Report No. DODIG-2016-116

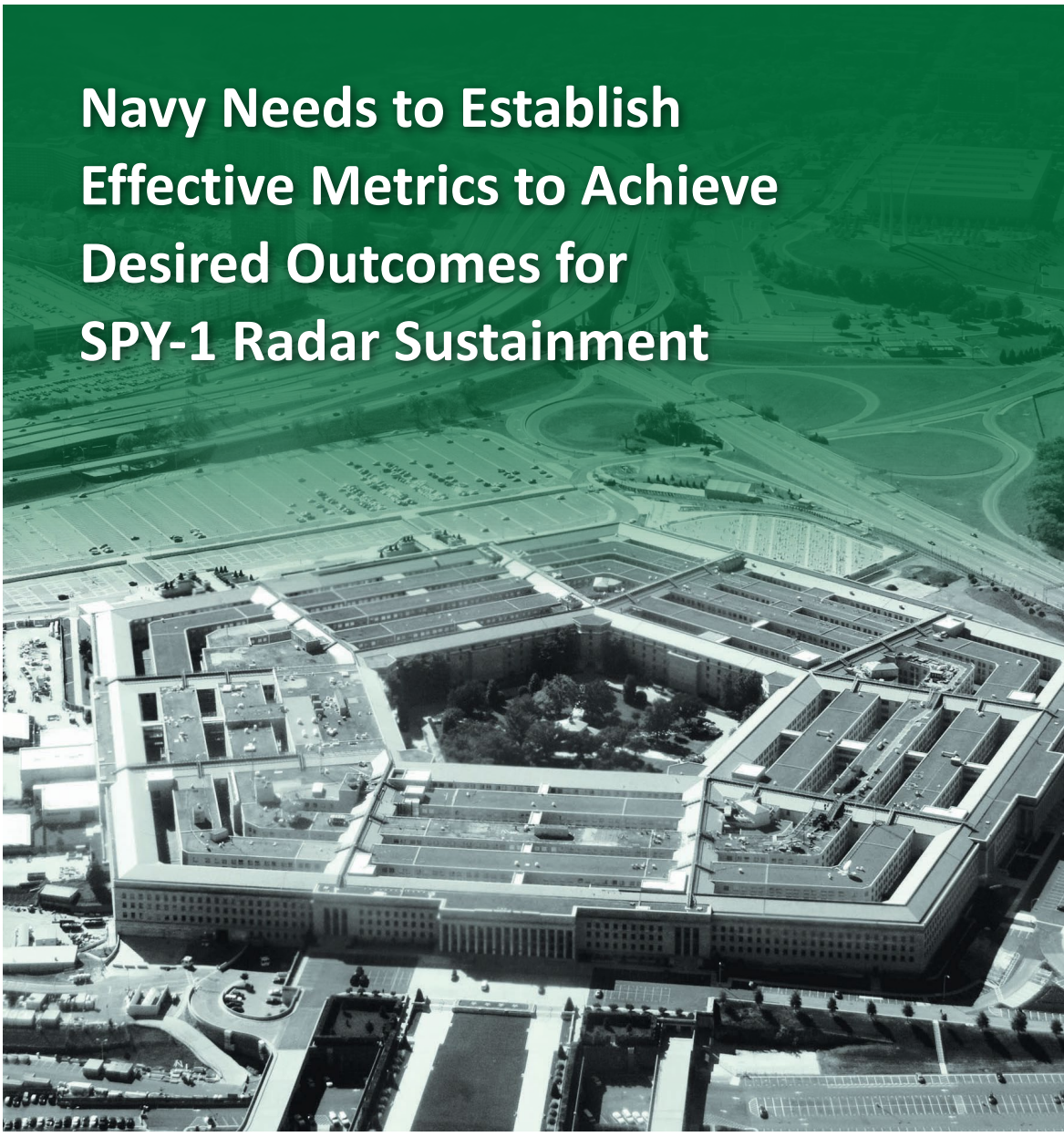
~~FOR OFFICIAL USE ONLY~~

INSPECTOR GENERAL

U.S. Department of Defense

AUGUST 1, 2016

Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for SPY-1 Radar Sustainment



INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

The document contains information that may be exempt from mandatory disclosure under the Freedom of Information Act.

~~FOR OFFICIAL USE ONLY~~

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

Mission

Our mission is to provide independent, relevant, and timely oversight of the Department of Defense that supports the warfighter; promotes accountability, integrity, and efficiency; advises the Secretary of Defense and Congress; and informs the public.

Vision

Our vision is to be a model oversight organization in the Federal Government by leading change, speaking truth, and promoting excellence—a diverse organization, working together as one professional team, recognized as leaders in our field.

Fraud, Waste, & Abuse
HOTLINE
Department of Defense
dodig.mil/hotline | 800.424.9098

For more information about whistleblower protection, please see the inside back cover.

Results in Brief

Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for SPY-1 Radar Sustainment

August 1, 2016

Objective

We determined whether the performance metrics included in the Navy's AN/SPY-1 Phased Array Radar (SPY-1 radar) performance-based logistics contracts appropriately incentivized the support contractors. This audit is the second in a series on SPY-1 radar spare parts.

The SPY-1 radar is an advanced, automatic detect and track radar system. The SPY-1 radar is one of 13 major subsystems in the AEGIS Weapon System that searches, detects, and tracks air and surface targets to support Anti-Air Warfare and Ballistic Missile Defense missions.

Findings

Naval Supply Systems Command Weapon Systems Support (NAVSUP WSS) did not develop and incorporate appropriate performance metrics into the performance-based logistics contracts used to sustain SPY-1 radars. Specifically, the metrics did not effectively incentivize Lockheed Martin and Raytheon to achieve Navy warfighter requirements or reduce the total ownership cost associated with the 327 critical SPY-1 radar parts supported by the contracts. This condition occurred because NAVSUP WSS personnel did not follow DoD guidance when developing the performance metrics. As a result, supply support and cost reduction objectives for SPY-1 radar parts were not met. In addition, operational availability of the AEGIS Weapon System could be adversely impacted if parts needed to maintain the SPY-1 radars are not transported to the warfighters when needed.

Visit us at www.dodig.mil

Findings (cont'd)

Furthermore, NAVSUP WSS personnel did not adequately assess the contractors' performance against established metrics. This occurred because NAVSUP WSS did not have written procedures to evaluate contractors' performance toward meeting the contract metrics. As a result, NAVSUP WSS paid the contractors $18 million during NAVSUP WSS performance reviews without deducting incentive fees for poor performance that was not found during these reviews.

Recommendations

We recommend that the Commander, Naval Supply Systems Command, require the Naval Supply Systems Command Weapon Systems Support to follow DoD guidance when developing the performance metrics incorporated in future performance-based logistics contracts used to sustain the SPY-1 radar. Specifically, the Commander should:

- establish formal support agreements with Advance Traceability and Control and the operational commands used to supply SPY-1 radar parts to fleet customers;
- review the readiness and sustainment performance history and costs of the AEGIS and SPY-1 radars, and use that data to identify the difference between existing and desired SPY-1 radar performance outcomes;
- breakdown system-level requirements into lower-level metrics that appropriately link contractor performance to the accomplishment of warfighter readiness and performance needs;
- establish written procedures that clearly describe the process to conduct semiannual performance reviews for the performance-based logistics contracts; and
- perform additional reviews of the completed semiannual reports for contracts N00104-12-D-ZD21 and N00104-13-D-ZD00, to determine if there is a change to the amount of incentives the contractors received and take corrective actions if appropriate.

Results in Brief

Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for SPY-1 Radar Sustainment

Management Comments and Our Response

The Commander, NAVSUP, addressed the specifics of the recommendation that NAVSUP WSS consult with the Navy stakeholders when reevaluating the SPY-1 radar's product support strategy and designing performance metrics included in future performance-based logistics contracts. However, the Commander did not provide the date when those actions would be completed. In addition, the Commander did not adequately address establishing a formal agreement between the two NAVSUP organizations involved in supplying SPY-1 radar parts to fleet customers.

The Commander, NAVSUP, agreed to:

- review the AEGIS and SPY-1 historical performance and costs to assess operational readiness;
- review the PBL performance metrics that we determined were not adequate; and
- assess whether the metrics need refinement.

However, comments from the Commander did not address all the specifics of the recommendations to use the data to develop lower-level metrics that incentivize the contractors to deliver the desired SPY-1 radar performance outcomes.

The Commander agreed to develop written procedures for conducting semiannual performance reviews. The Commander also agreed to reexamine the completed reviews for accuracy. However, the Commander did not specify what actions the contracting officers would take in response to the review reassessment results. We request that the Commander, NAVSUP, provide comments in response to the report by August 31, 2016. Please see the Recommendations Table on the following page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Commander, Naval Supply Systems Command	A.1.a, A.1.b, A.1.c, A.1.d, A.1.e, B.1.a, and B.1.b	

Please provide Management Comments by August 31, 2016.


INSPECTOR GENERAL
INTEGRITY
EFFICIENCY
DEPARTMENT OF DEFENSE

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

August 1, 2016

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE ACQUISITION,
TECHNOLOGY AND LOGISTICS
NAVAL INSPECTOR GENERAL

SUBJECT: Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for SPY-1 Radar Sustainment (Report No. DODIG-2016-116)

We are providing this report for review and comment. Naval Supply Systems Command Weapon Systems Support (NAVSUP WSS) did not establish performance metrics that effectively incentivize support providers to achieve warfighter requirements and reduce total ownership costs associated with SPY-1 radar parts. In addition, NAVSUP WSS did not adequately assess contractors' performance against established metrics. As a result, supply support and cost reduction objectives for SPY-1 radar parts were not met. In addition, NAVSUP WSS paid the contractors $18 million without deducting incentive fees for poor performance. We conducted this audit in accordance with generally accepted government auditing standards.

We considered management comments on a draft of this report when preparing the final report. DoD Instruction 7650.03 requires that recommendations be resolved promptly. The Commander, NAVSUP, addressed all specifics of Recommendation A.1.a but did not provide the date that NAVSUP WSS's actions would be completed. However, the Commander's comments only partially addressed Recommendations A.1.b, A.1.c, A.1.d, A.1.e, B.1.a, and B.1.b. Therefore, we request the Commander, NAVSUP, provide additional comments to the final report on Recommendations A.1.a, A.1.b, A.1.c, A.1.d, A.1.e, B.1.a, and B.1.b by August 31, 2016.

Please send a PDF file containing your comments to audasm@dodig.mil. Copies of your comments must have the actual signature of the authorizing official for your organization. We cannot accept the /Signed/ symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

Comments provided to the final report must be marked and portion-marked, as appropriate, in accordance with DoD Manual 5200.01.

We appreciate the courtesies extended to the staff. Please direct questions to me at (703) 604-9077 (DSN 664-9077).

Jacqueline L. Wicecarver

Jacqueline L. Wicecarver
Assistant Inspector General
Acquisition and Sustainment Management

Contents

Introduction

Objective 1

Background 1

SPY-1 Radar Performance-Based Logistics Contracts 4

Review of Internal Controls 6

Finding A. SPY-1 Radar System Performance Metrics Were Ineffective 7

Performance Metrics Not Developed to Incentivize Contractors to Achieve Desired Outcomes 7

NAVSUP WSS Did Not Follow DoD Guidance 10

Readiness and Support Goals Achievement at Risk 16

Recommendations, Management Comments, and Our Response 17

Finding B. Inadequate Performance Assessments 21

NAVSUP WSS Needs to Improve Performance Metrics Reviews 21

Additional Guidance Needed for Performance Metric Reviews 25

Inconsistencies May Have Adversely Impacted Performance Metric Review Outcomes 26

Summary 27

Recommendations, Management Comments, and Our Response 28

Appendixes

Appendix A. Scope and Methodology 29

Use of Computer-Processed Data 30

Use of Technical Assistance 31

Prior Coverage 31

Appendix B. Product Support Strategy Process Model 33

Appendix C. Urgent Orders Filled and Not Delivered by Customers' Required Delivery Date 37

Contents (cont'd)

Management Comments

Naval Supply Systems Command 43

Acronyms and Abbreviations 52


INSPECTOR GENERAL
INTEGRITY
EFFICIENCY
DEPARTMENT OF DEFENSE

Introduction

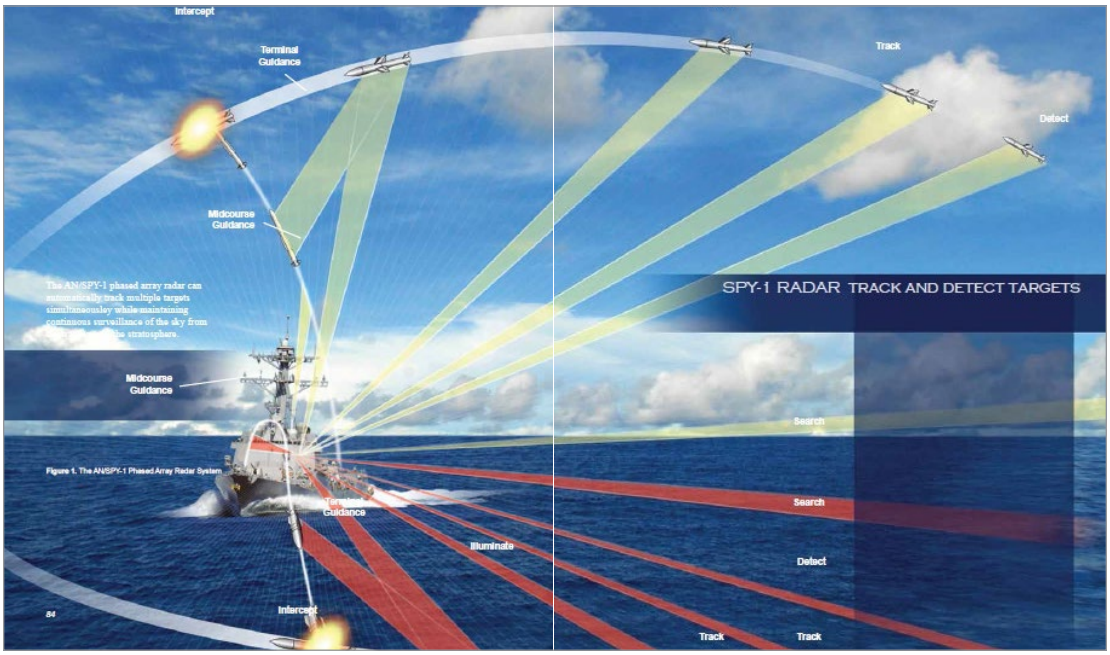
Objective

The audit objective was to determine whether the performance metrics included in the Navy's AN/SPY-1 Phased Array Radar (SPY-1 radar) performance-based logistics (PBL) contracts appropriately incentivized the support contractors. This is the second in a series of audits related to the management of SPY-1 radar spare parts. The first report focused on the SPY-1 radar spare parts requirements determination process and inventory management practices. See Appendix A for a discussion of the scope and methodology and prior audit coverage related to the objective.

Background

The SPY-1 radar is an advanced, automatic detect and track radar system. The SPY-1 radar is installed on 63 *Arleigh Burke*-class guided-missile destroyers and 22 *Ticonderoga*-class cruisers. It is one of 13 major subsystems in the AEGIS Weapon System that searches, detects, and tracks air and surface targets to support Anti-Air Warfare and Ballistic Missile Defense missions. The SPY-1 radar communicates with the standard missile, provides information to guide the missile to the target, and assesses the missile's success in destroying the target. The Navy placed the first SPY-1 radar in operation in 1983 on the USS *Ticonderoga*-class cruisers and on the *Arleigh Burke*-class destroyers in 1991. Figure 1 illustrates the SPY-1 radar's capabilities.

Figure 1. AN/SPY-1 Phased Array Radar System Capabilities



Source: Naval Sea Systems Command Leading Edge, Volume 7, Issue No. 2

Naval Supply Systems Command

The Naval Supply Systems Command manages the Navy's supply system and provides material support for Navy surface ships, submarines, aircraft, and expeditionary forces. After a weapon system is fully developed and integrated into the fleet, Naval Supply Systems Command Weapon Systems Support (NAVSUP WSS):

- assumes responsibility for supporting that system;
- provides the fleet with parts through a multi-tiered retail system and wholesale inventory;
- manages parts inventory for ships, submarines and weapon systems, including support for hull, electrical, mechanical, and electrical components; and
- forecasts parts requirements for wholesale stocking.

Fleet customers use operations and maintenance funding to purchase parts from NAVSUP WSS wholesale inventory. NAVSUP WSS uses the wholesale system to purchase spare parts from vendors with Navy Working Capital Funds, and then resells the parts to fleet customers.

Performance-Based Logistics Arrangements

The DoD designated performance-based logistics (PBL) as the preferred equipment sustainment strategy in an effort to increase weapon systems readiness, while reducing support costs and supply chain infrastructure. In 2003, DoD incorporated into policy the requirement for acquisition managers to use performance-based arrangements for sustaining products and services wherever feasible. A PBL contract provides weapon system support by designating what system performance outcome is required, such as acquiring a level of availability, and incentivizes the contractor to reduce costs through innovation.

The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]) policy memorandum[1] states that PBLs are a method to achieve DoD's Better Buying Power goals and their appropriate use would help to achieve affordable sustainment strategies. The USD(AT&L) Implementing Directive for Better Buying Power 2.0[2] states that the history of PBL contracting demonstrates DoD can achieve improved readiness at significant savings if PBL business arrangements are properly structured and executed.

As a business model, PBL differs from traditional contract support in many ways. In a PBL arrangement, the Government buys performance outcomes.[3] PBL contracts do not provide detailed descriptions of what Government goods and services are required to meet the outcomes. Rather, the Government identifies its desired system performance and the contractor determines how to deliver that performance outcome. In a PBL sustainment contract, the contractor is incentivized to reduce repairs, cost of parts, and labor because its profit is increased by reducing costs.

In contrast, for a traditional support model, the Government buys a weapon system and associated spares, repairs, tools, and data. The Government must specify which goods and services are desired and how many of each is needed. Traditional contracts focus on transactions of goods or services. The contractor charges the Government for each repair or replacement transaction when equipment fails or requires overhaul. As a result, the contractor receives more revenue the more the equipment fails, which is misaligned with the Government's goals for reliable, affordable equipment. According to a study sponsored by the Assistant Secretary of Defense (Logistics & Materiel Readiness) (ASD[L&MR]),[4] the Government should

[1] USD(AT&L) memorandum, "Endorsement of Next-Generation Performance-Based Logistics Strategies," May 14, 2012.

[2] USD(AT&L) memorandum, "Implementation Directive for Better Buying Power 2.0 – Achieving Greater Efficiency and Productivity in Defense Spending," April 24, 2013.

[3] For PBL, performance is defined in terms of military objectives, such as operational availability, reliability, cost per unit usages, or logistics response time.

[4] Proof Point Project: A Study to Determine the Impact of Performance Based Logistics (PBL) on Life Cycle Costs, November 2011.

share in the cost savings achieved by the contractor. These savings could occur during the performance of the existing contract or when awarding a follow-on contract at a lower price or both.

SPY-1 Radar Performance-Based Logistics Contracts

NAVSUP WSS used two PBL contracts to support 327 parts critical to the sustainment of the SPY-1 radars.

- On August 9, 2012, NAVSUP WSS awarded a 5-year, requirements-type, sole-source contract[5] to the Lockheed Martin Corporation for AEGIS Weapon System materiel support. As of November 26, 2013, NAVSUP WSS obligated $11.4 million to sustain the SPY-1 radars.
- On November 28, 2012, NAVSUP WSS awarded a 5-year, requirements-type, sole-source contract[6] to the Raytheon Company to provide materiel support for two AEGIS subsystems: the MK-99 Fire Control System and the SPY-1 radar transmitter group. During the first year of the contract, NAVSUP WSS obligated $16.6 million, to sustain the SPY-1 radars.

Desired Performance Outcomes

According to the SPY-1 radar contract work statements, the goal of the contracts was to create a flexible, streamlined process between the Navy and Lockheed Martin and Raytheon that would reduce:

- administrative lead time/cycle time (logistics response time);[7]
- support process variation; and
- the total ownership cost associated with the 327 critical SPY-1 radar parts supported in the contracts.

Delivery Requirements

The SPY-1 radar contracts required Lockheed Martin and Raytheon to fill customer orders within specified timeframes. Table 1 shows the various requisition types and number of days specified in the contracts that Lockheed Martin and Raytheon agreed to supply requested parts to Advanced Traceability and Control (ATAC)[8] for shipment.

[5] Lockheed Martin contract number N00104-12-D-ZD21.

[6] Raytheon contract number N00104-13-D-ZD00.

[7] Logistics response time is the average number of days that elapses from the time a customer submits a requisition (order) to the time the customer receives the parts ordered.

[8] ATAC is a NAVSUP WSS organization that picks up and delivers parts to Navy customers.

Table 1. Contracted Delivery Times

Order Priority Category*	Delivery Requirement
Casualty Report	Within 24 Hours
Category 1 (Priority Codes 1-3)	Within 2 Work Days
Category 2 (Priority Codes 4-8)	Within 4 Work Days
Category 3 (Priority Codes 9-15)	Within 6 Work Days

* DoD uses order priority categories to convey how urgently customers require the part ordered. Priority designators range from 1 to 15. Part orders designated priority group 1 have a higher priority than other requisitions designations and have shorter delivery requirements.

Source: Lockheed Martin and Raytheon contracts and DoD Regulation 4140.1-R, May 23, 2003

Performance Metrics

NAVSUP WSS used three performance metrics to assess contractor success in filling part orders. Table 2 shows the metrics standards, and the negative or positive adjustments that are applied to the contractors' next payment, based on the respective performance levels.[9]

Table 2. Performance Metric and Payment Adjustment

~~(FOUO)~~ PBL Contractors	Average Fill Rate	Average Contractor Response Time	Average Casualty Report Response Time
Lockheed Martin	[redacted]	[redacted]	[redacted]
Raytheon	[redacted]	[redacted]	[redacted]

~~(FOUO)~~

* Performance Metric Standard

Source: Lockheed Martin and Raytheon contracts

[9] In addition, Lockheed Martin incurs a $1,250 penalty for each order that remains undelivered for more than the agreed to number of production lead-time days. Raytheon incurs a $1,000 penalty for each order that remains undelivered for more than 365 days and a $3,000 penalty for each order requiring expedited delivery that remains undelivered for more than 9 days.

As of August 2015, NAVSUP WSS program management personnel had reviewed Lockheed Martin's first year performance and Raytheon's first 6-month performance.[10]

Review of Internal Controls

DoD Instruction 5010.40[11] requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified internal control weaknesses with the procedures that NAVSUP WSS used to develop the performance metrics in the PBL contracts to sustain the SPY-1 radars and the steps taken to assess contractor performance against those metrics. We will provide a copy of this report to the senior official responsible for internal controls in the Office of the Chief of Naval Operations.

[10] NAVSUP WSS personnel stated they were behind on the Raytheon performance review because of staffing turnover.

[11] DoD Instruction 5010.40, "Managers' Internal Control Program Procedures," May 30, 2013.

Finding A

SPY-1 Radar System Performance Metrics Were Ineffective

NAVSUP WSS did not develop and incorporate appropriate performance metrics into the PBL contracts that sustained SPY-1 radars. Specifically, the contract performance metrics did not effectively incentivize Lockheed Martin and Raytheon to achieve Navy warfighter requirements or reduce the total ownership cost[12] associated with the 327 critical SPY-1 radar parts supported by the contracts. This occurred because NAVSUP WSS personnel did not follow DoD guidance when developing the performance metrics in these contracts. As a result, supply support and total ownership cost reduction objectives for SPY-1 radar parts were not being met. In addition, the operational availability of the AEGIS Weapon System could be adversely impacted if parts needed to maintain the SPY-1 radars, a critical AEGIS subsystem, are not provided to the warfighters when needed.

Performance Metrics Not Developed to Incentivize Contractors to Achieve Desired Outcomes

NAVSUP WSS personnel did not develop and incorporate appropriate performance metrics into the PBL contracts used to sustain the SPY-1 radars. Specifically, the contract performance metrics did not effectively incentivize Lockheed Martin and Raytheon to achieve Navy warfighter requirements or reduce the total ownership cost associated with the 327 critical SPY-1 radar parts supported by the contracts.

DoD PBL guidance[13] states that a PBL is to create an arrangement, which incentivizes contractors to reduce costs by improving a weapon system's operational availability and decreasing maintenance costs. According to the DoD PBL guidance, for PBLs to be effective, desired outcomes must have supporting performance metrics that objectively indicate whether desired outcomes have been accomplished. In addition, the DoD PBL guidance states that the PBL arrangement should be detailed in a formal agreement, clearly defining the desired outcomes; the associated performance metrics and targets desired; and the financial incentives and disincentives for not meeting or exceeding agreed-upon desired outcomes.

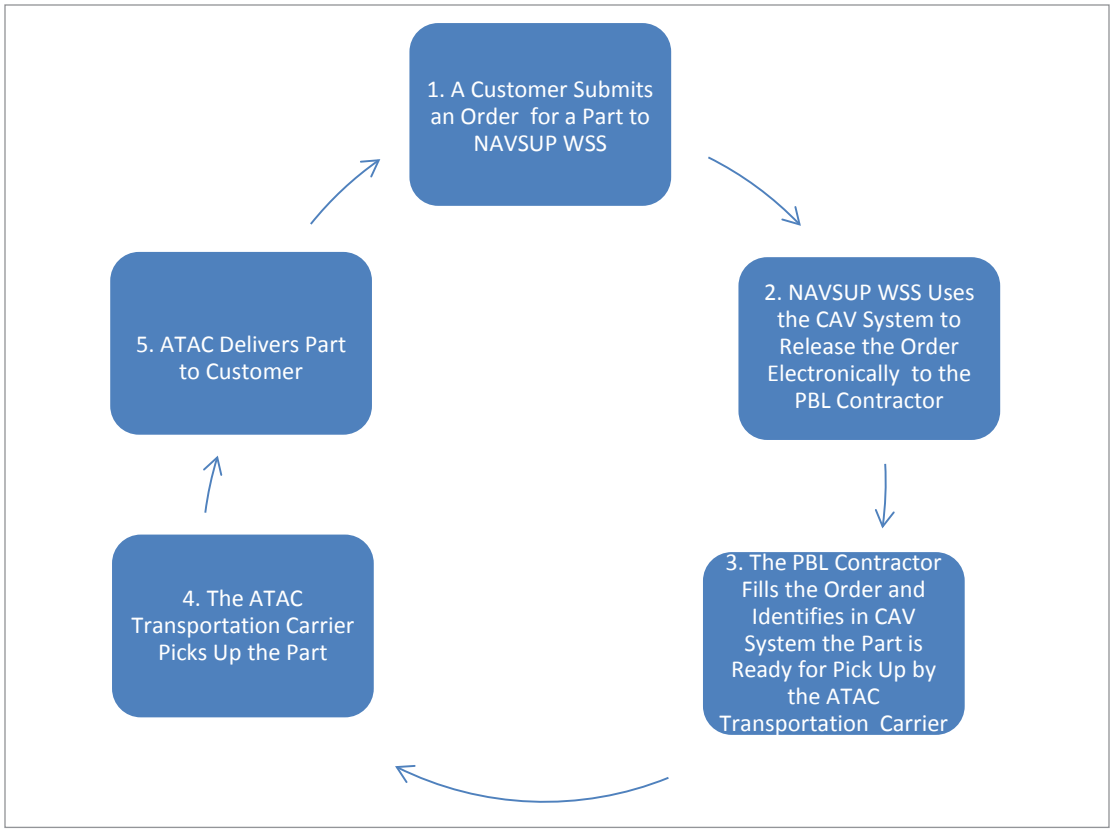
[12] Total ownership cost includes the direct costs of the program, logically attributable indirect program costs, support costs, and the costs associated with important central logistics infrastructure activities (such as supply chain management).

[13] DoD Performance Based Logistics (PBL) Guidebook, May 27, 2014, Product Support Manager Guidebook, April 2011, and OSD L&MR PBL study.

SPY-1 Radar Product Support Strategy

According to PBL Best Practices draft guidance[14], NAVSUP WSS acts as the Product Support Integrator in many product support[15] arrangements. In this capacity, NAVSUP WSS is the program manager and product support manager's agent for sustainment. Product support strategies can take many forms that leverage the capabilities of a variety of product support providers, including both commercial and Government sources. NAVSUP WSS used the PBL arrangement to implement the product support strategy in supplying parts for the SPY-1 radar. NAVSUP WSS entered into an arrangement that assigned roles, responsibilities, and the performance expectations of the product support providers. Figure 2 shows the process for the product support strategy that NAVSUP WSS used to supply the parts the fleet needs to sustain the SPY-1 radar.

Figure 2. SPY-1 Radar Product Support Process



LEGEND:

ATAC	Advance Traceability and Control
CAV	Commercial Asset Visibility
NAVSUP WSS	Naval Supply Systems Command Weapon Systems Support
PBL	Performance-Based Logistics

Source: Lockheed Martin contract N00104-12-D-ZD21 and Raytheon contract N00104-13-D-ZD00

[14] NAVSUP Draft PBL Best Practices (Steps 8 through 12), September 2013.

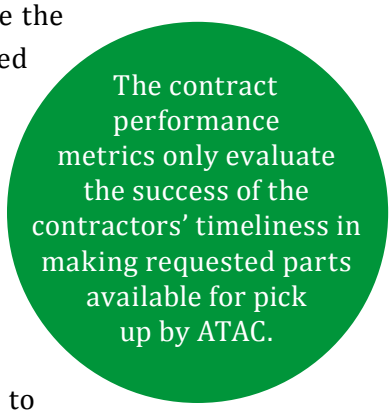
[15] Product support includes the logistics support functions necessary to maintain the readiness and operational capability of a system or subsystem. It encompasses a range of disciplines including, but not limited to: logistics, requirements, operational mission planning, financial, contracts, legal, and integrated product support elements.

Contract Performance Metrics Not Aligned With the Desired Outcomes or Adjusted to the Product Support Strategy

NAVSUP WSS incorporated the following performance metrics in the Lockheed Martin and Raytheon contracts:

- **Average Fill Rate**—percentage of orders that contractors filled within the time frames specified in the contract;
- **Average Contractor Response Time**—average time (in days) it takes the contractor to fill customer orders; and
- **Average Casualty Report Response Time**—average time (in days) it takes the contractor to fill urgent customer orders needed within 24 hours of receipt.

However, the contract performance metrics only evaluate the success of the contractors' timeliness in making requested parts available for pick up by ATAC. Without additional metrics that are specifically designed to incentivize the contractors to achieve all the contract goals,[16] the contractors will not streamline their supply support process or take other steps that will reduce the total cost of supporting the SPY-1 radar. NAVSUP WSS did not incorporate any contractual incentives that would motivate Lockheed Martin and Raytheon to take actions to accomplish those performance goals.



In addition, NAVSUP WSS did not incorporate the customer-required delivery times or the time needed by ATAC to deliver the parts to customers[17] when developing the performance metric standards in the Lockheed Martin and Raytheon contracts. For example, if a customer located in the continental United States submits a Category 2 part order, the customer may not receive the part when required. Category 2 part orders are to be delivered to customers located in the continental United States within 10 days. NAVSUP WSS required Lockheed Martin and Raytheon to make Category 2 part orders available to ATAC within 4 days. However, ATAC business rules state that it takes 8 days to deliver Category 2 part orders. Therefore, unless Lockheed Martin and Raytheon can make the parts available in 2 days, or ATAC delivers the parts to the customer in 6 days, customers will not receive the requested parts when needed.

[16] The contract goals are reduce logistics response time, process variation, and total ownership cost.

[17] Customer delivery times vary based on where the customer is located and how urgently the parts are needed. In addition, ATAC takes 4 to 8 days to deliver required parts.

NAVSUP WSS Did Not Follow DoD Guidance

NAVSUP WSS personnel did not follow DoD guidance when developing the performance metrics in the SPY-1 radar PBL contracts. The objective of product support is to implement a sustainment strategy that delivers affordable readiness, which is defined as providing mission capability to the warfighter at the lowest cost to the taxpayer. DoD uses the 12-step process[18] shown in Figure 3 to develop weapon system support strategies, including those that rely on PBLs.

Figure 3. DoD 12-Step Product Support Strategy Model

Source: DoD Product Support Manager Guidebook, April 2011

[18] See Appendix B for actions that typically occur during the 12-step process.

However, NAVSUP WSS did not use the 12-step process and instead incorporated the metrics that NAVSUP WSS had always included in maritime PBL contracts. Specifically, we did not find evidence that NAVSUP WSS:

- obtained relevant subject matter expertise needed to translate system requirements into a viable product support strategy during the Product Support Management Integrated Product Support Team (IPT) (Step 2);
- baselined the system to assess the current product support strategy and established initial technical and cost and pricing baselines (Step 3); and
- identified and refined the contract metrics to achieve desired performance outcomes (Step 4).

Relevant Expertise Not Used to Develop Performance Metrics

NAVSUP WSS did not use relevant subject matter experts when reevaluating the SPY-1 radar's product support strategy and developing the performance metrics included in the Lockheed Martin and Raytheon PBL contracts. Although NAVSUP WSS used an Integrated Product Team (IPT)[19] when reissuing the PBL contracts, the IPT did not include ATAC and fleet personnel. Forming an IPT is an important step to developing an effective product support strategy and requires participation and consensus of all stakeholders, including the warfighter. The war fighting capability needs must be translated into requirements. The metrics are derived from the requirements to drive achievement of the desired outcomes and should be documented in formal agreements and serve as the primary measures of support provider performance.

Periodically obtaining stakeholders insight and tailoring performance metrics for changes to the specific weapon system and the operational environment is critical to ensuring the product support strategy remains in close alignment with warfighter requirements. Developing a weapon system's product support strategy is not a one-time decision made early in a system's life and executed in the same form throughout the life cycle. A product strategy for a weapon system evolves over time, since the requirements, capabilities, competencies, operational mission, and material condition of defense systems change over time.

We did not find evidence that NAVSUP WSS compared ATAC's business processes to the fleet customer delivery requirements for the various categories of parts shipments and made appropriate revisions. In addition, NAVSUP WSS personnel stated that they did not enter into a formal agreement with ATAC that defined

[19] The IPT is a collaborative working body comprising key program staff and stakeholders whose purpose is to develop a product support solution. Various disciplines should be represented within the IPT, including Life Cycle Logistics, Engineering, Finance, Contracting, Legal, and individuals from other functional groups specific to the program and life-cycle needs.

the specific timeframes that ATAC needed to follow to ensure that parts were transported to the fleet when needed. As a result, NAVSUP WSS did not establish appropriate standards in the contracts for Lockheed Martin and Raytheon's performance metrics, which contributed to parts not being delivered to Navy customers timely using ATAC transportation.

Navy customers use DoD's order processing and delivery time standards to communicate the delivery requirements to support providers. For example, fleet customers used "Category 1" to inform NAVSUP WSS that a part's delivery needed to be expedited, because the part was urgently needed. Fleet customers submitted 190 Category 1 part orders during NAVSUP WSS performance review periods.[20] The fleet requested expedited delivery of these parts because the SPY-1 radar may not perform its mission without them. We determined that 137 of those 190 orders were not delivered by the required delivery dates. See Appendix C for a list of the part orders not filled by the customers' required delivery dates.

In addition, NAVSUP WSS did not contact the fleet to determine whether the PBL performance metrics should have changed, based on the operational environment of the SPY-1 radar at the time, when NAVSUP WSS renewed the Lockheed Martin and Raytheon PBL contracts in August 2012 and November 2012, respectively. On October 1, 2012, the Director, Surface Warfare Division, Chief of Naval Operations, issued an administrative change memorandum[21] that increased the operational availability requirement of the AEGIS Weapon System and the SPY-1 radars. In the memorandum, the Director stated:

> With more frequent deployments, longer at-sea time, and the critical nature of the ballistic missile defense mission, **AEGIS ships were unable to maintain the AEGIS Combat Systems components at required levels to meet Combatant Commanders, Fleet, and Type Command requirements.** [A December 2011 AEGIS Readiness Sparing study] suggested a major contributing factor to the mission degradation was insufficient spare parts in ship's inventory. By increasing the operational availability for use with the AEGIS Readiness Based Sparing (RBS) model, it is anticipated that the sparing inventory on board AEGIS ships will increase, resulting in improved repair time to meet mission requirements. **[Emphasis Added]**.

[20] NAVSUP WSS performed two semiannual reviews covering Lockheed Martin's performance from August 10, 2012, through August 9, 2013, and one semiannual review covering Raytheon's performance from November 28, 2012, through May 27, 2013.

[21] Chief of Naval Operations memorandum, "Authority to Increase Operational Availability (Ao) for AEGIS Sparing," October 1, 2012.

We did not find evidence that NAVSUP WSS ever assessed the impact that the change made to the SPY-1 radar's operational availability requirement had on its supply support. Specifically, NAVSUP WSS did not determine if the existing PBL metrics needed to be modified because of the December 2011 AEGIS Readiness Sparing study findings. The study concluded that supply support was not keeping up with the fleet's operational availability requirement for the SPY-1 radar.

NAVSUP WSS should consult with ATAC and the operational commands that support the fleet when reevaluating the SPY-1 radar's product support strategy and designing the performance metrics included in future performance-based logistics contracts. In addition, NAVSUP WSS should establish formal support agreements with ATAC and the operational commands used to supply SPY-1 radar parts to fleet customers.

SPY-1 Radar Product Support Process Not Reviewed and Technical and Cost Baselines Not Established

NAVSUP WSS did not review the current product support process and establish a baseline[22] for the logistical functions and total costs before awarding the SPY-1 PBL contracts. DoD guidance[23] provides steps to define and implement a product support strategy that is affordable and effective. The guidance explains that baselining the system provides a foundation for developing a strong product support strategy. It states that NAVSUP WSS should assess the supply strategy, including monitoring contractor performance, improvements, affordability, and cost control.

Effective PBL implementation depends on identifying and refining performance metrics that accurately reflect warfighter requirements and measure contractor performance. The ASD(L&MR) issued a memorandum[24] stating that the Government must clearly understand the program requirements, cost and technical characteristics, along with associated tradeoffs and alternatives for PBL arrangements to be effective. The memorandum further states one of the indicators of an effective PBL arrangement is that the Government gains data during the period of performance to refine subsequent PBL arrangements for improved productivity and cost reduction. NAVSUP WSS should have defined the SPY-1 radar's existing performance and cost baselines as a starting point for monitoring performance and costs to ensure processes are achieving required outcomes.

[22] The process of developing the system baseline is to identify all of the information known about the system to include performance, support, reliability, maintainability, and cost data.

[23] DoD Product Support Manager Guidebook, April 2011, provides guidance on how to develop and execute a product support strategy.

[24] ASD(L&MR) memorandum, "Performance Based Logistics Comprehensive Guidance," November 22, 2013.

Lockheed Martin and Raytheon provided logistical functions for these PBL contracts, including:

- making inventory decisions;
- repairing and/or manufacturing all parts;
- providing associated warehousing;
- managing system configuration and parts obsolescence; and
- coordinating transportation and tracking part orders.

NAVSUP WSS tasked Lockheed Martin and Raytheon to establish processes that reduce logistics response time, variation in the support process, and the total ownership cost for the SPY-1 radar parts supported through the contracts. However, NAVSUP WSS did not identify in the contracts, the specific activities and costs it required Lockheed Martin and Raytheon to achieve performance outcomes on, such as the frequency of the repair and parts replacement. Without these performance and cost baselines, NAVSUP WSS could not identify deficiencies with the existing support process or why specific parts cost more. NAVSUP WSS did not establish meaningful metric standards that provided Lockheed Martin and Raytheon the incentive to reduce logistics response time, support process variation, and total ownership costs.

NAVSUP WSS should review the readiness and sustainment performance history and cost of AEGIS and SPY-1 radar, use that data to identify the difference between existing and desired SPY-1 radar performance outcomes, and develop metrics that incentivize the contractors to deliver the desired outcomes.

Performance Metrics Were Not Appropriately Tailored to Desired Warfighter Outcomes

NAVSUP WSS did not effectively select and refine the contract metrics to achieve desired performance outcomes for the SPY-1 radar system. According to DoD guidance,[25] implementation of an effective product support strategy depends on metrics that accurately reflect the user's needs and effectively measure the product support provider's performance. Many PBL arrangements are executed at the subsystem or component levels. Consequently, system-level requirements should be broken down into lower-level performance metrics appropriate for the responsibility and risk assigned to the product support provider. However, NAVSUP WSS

System-level requirements should be broken down into lower-level performance metrics appropriate for the responsibility and risk assigned to the product support provider.

[25] DoD Product Support Manager Guidebook, April 2011, provides guidance on how to develop and execute a product support strategy.

bundled the SPY-1 radar sustainment with other AEGIS subsystem sustainment needs. Lockheed Martin's contract supports three AEGIS major subsystems, and Raytheon's contract provides supply support for two AEGIS subsystems.

NAVSUP WSS used consolidated performance metrics to monitor Lockheed Martin and Raytheon's success in filling part requests from the fleets for all AEGIS subsystems supported by each respective contract. However, as Table 3 shows when a particular subsystem's parts represent a low percent of the total orders filled through a particular contract, the contractor's poor performance can remain undetected by a high-level metric.

Table 3. Contractors' Success in Filling SPY-1 Parts Requests During First 6-month Review

(~~FOUO~~)	Lockheed Martin		Raytheon	
	NAVSUP WSS		NAVSUP WSS	
PBL Performance Metrics	All AEGIS Subsystems	Just SPY-1 Radar	All AEGIS Subsystems	Just SPY-1 Radar
Average Fill Rate	[redacted]	[redacted]	[redacted]	[redacted]
Average Contractor Response Time	[redacted]	[redacted]	[redacted]	[redacted]
Average Casualty Report Response Time	[redacted]	[redacted]	[redacted]	[redacted] (~~FOUO~~)

Source: DoD OIG

NAVSUP WSS's performance metric reviews showed both contractors met the standards for all the metrics. However, our review of the contractors' success in filling just the SPY-1 radar part orders found that when the SPY-1 radar part orders represented a low percent of the total orders, the contractors' poor performance on those orders could remain undetected by the high-level metric.

(~~FOUO~~) [redacted] NAVSUP WSS required Lockheed Martin and Raytheon to fill at least 85 percent of the part orders within the contracted delivery timeframe to meet the metric standard for the average fill rate. [redacted]

(FOUO) [redacted] This occurred because the SPY-1 radar orders represented only 27.4 percent [redacted] of the total orders that Lockheed Martin filled during the first performance review period.

NAVSUP WSS should design performance metrics that accurately reflect the user's needs and effectively measure the product support provider's performance. In addition, NAVSUP WSS should breakdown system-level requirements into lower-level performance metrics that appropriately link contractor performance to the accomplishment of warfighter readiness and performance needs.

Readiness and Support Goals Achievement at Risk

According to the implementing directive[26] for DoD's Better Buying Power Initiative, the history of PBL contracting demonstrates that DoD can achieve improved readiness at significant savings when PBL business arrangements are properly structured and executed. Having appropriate metrics aligned to warfighter requirements are critical to incentivize and motivate contractors to fulfill warfighter outcomes at a reduced total ownership cost. However, NAVSUP WSS did not take the necessary steps to properly structure the performance metrics it incorporated in the PBL contracts used to sustain the SPY-1 radar.

NAVSUP WSS did not consult with the organizations that supported the warfighting combatant commanders to identify and translate their warfighter capability needs into requirements. Consequently, the contract performance metrics in both contracts did not:

- align to warfighter requirements;
- effectively incentivize Lockheed Martin and Raytheon to make process improvements;
- allow for decreased repairs by improving parts reliability; or
- reduce total ownership costs associated with supporting the 327 critical SPY-1 radar parts.

The operational availability of the AEGIS Weapon System may also be adversely impacted if parts needed to maintain the SPY-1 radar, a critical AEGIS subsystem, are not provided to the warfighters when needed and cannot be obtained timely from other sources. NAVSUP WSS needs to link Lockheed Martin and Raytheon's

[26] DoD memorandum, "Implementation Directive for Better Buying Power 2.0 - Achieving Greater Efficiency and Productivity in Defense Spending," April 24, 2013.

contract metrics to AEGIS operational requirements and make sure the metrics influence the contract pricing and incentives for the PBL arrangements to be effective.

Recommendations, Management Comments, and Our Response

Recommendation A.1

We recommend that the Commander, Naval Supply Systems Command, require the Naval Supply Systems Command Weapon Systems Support follow Department of Defense guidance when developing the performance metrics incorporated in future performance-based logistics contracts used to sustain the SPY-1 radar. Naval Supply Systems Command Weapon Systems Support should:

a. Consult with Advanced Traceability and Control and the operational commands when reevaluating the SPY-1 radar's product support strategy and designing the performance metrics included in future performance-based logistics contracts.

Naval Supply Systems Command Comments

The Commander, NAVSUP, agreed with the recommendation. The Commander stated that the collective effort of both Navy governmental and industry stakeholders was essential to achieve and measure SPY-1 radar contract's performance outcome. The Commander stated NAVSUP WSS would continue to consult all Navy stakeholders, including ATAC and the operational commands, for the SPY-1 contract renewal efforts to make sure that NAVSUP WSS applies the best performance outcomes for the SPY-1 radar. The Commander stated that the contract renewal efforts would include reevaluating the performance metrics at various points during the product support life cycle.

Our Response

Comments from the Commander, NAVSUP, addressed the specifics of the recommendation; however, the Commander, NAVSUP, did not provide the date that NAVSUP WSS's actions would be completed. We request the Commander, NAVSUP, provide the date NAVSUP WSS's actions are expected to be completed.

b. Establish formal support agreements with Advanced Traceability and Control and the operational commands used to supply SPY-1 radar parts to fleet customers.

Naval Supply Systems Command Comments

The Commander, NAVSUP, partially agreed with the recommendation. The Commander stated that coordination with ATAC and other stakeholders was necessary to properly define the PBL delivery metrics and other performance outcomes. However, the Commander emphasized that ATAC's performance is outside the scope and control of the PBL provider. The Commander also stated it would be inappropriate for NAVSUP to enter into a formal agreement with ATAC, as ATAC was part of NAVSUP WSS, which is subordinate to NAVSUP.

Our Response

Comments from the Commander, NAVSUP, did not address the specifics of the recommendation. The intent of our recommendation was not for NAVSUP to enter into a formal agreement with ATAC. Rather, we recommended that NAVSUP WSS establish a formal agreement with ATAC. NAVSUP WSS uses PBL contractors and ATAC to supply the parts the fleet needs to sustain the SPY-1 radar. However, NAVSUP Global Logistic Support, another business unit within NAVSUP, executes the ATAC program. ATAC picks up the SPY-1 parts from the PBL contractors and transports the parts to the fleet. While we acknowledge that ATAC's performance is outside the scope and control of the PBL contractors, the contractors ATAC uses to transport parts do not follow ATAC's business rules. Consequently, without a formal support agreement requiring ATAC to deliver the parts in a set timeframe, we question how NAVSUP WSS can properly establish delivery standards for the SPY-1 radar PBL contracts and ensure the fleet's sustainment needs are met. The establishment of agreements with intragovernmental entities involved in product support is consistent with DoD PBL guidance. We request the Commander, NAVSUP, provide comments to the final report explaining how NAVSUP will make sure the right delivery standards are incorporated into the follow-on PBL contracts and the fleet's SPY-1 radar sustainment needs are met without a formal agreement binding ATAC to deliver parts within set timeframes.

c. Review the readiness and sustainment performance history and costs of the AEGIS and SPY-1 radars and use that data to identify the difference between existing and desired SPY-1 radar performance outcomes, and develop metrics that incentivize the contractors to deliver the desired performance outcomes.

d. Design performance metrics that accurately reflect the user's needs and effectively measure the product support provider's performance.

e. Breakdown system-level requirements into lower-level metrics that appropriately link contractor performance to the accomplishment of warfighter readiness and performance needs.

Naval Supply Systems Command Comments

The Commander, NAVSUP, agreed with the recommendations. The Commander stated that Naval Sea Systems Command Program Executive Office program managers monitor the SPY-1 radar's operational availability and overall sustainment costs. The Commander stated that NAVSUP WSS would obtain current performance data and determine if the PBL contractors' performance is negatively impacting the SPY-1 radar's operational availability. The Commander also stated that NAVSUP WSS had developed performance metrics for the follow-on PBL contracts. Specifically, NAVSUP WSS plans to include fill rate and average contractor response time metrics that hold both AEGIS/SPY-1 radar PBL providers to metric standards consistent with Chief of Naval Operations Instruction 4441.12D and Navy average customer wait time goals. The Commander stated that NAVSUP WSS would work with the Naval Sea System Command Program Executive Office to assess the overall performance metrics applicable to the 327 SPY-1 radar unique parts. The Commander stated those efforts would address if further metric refinement and lower-level performance metrics need to be incorporated into the follow-on PBL contracts, which are estimated to be awarded by February 28, 2018.

Our Response

Comments from the Commander, NAVSUP, did not address all the specifics of the recommendations. According to the work statements for the SPY-1 radar contracts, the goals of the contracts were to create a flexible, streamlined process between the Navy and the PBL contractors that reduced:

- administrative lead time/cycle time (logistics response time);
- support process variation; and
- the total ownership cost associated with the 327 critical SPY-1 radar parts supported in the contracts.

NAVSUP WSS's planned actions and proposed metrics focus only on making sure that the SPY-1 radar parts are supplied when needed. None of the metrics that NAVSUP WSS plans to include in the follow-on PBL contracts will incentivize the contractors to accomplish the above goals. A properly designed PBL arrangement aligns the provider's profit to all the Government's goals through the incentives included in the contract. We request the Commander, NAVSUP, provide comments to the final report explaining what metrics NAVSUP WSS plans to use to incentivize the PBL contractors to reduce logistics response time, support process variation, and the total ownership cost associated with the 327 critical SPY-1 radar parts supported in the contracts.

Finding B

Inadequate Performance Assessments

NAVSUP WSS personnel did not adequately review Lockheed Martin and Raytheon's success in filling Navy customers' SPY-1 radar part orders. Specifically, NAVSUP WSS personnel:

- excluded orders from performance metric reviews; and
- incorrectly calculated the length of time contractors took to fill part orders.

This occurred because NAVSUP WSS personnel did not have written procedures to evaluate the contractors' performance toward meeting the contract performance metrics. As a result, NAVSUP WSS paid the contractors $18 million during the Command's performance review without deducting incentive fees for poor performance that was not identified during these reviews.[27]

NAVSUP WSS Needs to Improve Performance Metrics Reviews

NAVSUP WSS personnel did not adequately review Lockheed Martin and Raytheon's success in filling Navy customers' SPY-1 radar part orders. The contractors' performance in filling SPY-1 part orders was evaluated against the three established metrics, as discussed in Finding A, and both contractors were paid monthly based on their success in meeting the standards for those metrics.

Lockheed Martin and Raytheon submitted monthly reports on meeting the performance metric standards. Although NAVSUP WSS tracked contractor performance monthly, it only evaluated the contractors' success in meeting their respective performance metric standards on a semiannual basis. During the monthly reviews, NAVSUP WSS contracting officials compared data from the Navy Enterprise Resource Planning system and the Commercial Asset Visibility database to the contractor's monthly reports of all requisitions submitted. NAVSUP WSS contracting officials used program management personnel from the NAVSUP WSS AEGIS/Ballistic Missile Defense Division to evaluate the contractors' performance and determine whether an adjustment to the contractors' next monthly payment was required.

[27] We audited NAVSUP WSS's two semiannual reviews covering Lockheed Martin's performance from August 10, 2012, through August 9, 2013, and the semiannual reviews covering Raytheon's performance from November 28, 2012, through May 27, 2013.

According to the contracts, Lockheed Martin's projected monthly payment would be reduced up to 3 percent, while Raytheon's reduction could be up to 9 percent if performance fell below the metric standards. In addition, both contractors could incur additional penalties[28] if they failed to deliver the parts within specified timeframes. Raytheon was also subject to a one-time, 10-percent penalty if it failed to meet all three performance metric standards for 4 consecutive months.

As of July 2015, NAVSUP WSS program management personnel had reviewed Lockheed Martin's first year performance and Raytheon's first 6-month performance. Table 4 shows the periods reviewed, the total number of orders reviewed, and orders for SPY-1 radar parts.

Table 4. Completed NAVSUP WSS Semiannual Performance Reviews

(~~FOUO~~) Contractor	Review Period	Total Orders Reviewed	SPY-1 Radar Orders Reviewed
Lockheed Martin	August 10, 2012 through February 9, 2013	[redacted]	[redacted]
Lockheed Martin	February 10, 2013 through August 9, 2013	[redacted]	[redacted]
Raytheon	November 28, 2012 through May 27, 2013	[redacted]	[redacted] (~~FOUO~~)

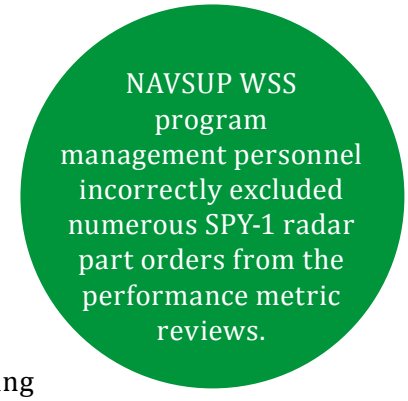
Source: DoD OIG

We identified deficiencies with the program management personnel's conclusions related to specific SPY-1 radar part orders filled by both contractors, during the periods covered by the reviews. Specifically, the program management personnel excluded numerous SPY-1 radar part orders from their review of Raytheon's performance and did not consistently calculate the days both Lockheed Martin and Raytheon took to fill SPY-1 radar orders. As a result, NAVSUP WSS did not deduct negative incentive fees from the contractors' payments.

[28] Lockheed Martin incurs a $1,250 penalty for each routine order that remains undelivered for more than agreed to number of production lead-time days. Raytheon incurs a $1,000 penalty for each routine order that remains undelivered for more than 365 days and a $3,000 penalty for each order requiring expedited delivery that remains undelivered for more than 9 days.

Customer Orders Excluded From Performance Metric Reviews

NAVSUP WSS program management personnel incorrectly excluded numerous SPY-1 radar part orders from the performance metric reviews. According to the Lockheed Martin and Raytheon contracts, the average fill rate metric is calculated from the delivery times for all part orders submitted during the review period, and the response time metrics from all orders filled by the contractors. The contracts addressed which part orders should be evaluated as part of the semiannual metric reviews. Specifically, all recurring part orders[29] should be filled by the contractors with existing inventory and included in all metric reviews.



The contracts also included provisions that allow the contractors to use existing inventory to fill one-time, nonrecurring part requirements, such as an initial filling of or an increase to a part's stock level.[30] Nonrecurring part orders are only included in the reviews if the contractor concludes it has sufficient stock available to fill those orders without negatively impacting its ability to fill recurring part orders. If the contractor determines that it cannot fill a nonrecurring part order without adversely impacting the filling of recurring orders, then NAVSUP WSS will issue a separate contract to fill the nonrecurring order, and those orders are excluded from the metric reviews.

(~~FOUO~~) However, NAVSUP WSS program management personnel performing the reviews did not consistently apply those procedures for Raytheon. The Navy submitted nonrecurring orders to the contractors as part of a fleet Special Sparing Initiative[31] to increase the number of spare parts being stocked onboard ships. NAVSUP WSS program management personnel did not include in their review seven of the special sparing initiative orders, although Raytheon used existing contract inventory to fill the orders. In addition, the program management personnel excluded 47 recurring orders for SPY-1 radar parts from Raytheon's performance metric review, because [redacted]

[29] Recurring part orders represent a routine request for an item for use or for stock replenishment. The Navy informed the contractors of the requirements for routine requests in advance.

[30] Nonrecurring orders are submitted to Lockheed Martin and Raytheon without prior notification to NAVSUP WSS and were not planned for when the contracts were awarded.

[31] The Special Sparing Initiative resulted in unplanned orders from the fleet that the contractors did not anticipate and include in fleet's forecasted contract needs. For example, the Navy had a sparing initiative to increase the number of parts stocked onboard ships to support the increase in the readiness goal of AEGIS Weapon System.

(~~FOUO~~) NAVSUP WSS program management personnel viewed special sparing initiative orders as a unique requirement that should not be included in the performance metric review. The personnel stated that they excluded the recurring demand orders from the performance metrics because they required the contractor to fill the special sparing initiative orders before the recurring part orders. The program management personnel also considered it unfair to include special sparing orders in the performance metric review because the orders were not anticipated and the contractor received many of these orders in a short period of time. Overall, program management personnel stated that a Navy's "programmatic" decision caused the contractors [redacted] However, the program management personnel could not provide any documentation to support this statement.

Contractors Order Fill Times Miscalculated

NAVSUP WSS program management officials incorrectly calculated the length of time contactors took to fill part orders. The contracts required the contractors to process urgent orders every day and all other orders, such as routine orders, Monday through Friday. According to NAVSUP WSS personnel, they calculated the number of days the contractors took to fill orders by subtracting the date the orders were received from the date the orders were shipped. Consequently, routine order delivery time calculations included the weekends, although the contracts state the contractor's delivery time for routine orders only include business days, not weekends.

NAVSUP WSS program management officials incorrectly calculated the length of time contactors took to fill part orders.

(~~FOUO~~) In addition, NAVSUP WSS program management officials incorrectly calculated the contractor delivery response time for urgent part orders. For example, [redacted] Table 5 shows the number of SPY-1 part orders impacted by these deficiencies.

Table 5. Number of Orders for SPY-1 Radar Parts With Miscalculated Fill Times

(~~FOUO~~) Contractor	Review Period	Order Type	Total Orders Shipped	Orders Miscalculated
Lockheed Martin	August 10, 2012, through February 9, 2013	Routine	[redacted]	[redacted]
		Urgent	[redacted]	[redacted]
Lockheed Martin	February 10, 2013, through August 9, 2013	Routine	[redacted]	[redacted]
		Urgent	[redacted]	[redacted]
Raytheon	November 28, 2012, through May 27, 2013	Routine	[redacted]	[redacted]
		Urgent	[redacted]	[redacted] (~~FOUO~~)

Source: DoD OIG

Additional Guidance Needed for Performance Metric Reviews

NAVSUP WSS personnel did not have written procedures to evaluate the contractor's performance towards meeting the contract performance metrics. Specifically, there were no written procedures that provided guidance for program personnel on which orders to include or exclude from performance metric reviews and how to calculate the number of days the contractors took to fill the orders. Instead, we found that during the semiannual performance reviews, NAVSUP WSS personnel made individualized determinations on hundreds of orders that the PBL contractors filled during the period. Many orders had different priorities such as routine, nonrecurring, and expedited orders, which impacted how NAVSUP WSS personnel reviewed these orders.

The lack of written procedures caused inconsistencies in which orders the program management officials determined should be included in the performance metric reviews. These inconsistencies impacted the program officials' determinations of whether the contractors met or did not meet the performance metric standards on specific orders. NAVSUP WSS should establish guidance and written procedures that clearly describe the NAVSUP WSS process for conducting semiannual performance metric reviews for the PBL contracts.

Inconsistencies May Have Adversely Impacted Performance Metric Review Outcomes

After correcting NAVSUP WSS's review results for improperly excluding orders and miscalculating days, we determined that these errors affected Raytheon meeting the metric standards for the SPY-1 radar orders. Table 6 compares the results of NAVSUP WSS with our review to determine whether the contractors met the metric standards for the fleet's SPY-1 part orders. It also shows NAVSUP WSS conclusions for all subsystems part orders filled during the review periods.

Table 6. OIG Assessment Compared to NAVSUP WSS Semiannual Metric Reviews

~~(FOUO)~~	Lockheed Martin						Raytheon		
	First Semiannual Review			Second Semiannual Review			First Semiannual Review		
Performance Metric	All Sub-systems	NAVSUP WSS SPY-1	DoD OIG Calculations SPY-1	All Sub-systems	NAVSUP WSS SPY-1	DoD OIG Calculations SPY-1	All Sub-systems	NAVSUP WSS SPY-1	DoD OIG Calculations SPY-1
Average Fill Rate	[redacted]								
Average Contractor Response Time	[redacted]								
Average Casualty Report Response Time	[redacted]								[redacted] ~~(FOUO)~~

Source: DoD OIG

~~(FOUO)~~ Our review of Raytheon results differed from NAVSUP WSS's for the average fill rate and average casualty report response time metrics. NAVSUP WSS's inaccurate reviews also failed to assess additional penalties to Raytheon for not filling fleet SPY-1 radar orders within the timeframe stated in the contract. Specifically, NAVSUP WSS program management officials did not deduct [redacted] for orders that Raytheon did not fill within the contracted timeframe. In addition, our review concluded

(~~FOUO~~) that NAVSUP WSS program management officials failed to compensate Lockheed Martin for exceeding performance expectations. NAVSUP WSS risks making the same errors with orders for parts associated with the other subsystems supported through the contracts.

There is risk that NAVSUP WSS made the same errors with orders for parts associated with the other subsystems supported through the contracts. NAVSUP WSS should perform additional reviews of the semiannual reports it has completed to date, for contracts N00104-12-D-ZD21 and N00104-13-D-ZD00, to determine if there is a change in the amount of incentives the contractors received. If NAVSUP WSS determines that either contractor did not receive the proper incentive payment or have a penalty assessed, NAVSUP WSS should take corrective actions.

Summary

NAVSUP WSS paid Lockheed Martin and Raytheon $18 million without deducting incentives fees for poor performance from August 10, 2012, through August 9, 2013, for the Lockheed Martin PBL contract and November 28, 2012, through May 27, 2013, for the Raytheon PBL contract. NAVSUP WSS used program management personnel from the NAVSUP WSS AEGIS/Ballistic Missile Defense Division to evaluate the part orders received during the performance review period against each metric's standard. However, NAVSUP WSS did not provide those officials written procedures for evaluating the contractor's performance towards meeting the performance metrics in the PBL contracts.

The lack of written procedures resulted in the program management officials incorrectly excluding part orders from the evaluation of Raytheon's performance. The lack of procedures also caused the program management officials to miscalculate the length of time both Lockheed Martin and Raytheon took to make each order available. Consequently, NAVSUP WSS may not have deducted up to 5 percent[32] of incentive fees when Raytheon did not meet the metric standards during the first half year of the PBL contract.

[32] NAVSUP WSS may not have deducted up to 5 percent of incentive fees when Raytheon did not meet the metric standards (2 percent for the fill rate metric and 3 percent for the Average Casualty Report Response Time metric).

Recommendations, Management Comments, and Our Response

Recommendation B.1

We recommend that the Commander, Naval Supply Systems Command require the Naval Supply Systems Command Weapon Systems Support to:

a. Establish written procedures that clearly describe the process for conducting semiannual performance metric reviews for the Performance-Based Logistics contracts.

b. Perform additional reviews of the completed semiannual reports for contracts N00104-12-D-ZD21 and N00104-13-D-ZD00, to determine if there is a change to the amount of incentives the contractors received and take corrective actions if appropriate.

Naval Supply Systems Command Comments

The Commander, NAVSUP, agreed with the recommendations. The Commander stated that NAVSUP WSS will establish written procedures that clearly describe the process for conducting semiannual performance metric reviews for the PBL contracts. The Commander further stated that NAVSUP WSS would examine the completed reviews for accuracy and provide the results to the appropriate contracting officer. The Commander stated that NAVSUP WSS expects to complete these actions by July 31, 2017.

Our Response

Comments from the Commander, NAVSUP, did not address all the specifics of the recommendations. Although the Commander stated NAVSUP WSS would provide the results of the reassessment of the completed performance metric reviews to the appropriate contracting officers, he did not state what actions the appropriate contracting officials would take. We request the Commander, NAVSUP, provide comments to the final report outlining what actions the appropriate contracting officer will take after receiving the reassessment results.

Appendix A

Scope and Methodology

We conducted this performance audit from January 2015 through April 2016 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 reviewed the Navy's processes and procedures used to determine whether NAVSUP WSS developed and incorporated appropriate performance metrics to sustain the SPY-1 radars and adequately assessed how effectively Lockheed Martin and Raytheon filled Navy customers' orders for SPY-1 radar parts. We obtained a list of all systems on *Arleigh Burke*–class destroyers and the cost per system. From this list, we selected the AN/SPY-1D and D(V) Phased Array Radar systems, as they represented the two highest cost systems. We then requested the two PBL contracts and related contracting files to assess how NAVSUP WSS established the performance metrics included in the contract used to sustain the SPY-1 radars. In addition, we requested NAVSUP WSS semiannual reviews of the contractors' performance in filling customer orders for the SPY-1 radar system against the metric standards established by NAVSUP WSS. Specifically, the semiannual reviews covered Raytheon's performance during the period from November 28, 2012, through May 27, 2013, and Lockheed Martin's performance from August 10, 2012, through August 9, 2013.

We visited and interviewed personnel from Weapon Systems Support and Business Systems Center at NAVSUP, Mechanicsburg, Pennsylvania. We discussed with Navy officials' their process and procedures for incorporating appropriate performance metrics that effectively incentivize support providers efforts in achieving warfighters desired outcomes and assessing semiannual performance reviews. The contractors reviewed relevant portions of the draft report and one contractor provided comments, which we considered in preparing the final report.

We reviewed the following DoD guidance applicable to the performance of PBL contracts.

- ASD(L&MR), "The DoD Product Support Manager Guidebook," April 2011 (2011 Release)
- ASD(L&MR) memorandum, "Performance Based Logistics Comprehensive Guidance," November 22, 2013

- Assistant Secretary of the Navy (Research, Development and Acquisition), "Performance Based Logistics (PBL) Guidance Document," January 27, 2003
- Naval Sea Systems Command, "A Program Manager Guide to the Application of Performance Based Logistics (PBL)," Revision A, October 8, 2008

Use of Computer-Processed Data

We relied on the computer-processed data obtained from two systems: the Navy Enterprise Resource Planning (ERP) and Birdtrack. The data in the semiannual reviews that we used to perform our analysis was retrieved from the ERP system. The Navy ERP provides consolidated financial management, workforce management, wholesale and retail supply, plant maintenance, and project management functions within the Navy. The supply support function of ERP involves processing requisitions, to include requisitions from the fleet systems through the Defense Automated Addressing System. The Defense Automated Addressing System processes requisitions using a standard format called Military Standard Requisitioning and Issue Procedures that uses codes to assist the supply sources in making supply decisions such as the urgency of a requisition. After the ERP processes the requisition, ERP sends the requisition through the Commercial Asset Visibility system to the contractor to fill the requisition. Some of the data from Military Standard Requisitioning and Issue Procedures is captured in ERP and included in the semiannual reviews are the requisition numbers, order dates, shipped dates, and received dates.

We traced a statistical sample, with assistance from the DoD OIG, Quantitative Methods Division (QMD) to the ERP requisition source document verifying the reliability of the semiannual reviews data. The ERP requisitions population for Lockheed Martin consisted of 466 requisitions and Raytheon consisted of 419 requisitions. QMD randomized the requisitions populations. We sorted each population by the random number column and selected the first 44 requisitions for Lockheed Martin and the first 43 for Raytheon as the basis for our test. Based on finding a zero error rate for each sample, we concluded with 90-percent confidence that the error rate would be less than five percent.

Birdtrack is an automated system that provides the Navy with parts tracking and analysis capabilities to speed up the flow of replacement parts to ships and forward-deployed activities. NAVSUP personnel provided a list of requisitions by part for each destroyer from the Birdtrack system that customers submitted to NAVSUP and the time it took to obtain that part. We used the data to determine the customer required delivery dates and whether the parts were delivered in the specified timeframes. We traced a statistical random sample, with assistance from the QMD, to the Birdtrack requisition source document to verify the reliability

of the requisitions data. The Birdtrack requisitions population consisted of 2,601 requisitions. QMD randomized the requisitions population and sorted them in random order. We selected the first 78 requisitions as the basis for our test. Based on a zero but not more than one error, we could conclude that with 90-percent confidence the error rate in the population would be less than or equal to 5 percent.

Based on our reviews, we concluded that the data used from the ERP and Birdtrack were sufficiently reliable for the purposes of this report. We did not rely on data from Commercial Asset Visibility, Defense Automated Addressing System, or contractor systems data; therefore, we did not test the reliability of data from these systems.

Use of Technical Assistance

During the audit, we relied on technical assistance provided by QMD at the DoD OIG. A QMD analyst developed a random sampling plan and provided assistance with selecting the statistical sample of Lockheed Martin and Raytheon customer requisitions used to perform data testing verification of computer-processed data.

Prior Coverage

During the last 5 years, the Department of Defense Inspector General (DoD IG) issued seven reports discussing the management of Navy's spare-part inventory and the inventory management practices of the Military Departments. Unrestricted DoD IG reports can be accessed at http://www.dodig.mil/pubs/index.cfm.

DoD IG

DODIG-2016-011, "The Navy Needs to Improve the Management of Parts Required to Sustain the AN/SPY-1 Phased Array Radar System," November 6, 2015

DODIG-2015-053, "Naval Supply Systems Command Needs to Improve Cost Effectiveness of Purchases for the Phalanx Close-In Weapon System," December 19, 2014

DODIG-2015-052, "Air Force Life Cycle Management Center's Management of F119 Engine Spare Parts Needs Improvement," December 19, 2014

DODIG-2014-119, "Excess Inventory Acquired on Performance-Based Logistics Contracts to Sustain the Air Force's C-130J Aircraft," September 22, 2014

DODIG-2014-064, "Improved Management Needed for the F/A-18 Engine Performance-Based Logistics Contracts," April 25, 2014

D-2012-102, "Better Cost-Control Measures Are Needed on the Army's Cost-Reimbursable Services Contract for Logistics Support of Stryker Vehicles," June 18, 2012

D-2011-061, "Excess Inventory and Contract Pricing Problems Jeopardize the Army Contract with Boeing to Support the Corpus Christi Army Depot," May 3, 2011

Appendix B

Product Support Strategy Process Model

The product support strategy model describes a 12-step process to develop and implement product support strategies. This model represents the major activities required to implement, manage, evaluate, and refine product support over the life cycle. It is not a one-time process but rather a continuing, iterative process in which the sustainment of a system is adapted and evolved to optimally support the needs and requirements of the warfighter in an effective and affordable manner. Program officials should perform the following 12 steps when developing or revising its product support strategy:

1. **Integrate Warfighter Requirements and Support.** Translate system operational requirements into the necessary sustainment strategy for effectively delivering those requirements. The objective of product support is to develop, enable, and execute a sustainment strategy that will deliver optimum operational readiness to the warfighter, consistent with warfighter requirements, at an affordable, best value cost. Warfighter requirements are expressed in operational terms. Those requirements must be interpreted and translated as needed into sustainment objectives that will drive the achievement of those outcomes.
2. **Form the Product Support Management Integrated Product Support Team (IPT).** The IPT consists of, but is not limited to: logistics (supply and transportation staff), requirements, operational mission planning, financial, contracts, legal, and integrated product support elements functional subject matter experts.
3. **Baseline the System.** Collect data that will be needed to assess and analyze support decisions, including inputs from various analyses. This data includes, but is not limited to, the level of repair analysis, reliability centered maintenance analysis, as well as reliability, availability, and maintainability and life-cycle cost analysis. Defining and documenting the system baseline involves identifying the historical readiness rates and operations and support costs.
4. **Identify/Refine Performance Outcomes.** Develop a process to identify critical product support outcomes and to measure success. Identify the critical behaviors that must be influenced by metrics to achieve product support strategy outcomes. The starting points for metrics identification are warfighter outcomes and Office of the Secretary of Defense's specified top-level weapon system metrics. Each product support strategy, as it evolves, must be tailored consistent with the maturity of data and existence of in-place support infrastructure and capabilities. The

metrics defined as accountable outcomes must be tailored accordingly with an objective to maintain a close correlation with, and enable the achievement of, the warfighter and Office of the Secretary of Defense's top-level outcomes.

5. **Business Case Analysis.** Assess the cost, competencies, capabilities, and process efficiencies to identify the optimum best value product support solution. The goal of the Product Support or Sustainment Business Case Analysis (BCA) is to identify the product support strategy that achieves the optimal balance between warfighter capabilities and affordability. The BCA should be a full, fair, and accurate comparison when evaluating multiple alternatives. A BCA is used for major life-cycle, sustainment, and other product-support decisions, especially those that result in new or changed resource requirements.
6. **Product Support Strategy Value Analysis.** Is a best value analysis to optimize long-term, life-cycle costs and benefits. This analysis includes, but is not limited to: the supply chain management strategy; strategies for continuous modernization and improvement of system reliability; availability and maintainability; proactively addressing obsolescence; diminishing manufacturing sources and material shortages; corrosion issues; a life-cycle cost control; and risk mitigation.
7. **Determine Support Methods(s).** Determine whether support will be acquired from product support providers (for example, contractors, and/or government) using an outcome-based or transactional-based acquisition method. Decision(s) are validated or made using a best value analysis consistent with the BCA. There are ultimately only two options available to them with some variations between these two options. They can either acquire the discrete goods and services necessary to enable the required warfighter outcomes, or they can acquire the outcomes themselves. The former is the transactional support model, and the latter is the performance-based (or outcome-based) model. DoD policy and guidance specifies a preference for the performance-based model wherever possible.
8. **Designate Product Support Integrator(s) (PSIs).** For outcome-based support, identify the Product Support Integrator(s) who will be delegated the responsibility to integrate support providers to deliver the specified outcomes assigned consistent with the scope of their delegated responsibility. Decision(s) are validated or made using a best value analysis consistent with the BCA. The program manager's responsibilities for oversight and management of the product support

function are typically delegated to the Product Support Manager, who leads the development and implementation of the product support strategies and ensures achievement of desired support outcomes during sustainment. As with the product support strategy and the arrangement with the warfighter, the PSI function is a key component of the product support strategy documented in the acquisition strategy and the life-cycle sustainment plan. While product support execution is accomplished by numerous organizational entities (also called Product Support Providers), the PSI is the single point of accountability for integrating all sources of support necessary to meet the agreed to support/performance metrics. Anyone who provides products or services in the sustainment of an acquisition system is a Product Support Provider. The primary role of the Product Support Integrator is to integrate the activities of the various Product Support Providers.

9. **Designate Product Support Provider(s).** Use the BCA value analysis, as well as PSI discretionary decisions for lower tiered supplier support, to select the best mix and blend of sources to perform the product support functions. Decision(s) are validated or made using a best value analysis consistent with the BCA. A primary objective of the BCA process is to determine, for the individual Integrated Product Support elements and, in aggregate, the objective system, the optimum sources of support depending on capabilities, competencies, best value, and the qualitative efficiency and effectiveness of support. For each of the Integrated Product Support elements there will be logical candidates, both public and private, to accomplish the required product support.
10. **Identify/Refine Financial Enablers.** Identify the range, types, and amount of funding required to accomplish the required support consistent with the terms, conditions, and objectives of the Product Support Agreements.
11. **Establish/Refine Product Support Agreements.** Document the implementing support arrangements (such as, a contract, memorandum of agreement, and memorandum of understanding) that assign and delineate the roles, responsibilities, resourcing, and reciprocal aspects of product support business relationships. The Product Support Manager should ensure the Product Support Agreements are in place to document and define each relationship that is part of the execution of the product support strategy. These Product Support Arrangements serve to formalize the roles, responsibilities, relationships, and commitments of the active participants in the product support strategy.

12. **Implement and Oversight.** Implement and manage the product support, including documenting updates to the life-cycle sustainment plan, conducting and implementing recommendations from logistics assessments, and maturing the sustainment maturity level. This includes the continuous, ongoing assessment of Product Support effectiveness through using the established governance mechanisms driving decisions and actions to review, modify, revise, or evolve product support strategies and business arrangements. The Product Support Manager's oversight role includes developing the performance assessment plan, monitoring performance, and revising the life-cycle sustainment plan and Product Support Package as needed. The Program Manager also acts as the agent for the warfighter, certifying PSI performance and approving incentive allocations. The Product Support Manager should take a hands-on approach and not assume that the Product Support Agreement will be self-regulating.

Appendix C

Urgent Orders Filled and Not Delivered by Customers' Required Delivery Date

Table 7. Urgent Orders Filled by Lockheed Martin and Not Delivered by Customers' Required Delivery Date

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]						
						(~~FOUO~~)

Table 7. Urgent Orders Filled by Lockheed Martin and Not Delivered by Customers' Required Delivery Date (cont'd)

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]						
						(~~FOUO~~)

Table 7. Urgent Orders Filled by Lockheed Martin and Not Delivered by Customers' Required Delivery Date (cont'd)

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]						
						(~~FOUO~~)

Table 7. Urgent Orders Filled by Lockheed Martin and Not Delivered by Customers' Required Delivery Date (cont'd)

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted] (~~FOUO~~)

(~~FOUO~~) [redacted]

Table 8. Urgent Orders Filled by Raytheon and Not Delivered by Customers' Required Delivery Date

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted] (~~FOUO~~)

Table 8. Urgent Orders Filled by Raytheon and Not Delivered by Customers' Required Delivery Date (cont'd)

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]						
						(~~FOUO~~)

Table 8. Urgent Orders Filled by Raytheon and Not Delivered by Customers' Required Delivery Date (cont'd)

(~~FOUO~~) No.	Order Number	Date Ordered by the Customer	Date Received by the Customer	Required Delivery Days	Logistics Response Time	Exceed Required Delivery Days
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted] (~~FOUO~~)

(~~FOUO~~) [redacted]

Management Comments

Naval Supply Systems Command

DEPARTMENT OF THE NAVY
NAVAL SUPPLY SYSTEMS COMMAND
5450 CARLISLE PIKE
PO BOX 2050
MECHANICSBURG PA 17055-0791

IN REPLY REFER TO
7510
Ser NOIG/024
JUN 14 2016

From: Commander, Naval Supply Systems Command
To: Department of Defense Inspector General – Deputy, Assistant Inspector General Acquisition and Sustainment Management

Subj: NAVSUP COMMENTS ON DODIG DRAFT AUDIT REPORT, "NAVY NEEDS TO ESTABLISH EFFECTIVE METRICS TO ACHIEVE DESIRED OUTCOMES FOR THE SPY-1 RADAR SUSTAINMENT"

Ref: (a) DoDIG Draft Audit Report, "Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for the SPY-1 Radar Sustainment"

Encl: (1) NAVSUP Comments on DoDIG Draft Audit Report, "Navy Needs to Establish Effective Metrics to Achieve Desired Outcomes for the SPY-1 Radar Sustainment"

1. Enclosure (1) is provided in response to reference (a).

2. For any questions, please contact the [redacted]

J. A. YUEN

Copy to:
NAVINSGEN

Naval Supply Systems Command (cont'd)

NAVSUP COMMENTS ON DODIG DRAFT AUDIT REPORT, "NAVY NEEDS TO ESTABLISH EFFECTIVE METRICS TO ACHIEVE DESIRED OUTCOMES FOR THE SPY-1 RADAR SUSTAINMENT"

DODIG AUDIT SUMMARY OF FINDINGS:

Naval Supply Systems Command (NAVSUP) Weapon Systems Support (WSS) did not develop and incorporate appropriate performance metrics into the performance-based logistics contracts used to sustain SPY-1 radars. Specifically, the metrics did not effectively incentivize Lockheed Martin and Raytheon to achieve Navy warfighter requirements or reduce the total ownership cost associated with the 327 critical SPY-1 radar parts supported by the contracts. This condition occurred because NAVSUP WSS personnel did not follow DoD guidance when developing the performance metrics. As a result, supply support and cost reduction objectives for SPY-1 radar parts were not met. In addition, operational availability of the AEGIS Weapon System could be adversely impacted if parts needed to maintain the SPY-1 radars are not transported to the warfighters when needed.

Furthermore, NAVSUP WSS personnel did not adequately assess the contractors' performance against established metrics. This occurred because NAVSUP WSS did not have written procedures to evaluate contractors' performance toward meeting the contract metrics.

RECOMMENDATIONS: We recommend that the Commander, Naval Supply Systems Command (NAVSUP), require NAVSUP Weapon Systems Support (WSS) follow Department of Defense guidance when developing the performance metrics incorporated in future performance-based logistics contracts used to sustain the SPY-1 radar. NAVSUP WSS should:

1

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation A.1.a: Consult with Advanced Traceability and Control program and the operational commands when reevaluating the SPY-1 radar's product support strategy and designing the performance metrics included in future performance-based logistics contracts.

NAVSUP Comments: Concur. NAVSUP WSS will continue to consult with all Navy stakeholders, including NAVSUP WSS Advanced Traceability and Control (ATAC) program and operational commands, on our performance-based logistics (PBL) renewal efforts to ensure we are applying the best performance outcomes for the SPY-1 Radar. This includes reevaluation of metrics at appropriate points in the product support life cycle. The collective effort of both Navy governmental and industry stakeholders is essential to achieve and measure the performance outcome included in the scope of the two SPY-1 Radar contracts.

Naval Supply Systems Command (cont'd)

Recommendation A.1.b: Establish formal support agreements with Advanced Traceability and Control and the operational commands used to supply SPY-1 radar parts to fleet customers.

NAVSUP Comments: Partially Concur. Agree that coordination with NAVSUP WSS ATAC program and other stakeholders is necessary to properly define PBL delivery metrics and other performance outcomes. ATAC input and participation is important on any PBL Integrated Product Team. NAVSUP WSS will continue to work with our ATAC program and other Transportation Subject Matter Experts to ensure the Navy is providing the most agile response to the customer from the supply system. However, it should be clarified that ATAC program performance is outside the scope and control of the PBL provider and is not part of the PBL contractual arrangement with industry. In addition, we feel it would not be appropriate for Naval Supply Systems Command to enter into a "formal support agreement" with ATAC, as ATAC is a part of NAVSUP WSS which is subordinate to Naval Supply Systems Command.

3

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation A.1.c: Review the readiness and sustainment performance history and costs of the AEGIS and SPY-1 radars and use that data to identify the difference between existing and desired SPY-1 radar performance outcomes, and develop metrics that incentivize the contractors to deliver the desired performance outcomes.

NAVSUP Comments: Concur. The current Sustainment, Readiness, and Acquisition Program Managers from the Naval Sea Systems Command (NAVSEA) Program Executive Office (PEO) Integrated Warfare Systems (IWS) are responsible for monitoring the weapon systems Operational Availability (Ao), and overall sustainment costs of the SPY-1 Radar. Negative performance and cost drivers for the SPY-1 Radar are identified and reviewed at the quarterly AEGIS/SPY-1 Radar Program Review Board and also reviewed at a monthly AEGIS Fleet Issues Working Group. These two groups work to identify any support gaps, recommend any improvements to any of the Integrated Product Support elements (including supply support), and identify actions that will lead to improved Ao. NAVSUP WSS will obtain current Ao performance data related to the SPY-1 Radar from the NAVSEA PEO IWS 1.0 Readiness team to see if there has been any negative impact to current Ao performance of the SPY-1 Radar based on the PBL provider's current performance. The AEGIS/SPY-1 PBL Renewal Government Integrated Product Team will address if the proposed performance metrics for the follow-on PBLs will need to be further refined. Any changes to the metrics will be incorporated into the follow-on PBL which are expected to be awarded by February of 2018. ECD: 28 February 2018.

4

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation A.1.d: Design performance metrics that accurately reflect the user's needs and effectively measure the product support provider's performance.

NAVSUP Comments: Concur. NAVSUP WSS has developed the performance metrics for the follow-on AEGIS/SPY-1 PBLs. NAVSUP WSS will hold both AEGIS/SPY-1 Radar PBL providers to an 85% fill rate per the OPNAV 4441.12D, 12 April 2012 instruction. OPNAVINST 4441.12D cites the supply availability goals which represent how often material is on hand and available to be issued when a requisition is received. Wholesale level systems that do not use Multi-Indenture Multi-Echelon sparing models, such as the AEGIS/SPY-1 Radar, are required to meet a goal of 85%. That is, 85% of requisitions will have to be filled in compliance with the established performance delivery requirements of 24 hours for Casualty Report (CASREP) requisitions, two days for Issue Priority Group (IPG) I requisitions, four days for IPG II requisitions, and six days for IPG III requisitions. In addition to filling 85% of the requisitions in accordance with the delivery requirement, the PBL Providers will also maintain a specific Average Contractor Response Time (ACRT) for both CASREP (1 day) and non-CASREP (7.5 days) requisitions. These delivery requirements were also developed in accordance with OPNAVINST 4441.12D and the Average Customer Wait Time (ACWT) goals. ACWT is a comprehensive measure of the time elapsed between the customer requirement submission time and the receipt time by the customer. ACWT is a collective indicator of the Logistics Response Time (LRT) and includes processing time onboard the ship. The LRT is made up of the requisition submission time, the Inventory Control Point processing time, depot processing time, transportation time, and receipt take-up time and is limited to off-ship processing. The delivery requirements required under the AEGIS/SPY-1 PBLs will aim to decrease the depot processing time - that is, the ACRT - in order to meet the total ACWT objective and the Navy's LRT goal of 23 days. NAVSUP WSS will obtain current Operational Availability (Ao) performance data related to the SPY-1 Radar from the NAVSEA Program Executive Office Integrated Warfare Systems 1.0 Readiness team to see if there has been any negative impact to current Ao performance of the SPY-1 Radar based on the PBL provider's current performance. The AEGIS/SPY-1 PBL Renewal Government Integrated Product Team will address if the proposed performance metrics for the follow-on PBLs will need to be further refined. Any changes to the metrics will be incorporated into the follow-on PBLs which are expected to be awarded by February of 2018. ECD: 28 February 2018.

5

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation A.1.e: Breakdown system-level requirements into lower-level metrics that appropriately link contractor performance to the accomplishment of warfighter readiness and performance needs.

NAVSUP Comments: Concur. NAVSUP WSS will work with the NAVSEA Program Executive Office (PEO) Integrated Warfare Systems to review and assess the overall performance metrics of the 327 SPY-1 unique items to see if lower-level performance metrics will need to be developed for the follow-on contracts. NAVSUP WSS will obtain current Operational Availability (Ao) performance data related to the SPY-1 Radar from the NAVSEA PEO Integrated Warfare Systems 1.0 Readiness team to see if there has been any negative impact to current Ao performance of the SPY-1 Radar. As a result of this analysis, the PBL Renewal Government IPT will address if lower level-level performance metrics will need to be implemented into the follow-on PBL contracts. Any changes to the metrics will be incorporated into the follow-on PBLs which are expected to be awarded by February of 2018. ECD: 28 February 2018.

6

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation B.1.a: Establish written procedures that clearly describe the process for conducting semiannual performance metric reviews for the Performance-Based Logistics contracts.

NAVSUP Comments: Concur. NAVSUP WSS will work to establish a standard operating procedure for conducting their Maritime PBL Semi-Annual Performance Reviews. ECD: 31 July 2017.

7

Enclosure (1)

Naval Supply Systems Command (cont'd)

Recommendation B.1.b: Perform additional reviews of the completed semiannual reports for contracts N00104-12-D-ZD21 and N00104-13-D-ZD00, to determine if there is a change to the amount of incentives the contractors received and take corrective actions if appropriate.

NAVSUP Comments: Concur. NAVSUP WSS will review the completed performance reviews for accuracy. Any changes to those reassessed performance reviews will be provided to the appropriate NAVSUP WSS Contracting Officer. ECD: 31 July 2017.

8

Enclosure (1)

Acronyms and Abbreviations

ASD(L&MR)	Assistant Secretary of Defense (Logistics & Materiel Readiness)
ATAC	Advanced Traceability and Control
BCA	Business Case Analysis
ERP	Enterprise Resource Planning
IPT	Integrated Product Team
NAVSUP	Naval Supply Systems Command
PBL	Performance-Based Logistics
PSI	Product Support Integrator
QMD	Quantitative Methods Division
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
WSS	Weapon System Support

Whistleblower Protection
U.S. Department of Defense

The Whistleblower Protection Enhancement Act of 2012 requires the Inspector General to designate a Whistleblower Protection Ombudsman to educate agency employees about prohibitions on retaliation, and rights and remedies against retaliation for protected disclosures. The designated ombudsman is the DoD Hotline Director. For more information on your rights and remedies against retaliation, visit www.dodig.mil/programs/whistleblower.

For more information about DoD IG reports or activities, please contact us:

Congressional Liaison
congressional@dodig.mil; 703.604.8324

Media Contact
public.affairs@dodig.mil; 703.604.8324

For Report Notifications
http://www.dodig.mil/pubs/email_update.cfm

Twitter
twitter.com/DoD_IG

DoD Hotline
dodig.mil/hotline

DEPARTMENT OF DEFENSE | INSPECTOR GENERAL

4800 Mark Center Drive
Alexandria, VA 22350-1500
www.dodig.mil
Defense Hotline 1.800.424.9098