

# Inspector General

United States  
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Better Cost-Control Measures Are Needed on the  
Army's Cost-Reimbursable Services Contract for  
Logistics Support of Stryker Vehicles

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## Acronyms

AAA	Army Audit Agency
ACC	Army Contracting Command
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
AWCF	Army Working Capital Fund
BCA	Business Case Analysis
CAP	Contractor Acquired Property
CLS	Contractor Logistics Support
DFARS/PGI	Defense Federal Acquisition Regulation Supplement, Procedure, Guidance, Instruction
DVH	Double V-Hull
FAR	Federal Acquisition Regulation
OPTEMPO	Operational Tempo
ORR	Operational Readiness Rate
PBL	Performance-Based Logistics
PEO	Program Executive Officer
PMO	Project Management Office
TLCSM	Total Life-Cycle Systems Management
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
U.S.C.	United States Code



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
4800 MARK CENTER DRIVE  
ALEXANDRIA, VIRGINIA 22350-1500

June 18, 2012

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,  
TECHNOLOGY, AND LOGISTICS  
AUDITOR GENERAL DEPARTMENT OF THE ARMY

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles  
(Report No. DODIG-2012-102)

We are providing this report for information and use. The Army's cost-reimbursable services contract for logistics support of Stryker vehicles lacked adequate cost-control metrics and a tangible deliverable. The contractor was authorized to spend about \$1.453 billion, but we calculated the operational support costs for Stryker vehicles at about \$1.117 billion for 5 years, resulting in about \$335.9 million that the contractor used to accumulate inventory that could have been put to better use. As a result of the audit, the Project Manager for Stryker Brigade Combat Team identified \$152.4 million in excess inventory that will be used to reduce Program Year 2011 and Program Year 2012 contract requirements. This report is the first of three reports on the effectiveness of the contractor logistics support strategy for the Stryker family of vehicles.

We considered management comments on a draft of this report when preparing the final report. The Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; Assistant Secretary of the Army for Acquisition, Logistics, and Technology; Program Executive Officer Ground Combat Systems; and Executive Director, Army Contracting Command comments conformed to the requirements of DoD Directive 7650.3; therefore, additional comments are not required.

We appreciate the courtesies extended to the staff. Please direct questions to Mr. Henry F. Kleinknecht at (703) 604-9324 (DSN 664-9324).

Handwritten signature of Jacqueline Wicecarver in black ink.

Jacqueline Wicecarver  
Assistant Inspector General  
Acquisition and Contract Management



# Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles

## What We Did

We evaluated the effectiveness of the contractor logistics support strategy for the Stryker family of vehicles. The Project Management Office for Stryker Brigade Combat Team (PMO Stryker) entered into the contract with General Dynamics Land Systems with a singular focus to achieve an operational readiness rate (ORR) goal of 90 percent and actually achieved an ORR in excess of 96 percent. This report is the first of three reports and addresses performance metrics and contract type; subsequent reports will address the contract funding procedures, contractor billings, and controls over Government property being managed by the contractor.

## What We Found

PMO Stryker and the Army Contracting Command (ACC)-Warren contracting officer did not implement adequate cost-control procedures on the cost-reimbursable services contract valued at about \$1.5 billion from March 2007 to February 2012 because they did not:

- adequately define performance-based contract requirements in clear, specific, and objective terms with measurable outcomes. The contract included a metric for availability (90-percent ORR), but did not include essential metrics relating to cost-per-unit usage (for example, miles driven) and logistics footprint (that is, dollars in inventory);

- establish the cost-reimbursable contract as one of the basic contract forms: either the completion-form contract in which the contractor is required to deliver a specified, definitive end product or the term-form contract in which the contractor is required to provide a specified level of effort for a stated period of time; and
- establish an effective means to measure operational costs and ensure that the level of operational funding was tied to the actual workload required to sustain the Stryker vehicle, but instead, used estimates made years earlier.

Consequently, the Stryker contractor logistics support contract had no tangible deliverable; neither complied with nor met the intent of DoD performance-based logistics guidance; and did not meet Federal Acquisition Regulation requirements for a cost-reimbursable contract. In addition, the Army had no means to measure the efficiency of the contractor's cost performance or actual cost overruns or underruns in relation to the fixed fee. Also, the sole focus on operational readiness created an incentive for the contractor to spend all available funds on Army inventory, valued by General Dynamics at about \$676.2 million, resulting in little, if any, cost risk for the contractor or incentive to control cost.

The contractor was authorized to spend about \$1.453 billion on the contract, but we calculated the operational support costs for Stryker vehicles at about \$1.117 billion for the first

5 years, resulting in about \$335.9 million used to accumulate inventory that could have been put to better use. As a result of the audit, PMO Stryker identified \$152.4 million in excess inventory that will be used to reduce Program Year 2011 (October 2011 to February 2012) and Program Year 2012 (March 2012 to February 2013) contract requirements.

## What We Recommend

Among other recommendations, the Program Executive Officer Ground Combat Systems with the support of the Executive Director, ACC, should require PMO Stryker to establish and monitor appropriate cost and inventory control metrics, define contract remedies that include both positive and negative fee measures related to inventory turns and inventory accuracy metrics, use one of the basic contract forms (either term or completion), and define a tangible deliverable. Further, the Program Executive Officer Ground Combat Systems needs to continue to review operational support costs for Stryker vehicles and determine whether current funding levels are appropriate. We also recommend converting the high-risk, cost-reimbursable contract or portions of the contract to a lower risk, firm-fixed-price contract.

Additionally, the Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; and the Assistant Secretary of the Army for Acquisition, Logistics, and Technology need to establish a multifunctional team to support PMO Stryker and ACC officials in negotiating the next Stryker logistics support contract scheduled for award in June 2013.

## Management Comments and Our Response

Management comments were responsive to the recommendations, and management is taking action to address cost-control measures, contract-type, and operational support funding issues. PMO Stryker is performing a business case analysis to determine whether PBL is the appropriate strategy and cost-reimbursable is the appropriate contract type to execute logistics support of Stryker vehicles. Additionally, PMO Stryker will continue to monitor operational support costs and consider currently available inventory to satisfy future requirements. Please see the recommendations table on page iii.

**Figure 1. Stryker Vehicle, Mobile Gun System**



Source: [www.sbct.army.mil](http://www.sbct.army.mil)

## Recommendations Table

<b>Management</b>	<b>Recommendations Requiring Comment</b>	<b>No Additional Comments Required</b>
Director, Defense Procurement and Acquisition Policy		5
Assistant Secretary of Defense for Logistics and Materiel Readiness		5
Assistant Secretary of the Army for Acquisition, Logistics, and Technology		2, 5
Program Executive Officer Ground Combat Systems		1, 3
Executive Director, Army Contracting Command-Warren		4

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# Introduction

## Objectives

The overall objective of the audit was to evaluate the effectiveness of the contractor logistics support sustainment strategy for Stryker vehicles. Specifically, we reviewed contract funding procedures, contract type, performance metrics, contractor billings, and controls over Government property being managed by the contractor. See Appendix A for a discussion of the scope and methodology and prior audit coverage. This report is the first of three reports and addresses performance metrics and contract type; subsequent reports will address the other audit objectives.

We performed this audit pursuant to Public Law 110-417, “Duncan Hunter National Defense Authorization Act for Fiscal Year 2009,” section 852, “Comprehensive Audit of Spare Parts Purchases and Depot Overhaul and Maintenance of Equipment for Operations in Iraq and Afghanistan,” October 14, 2008. Section 852 requires:

thorough audits to identify potential waste, fraud, and abuse in the performance of the following: (1) Department of Defense contracts, subcontracts, and task and delivery orders for—(A) depot overhaul and maintenance of equipment for the military in Iraq and Afghanistan; and (B) spare parts for military equipment used in Iraq and Afghanistan . . .

## Background

### ***Performance-Based Logistics Origin***

In 1999, the Aerospace Industries Association proposed the performance-based logistics (PBL) concept as the preferred sustainment strategy as part of the Joint Aeronautical Commander’s Group. Aerospace Industries defined PBL as “a weapon system sustainment strategy that features integrated supply chains and increased industry/government partnering to meet warfighter performance requirements.”

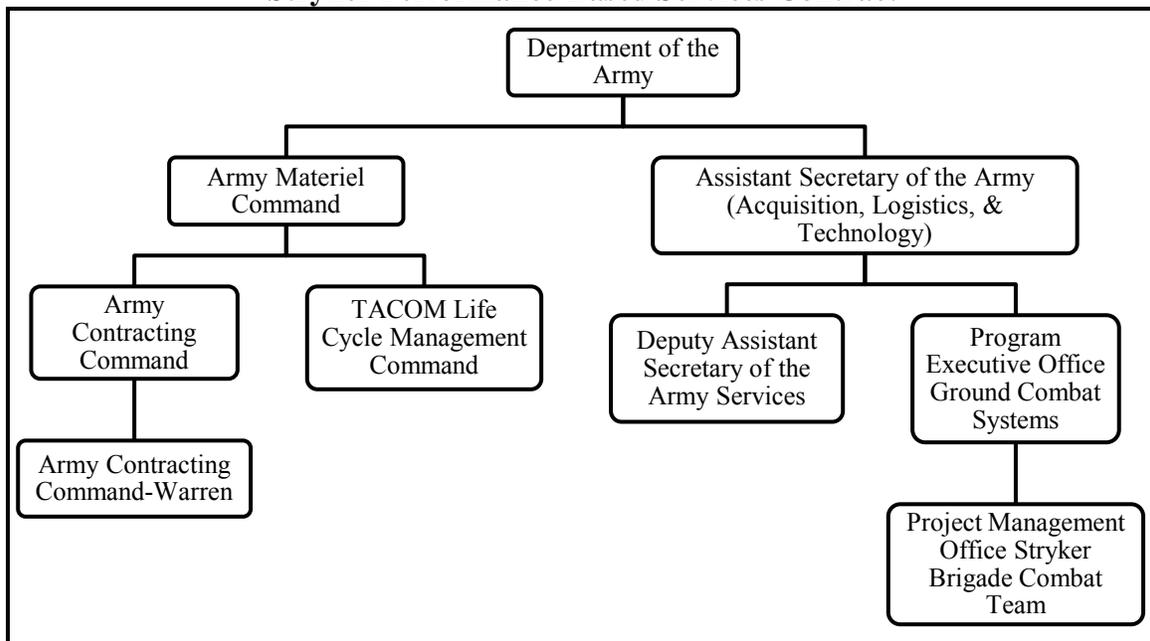
DoD subsequently endorsed the idea and attempted to use the strategy when it represented a “best value.” The acting Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]) memorandum, “Performance Based Logistics (PBL) Business Case Analysis,” January 23, 2004, established guiding principles for conducting business case analyses to determine the best value when considering PBL support. Best value was defined as:

*. . . the expected outcome that, in the Department’s consideration, provides the greatest overall benefit in response to requirements.*

## **U.S. Army TACOM Life Cycle Management Command**

The U.S. Army TACOM<sup>1</sup> Life Cycle Management Command is headquartered in Warren, Michigan, and is a major subordinate command of the U.S. Army Materiel Command. According to the Army Web site,<sup>2</sup> the Life Cycle Management Command is a collaborative organization whose mission is to develop, acquire, field, and sustain soldier and ground systems for the warfighter through the integration of effective and timely acquisition, logistics, and cutting-edge technology. The Life Cycle Management Command facilitates partnerships between the U. S. Army Contracting Command (ACC) and the colocated Program Executive Offices so that they can cooperatively provide the full range of life-cycle management services for the weapon systems that they support. Figure 2 illustrates the chain of command for the main Army components involved in the Stryker program.

**Figure 2. Organization Chart for Key Army Components Involved in the Stryker Performance-Based Services Contract**



### **Army Contracting Command**

The ACC-Warren, Michigan, previously referred to as TACOM Contracting Center, is at the TACOM Life Cycle Management Command. The contracting command is responsible for acquisition support and contracting for many of the Army's major weapon systems. The full range of services includes acquisition, fielding, and sustainment of TACOM Life Cycle Management Command systems, contracting, business advisory, and production support.

<sup>1</sup> TACOM was formerly known as the Tank-automotive and Armament Command.

<sup>2</sup> The Web site source is <http://www.tacom.army.mil/main/index.html>.

## ***Assistant Secretary of the Army for Acquisition, Logistics, and Technology***

The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA[ALT]), as the Army Acquisition Executive, has overarching responsibility for managing and overseeing the Army's acquisition of and contracting for services. As mandated by section 2330, title 10, United States Code (10 U.S.C. § 2330), the Secretary of Defense is required to establish and implement a management structure for procuring contract services for DoD. The management structure provided that, at a minimum, the USD(AT&L) must develop and maintain (in consultation with the Service acquisition executives) policies, procedures, and best practices guidelines addressing the procurement of contract services. The USD(AT&L) was also required to work with the Service acquisition executives to identify the critical skills and competencies needed to carry out the procurement of contract services on behalf of DoD and to develop a strategy for recruiting, training, and deploying employees to meet the requirements for such skills and competencies. The ASA(ALT) established the Deputy Assistant Secretary of the Army (Services) specifically to oversee contract services within the Army.

## ***Project Management Office Stryker Brigade Combat Team***

The Project Management Office for Stryker Brigade Combat Team (PMO Stryker) is a subsidiary office of the Program Executive Office Ground Combat Systems, which is under the command of the ASA(ALT). According to the Army Web site,<sup>3</sup> the mission of the PMO Stryker is to provide proven superior acquisition, development, and sustainment of the Stryker family of vehicles that afford the warfighter quick response maneuvering, enhanced survivability and lethality, expanded fight versatility, and proven tactical agility.

## ***General Dynamics Land Systems***

General Dynamics Land Systems (General Dynamics), according to its Web site,<sup>4</sup> is an international Defense contractor that offers a wide array of land and amphibious combat systems, subsystems, and components. General Dynamics produced the first Stryker vehicles in 2002. In addition to the Stryker, General Dynamics has also been responsible for developing a variety of other combat vehicles such as the Light-Armored Vehicle, M1 Abrams tank, the Fox vehicle, the Mine Resistant Ambush Protected vehicle, and the Expeditionary Fighting vehicle.

## ***The Stryker Family of Vehicles***

The Stryker family of vehicles is a 19-ton, 8-wheeled, armored vehicle platform, composed of 10 basic configurations. Originally named the "Interim Armored Vehicle," the overall mission of the Stryker is to enable soldiers to maneuver more easily in close quarters and urban terrain while providing protection in the open terrain.

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<sup>3</sup> The Web site source is <http://www.peogcs.army.mil/sbct.html>.

<sup>4</sup> The Web site source is <http://www.gdls.com>.

The Stryker family of vehicles consists of the:

1. Infantry Carrier Vehicle (Figure 3)
2. Reconnaissance Vehicle
3. Mortar Carrier Vehicle
4. Commander's Vehicle
5. Fire Support Vehicle
6. Engineer Squad Vehicle
7. Medical Evacuation Vehicle
8. Antitank Guided Missile Vehicle
9. Nuclear, Biological, Chemical, Reconnaissance Vehicle
10. Mobile Gun System Vehicle

**Figure 3. Stryker Infantry Carrier Vehicle**



Source: [www.sbct.army.mil](http://www.sbct.army.mil)

The Stryker family of vehicles acquisition plan states:

Comprehensive Contractor Logistics Support (CLS) is executed under a performance based contract supporting both garrison and deployment vehicles. The contractor is co-located with the units and provides National level maintenance and assists with field level maintenance. They [General Dynamics] request, receive, store and issue all CLS items as well as document part consumption and vehicles repairs. The contractor performs all scheduled services as well [as] repair services for all components or assemblies with the exception of defined Government Furnished items. CLS supports vehicles at all locations. Under CLS, GDLS [General Dynamics Land Systems] maintains the Stryker vehicles to a “fully mission capable” status.

### ***PMO Stryker Explanation of Operating Environment Complexities***

The Stryker family of vehicles acquisition program began before the events that would lead us to war in Iraq and Afghanistan. As a part of acquisition reform, the Stryker vehicle was a non-developmental item, lending itself to a PBL approach through the use of contractor logistics support (CLS) because the technical data were not readily

available. PMO Stryker stated that the pace of acquisition became an extremely rapid effort that took 31 months from contract award to the initial operational deployment in Iraq.

In addition to the rapid effort, the Army's deployment needs created complexities requiring concurrent development and production of a common chassis for ten original Stryker variants before completion of production verification testing. Additionally, the program had little operational tempo data from garrison deployments that could be used to identify PBL metrics for deployment, and the first brigade deployment to Iraq, which included CLS, was in October 2003. This escalated to three Stryker brigades deployed to Iraq in 2006, requiring sustainment of three brigades for 2 years. As brigades were eventually redeploying from Iraq, other brigades were deploying to Afghanistan. The Stryker brigades were now spread across two operational theaters with differing environments, operational tempos, and differing threats.

Metrics gathered from one theater were not applicable to the new theater. The new threat in Afghanistan led to an urgent requirement to change the design of the flat-bottom Stryker vehicles to a more survivable double v-hull (DVH) model. Design, test, production, and fielding were accelerated to get this new design into the hands of the soldier within 18 months. This added another new complexity to fleet support as both flat-bottom and DVH vehicles required support. The Army has deployed a second Stryker brigade to Afghanistan requiring additional CLS support. The DVH vehicles increased the variants to 17, which caused additional development, production, and sustainment complexities. The deployed fleet increased operational miles ten-fold from when fleets were in garrison/peacetime deployment. The operational environment, tempo, objectives, deployment, and utilization plans are all fluid as the threat changes in theater, imparting a higher level of complexity for identifying PBL metrics.

A total of 16 Stryker Brigade Combat Teams were deployed across both theaters and accumulated an estimated 40 million miles. In addition, 77 brigade vehicles were lost in battle, 435 vehicles were damaged, and 21 vehicles were reset. Nearly 200 retrofit applicable engineering change proposals and engineering change orders were developed since 2005, and 320 kits were developed or fielded to primarily address survivability issues in both Iraq and Afghanistan. As expected, the increased weight of these kits increased the failure rates of various drive-train and suspension components. Theater repair sites could not keep up with the volume of components requiring repair, so increased quantities of configuration spares were procured to meet operational vehicle readiness requirements. When newly designed/improved components were successfully tested and validated, they were incorporated into the supply system, either immediately replacing an existing part or replacing the part once it was totally depleted from the supply system, depending on the nature of the required design improvement.

Since 2008, unscheduled maintenance responsibilities were transitioned from the contractor to the soldier, and the transition is now complete for all garrison units. The transition for parts ordering from CLS to the Standard Army Management Information

System occurred on October 1, 2011, for garrison units. The transition for deployed units, both unscheduled maintenance and parts ordering, is not scheduled to occur until at least Spring 2013.

### ***Stryker and General Dynamics Contractor Logistics Support Contract***

On December 21, 2006, the ACC-Warren officials awarded General Dynamics a 6-year (base year and 5 option years) cost-plus-fixed-fee<sup>5</sup> PBL services contract. The first 5-years of the contract were funded for about \$1.5 billion including fees or profit of \$127.1 million (contract W56HZV-07-D-M112 delivery orders 0019 and 0169). The funding for Contract Year 6 was established in the Stryker requirements base contract at about \$341.2 million including fees, but has not been allocated to a delivery order yet. Table 1 shows the contract efforts funded on delivery orders or amendments or modifications to the delivery orders for an annual period of performance from March through February.

**Table 1. Stryker Logistics Support Costs on Contract W56HZV-07-D-M112 From March 2007 to February 2012**

<b>Contract Year</b>	<b>Period of Performance</b>	<b>Funded Cost</b>	<b>Fee</b>	<b>Total Cost With Fee</b>
<b>Delivery Order 0019</b>				
1	March 2007 – February 2008	\$232,173,007	\$22,822,643	\$254,995,650
2	March 2008 – February 2009	247,077,563	23,841,305	270,918,868
3	March 2009 – February 2010	285,329,161	27,765,278	313,094,439
4	March 2010 – February 2011	270,840,960	25,496,758	296,337,718
<b>Subtotal</b>		<b>\$1,035,420,691</b>	<b>\$99,925,984</b>	<b>\$1,135,346,675</b>
<b>Delivery Order 0169</b>				
5	March 2011 – February 2012	290,355,086	27,166,999	317,522,085
<b>Total</b>		<b>\$1,325,775,777</b>	<b>\$127,092,983</b>	<b>\$1,452,868,760*</b>
*Contract value of \$1.5 billion includes only contractor logistics support contract line items of more than \$40 million.				

As described in the acquisition plan, General Dynamics is responsible for performing scheduled and unscheduled maintenance; requesting, receiving, storing, and issuing all Stryker vehicle spares and repair parts; and documenting all part consumption and

<sup>5</sup> Cost-plus-fixed-fee contract is a cost-reimbursement contract that provides for payment of a negotiated fixed fee to the contractor in addition to allowable costs up to the maximum estimated cost obligated on the contract.

vehicle repairs. General Dynamics provides CLS to maintain all Stryker garrison and deployment<sup>6</sup> vehicles at a fully mission capable status. As of February 2012, PMO Stryker fielded 8 Stryker brigades consisting of approximately 2,576 vehicles. Based on the PBL contract's total costs for Contract Year 5, the funded logistics support cost per vehicle was about \$123,262.

## **Review of Internal Controls**

DoD Instruction 5010.40, "Managers' Internal Control Program (MICP) Procedures," July 29, 2010, requires DoD organizations to implement a comprehensive system of internal controls that provide reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified internal control weaknesses for the Project Management Office for Stryker Brigade Combat Team and the Army Contracting Command-Warren. Specifically, Stryker Brigade Combat Team, along with support from the Army Contracting Command-Warren, did not adequately define performance-based contract requirements, establish the cost-reimbursable contract as one of the basic contract forms with a tangible deliverable, and establish an effective means to measure operation costs. Additionally, the performance-based logistics metric requirements in Army Regulation 700-127, "Integrated Logistics Support," permitted the use of only one metric such as an operational availability metric without proper consideration of other essential cost-control metrics. We will provide a copy of the report to the senior official responsible for internal controls in the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology; Program Executive Office Ground Combat Systems; and Army Contracting Command-Warren.

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<sup>6</sup> "Garrison" describes Stryker vehicles stationed at permanent military post. "Deployment" describes Stryker vehicles that are deployed in theater to support a military operation.

## **Finding. Inadequate Cost Controls on the Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles**

PMO Stryker and ACC-Warren officials (PMO/ACC officials) did not implement adequate cost-control procedures on the cost-reimbursable services contract, valued at about \$1.5 billion (\$290.6 million annually), for logistics support of Stryker vehicles with General Dynamics. Specifically, PMO/ACC officials did not:

- adequately define performance-based contract requirements in clear, specific, and objective terms with measurable outcomes. The contract included a metric for availability (90-percent operational readiness rate) but did not include essential metrics relating to cost-per-unit usage (for example, miles driven) and the logistics footprint (that is, dollars in inventory);
- establish the cost-reimbursable contract as one of the basic contract forms: either the completion-form contract in which the contractor is required to deliver a specified, definitive end product or the term-form contract in which the contractor is required to provide a specified level of effort for a stated period of time; and
- establish an effective means to measure operational costs and ensure that the level of operational funding was tied to the actual workload required to sustain the Stryker vehicle, but instead, used estimates made years earlier.

As a result, the Stryker contractor logistics support contract had no tangible deliverable; neither complied with nor met the intent of DoD guidance as a performance-based logistics contract; and did not meet Federal Acquisition Regulation (FAR) 16.306, “Cost-Plus-Fixed-Fee Contracts,” requirements for a cost-reimbursable contract. PMO/ACC officials were measuring the contractor’s spend rate and operational readiness rate, but had no means to measure the efficiency of the contractor’s cost performance or actual contract overruns or underruns in relation to the fixed fee. Further, the sole focus on the operational readiness rate created an incentive for the contractor to spend all available funds on CLS inventory (valued by General Dynamics at about \$676.2 million for 14,444 items [spare and repair parts], and another 2,318 items were not assigned a value), resulting in an increased logistics footprint and little, if any, cost risk for the contractor or incentive to control costs. We calculated that about \$335.9 million used to accumulate inventory could have been put to better use. As a result of the audit, PMO Stryker identified \$152.4 million in excess inventory that will be used to reduce Program Year 2011 (October 2011 to February 2012) and Program Year 2012 (March 2012 to February 2013) contract requirements. Also, the cost risk could be reduced further by converting the high-risk, cost-reimbursable contract or portions of the contract to a lower risk, firm-fixed-price contract.

## **Performance-Based Contract Did Not Adequately Define Requirements With Measurable Outcomes**

PMO/ACC officials used a cost-reimbursable services contract to provide logistics support for Stryker vehicles (Stryker PBL contract) that included a minimal set of metrics (operational readiness rate) and did not effectively use other metrics to further define contract requirements in clear, specific, and objective terms with measurable outcomes, as required by statute and DoD guidance. Specifically, PMO/ACC officials limited the rating of contractor performance to a single measurable outcome of 90 percent for operational availability (operational readiness rate) and a contract ceiling price and did not include essential PBL metrics relating to cost-per-unit usage (for example, miles driven) and the logistics footprint (that is, dollars in inventory).

### ***Performance-Based Contract Guidance Requires Measurable Outcomes and Standard Performance Criteria***

Laws and regulations related to PBLs require contract requirements to be clear, specific, and objective with measurable outcomes. Section 2330a, title 10, United States Code, “Procurement of Services: Tracking of Purchases,” states:

The term “performance-based”, with respect to contract, task order, or arrangement, means that the contract, task order, or arrangement, respectively, includes the use of performance work statements that **set forth contract requirements in clear, specific, and objective terms with measurable outcomes.** [emphasis added]

Policy also recognizes the importance of measuring availability (that is, operational readiness). However, the metric should not be the exclusive focus of program managers as minimizing cost and logistics footprint must also be considered. DoD Directive 5000.01, “The Defense Acquisition System,” Section E1.1.17, “Performance-Based Logistics,” states:

PMs [Program Managers] shall develop and implement performance-based logistics strategies that **optimize total system availability while minimizing cost and logistics footprint.** [emphasis added]

Further, an August 16, 2004, USD(AT&L) memorandum “Performance Based Logistics: Purchasing Using Performance Based Criteria,” emphasized that PBL arrangements should be structured to “truly purchase performance,” which is defined in terms of military objectives. To determine whether the contractor is adequately performing in line with military objectives under a PBL arrangement, Military Departments must establish criteria to measure performance. The policy memorandum established the following five performance criteria for PBL contracts:

- (1) Operational Availability. The percent of time that a weapon system is available for a mission or ability to sustain an operation’s tempo.

- (2) Operational Reliability. The measure of a weapon system in meeting mission success objectives (percent of objectives met, by weapon system). Depending on the weapon system, a mission objective would be a sortie, tour, launch, destination reached, capability, etc.
- (3) Cost Per Unit Usage. The total operating costs divided by the appropriate unit of measure for a given weapon system. Depending on weapon system, **the measurement unit could be** flight hour, steaming hour, launch, **mile driven**, etc.
- (4) Logistics Footprint. The government/contractor size or “presence” of logistics support required to deploy, sustain, and move a weapon system. **Measurable elements include inventory/equipment, personnel, facilities, transportation assets, and real estate.**
- (5) Logistics Response Time. This is the period of time from a logistics demand signal sent to satisfaction of that logistics demand. “Logistics Demand” refers to systems, components, or resources, including labor, required for weapon system logistics support. **[emphasis added]**

See Appendix B for the complete USD(AT&L) memorandum. Subsequently, on November 22, 2005, an USD(AT&L) memorandum, “Total Life Cycle Systems Management (TLCSM) Metrics,” directed that the five criteria be used as the standard set of metrics for evaluating overall total life-cycle systems management.

### ***PMO Stryker Officials Measured Only the Operational Availability***

*PMs shall develop and implement performance-based logistics strategies that optimize total system availability while minimizing cost and logistics footprint. [DoD Directive 5000.01]*

The Stryker PBL contract included a metric for operational availability called the operational readiness rate (ORR) without similar metrics to measure cost performance or logistics footprint. The ORR reflects the percentage of Stryker vehicles in a fully mission capable status. The contract required the contractor to maintain ORR at 90 percent or higher for each brigade on a monthly basis, which was reported to the PMO Stryker.

Specifically, the contract stated:

C.9.3.1. Stryker Platform Brigade Operational Readiness Rate (ORR): The contractor shall sustain each Brigade during NET (New Equipment Training) to preclude a loss of training days and to ensure completion of training as scheduled. Upon completion of the Phase II OPNET [Operator New Equipment Training] and FLMNET [Field Level Maintenance New Equipment Training], the contractor shall maintain and sustain a 90% Operational Readiness Rate (ORR) by Brigade for the Stryker platform (excludes TRADOC [Training and Doctrine Command], ORF [Operational Readiness Float] Vehicles and Non-Standard SBCT [Stryker Brigade Combat Team] platforms).

In a February 18, 2011, memorandum, the former Deputy Project Manager for Stryker<sup>7</sup> considered contractor performance satisfactory as long as the achieved ORR for each brigade met or exceeded 90 percent.

To be effective, the selected measures in a PBL have to be few, meaningful and directly tied to the critical mission requirements. **Making everything equally important dilutes effectiveness. Operational Readiness Rates provided a clear focus on what was important to the Army** and center on the inherent functions that are necessary to provide Fully Mission Capable (FMC) vehicles. **[emphasis added]**

Table 2 shows that General Dynamics had consistently exceeded the required 90-percent ORR target for the seven brigades in deployment or garrison during the February 16, 2010, through February 15, 2011 contract year.

**Table 2. ORR Percentage From February 16, 2010 through February 15, 2011**

SBCT*	February	March	April	May	June	July	August	September	October	November	December	January
1	99.2	99.5	99.7	99.4	99.7	100.0	99.7	99.9	98.1	96.4	99.9	98.9
2	96.8	98.3	99.4	97.9	97.1	97.7	96.1	95.2	93.8	94.4	96.8	95.9
3	99.1	99.1	99.2	99.1	98.4	97.5	98.4	96.5	97.6	98.5	97.7	93.6
4	99.3	99.5	99.1	98.3	99.5	98.5	97.9	N/A	N/A	N/A	N/A	100.0
5	95.8	96.2	85.6	95.6	99.7	94.1	93.4	94.6	96.8	96.9	97.0	94.3
6	97.7	97.1	99.6	99.0	98.3	98.4	98.5	95.3	92.7	92.3	97.0	97.2
7	97.7	97.5	97.2	97.2	97.6	N/A	100.0	98.6	98.3	98.1	99.3	97.3
<b>Total</b>	<b>97.9</b>	<b>98.2</b>	<b>97.1</b>	<b>98.1</b>	<b>98.6</b>	<b>97.7</b>	<b>97.7</b>	<b>96.7</b>	<b>96.2</b>	<b>96.1</b>	<b>97.9</b>	<b>96.7</b>

Note: All reports covered the ORR period from the 16<sup>th</sup> day of the reporting month through the 15<sup>th</sup> day of the following month. Shaded boxes represent when the Stryker Brigade Combat Team was deployed. The nonshaded boxes represent Stryker Brigade Combat Team in garrison. "N/A" was inserted into all cells in which Stryker brigade vehicles were not fielded during the specific time period.  
\* Stryker Brigade Combat Team.

<sup>7</sup> The former Deputy Project Manager for Stryker was reassigned as the Deputy Project Manager for Heavy Brigade Combat Team in August 2011.

## **Cost-Per-Unit Usage Metric is Needed to Measure the Effectiveness and Efficiency of Contractor Performance**

*Because miles were used as the basis for funding the contract, the cost per mile would be a logical military objective to measure the actual cost efficiency of the contractor.*

PMO/ACC officials did not include an essential metric relating to cost-per-unit usage or miles driven in the Stryker PBL contract. Because miles were used as the basis for funding the contract, the cost per mile<sup>8</sup> would be a logical military objective to measure the actual cost efficiency of the contractor. Table 3 shows PMO/ACC officials associated operational

tempo (OPTEMPO) miles<sup>9</sup> with contract funding to purchase logistics support and the significant differences in cost per mile between garrison and deployment Stryker vehicles.

**Table 3. OPTEMPO Miles Associated With Stryker Logistics Funding**

<b>Mod</b>	<b>Contract Line Item</b>	<b>Description</b>	<b>Funded Amount</b>	<b>OPTEMPO Miles</b>	<b>Cost per Mile</b>
<b>March 2009 to February 2010</b>					
D7*	0017AA	Garrison (stateside)	\$74,815,635	1,639,680	\$45.63
D7*	0017AB	Deployment	203,155,689	12,499,200	16.25
	<b>Total</b>		<b>\$277,971,324</b>	<b>14,138,880</b>	<b>\$19.66</b>
Note: *See Appendix C for an excerpt of contract modification D7 of delivery order 0019, which shows funds being obligated based on expected miles driven.					

We would expect that deployed Stryker vehicles subjected to more frequent operations in treacherous conditions would have a higher cost per mile; however, the variable number of miles driven for garrison and related fixed costs may also impact the cost per mile. We calculated that the cost per mile for garrison vehicles was \$45.63 and for deployment vehicles, it was \$16.25, resulting in a difference of \$29.38 per mile. According to PMO Stryker officials, the estimated miles to be driven were not considered a factor in determining the costs to be applied to the contract. Specifically, the PMO Stryker official stated:

Yes, the estimated number of miles driven for garrison and deployment were not taken into consideration when negotiating the cost. Labor, material, and other costs are negotiated directly and independent of miles driven.

<sup>8</sup> The cost per mile is calculated by dividing the cost for a given performance period by the number of miles expected to be driven.

<sup>9</sup> The OPTEMPO baseline miles represent the miles that the Stryker vehicles in garrison (stateside) and deployment are expected to drive based on historical data.

According to a General Dynamics parts supply official, General Dynamics did not relate Stryker vehicle mileage to cost performance because contractor maintenance personnel inconsistently and inaccurately tracked Stryker vehicle mileage during maintenance schedules because:

- maintenance personnel not inputting mileage data and
- severely damaged vehicles showing false mileage readings or no readings at all.

The former Deputy Project Manager for Stryker stated that OPTEMPO miles were used as a basis to determine the funding level for the contract to allow PMO Stryker to associate cost with something tangible. However, the former Deputy Project Manager also stated that PMO Stryker does not track miles because they were not buying miles but

*Despite obligating \$278.0 million on the Stryker PBL contract to support 14.1 million OPTEMPO miles or \$19.66 per mile from March 2009 to February 2010, PMO Stryker is unable to measure contractor performance using a cost per mile metric.*

instead were buying support in terms of 90-percent ORR, which was the only thing that mattered. Consequently, the Stryker PBL contract relied on only one metric (ORR) and the contract defined cost reports, but had nothing tangible, such as a cost-per-unit usage metric, to track or measure cost performance and determine contract overruns or underruns as it related to the fixed fee. Despite obligating \$278.0 million on the Stryker PBL

contract to support 14.1 million OPTEMPO miles or \$19.66 per mile from March 2009 to February 2010, PMO Stryker was unable to measure contractor performance using a cost per mile metric. *The Stryker Brigade Combat Team needs to establish and monitor an appropriate cost-per-unit usage metric if a decision is made to continue logistics support for Stryker vehicles as a performance-based logistics contract.* [Recommendation 1.a and 1.b – Internal Controls]

### ***Inventory Control Metric is Needed to Control the Logistics Footprint***

The Stryker PBL contract did not include a fundamental inventory control metric that addressed parts obsolescence to ensure that the logistics footprint or inventory was minimized. PMO Stryker officials also did not effectively monitor the total value of on-hand Stryker inventory, were unable to detect or prevent General Dynamics from stockpiling excess inventory, and were not effectively controlling or disposing of obsolete inventory. Further, the primary emphasis on a 90-percent ORR provided an inherent incentive for the contractor to spend all of the authorized funds to accumulate inventory that ensured that the contractor would meet or exceed the contract's only performance standard.

The Army never valued the contractor-managed, Army-owned Stryker inventory. At our request, General Dynamics assigned a value to the inventory in September 2010 and later updated the inventory value in January 2012. As of January 2012, the Stryker inventory

was valued at about \$676.2 million<sup>10</sup> (CLS only) for 14,444 different items (spare and repair parts). General Dynamics was not able to value another 2,318 items for various reasons.

On January 27, 2012, PMO/ACC officials revised the Stryker quality assurance surveillance plan to include inventory turns (the number of times inventory is used and replaced during a given period) and inventory accuracy metrics; therefore, we are not making a recommendation in this area. However, the plan did not adequately define contract remedies to include both negative and positive fee measures. *The Stryker Brigade Combat Team needs to define contract remedies that include both negative and positive fee measures related to inventory turns and inventory accuracy metrics for Stryker vehicles.* [Recommendation 1.c – Internal Controls]

### ***Army Regulation Could Be Interpreted to Allow the Use of Just One Performance-Based Logistics Metric***

Army Regulation 700-127, “Integrated Logistics Support,” states that “at least” one of the five published PBL metrics (TLCSM metrics) established by USD(AT&L) memorandum are needed in PBL contracts. However, an ASA(ALT) official stated that the intent of Army Regulation 700-127 was to encourage the use of more than one metric but not too many metrics, which could interrupt the continuity of efforts. Specifically, Section 4-2(c), “General Policy,” states:

c. Army PBL criteria requires that the PBL PSSs [Product Support Strategies] for U.S. Army programs shall possess clearly defined, measurable, product support performance outcome(s) that meet warfighter requirements and expectations. **The program shall comply with the new Sustainment Key Performance Parameter (KPP), Key System Attributes (KSAs) and/or at least one of the published DOD overarching TLCSM [total life cycle systems management] metrics (or supporting Army metric sub-element(s)). [emphasis added]**

The regulation’s language needs to be revised because it allowed PMO/ACC officials’ to focus only on ORR without proper consideration of other essential cost-control metrics, such as cost-per-unit usage and logistics footprint. *The Assistant Secretary of the Army for Acquisition, Logistics, and Technology needs to revise Army Regulation 700-127 to require the use of all necessary DoD overarching total life-cycle systems management metrics in performance-based logistics contracts to effectively ensure desired outcomes.* [Recommendation 2 – Internal Controls]

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<sup>10</sup> General Dynamics Disclaimer for Government-Owned Inventory Valuation: “The information in this document has been prepared solely for information purposes in response to specific DoD Inspector General requests regarding government owned inventory. The information as presented herein is not an official record or deliverable of General Dynamics or any of its subsidiaries and should not be relied upon for any decision, analysis or evaluation regarding government owned inventory valuation. The data herein has not been verified or validated for accuracy particularly with respect to dollar valuations.”

## Stryker PBL Contract Was Not Established Using One of the Basic Contract Forms

PMO/ACC officials did not establish a basic contract form that required General Dynamics to deliver a defined end product or perform a specific level of effort to earn a fixed fee as required for cost-plus-fixed-fee contracts under the FAR. Although the cost-plus-fixed-fee contract type guaranteed the contractor's recovery of cost, it provided the least incentive for the contractor to control cost and perform in an efficient and economical manner. Further, as a positive outcome for the contractor, there was an incentive to underrun to make the fixed fee a higher percentage of actual cost than of the estimated cost; however, as a negative outcome for DoD, there is the incentive to deliver a technically excellent product usually at the expense of cost.

*Although the cost-plus-fixed-fee contract type guarantees the contractor's recovery of cost, it provides the least incentive for the contractor to control cost and perform in an efficient and economical manner.*

### **Cost-Plus-Fixed-Fee Guidance Requires Contracts To Be Either Completion- or Term-Form Contracts**

FAR Section 16.306, "Cost-Plus-Fixed-Fee Contracts," states:

(a) *Description.* A cost-plus-fixed-fee contract is a cost-reimbursement contract that provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract. The fixed fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the contract. This contract type permits contracting for efforts that might otherwise present too great a risk to contractors, but it provides the contractor only a minimum incentive to control costs.

d) *Completion and term forms.* A cost-plus-fixed-fee contract may take one of two basic forms – completion or term.

(1) The completion form describes the scope of work by stating a definite goal or target and specifying an end product. This form of contract normally requires the contractor to complete and deliver the specified end product (e.g., a final report of research accomplishing the goal or target) within the estimated cost, if possible, as a condition for payment of the entire fixed fee. However, in the event the work cannot be completed within the estimated cost, the Government may require more effort without increase in fee, provided the Government increases the estimated cost.

(2) The term form describes the scope of work in general terms and obligates the contractor to devote a specified level of effort for a stated time period. Under this form, if the performance is considered satisfactory by the Government, the fixed fee is payable at the expiration of the agreed-upon period, upon contractor statement that the level of effort specified in the contract has been expended in performing the contract work. Renewal for further periods of performance is a new acquisition that involves new cost and fee arrangements.

(3) Because of the differences in obligation assumed by the contractor, the completion form is preferred over the term form whenever the work, or specific milestones for the work, can be defined well enough to permit development of estimates within which the contractor can be expected to complete the work.

(4) The term form shall not be used unless the contractor is obligated by the contract to provide a specific level of effort within a definite time period.

### ***Stryker Contract Did Not Specify an End Product or a Level of Effort***

The completion-form contract describes the scope of work in terms of a definite goal or target and a specific end product. The contractor's completion and delivery of the specified end product would result in earning the fee. An example of a specified end product would be a final report on the results of a research project or study performed that accomplished a stated goal or target. However, the Stryker PBL contract involved vehicle maintenance and spare parts supply and did not specify a tangible end product or deliverable that would warrant the earning of a fee. Therefore, the Stryker PBL contract would not be considered a completion-form contract.

The term-form contract describes the scope of work in general terms and requires the contractor to contribute a specified level of effort for a specified period of time. If the contracting officer is generally satisfied with the performance at the end of the performance period and the contractor certifies to expending the level of effort specified in the contract, then the fixed fee is paid to the contractor. For example, if the Army estimated a certain amount of miles to be driven during a specific time period (for example, 15 million miles at a cost of \$300 million results in a cost per mile of \$20), then the contractor's performance would be measured to the cost-per-mile metric. The Army's expected miles driven remaining constant and the contractor's achievement of the cost-per-mile metric within a reasonable range would be a condition for earning the fee. However, Stryker vehicle miles were not tracked, and performance was not measured using a cost-per-unit usage metric. Therefore, the contract does not meet the definition of a term-form contract. *The Project Manager for Stryker Brigade Combat Team needs to use one of the basic contract forms, either term or completion, and define a tangible deliverable if logistics support for Stryker vehicles is procured under a cost-reimbursable contract as required by FAR 16.306.* [Recommendation 1.d – Internal Controls]

### ***Former Deputy PMO Stryker Considered the Contract to Be a Hybrid of Both Term- and Completion-Form Contracts***

In response to the question of whether the Stryker cost-reimbursable contract was a completion- or term-form contract, the former Deputy Project Manager for Stryker, who was also the initial contracting officer that awarded the Stryker PBL contract, provided the following response.

Like any complex contract the contract is a **hybrid of term and some completion** efforts. [emphasis added]

The ACC-Warren contracting officer provided a similar response, stating that the labor for the garrison and deployment efforts were both nonseverable (completion) and term form. However, as discussed in the previous section, we did not find a specific level of effort in the contract that would justify payment of a fixed-fee to the contractor and there was no end product specified to make it a completion form.

We recognize the incentive for PMO Stryker to achieve a high ORR, but an effective and efficient Stryker PBL cost-reimbursable contract needs to have essential metrics related to cost-per-unit usage and logistics footprint and a defined deliverable other than ORR. However, the requirement in Army Regulation 700-127 could be interpreted to mean that only one of the essential DoD TLCSM metrics was required for PBL support; therefore, we are not recommending that the performance of PMO/ACC officials be reviewed. *We are recommending that PMO/ACC officials receive appropriate training in PBL strategies and that their performance standards address whether proper cost control metrics were included in any PBL or cost-reimbursable contracts.* [Recommendations 3.a and 4]

## **PMO Stryker Did Not Establish an Effective Means to Measure Operational Costs to Sustain Stryker Vehicles**

PMO/ACC officials did not establish an effective means to measure the actual operational costs to sustain the Stryker vehicle and just monitored General Dynamics' spend rate within the estimated contract cost ceiling negotiated 5 years earlier. This occurred because PMO/ACC officials did not use Army working capital funds (AWCFs)

*PMO/ACC officials did not use Army working capital funds (AWCFs) to purchase the parts and seek reimbursement through Stryker brigade customer orders.*

to purchase the parts and seek reimbursement through Stryker brigade customer orders. AWCFs are generally used to finance the initial cost of products or services, and customer orders generate the funds used to

replenish the AWCFs and continue operations. Therefore, by using AWCFs, PMO Stryker could have determined the actual sustainment cost for the Stryker vehicle based on the cost of orders generated by Stryker brigades who are the actual consumers of the parts. This would ensure that the level of operational funding was tied to actual workload rather than estimates made years earlier.

Additionally, we question the reasonableness of the negotiated contract cost to provide logistics support for Stryker vehicles because PMO/ACC officials did not consider the Stryker material inventory accumulated from previous Stryker PBL contracts awarded in May 2002 and February 2006. As of January 2012, General Dynamics calculated that it managed approximately \$892.3 million of Army-owned inventory, including \$676.2 million of inventory that supports CLS operations. However, PMO Stryker and General Dynamics could not determine the cost of the inventory that was acquired from previous contracts. Despite PMO/ACC officials being unaware of the value of the on-

hand inventory before awarding the current PBL contract, they negotiated an additional cost of approximately \$1.5 billion, or \$290.6 million annually, for General Dynamics to perform logistics support on the PBL contract for 5 years.

### ***PMO Stryker Did Not Transfer Excess Material Cost to Follow-On Contract***

PMO/ACC officials improperly classified the Stryker spare parts as contractor-acquired material<sup>11</sup> and then did not identify the actual cost of the material acquired on previous

*when excess contractor-acquired material on the losing contract is required on a follow-on contract, then the material cost should be reduced on the losing contract and added on the gaining contract.  
[PGI 245.402-70(6)]*

contracts and transfer the material to the current Stryker PBL contract. The former Deputy Project Manager for Stryker provided the following explanation for PMO Stryker classifying the Stryker spare parts inventory as contractor-acquired material:

In the case of CLS [Contractor Logistics Support], the Government takes delivery when the parts are used in performance of the contract, i.e. attached to the vehicle.

Defense Federal Acquisition Regulation Supplement, Procedures, Guidance, Instruction (DFARS/PGI) 245.4, "Title to Government Property," states that when excess contractor-acquired material on the losing contract is required on a follow-on contract, then the material cost should be reduced on the losing contract and added on the gaining contract. PGI 245.402-70, "Policy," states:

(6) To the extent that contractor-acquired material that is excess to the needs of the accountable contract is required on follow-on or other contracts, **the costs of such property shall be credited to the losing contract; the gaining contract shall be debited accordingly ... [emphasis added]**

Additionally, we disagree with the former Deputy Project Manager's assertion that the spare parts purchased on the Stryker PBL contract are contractor-acquired material, but even if so classified, the material should have been properly transferred to the gaining contract and credited or cost reduced on the losing contract.

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<sup>11</sup> USD(AT&L) and Office of the Under Secretary of Defense (Comptroller) memorandum, "Military Equipment Valuation Contractor Acquired Property Business Rule," December 22, 2007, states that contractor-acquired property under cost-reimbursable contracts, is property that does not get recorded in an Army accountability system or on financial statements as Government property until the property is delivered to the Army. However, Stryker inventory was delivered to the Army and accepted at the Government-owned-contractor-operated warehouse, managed by General Dynamics.

## DoD Office of Inspector General Calculation of Stryker Operational Costs

As of December 2011, PMO Stryker spent approximately \$1.261 billion of the estimated \$1.453 billion funded for Stryker logistics support over the first 5 years. To calculate the

*The contractor was authorized to spend about \$1.453 billion on the contract, but we calculated the operational support costs for Stryker vehicles of about \$1.117 billion for the first 5 years, resulting in about \$335.9 million used to accumulate inventory that could have been put to better use.*

actual operational support costs for Stryker vehicles from March 2007 to January 2012, we used the annual expenditures minus an annual factor for accumulated inventory (less an obsolescence factor) as shown in Table 4. The contractor was authorized to spend about \$1.453 billion on the contract, but we

calculated the operational support costs for Stryker vehicles at about \$1.117 billion for the first 5 years, resulting in about \$335.9 million used to accumulate inventory that could have been put to better use.

**Table 4. Office of Inspector General Calculation of Annual Stryker Operational Support Costs From March 2007 to January 2012 (in millions)**

Contract Period	Annual Expenditure <sup>1</sup>	Inventory			Operational Support Cost <sup>4</sup>	Contract Funding <sup>5</sup>	Difference
		Average Annual Increase <sup>2</sup>	Cumulative	Obsolescence Allowance <sup>3</sup>			
<b>Interim and 1<sup>st</sup> Follow-On Contracts DAAE07-02-C-B001 and W56HZV-06-C-B003 (May 2002 – Feb 2007)</b>							
			\$332.2				
<b>2<sup>nd</sup> Follow-On Contract W56HZV-07-D-M112 (Mar 2007 – January 2012)</b>							
1	\$251.6	\$69.9	\$402.1	\$29.8	\$211.4	\$255.0	\$43.6
2	267.8	69.9	472.0	34.9	232.8	270.9	38.1
3	303.1	69.9	541.9	40.1	273.2	313.1	39.9
4	283.3	69.9	611.9	45.3	258.7	296.3	37.7
5	155.1	64.3	676.2	50.0	140.8	317.5	176.8
<b>Total</b>	<b>\$1,260.9</b>			<b>\$200.1</b>	<b>\$1,116.9</b>	<b>\$1,452.9</b>	<b>\$335.9</b>

Note: Totals may not sum due to rounding.

<sup>1</sup>Defense Finance and Accounting Service provided expenditure data as of December 2011.

<sup>2</sup>Inventory accumulated over a 9.7-year period from previous contracts (May 2002 to January 2012), so Average Annual Inventory is based on on-hand inventory valued by General Dynamics at \$676,192,181 (as of January 2012) divided by 9.7 years.

<sup>3</sup>Obsolescence Allowance calculation is based on applying a 7.4 percent obsolescence factor (doubled the 3.7 percent factor obtained from the Defense Logistics Agency) to Cumulative Inventory.

<sup>4</sup>Operational Support Cost calculation is based on the Annual Expenditure amount minus the Average Annual Increase plus the Obsolescence Allowance factor of 7.4 percent.

<sup>5</sup>Contract funding was as of December 2011.

## **PMO Stryker Comments on Obsolescence Factor**

We originally calculated a Stryker operational support cost using a 3.7 percent obsolescence factor obtained from the Defense Logistics Agency. PMO Stryker commented that a higher obsolescence factor similar to the Bradley and Abrams vehicles (14.4 percent to 17.2 percent) may be more appropriate. Using a 15.0 percent obsolescence factor based on the yearly averages of the Bradley and Abrams vehicles would mean that more than half, or \$405.6 million, of the Stryker CLS inventory is obsolete. In response to PMO Stryker comments, we doubled the obsolescence factor used in our calculations to 7.4 percent, which would mean that \$200.1 million of the Stryker inventory is obsolete.

## **Action Taken During Audit to Reduce Inventory**

As a result of the audit, PMO Stryker identified \$152.4 million that could be put to better use. Specifically, on January 26, 2012, PMO Stryker deobligated \$68.7 million on contract W56HZV-07-D-M112, delivery order 0169, in recognition of accumulated excess inventory that will be used to reduce Program Year 2011 (October 2011 to February 2012) contract requirements. Further, PMO Stryker renegotiated costs for Program Year 2012 (March 2012 to February 2013) requirements on delivery order 0269, resulting in a cost avoidance of \$83.7 million. See Appendix D for details on potential monetary benefits. *The Program Executive Officer Ground Combat Systems needs to continue to review operational support costs for Stryker vehicles and apply more of the Army's current Stryker inventory to future requirements, allowing additional contract funding to be put to better use.* [Recommendation 3.b – Internal Controls]

## **Converting the Cost-Reimbursable Contract to Firm-Fixed-Price Would Have Reduced Risk**

Since May 2002, PMO/ACC officials have made no progress in converting the high-risk cost-reimbursable contract or portions of the contract to a preferred lower risk firm-fixed-price contract. According to PMO Stryker officials, the cost-reimbursable contract was used because of changing fielding and operational requirements. As a result, the Stryker PBL contract was at a higher risk of misuse, waste, and inadequate accountability.

## **Preference for Firm-Fixed-Price Contracts**

In a March 4, 2009, memorandum, "Government Contracting," President Barack Obama discussed the increase in dollars obligated on cost-reimbursement contracts by the Federal Government since 2001. Further, President Obama stated that excessive reliance on cost-reimbursement contracts pose a high risk of waste, inefficiency, and subjection to misuse. The President also explicitly expressed a clear preference for executive agencies to use fixed-price contracts. Specifically, the President's memorandum states:

**Excessive reliance by executive agencies on sole-source contracts (or contracts with a limited number of sources) and cost-reimbursement contracts creates a risk that taxpayer funds will be spent on contracts that are wasteful, inefficient, subject to misuse, or otherwise not well designed to serve the needs of the Federal Government or the interests of the American taxpayer.** Reports by

agency Inspectors General, the Government Accountability Office (GAO), and other independent reviewing bodies have shown that noncompetitive and cost-reimbursement contracts have been misused, resulting in wasted taxpayer resources, poor contractor performance, and inadequate accountability for results.

[Paragraph omitted]

**In addition, there shall be a preference for fixed-price type contracts. Cost-reimbursement contracts shall be used only when circumstances do not allow the agency to define its requirements sufficiently to allow for a fixed-price type contract. [emphasis added]**

### ***Proper Use of Cost-Reimbursement Contracts***

FAR Subpart 16.3, “Cost-Reimbursement Contracts,” established circumstances for application of the cost-reimbursement type contracts. FAR 16.301-2, “Application,” states:

- (a) The contracting officer shall use cost-reimbursement contracts only when—
  - (1) Circumstances do not allow the agency to define its requirements sufficiently to allow for a fixed-price type contract (see 7.105); or
  - (2) Uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract.
- (b) The contracting officer shall document the rationale for selecting the contract type in the written acquisition plan and ensure that the plan is approved and signed at least one level above the contracting officer ...

### ***Army Justification for Using a Higher Risk Contract Type***

The Stryker Acquisition Plan, approved by Program Executive Officer Ground Combat Systems on June 8, 2006, stated that the circumstances do not support a firm-fixed-price contract, but for future negotiations, the Army will select a contract type that will tie the fee to contractor performance. The plan states:

The plan is to develop a six year CLS [contractor logistics support] Requirements Contract and award annual service support delivery orders. Adjustments in scope for any updates required as a result of the ASARC [Army Systems Acquisition Review Council] process can be incorporated by change order and funded in the requisite delivery order. This type of contracting mechanism would require negotiations of a complex pricing matrix that reflects the critical elements or parameter of costs. Likely elements and pricing ranges would cover the numbers of vehicles and mix of vehicles types (either brigades set or individual vehicles or vehicles small quantities with specific organization or support requirements), geographic or specific locations, as well as mileage or operational tempo per mile costs above a certain minimum threshold. **Although current circumstances do not support a firm fixed price contract, in the future[,] contract negotiations will be directed toward selecting a contract type or a combination of**

**contract types that will tie fee and/or profit to contractor performance, and balances the contractor's risk with the contractor's reward. [emphasis added]**

The Army Audit Agency (AAA) issued Report A-2006-0028-ALM, "Stryker Contract Logistics Support Costs: Office of the Project Manager, Stryker Brigade Combat Team," December 6, 2005, which reviewed the PBL cost-reimbursable Stryker Interim Contractor Logistics Support contract awarded to General Dynamics in May 2002. In the report, AAA stated that cost-plus-fixed-fee contracts increased the cost risk to the Army and, as indicated by FAR 16.306, provided minimal incentive for the contractor to control cost. AAA recommended that the Project Manager develop and implement a plan to convert the cost-plus-fixed-fee contract to a contract that incentivizes the contractor to control costs such as a firm-fixed price or cost-plus-incentive contract type. PMO Stryker responded that the follow-on logistics support contracts would be migrated to a "lower cost risk contract" that places the appropriate risk on the contractor and adds positive and negative incentives when sufficient support data were available. However, as of February 2012, PMO/ACC officials have made no progress moving to a lower risk contract with appropriate risk and incentives for the contractor. *The Project Manager for Stryker Brigade Combat Team needs to determine which portions of the Stryker logistics support contract can be transitioned to lower risk firm-fixed-price or fixed-price incentive contracts and take appropriate action.* [Recommendation 1.e]

## **Multifunctional Support Team Needed to Resolve Stryker Logistics Support Contract Issues**

As emphasized in DoD guidance for PBLs, properly structured PBL arrangements need essential criteria to measure performance relating to the operational availability, operational reliability, cost-per-unit usage, logistics footprint, and logistics response time. Under PBL arrangements, DoD prefers that the contract is firm-fixed price in which the contractor is required to manage and pay for inventory and DoD pays the contractor for performance (cost per mile or cost per flight hour). Increased reliability or availability is critical to an effective PBL contract, but so are appropriate measures to control costs and the logistics footprint. However, the high-risk contract strategy used for Stryker vehicles is not the DoD preferred PBL strategy because it is cost-reimbursable, which essentially required the Army to pay for the entire inventory, while General Dynamics controlled and managed the inventory to repair Stryker vehicles to meet an ORR. The recommendations in this report to add appropriate cost-per-unit-usage and inventory controls to the contract would greatly improve the effectiveness of the contract and reduce the risk of mismanagement.

In addition, it is important to note that on November, 1, 2005, the Army Acquisition Executive issued a Stryker sustainment readiness review decision that directed PMO Stryker to develop a plan for the "Blue-to-Green" (contractor-to-Army) transition no later than FY 2008. Under the new logistics support strategy, General Dynamics supports Stryker-unique items while Defense Logistics Agency supports common consumable items also used on other DoD systems. According to PMO Stryker officials, the "Blue-to-Green" transition occurred in October 2011 for brigades in garrison and will retain full

contractor logistics support for brigades in deployment until the completion of contingency operations in Afghanistan. It is imperative for the success of the sustainment strategy for the Stryker vehicle that PMO/ACC officials select the appropriate contract type that reduces risk to DoD and select the appropriate performance metrics to assess General Dynamics' performance.

This report on the unique Stryker logistics support strategy identified a need for PMO/ACC officials to: include essential metrics relating to cost-per-unit usage and logistics footprint, establish the cost-reimbursable contract as either the completion form or the term form, and establish an effective means to measure operational costs and ensure that the level of operational funding was tied to the actual workload. Therefore, a multifunctional support team that has the necessary knowledge, technical expertise, and credibility is needed to support PMO/ACC officials to effectively negotiate the next Stryker logistics support contract scheduled for award in June 2013. *The Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; and Assistant Secretary of the Army for Acquisition, Logistics, and Technology need to establish a multifunctional support team made up of individuals with various skills to ensure that the right mix of knowledge, technical expertise, and credibility are provided to support PMO/ACC officials in negotiating the next Stryker logistics support contract scheduled for award in June 2013.*  
[Recommendation 5 – Internal Controls]

As a result of our preliminary briefing of the identified deficiencies discussed in this report and PMO Stryker's need for high-level expertise and support, key DoD officials have begun a dialogue to form this multifunctional support team.

## **Management Comments on the Finding and Our Response**

Overall, the Deputy Program Executive Officer Ground Combat Systems (Deputy PEO) agreed with the audit report conclusions and potential monetary benefits, but stated that some audit report statements were inaccurate relating to cost-control procedures, contract type, inventory, obsolescence, and monetary benefits as a result of the audit.

### ***Cost-Controls Procedures***

The Deputy PEO stated its interpretation of applicable guidance and regulations resulted in effective implementation of cost control procedures for the logistics support of Stryker vehicles. He stated that cost performance reports, monthly management reviews that specifically addressed the contractors cost reduction and continuous improvement requirements and weekly phone calls and reviews of all part shortages impacting ORR showed the broad array of cost control procedures. The Deputy PEO also stated that the contractor consistently underran the contract ("approximate \$10 million per year") and that all of these cost savings go to the Government.

## ***Our Response***

We agree that PMO Stryker implemented procedures to monitor contractor spending of available funds on the cost-reimbursable contract; however, the procedures did not effectively control costs or measure how efficiently the contractor was spending the funds during performance of the contract. The Deputy PEO stated that the contract costs were underran by \$10 million per year. Unfortunately, there was no deliverable in terms of a specific end product (completion form) or specific level of effort over a specified period of time (term form) as required by Federal Acquisition Regulation (FAR subpart 16.306) for cost-plus-fixed fee contracts to measure the amount of any underrun or overrun and when the contractor had earned the fixed fee.

## ***Contract Type***

The Deputy PEO stated that the Stryker contract was constructed consistent with the guidance and applicable public law and that performance-based acquisition guidance “Seven Steps to Performance-Based Acquisition” states that “we should not be buying an end product but rather the results of the products.” He stated that the contract was a completion type contract and the completion or “results” of the CLS scope was the 90-percent ORR. The Deputy PEO further stated that the performance-based acquisition guidance does not require a “product” or “tangible” deliverable, but rather a definite goal or measurable result. Also, he stated that the construction of the contract line item numbers have always matched regulatory guidance, that performance-based acquisition is by definition a completion type contract, and that the difference between completion and level of effort are immediately apparent in Section B (Supplies or Services and Prices/Costs) of the contract. The Deputy PEO also seemed to suggest that it would not have been possible to establish some type of cost-per-unit-usage metric, that the use of a cost metric was not a performance-based acquisition requirement, and that the number of Stryker vehicles was the driving factor in calculating the CLS estimated contract amount.

## ***Our Response***

The Seven Steps to Performance-Based Acquisition is a best practice guide that does not take precedence over the FAR for cost-plus-fixed-fee contracts. FAR 16.306 states that a completion-form contract must have a *definitive goal and a specified end product*. We agree that the Stryker contract requirement of a 90-percent ORR met the FAR criteria for a definitive goal, but it did not satisfy the criteria for a specified end product. The Deputy PEO admitted that the contract had no specific end product. Therefore, the contract could not meet regulatory requirements for a completion form cost-plus-fixed-fee contract. Further, the contract line item numbers specified 12-month periods of performance (March 1 through February 28) making the contract more of a term-form contract but there was no specific level of effort. Also, as discussed in the report, the USD(AT&L) memorandum “Performance Based Logistics: Purchasing Using Performance Based Criteria,” established a cost-per-unit usage metric as an essential performance criteria for PBL contracts. The memorandum shows cost-per-unit-usage as an essential metric (operating cost divided by the appropriate unit of measure for the weapon system) for performance-based logistics contracts.

## ***Inventory***

The Deputy PEO stated that the inventory growth may be because of reliability improvements and that over time, the inventory will be consumed but at a slower pace than expected as a byproduct of reliability growth. Further, he stated that the contractor's inventory of parts was directly visible only because the Stryker CLS contract was executed as a cost reimbursable contract, and the inventory fell under Contractor Acquired Property (CAP) requirements. In addition, he stated that if the contract was converted to firm fixed price, the Government would have limited visibility into inventory. The Deputy PEO also stated that "all material and parts procured and accountable under previous contracts were transferred to contract W56HZV-07-D-M112."

## ***Our Response***

If the Stryker contract was a fixed-price contract, the contractor would own the inventory and Government insight would not be necessary. Also, the material and parts from previous contracts were all transferred to the current Stryker contract, but the costs of such property were not credited to the losing contract nor was the gaining contract debited as would have been required if the property was CAP. However, the Stryker inventory was not CAP because it was delivered to the Army at the Government-Owned-Contractor-Operated warehouse. The misclassification of Stryker inventory as CAP will be discussed in detail in a subsequent report.

## ***Obsolescence***

The Deputy PEO stated that a more appropriate obsolescence factor would be 15 percent based on information from Heavy Brigade Combat Teams (Bradley 14.4 percent and Abrams 17.2 percent) and that using the higher factor would significantly reduce the audits conclusion regarding excess Stryker inventory.

## ***Our Response***

The Deputy PEO's suggested obsolescence factor of 15 percent would result in more than 60 percent, or \$405.6 million of the Stryker CLS inventory, managed by General Dynamics, being obsolete. This business practice does not support the DoD comprehensive inventory management improvement initiative.

## ***Monetary Benefits as a Result of the Audit***

The Deputy PEO stated that the contract funding deobligations were a direct result of executing the Blue-to-Green transition and that while the total savings of \$152.4 million occurred during the time of the audit, there was no connection between the two events.

## ***Our Response***

The preponderance of the cost reduction related to Army Working Capital Funds. The Blue-to-Green transition from contractor-performed maintenance services to DoD would have reduced contractor labor because field services were transitioning from the contractor to DoD; however, the transition would have minimal if any impact on the

Army Working Capital Funds that were used to purchase Stryker-unique parts from General Dynamics. In response to a discussion draft of this report, PMO Stryker stated:

Recent negotiations for spares material incorporated new methodologies for calculating the annual requirement of spare parts in support of Contractor Logistics Support (CLS). The negotiations took into consideration all inventory management processes consisting of consumption history, past and future vehicle densities by location, repairable candidates, expected unserviceable returns and washouts, stock on hand at all locations, stock due in from procurement and repair, lead-times and pipeline requirements.

We commend PMO Stryker for developing a new methodology for negotiating logistics support costs that considered on-hand inventory, inventory due-in, consumption history, and future requirements. This methodology for evaluating inventory should have been used throughout the performance of the Stryker contract and did not relate to the Blue-to-Green transition.

## **Recommendations, Management Comments, and Our Response**

**1. We recommend that the Program Executive Officer Ground Combat Systems with the support of the Executive Director, Army Contracting Command-Warren, require the Project Manager for Stryker Brigade Combat Team to:**

**a. Establish an appropriate cost-per-unit usage metric if a decision is made to continue logistics support for Stryker vehicles as a performance-based logistics contract.**

**b. Establish procedures to monitor the cost-per-unit usage metric if logistics support for Stryker vehicles is procured under a performance-based logistics contract.**

**c. Define contract remedies that include both positive and negative fee measures related to inventory turns and inventory accuracy metrics for Stryker vehicles.**

**d. Use one of the basic contract forms, either term or completion, and define a tangible deliverable if logistics support for Stryker vehicles is procured under a cost-reimbursable contract as required by Federal Acquisition Regulation Section 16.306, “Cost-Plus-Fixed-Fee Contracts.”**

**e. Determine which portions of the Stryker logistics support contract can be transitioned to lower risk firm-fixed-price or fixed-price incentive type contracts and take appropriate action.**

### ***Department of the Army Comments***

The Deputy PEO Ground Combat Systems partially agreed with the recommendations and stated that PMO Stryker will perform a business case analysis (BCA) to determine whether to use a PBL strategy going forward. He stated that the BCA will also determine whether a cost-reimbursable contract type is appropriate for the PBL strategy and whether portions of the PBL contract can transition to firm-fixed-price. If the decision is made to use a PBL contract, the Deputy PEO stated that PMO Stryker will establish appropriate metrics, including establishing incentives for inventory turns and inventory accuracy. Further, if a cost-reimbursable contract is used, he stated that the contract will be either the term- or completion-form in accordance with the FAR. The Deputy PEO stated that the BCA is scheduled to be completed by December 31, 2012; the target date for establishment of additional metrics, incentivizing contract metrics, and either executing a cost-reimbursable or transitioning to a firm-fixed-price contract, if a PBL strategy is to continue, is March 31, 2013.

### ***Our Response***

The Deputy PEO Ground Combat Systems comments were responsive, and no further comments are required. The planned actions met the intent of the recommendations.

**2. We recommend that the Assistant Secretary of the Army for Acquisition, Logistics, and Technology revise Army Regulation 700-127 to require the use of all necessary DoD overarching total life-cycle systems management metrics in performance-based logistics contracts to effectively ensure desired outcomes.**

### ***Department of the Army Comments***

The Deputy Assistant Secretary of the Army for Acquisition Policy and Logistics agreed with the recommendation. The Deputy Assistant stated that Army Regulation 700-127 will be revised to require the use of all necessary DoD overarching TLCSM metrics in PBL contracts. He stated that the revised Army Regulation is scheduled for release by the fourth quarter of FY 2013.

### ***Our Response***

The Deputy Assistant Secretary of the Army for Acquisition Policy and Logistics comments were responsive, and no further comments are required. The planned actions met the intent of the recommendation.

**3. We recommend that the Program Executive Officer Ground Combat Systems:**

**a. Require that the appropriate staff in the Project Management Office for Stryker Brigade Combat Team receive training in performance-based logistics support strategies and that performance standards address whether proper cost control metrics were included in any performance-based logistics or cost-reimbursable contracts.**

### ***Department of the Army Comments***

The Deputy PEO Ground Combat Systems agreed with the recommendation and stated that PEO Ground Combat Systems will sponsor a work directive training for all PEO staff that will address performance-based acquisition scope development. He stated that PMO Stryker staff will be required to complete the training courses no later than December 31, 2012. Further, the Deputy PEO stated that PMO Stryker logistics, engineering, and business management staff will attend the Performance-Based Life-Cycle Product Support conference in Washington, D.C. from July 16 – 18, 2012. According to the Deputy PEO, all project managers' performance standards already include two mandatory objectives that address cost saving initiatives.

### ***Our Response***

The Deputy PEO Ground Combat Systems comments were responsive, and no further comments are required. The planned actions met the intent of the recommendation.

**b. Continue to review the operational support costs for Stryker vehicles and apply more of the Army's current Stryker inventory to future requirements, allowing additional contract funding to be put to better use.**

### ***Department of the Army Comments***

The Deputy PEO Ground Combat Systems partially agreed with the recommendation and stated that PMO Stryker will continue to review operational support costs to effectively manage current Stryker inventory. Additionally, he stated that PMO Stryker will consider all available inventory to satisfy future requirements and program cost estimates and budgets will be adjusted accordingly, recognizing that some level of excess inventory is necessary to ensure continuous availability.

### ***Our Response***

The Deputy PEO Ground Combat Systems comments were responsive, and no further comments are required. The planned actions met the intent of the recommendation. We commend PMO Stryker for identifying opportunities during the audit to satisfy future requirements with \$152.4 million of excess inventory.

**4. We recommend that the Executive Director, Army Contracting Command-Warren, require that the contracting officer for Stryker Brigade Combat Team receive training in performance-based logistics support strategies and that performance standards address whether proper cost control metrics were included in any performance-based logistics or cost-reimbursable contracts.**

### ***Department of the Army Comments***

The Executive Director, Army Contracting Command, agreed with the recommendation and endorsed the Executive Director, Army Contracting Command-Warren's comments. The Executive Director, Army Contracting Command-Warren, stated that he has directed the contracting officer and contracting specialist for PMO Stryker to take PBL support strategies training no later than December 31, 2012. Additionally, he stated that the

contracting officials will attend the Performance-Based Life-Cycle Product Support conference in Washington, D.C. from July 16 – 18, 2012. Further, the Executive Director stated that no later than December 31, 2012, he will ensure that the contracting officer is rated against the specific performance objectives, to include proper cost control metrics in PBL or cost-reimbursable contracts.

### ***Our Response***

The Executive Director, Army Contracting Command comments were responsive, and no further comments are required. The planned actions met the intent of the recommendation.

**5. We recommend that the Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; and Assistant Secretary of the Army for Acquisition, Logistics, and Technology establish a multifunctional support team made up of individuals with various skills to ensure that the right mix of knowledge, technical expertise, and credibility are provided to support the Project Manager for Stryker Brigade Combat Team and Army Contracting Command-Warren contracting officer in negotiating the next Stryker logistics support contract scheduled for award in June 2013.**

### ***Defense Procurement and Acquisition Policy Comments***

The Director, Defense Procurement and Acquisition Policy, also responding for the Assistant Secretary of Defense for Logistics and Materiel Readiness, agreed with the recommendation and stated that DoD would identify the appropriate members for a multifunctional support team lead by the Army to provide continuous assistance to PMO Stryker with defining requirements, conducting market research, and developing an acquisition strategy and performance work statement for the Stryker program. Additionally, the Director stated that the multifunctional support team will receive service acquisition training offered through Service Acquisition Workshop offered by Defense Acquisition University.

### ***Our Response***

The Director, Defense Procurement and Acquisition Policy, comments were responsive, and no further comments are required. The Director's planned actions met the intent of the recommendation.

### ***Department of the Army Comments***

The Deputy for Acquisition and System Management, Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, agreed with the recommendation and stated that the Army will use a two-pronged approach to establish the foundation for Stryker contract success. He stated that the approach will include: identifying members of an integrated solutions team under Army leadership that will review the acquisition strategy, conduct market research, define requirements, establish and execute a sourcing strategy, and manage the Stryker program performance through contract completion; and leveraging the Service Acquisition Workshop training provided by Defense Acquisition

University to assist the team in effectively executing the Stryker follow-on contract. Additionally, the Deputy PEO Ground Combat Systems stated that the recommendation would be beneficial to all future DoD PBL contracts.

### ***Our Response***

The Deputy for Acquisition and Systems Management comments were responsive, and no further comments are required. The Assistant Secretary's planned actions met the intent of the recommendation.

## **Appendix A. Scope and Methodology**

We conducted this performance audit from October 2010 through March 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We met with representatives from the Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense (Logistics and Materiel Readiness); Assistant Secretary of the Army (Acquisition, Logistics, and Technology); the Executive Director, Army Contracting Command-Warren, Michigan; Program Executive Office Ground Combat Systems; and the Project Manager for Stryker Brigade Combat Team.

We interviewed personnel from the Army Contracting Command, Warren, Michigan; the Project Management Office Stryker Brigade Combat Team; General Dynamics Land Systems, Sterling Heights, Michigan; General Dynamics Land Systems, Auburn, Washington; and General Dynamics Land Systems, London, Ontario.

We reviewed copies of three Stryker contractor logistics support contracts (W56HZV-07-D-M112, DAAE07-02-C-B001, and W56HZV-06-C-B003) and acquisition planning documentation from the Project Management Office Stryker Brigade Combat Team, dated from May 2002 to January 2012. Specifically, for contract W56HZV-07-D-M112, we reviewed CLS contract line items of more than \$40 million on delivery orders 0019 and 0169, which totaled \$1.5 billion. Additionally, we reviewed General Dynamics' contract data requirements list deliverables related to spare part inventory quantities and prices. Further, we obtained Government disbursement data for the Stryker contractor logistics support contract from Defense Finance and Accounting Services-Columbus.

We reviewed the United States Code, Federal Acquisition Regulation, Defense Federal Acquisition Regulation Supplement and Army Regulation for guidance related to acquisition planning. We also reviewed criteria related to performance metrics under PBL contracts, including memorandum guidance from the Under Secretary of Defense for Acquisition, Technology, and Logistics (see Appendix B for the complete memorandum). We also used the Electronic Document Access system to obtain and review specific contract delivery orders and modifications to the current Stryker logistics support contract.

### **Use of Computer-Processed Data**

We relied on computer-processed data from the Mechanization of Contract Administration Services System to identify the total amount spent on each contract line item number under contract W56HZV-07-D-M112 delivery orders 0019 and 0169. The Mechanization of Contract Administration Services System is an integrated system

supporting post award contract administration that is used by Defense Financial Accounting Service-Columbus to make payments for more complex contracts. To assess the reliability of Mechanization of Contract Administration Services data, we compared the data to General Dynamics billing vouchers and determined that the data were sufficiently reliable for the purposes of this report.

We relied on and reported the total inventory value of about \$892.3 million provided by General Dynamics for 16,344 different items, including about \$676.2 million relating to the contractor logistics support effort. General Dynamics calculated the inventory value and quantities from various sources: Oracle, Data Management Information System, last purchase order price, a contractor data requirements list that provided moving-average prices, and contractor support team estimates. General Dynamics provided the following disclaimer with the data:

The information in this document has been prepared solely for information purposes in response to specific DoD Inspector General requests regarding government owned inventory. The information as presented herein is not an official record or deliverable of General Dynamics or any of its subsidiaries and should not be relied upon for any decision, analysis or evaluation regarding government owned inventory valuation. The data herein has not been verified or validated for accuracy particularly with respect to dollar valuations.

Although we were unable to verify the accuracy of the General Dynamics' inventory value calculation, the exactness of the total inventory calculation is not material to the report finding and conclusions.

## **Prior Coverage**

During the 5 years before our audit, the Army Audit Agency issued one report discussing the Army interim logistics support contract for the Stryker vehicle with General Dynamics. Unrestricted Army reports can be accessed from .mil and gao.gov domains over the Internet at <https://www.aaa.army.mil/>.

Army Audit Agency Report No. A-2006-0028-ALM, "Stryker Contract Logistics Support Costs," December 6, 2005

# Appendix B. Performance-Based Logistics Memorandum



THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3010

AUG 16 2004

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS

SUBJECT: Performance Based Logistics: Purchasing Using Performance Based Criteria

The Deputy Secretary of Defense memorandum of February 4, 2004, "Implementation of the Defense Business Practice Implementation Board (DBB) Recommendation to the Senior Executive Council (SEC) on Continued Progress on Performance Based Logistics", directed that my office issue clear guidance on purchasing weapon system logistics support using performance-based criteria. That guidance follows.

DoD 5000.1, the Defense Acquisition System, requires program managers to develop and implement performance based logistics (PBL) strategies that optimize total system availability while minimizing cost and logistics footprint. PBL strategies may be applied at the system, subsystem, or major assembly level depending upon program unique circumstances and appropriate business case analysis. PBL arrangements will be constructed to truly purchase performance, as detailed in this memorandum.

Those purchasing PBL should follow Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) guidance, as appropriate, for the acquisition of logistics services and support and should seek to utilize FAR Part 12 - "Acquisition of Commercial Items" to acquire PBL as a commercial item. Additional information regarding PBL implementation is included in the DoD Interim Defense Acquisition Guidebook.

For PBL, "performance" is defined in terms of military objectives, using the following criteria:

- (1) Operational Availability. The percent of time that a weapon system is available for a mission or ability to sustain operations tempo.



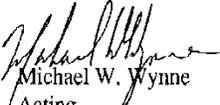
- (2) Operational Reliability. The measure of a weapon system in meeting mission success objectives (percent of objectives met, by weapon system). Depending on the weapon system, a mission objective would be a sortie, tour, launch, destination reached, capability, etc.
- (3) Cost Per Unit Usage. The total operating costs divided by the appropriate unit of measurement for a given weapon system. Depending on weapon system, the measurement unit could be flight hour, steaming hour, launch, mile driven, etc.
- (4) Logistics Footprint. The government / contractor size or “presence” of logistics support required to deploy, sustain, and move a weapon system. Measurable elements include inventory / equipment, personnel, facilities, transportation assets, and real estate.
- (5) Logistics Response Time. This is the period of time from logistics demand signal sent to satisfaction of that logistics demand. “Logistics Demand” refers to systems, components, or resources, including labor, required for weapon system logistics support.

PBL metrics should support these desired outcomes. Performance measures will be tailored by the Military Departments to reflect, specific Service definitions and the unique circumstances of the PBL arrangements.

The preferred PBL contracting approach is the use of long-term contracts with incentives tied to performance. Award term contracts should be used where possible to incentivize optimal industry support. Incentives should be tied to metrics tailored by the Military Departments to reflect their specific definitions and reporting processes. Award and incentive contracts shall include tailored cost reporting to enable appropriate contract management and to facilitate future cost estimating and price analysis. PBL contracts must include a definition of metrics and should be constructed to provide industry with a firm period of performance. Wherever possible, PBL contracts should be fixed price (e.g., fixed price per operating or system operating hour). Lack of data on systems performance or maintenance costs, or other pricing risk factors may necessitate cost type contracts for some early stage PBLs. Full access to DoD demand data will be incorporated into all PBL contracts. PBL contracts should be competitively sourced wherever possible and should make maximum use of small and disadvantaged sources. PBL contractors should be encouraged to use small and disadvantaged businesses as subcontractors, and may be incentivized to do so through PBL contractual incentives tied to small and disadvantaged business subcontracting goals.

The Defense Acquisition University (DAU) website ([www.dau.mil](http://www.dau.mil)) provides courses in performance based service acquisition and PBL as well as PBL "lessons learned." Maximizing use of these DAU resources will increase our ability to support the warfighter.

This guidance is effective immediately and will be incorporated into the Defense Acquisition Guidebook.



Michael W. Wynne  
Acting

# Appendix C. Mileage Funding Structure

<b>CONTINUATION SHEET</b>	<b>Reference No. of Document Being Continued</b>		<b>Page 2 of 10</b>
	PIIN/SHN W56HZV-07-D-M112/0019	MOD/AMD D7	

**Name of Offeror or Contractor:** GM GDLS DEFENSE GROUP, LLC

3. The parties agree that as a result of the changes to the scope of work in Section C.9 the funded OPTEMPO miles (baseline year) are as follows:

	<u>Baseline OPTEMPO Miles</u>
a. Garrison Common CPM	1,580,160
b. Garrison MGS CPM	40,320
c. Garrison NBCRV CPM	19,200
d. Deployment Common CPM	12,076,800
e. Deployment MGS CPM	364,800
f. Deployment NBCRV CPM	57,600

(OPTEMPO miles for deployment includes operations in Afghanistan)

4. The parties agree that the negotiated Cost-Plus Fixed Fee to perform the scope of work during the baseline year contained herein is as follows:

	<u>Garrison</u>	<u>Deployment</u>	<u>FRA Afghanistan</u>	<u>Total</u>
Estimated Cost:	\$68,541,813	\$185,940,258	\$40,630,286	\$295,112,358
FCCM:	\$ 10,173	\$ 3,106	\$ 902	\$ 14,181
Fixed Fee:	\$ 6,340,118	\$ 17,664,325	\$ 3,859,877	\$ 27,864,319
Total CPFF:	\$74,892,104	\$203,607,689	\$44,491,065	\$322,990,858

5. The contractor shall bill to CLINs as follows:

a. Garrison: CLIN 0017AA (\$74,815,635); CLIN 0017AD (\$5,149); CLIN 0017AE (\$7,320); CLIN 0017AF (\$64,000)

	<u>CLIN 0017AA</u>	<u>CLIN 0017AD</u>	<u>CLIN 0017AE</u>	<u>CLIN 0017AF</u>
Estimated Cost:	\$68,471,829	\$4,712	\$6,699	\$58,573
FCCM:	\$ 10,162	\$ 1	\$ 1	\$ 9
Fixed Fee:	\$ 6,333,644	\$ 436	\$ 620	\$ 5,418
Total CPFF:	\$74,815,635	\$5,149	\$7,320	\$64,000

b. Deployment: CLIN 0017AB (\$203,155,689); CLIN 0017AC (\$452,000)

	<u>CLIN 0017AB</u>	<u>CLIN 0017AC</u>
Estimated Cost:	\$185,527,479	\$412,779
FCCM:	\$ 3,099	\$ 7
Fixed Fee:	\$ 17,625,111	\$ 39,214
Total CPFF:	\$203,155,689	\$452,000

c. FRA Afghanistan: CLIN 0017AC (\$44,491,065) - As stated in paragraph 4 above.

## Appendix D. Summary of Potential Monetary Benefits

Recommendation	Type of Benefit	Amount of Benefit	Account
3.b	Internal Control-Economy and Efficiency. Reduces costs for future requirements by applying current Army assets to satisfy requirements.	Funds put to better use of \$152.4 million, including \$68.7 million deobligated on contract W56HZV-07-D-M112 delivery order 0169 for Program Year 2011 (Oct 2011 to Feb 2012) requirements; \$83.7 million cost avoidance in renegotiated amount on delivery order 0269 for Program Year 2012 (Mar 2012 to Feb 2013) requirements.	Army Working Capital Fund – 97X4930.001.
Note: Potential monetary benefits are funds put to better use or questioned costs.			

# Defense Procurement and Acquisition Policy Comments



ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

APR 26 2012

MEMORANDUM FOR DIRECTOR OF PRICING AND LOGISTICS ACQUISITION,  
OFFICE OF THE INSPECTOR GENERAL

THROUGH: DIRECTOR, ACQUISITION RESOURCES AND ANALYSIS *7/2/12*

SUBJECT: Response to DoDIG Draft Report Better Cost-Control Measures are Needed on the  
Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker  
Vehicles (Project No. D2011-D000CH-0032.000)

As requested, I am providing a response to the general content and recommendations  
contained in the subject report.

**Recommendation 5:**

We recommend that the Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; and Assistant Secretary of the Army for Acquisition, Logistics, and Technology establish a multifunctional support cadre made up of individuals with various skills to ensure that the right mix of knowledge, technical expertise, and credibility are provided to support the Project Manager for Stryker Brigade Combat Team and Army Contracting Command – Warren contracting officer for the next Stryker Logistics support contract scheduled for award in June 2013.

**Response:**

Concur. The Department intends to identify appropriate members for a multifunctional support cadre which will function under Army leadership. That support cadre will assist the Project Manager (PM) with defining requirements, conducting market research, developing the acquisition strategy and the performance work statement (PWS). We also intend to leverage the Defense Acquisition University to provide a tailored, four-day Service Acquisition Workshop (SAW), designed to assist this team in developing the PWS. The Department intends to provide continued support to the PM through this multifunctional support cadre through the execution of the program.

Please contact [REDACTED] if additional [REDACTED]

  
Richard Ginman  
Director, Defense Procurement  
and Acquisition Policy

# Department of the Army Comments



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY  
ACQUISITION LOGISTICS AND TECHNOLOGY  
103 ARMY PENTAGON  
WASHINGTON DC 20310-0103

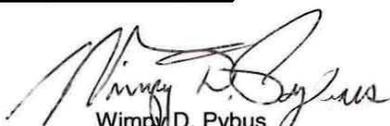
SAAL-LP

APR 25 2012

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE,  
4800 MARK CENTER DRIVE, ALEXANDRIA, VIRGINIA 22350

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No. D2011-D000CH-0032.000)

1. Reference memorandum, Inspector General, Department of Defense (DoD), dated 29 December 2012, subject as above.
2. We concur with recommendation two of the subject draft report which states: "We recommend that the Assistant Secretary of the Army for Acquisition, Logistics, and Technology revise Army Regulation 700-127 to require use of all necessary DoD overarching total life-cycle systems management metrics in performance-based logistics contracts to effectively ensure desired outcomes."
3. The next revision to Army Regulation 700-127 will require use of all necessary DoD overarching total life-cycle systems management metrics in performance-based logistics contracts. Our next revision to the regulation is a major revision and is planned for release by 4QFY13.
4. The point of contact for this action is [REDACTED]

  
Wimpy D. Pybus  
Deputy Assistant Secretary of the Army  
(Acquisition Policy and Logistics)



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY  
ACQUISITION LOGISTICS AND TECHNOLOGY  
103 ARMY PENTAGON  
WASHINGTON DC 20310

SAAL-SMS

MAY 7 2012

MEMORANDUM FOR UNITED STATES ARMY AUDIT AGENCY, 3101 PARK-CENTER DRIVE, ALEXANDRIA, VA 22302-1596

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No. D-2011-D000CH-0032-000)

1. Pursuant to the Department of Defense Inspector General's (DoDIG) Memorandum, dated 26 Mar 12, the following information is provided to DoDIG request for comments to their subject draft report.
2. The DoDIG Recommendation one. We recommend the Program Executive Officer Ground Combat Systems with the support of the Executive Director, Army Contracting Command- Warren, require the Project Manager for the Stryker Brigade Combat Team to:
  - a. Establish an appropriate cost-per-unit usage metric if a decision is made to continue logistics support for Stryker vehicles as a performance-based logistics contract.
  - b. Establish procedures to monitor the cost-per-unit usage metric if logistics support for Stryker vehicles is procured under a performance-based logistics contract.
  - c. Define contract remedies that include both positive and negative fee measures related to inventory turns and inventory accuracy metrics for Stryker vehicles.
  - d. Use one of the basic contract forms, either term or completion, and define a tangible deliverable if logistics support for Stryker vehicles is procured under a cost-reimbursable contract as required by Federal Acquisition Regulation Section 16.306, "Cost-Plus-Fixed-Fee Contracts"
  - e. Determine which portions of the Stryker logistics support contract can be transitioned to lower risk firm-fixed-price or fixed-price incentive type contracts and take appropriate action.

U.S. Army Management Action: See Enclosure: AMSTA-CSC-J, Subject: MEMORANDUM FOR Director of Pricing and Logistics Acquisition - Acquisition and Contract Management, Department of Defense Office of the Inspector General, 4800 Mark Center Drive, Alexandria, Virginia 22303-1500, dated 26 April 2012.

3. The DoDIG Recommendation three. We recommend that the Program Executive Officer Ground Combat Systems:

SAAL-SMS

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No. D-2011-D000CH-0032-000)

a. Require that the appropriate staff in the Project management Office for Stryker brigade Combat Team receive training in performance-based logistics support strategies and that performance standards address whether proper cost control metrics were included in any performance-based logistics or cost-reimbursable contracts.

b.. Continue to review the operational support costs for Stryker vehicles and apply more of the Army's current Stryker inventory to future requirements, allowing additional contract funding to be put to better use.

U.S. Army Management Action: See Enclosure: AMSTA-CSC-J, Subject: MEMORANDUM FOR Director of Pricing and Logistics Acquisition - Acquisition and Contract Management, Department of Defense Office of the Inspector General, 4800 Mark Center Drive, Alexandria, Virginia 22303-1500, dated 26 April 2012

4. The DoDIG Recommendation five. We recommend that the Director, Defense Procurement and Acquisition Policy; Assistant Secretary of Defense for Logistics and Materiel Readiness; and Assistant Secretary of the Army for Acquisition, Logistics, and Technology establish a multifunctional support cadre made up of individuals with various skills to ensure that the right mix of knowledge, technical expertise, and credibility are provided to support the Project Manager for Stryker Brigade Combat Team and Army Contracting Command–Warren contracting officer for the next Stryker Logistics support contract scheduled for award in Jun 13.

U.S. Army Management Action: The Department concurs with the DoDIG recommendation to establish a multifunctional cadre to support the Program Manager and Contracting Officer in advance of the scheduled contract award. We first intend on identifying the members of an integrated solutions team under Army leadership that will review the current strategy, conduct market research, define requirements, establish a sourcing strategy, execute to strategy, and manage the performance through the life of the contract. Secondly, we will leverage the Defense Acquisition University in providing a tailored Service Acquisition Workshop designed to provide four days of training to this team with the critical skill set necessary to assist them in developing and executing the next Stryker logistics support contract. We feel this two pronged approach will establish the necessary foundation for contract success, meeting the intended result of your recommendation.

SAAL-SMS

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No. D-2011-D000CH-0032-000)

5. Additional comments from the Program Executive Office-Ground Combat Systems are included in the Enclosure to assist in providing greater accuracy and clarity for the final report.



Harold J. Greene  
Brigadier General, GS  
Deputy for Acquisition  
And System Management

Enclosure



DEPARTMENT OF THE ARMY  
PROGRAM EXECUTIVE OFFICE  
GROUND COMBAT SYSTEMS  
6501 E. ELEVEN MILE ROAD  
WARREN, MICHIGAN 48397-5000

REPLY TO

AMSTA-CSC-J

26 April 2012

MEMORANDUM FOR Director of Pricing and Logistics Acquisition – Acquisition and Contract Management, Department of Defense Office of the Inspector General, 4800 Mark Center Drive, Alexandria, Virginia 22302-1500

SUBJECT: Draft Report: Better Cost-Control Measures Are Needed on The Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No: D2011-D000CH-0032.000)

1. Reference memorandum, DODIG, dated 26 March 2012, subject as above.
2. We have reviewed subject report DODIG Draft Report and agree with comments with your report conclusions, recommendations 1 and 3, and related potential monetary benefits. Our specific comments are contained in the enclosed reply.
3. The TACOM Internal Review and Audit Compliance Office will track that status of the corrective actions through completion and perform a follow-up review to verify implementation.
4. Point of contact for this reply is [REDACTED]

  
PAUL D. ROGERS, Ph.D. SES  
Deputy, Program Executive Officer  
Ground Combat Systems

Enclosures

- Attachment 1 - Inventory and Cost CDRLs
- Attachment 2 - SBCT Revised Table 4
- Attachment 3 - Contract Section B
- Attachment 4 - Revised Metric CDRLs
- Attachment 5 - PEO Manager Performance Standards

\*Omitted because of length. Copies will be provided upon request.

**Program Executive Office, Ground Combat Systems  
Comments to DOD Inspector General Draft Report,  
Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable  
Services Contract for Logistics Support of Stryker Vehicles  
(Project No. D2011-D000CH-0032.000)**

**Objective:** The overall objective of the audit was to evaluate the effectiveness of the contractor logistics support sustainment strategy for Stryker vehicles.

**DoDIG Conclusion:** PMO Stryker and ACC-Warren officials did not effectively implement cost-control procedures on the cost-reimbursable services contract, valued at about \$1.5 billion (\$290.6 million annually), for logistics support of Stryker vehicles with General Dynamics.

**PMSBCT Summary Comments:**

The recommendations in this report represent good acquisition and contracting practice which will improve the PM SBCT logistics support strategy, plan and execution moving forward. PM SBCT has initiated a business case analysis (BCA) of the logistics support approach to be taken in the future. It will consider the type of support, contractor vs. organic as well as identifying potential metrics. This BCA will be complete NLT 31 Dec 2012 and will inform the next logistics support contract to be awarded NLT 31 March 2013. PM SBCT has continued the complex transition from "blue" (contractor) support to "green" (organic) support. All CONUS brigades have completed this transition. OCONUS brigades will continue to utilize "blue" support for the foreseeable future until deployments in theater cease. PM SBCT continues to analyze current contract deliverables and perform annual monitoring of its part stock levels. These activities will continue to be utilized in support of current delivery order planning/negotiation as well as future requirements contracting planning/negotiation. As described in the report, the SBCT program is being executed in a dynamic environment from the moment vehicles came off the production line. Stryker brigades were immediately deployed into Iraq and then later into Afghanistan simultaneously. The threats and OPTEMPOs for both theaters vary significantly. Additionally, the threats and OPTEMPO continually change, making forecasting of logistical activities very difficult, further complicating and challenging the contracting approaches to be utilized. PM SBCT assigned a single fleet metric of operational readiness to the contract in order to ensure the soldier availability of the Stryker fleet. This constituted a completion form of contract IAW Federal Acquisition Regulations. PM SBCT continues to strive for improvement and efficiencies IAW Department of the Army guidance and embraces the recommendations contained in this report as one set of inputs to accomplish this task.

It is PMSBCT's position:

- a. Our interpretation of applicable guidance and regulations resulted in effective implementation of cost control procedures for the logistic support of Stryker vehicles.

b. That the contract was constructed consistent with the guidance and applicable public laws.

c. PMSBCT had various initiatives to address whether the contractor managed the program and the contract cost effectively. This was done with insight into the CLS inventory and cost via contract deliverables (Ref Attachment 1 "Inventory and Cost CDRLs") and management control processes. The contractor's inventory of parts was visible directly only because the Stryker CLS contract has been executed as a Cost Contract and therefore, the inventory falls under Contractor Acquired Property (CAP) requirements. Under a Fixed Priced contract arrangement there would be limited visibility into their inventory. With the possible exception of documentation received in support of progress payments, the Government will have minimal insight once the CLS effort is converted to FFP.

d. That CLS inventory was consistently reviewed and considered during all CLS contracting activities. In addition, per the regulations, activities to close out the current cost contract (in FY13) will decide what material is excess and what residual material is usable and available for transfer to the follow-on contract. The excess material will be disposed through appropriate processes.

e. That, the DODIG acquires input from DOD/DA Service Contracting and PBL experts (e.g. DAU) prior to final release of the audit report.

Performance Based Acquisition guidance specifically states that under a performance based service contract "we should not be buying an end product, but rather the results of the products". (See FAQ A14, [www.acquisition.gov/comp/seven?steps/FAQs-general.html](http://www.acquisition.gov/comp/seven?steps/FAQs-general.html).) Yet one of this audit's finding is that a "Stryker Contract Did Not Specify an End Product". The original CLS scope required "results" (per the guidance) in the form of 90% Operational Readiness Rate.

Service contracting is a complicated element of DOD acquisition. All involved with Service contracting recognize the value in Dr. Carter's Better Buying on Tradecraft in Service Contracting which identifies improvements that can be implemented by Defense Acquisition officials in procuring services.

A significant inconsistent/factual concern is the misapplication of an obsolescence factor of 7.4% that has little relation to the design, operational and sustainment characteristics of ground combat vehicles from the last thirty years (Reference Audit No. D2011-D0000CH-0032.000, page 20 Table 4). The Stryker Brigade optempo most closely resembles that of the Heavy Brigade Combat Teams with a mission closer to that of a Bradley than of an Abrams (Bradley 14.4% and Abrams 17.2%). It is PMSBCT's position that a more appropriate obsolescence factor for the Stryker would be 15%. Usage of this obsolescence factor significantly reduces this audits conclusion regarding excess Stryker inventory. (See Attachment 2, "SBCT Revised Table 4")

**PM SBCT Specific Comments to Report:**

Specific list of audit report statements that PMSBCT believes are inaccurate is as follows. Page numbers are in reference to Draft Report.

Page i, first column, second paragraph, Audit Report statement: "What We Found. PMO Stryker and the Army Command (ACC) - Warren contracting officer did not effectively implement cost-control procedures ..".

PMSBCT response: Stryker has a broad array of implemented cost-control procedures of which the report does not discuss. Almost none of these cost-control procedures were reviewed by the audit team. Examination of the following procedures may have provided the auditors with a different opinion: the standard cost methodology found in the Cost Performance Reports (CPR), Monthly CLS cost management reviews that specifically address the Contractors cost reduction and continuous improvement requirements, weekly phone calls to CLS locations around the world (Afghanistan, Oman and Joint Base Lewis McChord) and weekly 4-Star review of all Stryker parts shortage impacting ORR (BUA/CUB, Battlefield Update Assessment/Commanders Update Brief).

Page i, second column, first paragraph, Audit Report opinion:

- a. "Did not establish the cost-reimbursable contract as one of the basic contract forms: the completion-form contract in which the contractor is required to deliver a specified, definitive end product of the term-form contract in which the contractor is required to provide a specified level of effort for a stated period of time."

PMSBCT response: The Stryker contract is established as a Completion contract, with the completion being the 90% ORR. Section B of the contract clearly delineates that fact. See the CLIN structure selected by the PCO at the time the contract is generated in PADDs. Construction of the CLINs has always matched the regulatory guidance that PBA is by definition a Completion contract type. The difference between a Completion contract CLIN and a Level of Effort (LOE) CLIN are immediately apparent. (See Attachment 3 "Contract Section B").

- b. "A definitive end product" is required.

PMSBCT response: The requirements for a Performance Based Acquisition are NOT a "definitive end product" as cited in the audit (See FAQ A14, [www.acquisition.gov/comp/seven?steps/FAQs-general.html](http://www.acquisition.gov/comp/seven?steps/FAQs-general.html)). The Stryker contract is executed as a Service contract. The regulatory requirement is that PBA contracts are for a definitive goal or measurable result. 90% ORR is a measure of availability and meets the regulatory requirement and in conjunction with clear criteria on an exactly what deadlines a vehicles identified in the IETM, the CLS contract has clear measures of success.

PAGE 6 (Footnote)

Audit Report statement: "...in addition to allowable costs up to the maximum estimated cost obligated".

PMSBCT response: Costs are not obligated on the contract. It would be correct to say "...in addition to allowable costs subject to the Limitation of Funds Clause".

PAGE 7

Audit Report statement: "specifically, Stryker Brigade Combat Team ...did not establish an effective means to measure operation costs."

PMSBCT response: The audit should have stated that the only validated usage data available was the number of vehicles in use at specific locations (although the vehicles were frequently moved to answer deployment or battle loss requirements). The auditors omit that the PMO tracked the number of Stryker vehicles on a daily basis.

(Note: Mileage Usage is not supported by other studies. Note Rand Study "The Effect of Equipment Age on Mission-Critical Failure Rates a Study of M1 tanks dated 2004, found:

"...it is noteworthy that some locations, controlling for age and usage, had more M1 failures than others...Consistent with the fact that significant numbers of failures were recorded during months with zero usage, the model indicates that failures are likely to occur (or at least be recorded) during periods of nonuse. Because the only usage-based explanatory variable available was kilometers driven, it is likely that the positive intercepts also stem from other tank activities, such as firing rounds or idling (e.g., running the tank engine while the tank is not moving in a defensive position). Such "hidden" explanatory variables can generate failures but no increase in kilometers. (These variables are termed hidden because they were not available for the study.)" (Reference Page 28 of the Rand Study)

Further on page 69 of the Rand Study: "The analysis also showed that, after accounting for age, different Army locations had dramatically different failure rates during the study period. Additional study to understand the source of the differences could reveal further opportunity to reduce failure rates. Finally, the analysis suggested that, for a given age and location, higher usage corresponded to a lower failure rate (that is, failures per kilometer). This may simply be an artifact of peacetime usage patterns characterized by low and sporadic usage."

The data collected on the Stryker program suggests similar relationships. Note the higher cost per mile in deployment rather than in garrison cited in the audit report. The auditors fail to establish any relevancy. Currently the program tracks various operational and usage information (i.e. engine hours and vehicle miles). However, the current vehicle equipment does not provide real-time data and variance in the process of collecting the

data further complicates assessing the metrics. Current data is based on manually recorded counts, acquired through sampling efforts and from other inconsistent methods of tracking data.

PAGE 8

Inconsistent wording: "PMO Stryker and ACC-Warren officials (PMO/ACC officials) did not implement *adequate* cost-control procedures on the cost-reimbursable services contract..." To be consistent and accurate with wording on page i. it should read "PMO Stryker and ACC-Warren officials (PMO/ACC officials) did not *effectively* implement cost-control procedures on the cost-reimbursable services contract..."

Revised

Audit Report statement: "establish the cost-reimbursable contract as one of the basic contract forms: either the completion-form contract in which the contractor is required to deliver a specified, definitive end product... As a result, the Stryker contractor logistics support contract had no tangible deliverable."

PMSBCT response: Regulatory guidance does not require a "product" or "tangible deliverable" for a PBA. PBA guidance says just the opposite; that is a PBA should not be focused on acquiring a product. From the FAQ section of the Seven Steps to a PBA, referenced above, PBA is generally focused on services or measurable results.

Audit Report statement: "no means to measure the efficiency if the contractor's cost performance or actual contract overruns or under runs in relation to fee".

PMSBCT response: The Contract Funds Status Report (C019) provides indicators of overruns and under runs on a monthly basis and is reviewed by Contracting and Business Management on a monthly basis.

Audit Report statement: "Further, the sole focus on the operational readiness rate created an incentive for the contractor to spend all available funds on CLS inventory..."

PMSBCT response: The contractor consistently under-ran the contract (approximate \$10 million per year). If the IG statement were true the opposite would be expected. In addition 100% of the cost savings under this contract go to the Government when the contractor under runs and that savings compounds because the improved practices and processes, design improvements also are the basis for out year negotiations and efforts.

Audit Report statement: "We calculated that about \$335.9 million used to accumulate inventory could have been put to better use." (Reference Audit No. D2011-D0000CH-0032.000, page 20 Table 4).

Page 19

PMSBCT Response: The basis of the calculation was flawed from three perspectives. Expenditures for each year are not final at this point, the obsolescence factor is not realistic and year five of the contract is not complete. (See Attachment 2 "SBCT Revised Table 4")

Page 9:

Audit Report statement: "Specifically, PMO/ACC officials limited the rating of contractor performance to a single measurable outcome....and a contract ceiling price."

PMSBCT Response: Initial award might have been for a ceiling price but contractually all line items have been definitized. There have been urgent requirements placed on contract at 'ceiling' prices but those line items have all been definitized. All CLS contracts are definitive contracts they are NOT contracts or contract modification with 'ceilings'.

PAGE 10

Audit Report statement: "PMO Stryker Officials Measured Only the Operational Availability".

PMSBCT response: Title of this section should be corrected and expanded to "PMO Stryker Officials Measured the Operational Availability with regards to the PBL portion of the contract." The PMO tracks many measures of cost effectiveness, and reviews key data and elements of the program.

Zero balance items and critical due-ins were tracked on a daily basis and reported to the AMC Commanding General each week. Cost Reports were contractually required to be submitted on a monthly basis. Inventory reports were submitted annually. Conditional acceptance retrofits were tracked (in other parts of the contract, but often implemented through CLS) and there are also a tremendous amount of CDRL data that provided tracking (Ref Attachment 1 "Inventory and Cost CDRLs). Logistics footprint "government/contractor size or presence of logistics to deploy" was reviewed thoroughly and directly addressed in the contract or contract negotiations.

PAGE 12

Audit Report statement: "Did not include an essential metric relating to cost per unit usage or miles driven in the Stryker PBL contract."

PMSBCT response: 1. Inclusion of a metric relating to cost per unit usage or miles driven is not a PBL requirement. 2. There was a "usage factor" which was the number of vehicles that had to be supported. The number of vehicles delivered each year was included in the requirements contract as were the number of vehicle deprocessed at each location. The numbers of vehicles in a Brigade of a particular configuration were documented. The number of vehicles in the Ready to Fight (RTF) category and the number meeting other customer requirements were known (although for security reasons there was limited information in the contract on specific users and locations). The Stryker PMO tracks each vehicle and its location. The numbers of Stryker Vehicles were the driving factor in calculating the CLS estimated contract amount. Therefore the

Stryker program contract is based on "usage" or unit of vehicles fielded or used in garrison or deployment.

Page 13:

Other facts to consider: Certainly in a cost contract there are concerns about the additional inventory, however, it is not an Army Logistic footprint issue. If parts grow more reliable as a result of the Defense Acquisition Executive directed Reliability Growth program (on the Stryker NBCRV or MGS for instance), fewer parts enters the Army's logistic footprint. This may result, at least initially, in more inventories staying in the contractor's warehouse. The CLS contract was constructed with a requirement for the contractor to provide the latest configuration, more reliable parts and therefore reduce the Army's footprint. That could result in a temporary increase in the contractor's warehouse stock when average monthly demand goes down. Over time the inventory will be consumed but at a slower pace than expected as a byproduct of reliability growth. The audit misrepresents the contractor's inventory of parts as part of the logistic footprint. It overlooks the improvements in reliability and the short term impacts.

Page 17:

Other facts to consider: "Term" has a lot of meanings and it depends on exactly how the question was asked or understood. There is the "term" or duration of the contract, there are the 'terms' of a contract and there is "Term" contract (or more commonly described as a level of effort or LOE contract).

There are 'efforts' or scopes of all types in the Stryker Requirements contract. This contract includes some LOE and some completion types within the Stryker Requirement Contract. Even, within the CLS scope there are some individual paragraphs that are level of effort (such as supply chain management or certain obsolescence reporting requirements). The preponderance of the CLS effort is completion and tied to the 90% Operational Readiness and related training requirements.

Page 18

Audit Report statement: "PMO Stryker Did Not Transfer Excess Material to follow-On Contract"

PMSBCT response: Per Contract provision H.33.1 "All material and parts procured and accountable under previous contracts were transferred to Contract W56HZV-07-D-M112..."

Revised

Page 19 and Table 4

Audit Report statement: "...resulting in about \$335.9 million used to accumulate inventory that could have been put to better use." (Reference Audit No. D2011-D0000CH-0032.000, page 20 Table 4).

Page 19

PMSBCT response: Factual errors made by the DODIG included using contract funding instead of actual expenditures in their formula, using an obsolescence rate that was too low, and using a period of performance (year 5 on the table) that was not yet completed.) (See Attachment 2 "SBCT Revised Table 4"). Using DOD IG Table 4 calculations with a 15% obsolescence factor and taking out incomplete year 5 would result in \$4.9 million in excess inventory. This excess inventory is well within the range of acceptable excess on a program of this size and complexity.

Page 20

Audit Report statement: Factually incorrect statement: "As a result of the audit, PMO Stryker identified \$152.4 million that could be put to better use.'

PMSBCT response: It is correct to state that there were decreases in the CLS Delivery Orders 0169 and 0269. Since 2005 the SBCT program has been transitioning from CLS to organic/military support (Blue to Green). These deobligations were a direct result of executing the Blue to Green transition. While the total savings of \$152.4 million occurred during the time of the audit, there is no connection between the two events.

**DOD IG Recommendation 1:** Require the Project Manager for Stryker Brigade Combat Team to:

- a. Establish an appropriate cost-per-unit usage metric if a decision is made to continue logistics support for Stryker vehicles as a performance-based logistics contract.
- b. Establish procedures to monitor the cost-per-unit usage metric if logistics support for Stryker vehicles is procured under a performance-based logistics contract.
- c. Define contract remedies that include both positive and negative fee measures related to inventory turns and inventory accuracy metrics for Stryker vehicles.
- d. Use one of the basic contract forms, either term or completion, and define a tangible deliverable if logistics support for Stryker vehicles is procured under a cost-reimbursable contract as required by Federal Acquisition Regulation Section 16.306, "Cost-Plus-Fixed-Fee Contracts."
- e. Determine which portions of the Stryker logistics support contract can be transitioned to lower risk firm-fixed-price or fixed-price incentive type contracts and take appropriate action.

**Program Executive Officer Ground Combat Systems Comments:**

**Recommendation 1.a.** Concur in part. SBCT PMO is examining how to make this work through the current scope of work development and the Business Case Analysis both for the follow-on contract. If the BCA leads to a decision to continue PBL, PMSBCT will establish additional metrics and procedures to monitor those metrics (in addition to ORR) in future contracting efforts (e.g. cost per unit). Analysis, assessment and selection of additional metrics will take into consideration the ability to accurately collect data to support these metrics. Currently the program tracks various operational and usage information (i.e. engine hours and vehicle miles). However, the current vehicle equipment does not provide real-time data and variance in the process of collecting the data further complicates assessing the metrics. The BCA is expected to be completed by 31 Dec 2012. Target date for establishment of additional metrics and procedures to monitor those metrics, should analysis lead to a decision to continue PBL is 31 Mar 2013.

**Recommendation 1.b.** Concur in part. See 1.a

**Recommendation 1.c** Concur in part. For the last year of the current contract we instituted metrics regarding inventory turns and inventory accuracy which are reported via contract deliverable, (Ref. Attachment 4 "Revised Metric CDRLs"). PMSBCT has not incentivized these metrics but plan on doing so on the follow on contract, scheduled to be awarded no later than 31 Mar 2013.

**Recommendation 1.d.** Concur. Should the BCA inform the program that PBL will be continued and if a cost reimbursable contract is utilized, the PBL effort will be either term or completion in accordance with Federal Acquisition Regulations 16.306. The BCA is expected to be completed by 31 Dec 2012. Target date for the follow on contract as either term or completion, if PBL is continued and a cost reimbursable contract is used, is scheduled for execution no later than 31 Mar 2013.

**Recommendation 1.e.** Concur. Stryker PMO through the ongoing Business Case Analysis process is looking at the possibility of transitioning portions of the follow-on CLS effort to Firm Fixed Price (e.g. scheduled services). The BCA is expected to be completed by 31 Dec 2012. Target date for potentially transitioning the portions of the follow on CLS effort to Firm Fixed Price, should the BCA analysis lead to a decision to do so, is 31 Mar 2013.

**DOD IG Recommendation 3:**

- a. Ensure that the appropriate staff in the Project Management Office for Stryker Brigade Combat Team receive training in performance-based logistics support strategies and that performance standards address whether proper cost control metrics were included in any performance-based logistics or cost-reimbursable contracts.
- b. Continue to review the operational support costs for Stryker vehicles and apply more of the Army's current Stryker inventory to future requirements, allowing additional contract funding to be put to better use.

**Program Executive Officer Ground Combat Systems Comments:**

**Recommendation 3a:** Concur.

The PM Stryker endorses Dr. Carter's Better Buying on Tradecraft in Service Contracting and believes it should be combined with foundational training in Fiscal Law which also impacts the construction of Service contract requirement. The PEO is further sponsoring work directive training that has prepared for PEO staff. It will cover PBA scope development for all the PMs cognizant staff in GCS). The PEO and PMSBCT, has arranged for its acquisition workforce members in the Stryker Brigade Combat Team to receive training in performance-based logistics support strategies no later than 31 December 2012. In addition, PMSBCT logistics, engineering and business management personnel have been scheduled to attend the Performance-Based Life-Cycle Product Support conference in Washington, D.C. on 16 – 18 July 2012. In addition, all manager performance standards within the PEO already include Cost saving Initiatives. (Ref. Attachment 5 PEO Manager Performance Standards)

**Recommendation 3b.** Concur in part.

Stryker has in the past and continues to review operational support costs and effectively manage current inventory. All available inventory is considered for application to future requirements and program estimates/budgets are adjusted accordingly. The SBCT operational environment is complex and varied; therefore some level of excess inventory is necessary to support fluid combat operations.

**Report Appendix D. Summary of Potential Monetary Benefits:**

Type of Benefit: Internal Control-Economy and Efficiency. Reduces costs for future requirements by applying current Army assets to satisfy requirements.

Amount of Benefit: Funds put to better use of \$152.4 million, including \$68.7 million deobligated on contract W56HZV-07-D-M112 delivery order 0169 for Program Year 2011 (Oct 2011 to Feb 2012) requirements: \$83.7 million cost avoidance in renegotiated amount on delivery order 0269 for Program Year 2012 (Mar 2012 to Feb 2013) requirements.  
Account: Army Working Capital Fund – 97X4930.001

**Program Executive Officer Ground Combat Systems Comments:**

It is correct to state that there were decreases in the CLS Delivery Orders 0169 and 0269. Since 2005 the SBCT program has been transitioning from CLS to organic/military support (Blue to Green). These deobligations were a direct impact of executing the Blue to Green transition. While the total savings of \$152.4 million occurred during the time of the audit, there is no connection between the two events.

A more applicable benefit, as a result of this audit, is the establishment of a DOD wide multifunctional cadre of experts, including contracting and logistics, to support all future DOD PBL contracts.



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND  
4400 MARTIN ROAD  
REDSTONE ARSENAL, AL 35898-5000

AMCIR

MAY 2 2012

MEMORANDUM FOR Department of Defense Inspector General (DoDIG), ATTN:  
[REDACTED] Logistics Acquisition Division, Acquisition and Contract  
Management Directorate, Room 300, 400 Army Navy Drive, Arlington, VA 22202-4704

SUBJECT: Command Reply to DoDIG Draft Report – Better Cost-Control Measures Are  
Needed on the Army's Cost-reimbursable Services Contract for Logistics Support of Stryker  
Vehicles (Project No. D2011-D000CH-0032.000)

1. The U.S. Army Materiel Command (AMC) has reviewed the subject draft report and the responses from the U.S. Army Contracting Command (ACC). AMC endorses the enclosed ACC response.
2. The AMC point of contact is [REDACTED]

Encl

  
JOHN B. NERGER  
Executive Deputy to the  
Commanding General



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
U.S. ARMY CONTRACTING COMMAND  
3334A WELLS ROAD  
REDSTONE ARSENAL, AL 35898-5000

20 APR 2012

AMSCC-IR

MEMORANDUM FOR [REDACTED] Director, Internal Review and Audit Compliance  
Office, Headquarters, U.S. Army Materiel Command, 4400 Martin Road, Redstone Arsenal, AL  
35898

SUBJECT: Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable  
Services Contract for Logistics Support of Stryker Vehicles, (Project No. D-2011 CH-0032)  
(D1234) (10507)

1. Reference memorandum and audit report, Office of Inspector General - Department of  
Defense, 26 March 2012, subject: same as above.
2. The Army Contracting Command (ACC) concurs with the enclosed comments provided by  
ACC-Warren.
3. The ACC point of contact is [REDACTED]

Encl

*Carol E. Lowman*  
CAROL E. LOWMAN  
Executive Director



DEPARTMENT OF THE ARMY  
UNITED STATES ARMY CONTRACTING COMMAND-WARREN  
6501 EAST 11 MILE ROAD  
WARREN, MICHIGAN 48397-5000

REPLY TO  
ATTENTION OF:

CCTA-A

19 April 2012

MEMORANDUM FOR: Executive Director, U.S. Army Contracting Command, AMSCC-IR,  
3334A Wells Road, Redstone Arsenal, AL 35898-5000 ATTN: ACC-HQs, Internal Review  
and Audit Compliance Office [REDACTED]

SUBJECT: Draft Report: Better Cost-Control Measures Are Needed on The Army's Cost-  
Reimbursable Services Contract for Logistics Support of Stryker Vehicles (Project No: D2011-  
D000CH-0032.000)

1. Reference memorandum, DODIG, dated 27 March 2012, subject as above.
2. We have reviewed the subject DODIG Draft Report and agree with your conclusions and report recommendation 4. Our specific comments are contained in the enclosed response.
3. The TACOM Life Cycle Management Command (LCMC), Internal Review and Audit Compliance will track the status of the corrective actions through completion and perform a follow-up review to verify implementation.
4. Point of contact for this reply is [REDACTED]

Encl

  
HARRY P. HALLOCK  
Executive Director

**Army Contracting Command - Warren  
Comments to DOD Inspector General Draft Report,  
Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable  
Services Contract for Logistics Support of Stryker Vehicles  
(Project No. D2011-D000CH-0032.000)**

**Objective:** DoDIG's overall objective was to evaluate the effectiveness of the contractor logistics support sustainment strategy for Stryker vehicles.

**DoDIG Conclusion:** PMO Stryker and ACC-Warren officials did not implement adequate cost-control procedures on the cost-reimbursable services contract, valued at about \$1.5 billion (\$290.6 million annually), for logistics support of Stryker vehicles with General Dynamics.

**Additional facts:**

As part of the current Contractor Logistic Support (CLS) effort, the contractor is required to report cost information and to meet an Operational Readiness Rate performance requirement. Cost information is required on the following CDRLs: Contract Funds Status Report; Contract Work Breakdown Structure; Cost Data Summary Report; Functional Cost-Hour Report; and Limitation of Funds Analysis Report. In addition, as a result of interim discussions with the DoDIG, ACC-WRN has incorporated the following performance metrics into the final year (FY12) of the existing Stryker requirements contract for CLS: requisition fill time; inventory turns; inventory accuracy at Auburn; and first pass stock availability.

**Recommendation 4:** Ensure that the contracting officer for Stryker Brigade Combat Team receive training in performance-based logistics support strategies and that performance standards address whether proper cost control metrics were included in any performance-based logistics or cost-reimbursable contracts.

**Executive Director, Army Contracting Command-Warren Comments:** Concur. The Executive Director, Army Contracting Command-Warren, has arranged for the contracting officer and contract specialist for Stryker Brigade Combat Team to receive training in performance-based logistics support strategies no later than 31 December 2012. In addition, both the contracting officer and contract specialist have been scheduled to attend the Performance-Based Life-Cycle Product Support conference in Washington, D.C. on 16 – 18 July 2012. The PCO working this program is covered by Acquisition Demo Performance Objectives appropriate for the position (NH-03, Supervisory Contract Specialist). The objectives, as currently written, provide ample opportunity for the supervisor to sufficiently evaluate employee performance with regard to proper contracting practices (i.e. including proper cost control metrics in performance-based logistics or cost-reimbursable contracts). We will ensure that the Contracting Officer is rated against these specific performance elements. The target date for completion is 31 Dec 2012.



# Inspector General Department of Defense

