of personnel to deploy on each mission. Scheduling of personnel to meet mission requirements is at the discretion of the contractor.

4. What critical issues does industry need to address?

Unfortunately, our DHC-7 mechanics are aging along with our airframes. The workforce at Camp Humphreys has remained relatively stable; however, turnover at Fort Bliss continues to be a problem. Many of our contractor's technical personnel have retired, moved on to management positions with other companies, or simply have chosen not to undergo the hardships that are currently associated with the ARL program.

Recruiting mechanics for positions supporting ARL is difficult. AMCOM has been forced to "relax" DHC-7-peculiar experience requirements as the available pool of

qualified DHC-7 mechanics is disappearing. The contractor has been hiring mechanics with "equivalently complex" aircraft maintenance experience. They then perform on-the-job training to qualify them as DHC-7 mechanics. In the past few months, the contractor has successfully recruited several DHC-7 experienced mechanics from small operations that have closed.

Compensation packages must encourage mechanics to join the ARL Team. The proposed salary levels are evaluated based on U.S. Government Area Wage Determination Tables. AMCOM does not mandate the salary range for these employees. One respondent to the questionnaire stated the mechanics receive "very little financial support while working long hours, i.e., being on status alert or stand-by and not considering paying for waiting."

While readiness rates are being attained, a definite need exists to improve diagnostics techniques and troubleshooting procedures. As previously stated, ARL has undergone multiple modifications as technology evolves and is implemented into the PME. These modifications often complicate wiring and interface connections to the aircraft. The airframe is also subject to mandatory FAA and military upgrades. Maintenance planning and scheduling (with support from the user units) are critical areas requiring proactive involvement by the contractor. Often there is an appearance that the contractor "throws parts at," rather than properly troubleshooting, the problem. This is a definite "lose-lose" situation.

Based on historical information, the contractor assembles a push package of parts that may be required during the deployment. Diagnostics are difficult from the remote site, and even the best plans go awry when an unforeseen repair is required. Evacuation or diversion of the aircraft to a secure facility large enough to handle an aircraft of this size is often the only way to execute a repair. This adds additional cost to the deployment and frustration to the commander, who is losing missions.

Obsolescence is a DoD-wide problem. The LCCS contractor is required to develop an Obsolescence Plan. Only 113 DHC-7 aircraft were produced, and the U.S. Army is now the primary user of the aircraft worldwide. It is apparent that the OEM and some subcontractors who work with DHC-7 aircraft are making attempts to re-engineer,

re-manufacture, and/or redesign parts that are no longer available. The current LCCS contractor has not adequately addressed issues of obsolescence. In recent months, requests have been made to the Government to waive the reduced payments clause of the contract citing the parts are "just not available," and "that part never broke before." These requests are not being approved. Waivers are unacceptable in this instance, and industry must endeavor to counteract obsolescence.

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[1] Gutierrez

[2] AR 715-9, p. 20

[3] DODI 3020.37, p. 2-1

[4] AR 95-20

[5] DODI 3020.37, p 2-1.

[6] AR 715-9, p. 22

[7] DODI 3020.37, p. 2-1

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V. CONCLUSIONS AND RECOMMENDATIONS

A. IMPACTS

What are the impacts to military systems when civilian contractors are responsible for Life-cycle Contractor Logistics Support (LCCS) in hostile environments?

1. Conclusions

Military systems have inherently different roles and functions. Contractors who choose to compete for market share of military systems business must understand the inherent peculiarities of these systems. LCCS for an aviation system differs greatly from a missile system. In the case of missile systems, the missile either fires or does not fire. If it fires, it either hits or does not hit its intended target. There are minimal opportunities to evaluate why a missile did not either acquire a target or detonate at the appropriate time. Aviation systems normally carry personnel, who can provide more accurate information on system problems or failures. Aviation systems normally return to their point of departure. This concept challenges the maintainers over a life-cycle that commonly exceeds twenty years.

When the Government chose to transition logistics support from "green suit" maintenance to private industry, the Government relinquished the ability to independently develop and monitor the maintenance database. The Government depends on the contractor's ability to perform this vital task.

When considering outsourcing, the Government must keep in mind:

- The contractor develops and controls the maintenance data of the system, unless otherwise contractually directed;
- The contractor has the personnel at the sites who perform the duties associated with aircraft and Government Furnished Property (GFP) maintenance;
- The contractor purchases the materials to support the program; and

- The contractor is the only entity that knows the actual costs associated with operating the program. Accuracy in this area is critical for estimating future operations and support (O&S) costs.

Dealing with the contractor's corporate structure is oftentimes difficult. Experience of the contractor contributes to their understanding of the requirements of the contract. Under the current Airborne Reconnaissance Low (ARL) airframe contract, the contractor, either through inadequate and inexperienced staffing or an unclear interpretation of the contract, has had difficulty relaying historical maintenance and cost data to the Government. Under the previous ARL LCCS contract, this contractor served as a subcontractor to a much larger company on a Time and Materials contract. They were paid a fee for performing a required action. They were not required to produce any maintenance data, other than the aircraft records and those documents required by the Federal Aviation Administration.

In an ideal world, the Government would have to deal with only one contractor for an entire system; however, in the case of ARL, the reality of the commodity system concept dictates the management of the various components by individual commands, creating a multiple contracts/contractor scenario. Aircraft maintainers are the logical choice for maintaining aircraft, and technologically advanced software development enterprises are the proper maintainers of the Primary Mission Equipment (PME) that is installed on these aircraft.

As these aircraft age and parts become more difficult to obtain, the Government must understand that O&S costs will increase. The Government has created a "niche" for the ARL contractors. There may be few new players interested in such a small segment of the aircraft maintenance market. This most probably will result in a higher flying hour rate in future acquisitions. Moreover, as the number of civilian operators decreases, the pool of experienced maintainers will eventually dry up, making qualified mechanics difficult to find.

2. Recommendations

a. Government

Contracting for maintenance in a hostile environment at remote locations is difficult. It requires dedication on the part of many people to ensure the system remains viable. The Government must be receptive to new thought processes and make educated decisions regarding highly complex programs.

The users' requirements must be concisely defined, especially when utilizing the Firm Fixed Price (FFP) method of contracting. The ARL requirement for a 90 percent Mission Capable (MC) rate does not guarantee a 100 percent mission accomplishment rate. If the aircraft is not available when a critical mission must be accomplished, the user loses the opportunity to achieve his/her goal.

In future contract selections, the Government should consider the following when setting evaluation criteria:

- The Government should contemplate full and open competition rather than mandating the contractual effort be designated as a small business set-aside. The small business may not have the in-house expertise or the necessary resources to perform the requirements that are peculiar to the system.

- The Government should weight past performance more highly than cost when selecting contractors for this type of effort. Past performance evaluation entails the manual input of details of a contractor's past performance into a Department of Defense (DoD) database. This information is then accessible by any Government agency that is evaluating the past performance of a contractor on future competitions.

- The Government should consider a contractual vehicle with a performance incentive.

The Government should also re-evaluate the concept of providing GFP to contractors. Under the Aviation and Missile Command (AMCOM) contract, the contractor must use "flying hour" dollar revenues to maintain, repair, and/or replace the GFP. In the case of ground support equipment, it appears a more practical concept would

involve permitting the contractor to purchase the equipment that had previously been GFP, or purchase new equipment. This concept provides the contractor the opportunity to keep the newest equipment on-hand and control equipment configuration among the sites. This plan could also provide additional tax incentive benefits to the contractor. Additional benefits of this concept could be the minimization of the amount of equipment on-hand and therefore a smaller footprint for the contractor during deployments. Military-peculiar hardware should remain the responsibility of the Government, however, and should be listed on a GFP inventory record and maintained as contractually mandated.

More systems are being considered for outsourcing and privatization. As this occurs, it is recommended that any Program Management Office (PMO) considering LCCS meet with representatives of the Fixed Wing Product Management Office (FWPMO). The experience base and personnel available in FWPMO could provide insight and recommendations concerning outsourcing initiatives.

b. Industry

As the Government continues to outsource, it becomes even more imperative that industry emphasize communications with the Government and other Government contractors. The Government would hope that industry would make the necessary inquiries and ask questions regarding potentially confusing areas of contract execution or responsibility. Assuming the responsibility for a Government program, especially in a "hostile" environment is an enormous undertaking. Industry must understand the magnitude of that responsibility. The contractor must make every effort to deliver proactive and innovative management plans. It is industry's responsibility to project, plan, and estimate their corporate requirements prior to proposing on a Government effort. The contract is "two-sided" and both sides need to play fully for a "win-win" situation. This raises the question: "Can industry share 'lessons learned' with the Government?"

A willing attitude is essential for success in the Government contracting arena. Industry must understand the size and scope of the effort required to perform a particular military system logistics support contract. Aging systems are difficult to

maintain. The military mission is complex. Changes in force structure, areas of operation, and operating tempo (OPTEMPO) further complicate the process. Corporate commitment is required for the success of this program. Corporate commitment means that the contractor must, when necessary, "think out of the box" to solve unusual problems. Although the MC rates have remained relatively stable and the majority of the missions have been accomplished under this contract, AMCOM has not experienced a 100 percent corporate commitment to the program from this contractor.

Industry must recognize influencing factors. Industry must understand the difference in operational methodology and focus required for different types of contracts. There is a tremendous dissimilarity in the management of a program under a Cost-Plus Fixed Fee versus an FFP contract. Contracts that operate on a Cost Plus concept tend to operate smoothly, as the Government chooses to retain the risk. Using an FFP method of contracting, the risk shifts from the Government to the contractor. Again: Can industry share lessons learned with the Government?

The transition from one type of contract to another should elicit dialog and questions; surface any areas of concern regarding the requirements of the Statement of Work (SOW); and suggestions for more effective (and possibly cost-saving) methods of doing business. The Government cannot, nor should they, be responsible for the mistakes or misunderstandings of contractors. Silence on the part of the contractor does not indicate understanding of the requirements. Success in winning a contract does not equate to the successful performance of that contract. Unlike a Government operation using soldiers, where manpower is an unlimited commodity, commercial contracts require civilian personnel, who work in sometimes extraordinarily difficult environments and should be compensated accordingly. The contractor should keep the employees' best interests in mind when developing corporate strategies. This includes proposing incentives for deploying to potentially hostile areas of operations.

Personnel are the backbone of this program, and training is critical to success. The contractor must ensure that a training plan is in place, with heavy emphasis on troubleshooting and diagnostics procedures. This could be another possible area of evaluation for an incentive award type of contract. The contractor should ensure that

personnel are informed of the performance requirements, including potential deployments, of their contract. It is apparent from feedback from the questionnaire that the contractor should listen to their employees.

B. SUMMARY

The goal of this thesis is to answer the question: What are the impacts to military systems when civilian contractors are responsible for life-cycle contractor logistics support in hostile environments?

The Government endeavors to operate along commercial principles; however, there are many unique requirements and responsibilities associated with military operations that cannot be easily undertaken by a commercial vendor. During the past eighteen months of LCCS, differences of opinion have sometimes occurred between the Government and the contractor regarding interpretation of contractual language. These types of situations should be anticipated, even encouraged, for this is an edifying opportunity.

It has never been the Government's intent to cause harm to a contractor in any way. The Government attempts to remain impartial and fair at all times and does not wish to interfere with the contractor's business practices. Recently, the Government has agreed to waivers of liquidated damage assessments that occurred outside the contractor's realm of responsibility. The recent re-negotiation of the flight hour rate, based on the contractor's submission of purported actual cost of operations, is indicative of the Government's desire to keep the contractor solvent and performing in accordance with the terms of the contract.

The Government cannot ensure that continuity of contractor operations. On 18 October 2001, FWPMO was notified by the Chief Executive Officer of Telford Aviation, Bangor, Maine, that their company had purchased 100 percent of the stock of Avtel Services, Incorporated, and would begin performing the LCCS for ARL on or about 19 October 2001. Telford Aviation had been a depot-level subcontractor to Avtel. Three option years remain on the current contract. It is anticipated that more "lessons learned" under the new management will occur. This is indicative of change, growth, and free enterprise at work.

The team must share a common vision: Cooperation, Commitment, Coordination, and Communication. This vision applies not only to the aircraft maintainers, but also to the PME developers and maintainers as well. Our contractors must support and encourage each other. They must keep communications channels open among themselves and with us. They must cooperate to resolve any areas of dispute or confusion. The government must allow them the opportunity to resolve these issues and form necessary alliances, becoming involved only when resolution to particular issues cannot be met. Corporate America must ask questions, be proactive, and be a part of the team.

Through teaming, innovation, and proactive management, contractor LCCS is a viable alternative to "green suit maintenance" in hostile environments. "Contractors on the Battlefield" is a current reality, and it is imperative that all acquisition professionals, Government and contractor, contribute to ensure the success of programs utilizing this maintenance concept. Through the dedication of the many professionals who serve the ARL program, it will remain an effective, sustainable system throughout its planned life-cycle.

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TOPICS FOR FURTHER RESEARCH

Combatant vs. Noncombatant Status

Discipline and Control

Force Protection (Security)

Doctrine Development for Contractors on the Battlefield

Impacts of Army XXI and Army After Next on Logistics Support

Utilization of Reserve Forces to Augment Tactical Units' Mission Operations

The Commander's Responsibility for Contractors on the Battlefield

The Impacts of Senate Bill 768

Define the Core Capabilities that the Federal Government Should and Could Outsource

How do we care for our soldiers?

What are the different expectations of and related to our contractors?

How do we insure our contractors? Do we self-insure? What about host-nation participants?

What tax exclusions could Government provide to contractors to encourage participation in these environments?

Standard Type Classification (STC) management

Aircraft Survivability Equipment (ASE)

Implications of Government Furnished Property/Equipment (GFP/E) and logistics support contractors.

Implications of Status of Forces Agreements (SOFA)

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DEFINITIONS

Combat Zone (CZ) – An area required by combat forces to conduct operations; it normally beings at the forward boundary designated by the commander and extends to the communications zone (COMMZ) boundary. It may be subdivided into forward and rear CZs. A CZ may contain one or more corps, which may in turn contain divisions in a number necessary to accomplish the mission. When considering the sue of contract support the CZ is an area that presents special problems because of the risks to non-combatants who furnish the supplies or services requested.[1]

Contracting Officer's Representative (COR) – An individual appointed in writing by a contracting officer to act as the eyes and ears of the contracting officer. This individual is not normally a member of the contracting organization, but most often comes from the requesting unit or activity. The contracting officer assigns the COR specific responsibilities, with limitations of authority, in writing. The COR represents the contracting officer only to the extent documented in the written appointment.[2]

Emergency-Essential Support – Support and services which, if not immediately available, would impair the performance of the Army's mobilization and wartime operations mission. These are considered emergency-essential because the Army cannot obtain them with current military, Department of the Army civilian, or assured Host Nation Support (HNS) resources.[3]

Host Nation Support (HNS) – Civil and military assistance rendered in peace and operations other than war by a host nation to allied forces which are located on or in transition through the host nation's territory. The basis for such commitments are bilateral or multilateral agreements concluded between the host nation and the nation(s) having forces operating on the host nations' territory.

Operations Other Than War connotes conditions ranging from humanitarian and peacekeeping operations, through heightened international tensions or states of military readiness and periods of armed conflict.[4]

Status of Forces Agreement (SOFA) – SOFA are internal agreements concluded between one or more foreign governments that provide for various privileges,

immunities, and responsibilities of the two governments, as well as the rights and responsibilities of individual members of a sending state's force. The United States does not have a SOFA with every country. Moreover, SOFAs vary, just as contracts do. One SOFA may contain provisions applicable to contractors, while another SOFA may not. A contractor employee's status will depend upon the specific provisions of a SOFA applicable between the U.S. and the country where a deployment occurs.[5]

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[1] FM 100-10-2

[2] FM 100-10-2

[3] AR 715-9

[4] AR 715-9

[5] AMC PAM 715-18

APPENDIX A-1

I am a contractor _____/Government employee. If Government, DA Civilian_ _____/Military __ _____.

While supporting the ARL program, I have been deployed to the following locations: 2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

b. What were the lessons learned?

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

b. What can industry do?

4. Should contractors be deployed to hostile environments? If so, under what conditions?

5. What should someone dealing with this type of situation in the future need to know?

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APPENDIX A-2

1. I am a contractor _X____/Government employee. If Government, DA Civilian_ ____/Military ___. While supporting the ARL program, I have been deployed to the following locations:

Colombia, Panama, Peru, Venezuela, and Puerto Rico

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

Deployments tend to be quite restrictive regarding personal time, i.e., Army commanders restrict contractors based on their own troops failed conduct. The Army has not yet definitized how contractors will be accommodated in differing theaters and situations. Some locations permit access to Commissary and PX facilities while others do not. Joint Travel Regulations do not cover all aspects of contractor needs, yet contracts are tied to JTRs. There needs to be better flexibility and less bureaucracy. Army commanders tend to treat and expect contractors to act as soldiers. An education program needs broad presentation so everyone, contractors and commanders, know the rules.

b. What were the lessons learned?

Flexibility is tantamount to good support. Just as the Army has focused on issues training, they must now educate everyone on the Contractors on the Battlefield Program.

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

Provide adequate monetary incentive, provide necessary survival training (weapons, NBC, Escape and Evade, language training, customs and courtesies).

b. What can industry do?

Fully brief employees on the responsibilities and hazards of the job. Train replacements similar to armed forces reserves in order to provide adequate depth of service in case their employee is injured or decides to leave the theater.

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yes, any and all. But the broad program must be better structured than today. Issues that lack clarity are: who provides transport to the area, who provides housing, medical care, and evacuation.

5. What should someone dealing with this type of situation in the future need to know?

Issues that lack clarity are: who provides transport to the area, who provides housing, medical care and evacuation.

APPENDIX A-3

1. I am a contractor _ ___/ X_____ Government employee. If Government, DA Civilian_ _____/Military _____.

While supporting the ARL program, I have been deployed to the following locations:

Colombia, Korea, Peru, Venezuela, Bosnia Somalia Ecuador, and Bolivia

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

Pure lack of professional, integrity, and performance from all contractors. The biggest concern from any of the three at the time was the accommodations, or lack thereof, thus in my professional opinion and 18 years of maintenance experience, I could have done the job and done it better with U.S. Army soldiers training in the equipment and have a better morale, job performance, and most importantly, a better control of force security!

b. What were the lessons learned?

When deployed or preparing to deploy, a constant watch over the prepping of equipment and securing all personnel become too much trouble for civilian contractor(s). For example, even though the prime and subcontractors had been deployed to a said location prior, therefore not to be a new experience, one lead man complained of having to get his crew official passports, instead of complying with his contractual obligations and using civilian passports/visas, he said, “If the Army can’t get my crew in, we just won’t fly.” This flies in the face of good American soldiers and officers accomplishing a very difficult mission and the best under tight time constraints in which “The only thing that a contractor is interested in is his money, and if he’s not catered to in a fashion he’s happy with, they quit!!!! Also, during a training standdown day, a radio control head was requested by the commander. This was a four quick type DZUES Fastener 2 minute job. Avtel’s response from the top was, “It’s not in the statement of work.” There are six years of accounts I could site, but the time and effort are not seemingly worth it.

3. A “hostile environment” does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

Fire each and every one of them. Force protection is an attitude of discipline which cannot be instilled to a person who is “Only in it for the money.” Job performance suffers to shave costs, but more importantly, morale and motivation from soldiers become a more than necessary difficult task to deal with.

b. What can industry do?

Supply depot-level logistics, i.e., oil, special tools, and a ready supply of parts. To be sure, when necessary, supply troubleshooters for deployed units.

4. Should contractors be deployed to hostile environments? If so, under what conditions?

No. Never. See logistics, troubleshooter above.

5. What should someone dealing with this type of situation in the future need to know?

Pre-flight the plan the night before you’re going to launch, and if it is not 100 percent, make the contractor eat the downtime and pay for noncompliance with their contractual obligations.

APPENDIX A-4

1. I am a contractor _ _____/Government employee. If Government, DA Civilian_ _____/Military __ X_____.

While supporting the ARL program, I have been deployed to the following locations: Colombia and Korea

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

Aircraft Fuel Indicating Problems

b. What were the lessons learned?

Just enforce the statement of work!

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

Ensure they are designated essential

b. What can industry do?

Training to prepare them for the environment that they are going to be working in.

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yes, only after they have received the proper training.

5. What should someone dealing with this type of situation in the future need to know?

I would ask what type of training should contractors be required to have in order to deploy with the military.

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APPENDIX A-5

1. I am a contractor _ __/__X____ Government employee. If Government, DA Civilian_ _____/Military __X_____.

While supporting the ARL program, I have been deployed to the following locations:

Colombia

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

My experience with contractor personnel during deployments in hostile environments have for the most part been extremely favorable. The contractors are professional and possess the same sense of urgency for mission completion as do the military soldiers.

b. What were the lessons learned?

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

The supported unit understands the importance of contractor support during deployments to hostile environments. We include the contractors in pre-deployment briefings and require the deploying employees to participate in the Soldier Readiness Program (SRP) prior to each movement. The contractors receive medicines, security briefings, etc., in the same manner as the soldiers of the unit. However, other post support agencies (AG – Personnel) are not knowledgeable on the role of the contractors during deployments. We have experienced difficulty in obtaining identification cards for contractors. We also experienced other problems when dealing with support agencies on the local military post. Education of all agencies on the role of contractor support is the solution to these types of problems.

b. What can industry do?

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yes – when the Government can provide adequate protection and security for deployed contractors. This should be addressed in the statement of work for the contractor organization.

Yes and without limitations or restrictions.

5. What should someone dealing with this type of situation in the future need to know?

APPENDIX A-6

1. I am a contractor _ ____/__X____ Government employee. If Government, DA Civilian_____/Military __X_____.

While supporting the ARL program, I have been deployed to the following locations:

Korea

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

At both Korea and Panama sites, the true meaning of the term "team effort" was realized.

Contractors were dedicated and professional; however, I don't know of any contractual agreement in place to assure their continued service in time of war.

b. What were the lessons learned?

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

Good question. Even if there was a contractual agreement, what would prevent a contractor from breaking the agreement if he felt his life was in danger?

b. What can industry do?

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Preferably deployed to hostile environments only in non-critical warfighting and support roles.

5. What should someone dealing with this type of situation in the future need to know?

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APPENDIX A-7

1. I am a contractor _X___/_____Government employee. If Government, DA Civilian_ _____/Military __ _____.

While supporting the ARL program, I have been deployed to the following locations:

Colombia, Panama, Puerto Rico, and Bolivia

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

Very little financial support while working long hours, i.e., being on status alert or stand-by and not considering paying for waiting. Working conditions, being out in the open, battling the elements.

What were the lessons learned?

Improvise, do the best under simulated combat conditions.

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

A little R&R to friendly areas on long deployments. Deploy to different locations, not only one area year round.

b. What can industry do?

Remind military we are civilians, not military personnel.

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yellow status is OK for me, but make sure are is well-secured and fortified. Also, evacuation plan in place at all times.

5. What should someone dealing with this type of situation in the future need to know?

Be strong minded and aware of your surroundings, hoping you are doing a job for a good cause.

APPENDIX A-8

1. I am a contractor _____/___X__ Government employee. If Government, DA Civilian _X_____/Military _____.

While supporting the ARL program, I have been deployed to the following locations:

Korea and Panama

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

While in Korea, I observed the ARL contractors' very strong work ethic, and a true appreciation for the unit's mission. At both Korea and Panama sites, the true meaning of the term "team effort" was realized. No negative comments.

b. What were the lessons learned?

Military leaders should brief their soldiers on the contractors' "value-added" and their role in support of the unit and readiness. Daily interaction between the leaders and the contractors is critical to ensure proper channels of communication remain open and flows freely.

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

Proper planning, coordination, and orientation/training for the contractors and their family members prior to deployments can preclude many issues and concerns.

b. What can industry do?

Properly brief their personnel, provide them access to the contract statement of work and explain in detail mission essential contractors. Ensure they receive proper informational briefings on their future geographic areas of operations, climate, culture, work environment, and related subjects.

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yes, and without limitations or restrictions.

5. What should someone dealing with this type of situation in the future need to know?

Contractors must be included in routine military/unit activities and meetings. They must be a part of the "team concept" and feel like they are an important asset to the unit. Always remember to support their personal and family needs.

APPENDIX A-9

1. I am a contractor _____/____X____ Government employee. If Government, DA Civilian_ _____/Military __X_____.

While supporting the ARL program, I have been deployed to the following locations:

Colombia –

2. While supporting the ARL program, I have had the following positive/negative experiences during contractor deployments (with respect to either personnel or the aircraft:

Generally positive experiences, however we should improve the timely support of the mechanics i.e., our mechanic did not get his passport nor visa until the last moment. I don't know who is the fault.

What were the lessons learned?

3. A "hostile environment" does not necessarily mean a military conflict. What can the Government do to facilitate deployment of contractors to hostile environments?

b. What can industry do?

4. Should contractors be deployed to hostile environments? If so, under what conditions?

Yes, always if they are going to do our maintenance they must be wherever

we are to do the mission and work what ever schedule it takes to complete it.

5. What should someone dealing with this type of situation in the future need to know?

Get passport, visa, shots and country orientation and be sure who is

responsible for funding each.

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APPENDIX B. THOUGHTS FROM THE 204TH MI BN

There is no single person or company to go to for compliance with the terms of the U.S. Army. In this, I mean there are too many different requirements for the four different contractors, for one person to keep up with. There needs to be a position in each Battalion, (Battalion COR/Maintenance Officer) that should be a contractor/DAC. Someone full time that doesn't change every two years. This would allow a concrete standard to be set for the contract maintenance program, one that does not waiver on the statement of work.

The bottom line is that the contractor is in this for the money, not mission accomplishment. If they are not making money, we are not accomplishing our missions. Army stewardship in the maintenance arena has become very limited, due to the fact that a COR cannot supervise contractors, or obligate the Government.

The people in charge at AMCOM should allow Battalion input prior to soliciting a contract such as this (In fact, there was INSCOM support during the writing of the SOW and the evaluation). I have been told than an INSCOM CW4 wrote this statement of work. Did he seek the input of all the units to look at the draft version to ensure that it meets everyone's approval. Ft Rucker (Army Aviation Maintenance Center) needs to ensure it meets all Army maintenance requirements, what their needs were and how they need the contract tailored to meet those needs.

There are no specifics to this contract, as to who is responsible for what, i.e., one contractor does bench maintenance for one type of equipment. Who is responsible for SATCOM, and at what point?

The notes in the MEL, input by INSCOM, should be delegated down to the Battalion/Company commander to have authority to waive the restrictions that hinder his/her unit from completing their missions.

I believe the removal of the "N" tail number would allow the Army better maintenance management avenues, or at a minimum, clarification of the Federal Aviation Regulations.

A hanger would allow a quicker turn-around time, just due to the weather in Colombia, and not having to relocate every time a fuel cell needs to be opened, or the aircraft jacked. (In fact, AMCOM executed an Elective Improvement in CY 2000 to purchase a portable hanger facility for semi-permanent installation at the deployment site. AMCOM awaits INSCOM's and SOUTHCOM's approval and requirements prior to acquiring the facility.)

A better relationship between flight scheduling and the maintenance team would allow for a smoother transition from scheduled flight to actual flight.

Get passport, visa, shots and country orientation and be sure who is responsible for funding each.

APPENDIX C. REGULATORY GUIDANCE

From the text of the Airborne Reconnaissance Low (ARL) Contract: "The following documents, and dates of issue in effect at the time of solicitation, form a part of this Statement of Work (SOW) to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this SOW, the contents of this SOW shall be considered a superseding requirement. All Military Standards (MIL STDs) and Specifications (SPECs) listed herein are for reference purposes only.

The following documentation is referenced in this SOW. For those documents subject to amendment or re-issue, the version of the document current at the closing date of the solicitation shall apply unless otherwise stated herein.

2.1 Military Handbooks (MIL-HDBK)

MIL-HDBK-454	General Guidelines for Electronic Equipment
MIL-HDBK-502	Acquisition Logistics
MIL-HDBK-1221	Evaluation Of Commercial Off The Shelf (COTS) Manuals

Federal Standards/Defense Standards/Military Standards (MIL-STD)

MIL-STD-129N	Standard Practice for Military Marking
MIL-STD-464	Electromagnetic Environmental Effects Requirements for Systems
MIL-STD-704E	Aircraft Electric Power Characteristics
MIL-STD-882C	Military Standard System Safety Program Requirements
MIL-STD-973	Configuration Management
MIL-STD-974	Contractor Integrated Technical Information Service (CITIS)
MIL-STD-980	Foreign Object Damage (FOD) Prevention

MIL-STD-1456 (2)	Contractor Configuration Management Plan
ISO 10012-1	Quality Assurance Requirements for Measuring Equipment

2.3 Federal Aviation Regulations (FAR)

FAR Part 21	Certification Procedures for Products and Parts
FAR Part 25	Airworthiness Standards: Transport Category Airframe
FAR Part 43	Maintenance, Preventative Maintenance, Rebuilding, and Alterations
FAR Part 91	General Operating and Flight Rules
FAR Part 145	FAA Certificate Repair Stations

2.4 Department Of Defense (DOD) Instructions

DODI 3020.37	Essential Contractor Services During Crisis

2.5 Army Regulations (AR)

AR 95-1	Army Aviation and Flight Regulations
AR 95-20	Contractor Flight Operations
AR 600-55	Motor Vehicle Driver and Equipment Operator Selection, Training, Testing and Licensing
AR 700-138	Army Logistics Readiness and Sustainability
AR 750-43	Army Test, Measurement and Diagnostic Equipment Program.

2.6 Field Manuals (FM)

FM 10-67-1	Concepts and Equipment of Petroleum Operations
	Technical Circular (TC) 1-218 Aircrew Training Manual

2.7 Technical Manuals (TM)

TM 1-1500-204-23-1	General Aircraft Maintenance Manual
TM 1-1500-328-23	Aeronautical Equipment Maintenance Management & Policies & Procedures
TM 55-1500-342-23	Army Aviation Maintenance Engineering Manual for Weight and Balance
TM 55-1500-343-23	Organizational and Intermediate Avionics Cleaning and Corrosion Prevention / Control
TM 55-1500-344-23	Aircraft Weapons System Cleaning & Corrosion Control
TM 55-1500-345-23	Painting and Marking of Army Aircraft
TM 55-1680-352-23/23P	Maintenance and Parts Manual for Army Survival Kits
TM 55-1680-354-10	Operators Manual for Army Survival Kits
TM 55-1680-354-14/	Floatation Equipment TO 145-1-102
TM 55-15XX-XXX-XX	O-5/EO-5/RC-7 MTF CL (Pending approval)

2.8 Department Of The Army Pamphlets (DA PAM)

DA PAM 700-20	DA TMDE Register
DA PAM 700-21	Index to TMDE Register
DA PAM 700-21-1	DA TMDE Preferred Items List
DA PAM 715-16	Contractor Deployment Guide
DA PAM 738-750	Functional Users Manual for the Army Maintenance Management System (TAMMS)

DA PAM 738-751 Functional Users Manual for USA Maintenance Management System (TAMMS-A)

2.9 Miscellaneous Documents

TB 43-0106 Aeronautical Equipment Army Oil Analysis Program (AOAP)

DLAM 8210.1 Defense Logistics Agency Manual

Federal Aviation Administration (FAA) Advisory Circular Adv. Cir. 91-67 Minimum Equipment Requirements for General Aviation under FAA Federal Aviation Regulation Part 91-67

(Part Number 3023342) Pratt & Whitney Maintenance Manual

APPENDIX D. CONTRACT DATA REQUIREMENTS LIST (CDRL)

CDRL	SOW Para	Title/Data Item Description	Synopsis
A001	3.2, 3.2.1	Status of Government Furnished Equipment (GFE) DI-MGMT-80269	Upon receipt of GFE, and following completion of a receipt inspection, the contractor shall submit a GFE report for all received GFE. After consolidation of GFE, the contractor shall classify and tag according to serviceability
A002	3.2.2, 3.2.3	GFE Quality Deficiency Report (QDR) DI-QCIC-80736	The contractor shall submit a QDR for each failure of GFE/Government Furnished Material (GFM) that occurs. After receipt and inspection/testing, the contractor shall report all deficiencies noted.
A003	5.5	Over and Above (O&A) Manhour Estimate, Technical Cost Proposal DI-FNCL-81116	The contractor must submit a request for authorization for any O&A activity to the Government . O&A situations occur when an event outside the normal maintenance activities, i.e., an act of God or an incident/accident, occurs. O&As may include manhours and/or materials required to effect the repair.
A004	3.2.7	Report of Shipping and Packing Discrepancy DI-MGMT-80503	The contractor shall submit a Report of Discrepancy (ROD) (SF-364) no later than (NLT) 7 days after telephonically notifying the Government of known discrepancies.
A005	4.4.1, 4.9.9, 4.21, 4.23	Management Plan DI-MGMT-80004	The contractor shall develop and submit a Management Plan. The plan should address the contractor's efforts to gain certification as a FAR Part 145 Limited Repair Station, DoD Essential Contractor Services, and Tool Control.

CDRL	SOW Para	Title/Data Item Description	Synopsis
A006	4.6	Monthly Maintenance Report Technical Report-Study/Services DI-MISC-80508	The contractor shall submit a monthly maintenance report NLT 5 days after the close of calendar month being reported.
A007	4.6.2, 5.1	Airworthiness Directive (AD)/Service Bulletin (SB)/Advisory Data DI-MISC-81241	The contractor shall report all ADs, SBs/Instructions or Original Equipment Manufacturer (OEM) requests that inspections/modifications be completed. The contractor shall report all actions taken to the Contracting Officer's Representative (COR) NLT 30 days after completion. Non-mandatory SBs which are not complied with shall be explained with an exception request.
A008	4.6.5.3, 4.6.5.9	Engine Overhaul Logistics Management Information (LMI) Summaries DI-ALSS-81530	The contractor shall provide the on-site COR a vendor format Technical Teardown and Build-up report for each engine and propeller that is overhauled.
A009	4.6.5.4	Engine Trend Monitoring Technical Report-Study/Services DI-MISC-80508	The contractor shall provide a monthly ETM report listing each installed aircraft engine. The report period shall be as of the last day of each month. The report shall be due NLT the 5th day after the close of the report month.
A010	4.6.7	Corrosion Prevention Control Plan DI-MFFP-81403	The contractor will develop a system Corrosion Prevention and Control Plan based on applicable maintenance manuals.
A011	4.6.12	Obsolete/Non-supportables LMI Summaries DI-ALSS-81530	The contractor shall report unsupportable items to the Government as soon as unsupportability is discovered. When obsolescence can be predicted, it shall be reported three years prior to an aircraft becoming not mission capable (NMC) for that part.

CDRL	SOW Para	Title/Data Item Description	Synopsis
A012	4.7.2.f	Pre-mission/Alignment Technical Report-Study/Services DI-MISC-80508	The contractor shall provide alignment data to the unit on a unit form. The report is due during the mission briefing on each mission day.
A013	4.14	Flight Safety QDR DI-QCIC-80736	The contractor shall submit a QDR after failure/discrepancy of a flight safety component, whether Contractor or Government furnished The QDR is due NLT 10 days after determination of quality deficiency problem.
A014	4.14	Teardown Deficiency Report DI-ALSS-81534	At Government request, the contractor will perform a teardown analysis of a component/system to determine the reason for failure.
A015	4.22.1	Spare Parts Usage Report DI-ILSS-80483	The contractor shall provide a Spare Parts Usage Report by tail number and site. Semi-annual report is due 30 June and 31 December.
A016	4.22.2	Powerplant/Propeller/Hot Section Inspection (HSI) Report Technical Report-Study/Services DI-MISC-80508	The contractor shall submit a report listing all engines and propellers, installed and in storage, that are projected for overhaul during the next, and subsequent years. Included in the report will be all engines, installed and in storage, that are projected for HSIs in the next year
A017	4.22.3	Status Report DI-MGMT-80368	The status report shall be submitted daily to the on-site COR. A monthly roll-up report will also be delivered to the COR.
A018	4.22.4	Contractor Funds Status Report (CFSR) DI-MGMT-81468	The contractor shall submit CFSR to the Government NLT 15 days after the end of the contractor's accounting month.
A019	4.22.5	Depot Maintenance Cost Report DI-FNCL-80462	The contractor shall prepare and submit a Depot Maintenance Cost Report NLT 31 December annually.

CDRL	SOW Para	Title/Data Item Description	Synopsis
A020	5.6	Data Accession List (DAL) DI-MGMT-81453	Contractor internal data generated in compliance with SOW requirements will be furnished to the Government on an "as required" basis.
A021	4.25	Configuration Management Report DI-MISC-80508	The contractor shall submit a Configuration Management Report quarterly.
A022	4.6.5.1	Engine Maintenance Management Plan DI-MGMT-80004	The contractor shall develop and submit an Engine Maintenance Management Plan to the Government. This is a one-time submission due 60 days after contract award.

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