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United States Government Accountability Office
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Congressional Committees

Subject: *DOD's 2010 Comprehensive Inventory Management Improvement Plan Addressed Statutory Requirements, But Faces Implementation Challenges*

The Department of Defense (DOD) spends billions of dollars to purchase, manage, store, track, and deliver spare parts and other supplies needed to keep military equipment ready and operating. Given the need to support ongoing U.S. military operations, DOD reported that it currently manages more than 4 million secondary inventory items valued at more than $91 billion as of September 2009.[1] However, DOD reported that $10.3 billion (11 percent) of its secondary inventory has been designated as excess and categorized for potential reuse or disposal. According to DOD, another $15.2 billion (17 percent) of its secondary inventory exceeds the approved acquisition objective and is being retained because it was determined to be more economical to retain than to dispose of it or it might be needed in the future.[2]

Since 1990, we have identified DOD supply chain management as a high-risk area due in part to ineffective and inefficient inventory management practices and procedures, weaknesses in accurately forecasting demand for spare parts, and challenges in achieving widespread implementation of key technologies aimed at improving asset visibility. These factors have contributed to the accumulation of billions of dollars in spare parts that are excess to current requirements.[3] Moreover, we have recently

[1]DOD defines secondary inventory items to include reparable components, subsystems, and assemblies other than major end items (e.g., ships, aircraft, and helicopters), consumable repair parts, bulk items and materiel, subsistence, and expendable end items (e.g., clothing and other personal gear).

[2]The *approved acquisition objective* incorporates both materiel needed to meet the requirements objective and materiel needed to meet 2 years of estimated future demand. The *requirements objective* is (for wholesale inventory replenishment) the maximum authorized quantity of stock for an item. It consists of the sum of stock represented by the economic order quantity, the safety level, the repair-cycle level, and the authorized additive levels. While inventory held for economical reasons or future use is not part of the approved acquisition objective, DOD states that retention of this inventory is necessary for the military mission.

[3]GAO, *High-Risk Series: An Update*, GAO-09-271 (Washington, D.C.: January 2009); *High-Risk Series: An Update*, GAO-07-310 (Washington, D.C.: January 2007); and *High Risk-Series: An Update*, GAO-05-207 (Washington, D.C.: January 2005).

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reported on the inventory management practices of the military departments and the Defense Logistics Agency (DLA) and recommended DOD take steps to improve demand forecasting, modify policies to provide incentives to reduce on-order inventory that is not needed to support requirements (i.e., on-order excess), ensure proper, documented reviews are conducted to validate methodologies for making retention decisions, and establish metrics and goals for tracking and assessing the cost efficiency of inventory management.[4] To provide high-level strategic direction, DOD issued its *Logistics Strategic Plan* in July 2010, which, among other things, established a goal to improve supply chain processes, including inventory management practices.

Section 328 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010 required the Secretary of Defense to submit to congressional defense committees a comprehensive plan for improving the inventory management systems of the military departments and DLA with the objective of reducing the acquisition and storage of secondary inventory that is excess to requirements.[5] For purposes of section 328, the NDAA defines inventory that is excess to requirements as inventory that is excess to the approved acquisition objective and not needed for the purposes of economic or contingency retention.[6] Section 328 identifies eight specific elements, listed in table 1, that are required to be in the plan. Further, section 328 states that the plan was to be submitted not later than 270 days after the enactment of the act.[7] The department submitted its *Comprehensive Inventory Management Improvement Plan* (*Plan*) on November 8, 2010.

Section 328 also requires us to submit to the congressional defense committees an assessment of the extent to which the *Plan* meets the specified requirements no later than 60 days after the *Plan*'s submission. Our objectives were to (1) determine the extent to which DOD's *Plan* addresses the reporting elements required by section 328 of the NDAA and (2) assess the extent to which the *Plan* addresses six key characteristics that help establish a comprehensive, results-oriented management framework to guide implementation. These characteristics were not required to be included by section 328, but our prior work examining national strategies and logistic issues has shown that these characteristics help establish a results-oriented

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[4]See GAO, *Defense Inventory: Defense Logistics Agency Needs to Expand on Efforts to More Effectively Manage Spare Parts*, GAO-10-469 (Washington, D.C.: May 11, 2010); *Defense Inventory: Army Needs to Evaluate Impact of Recent Actions to Improve Demand Forecasts for Spare Parts*, GAO-09-199 (Washington, D.C.: Jan. 12, 2009); *Defense Inventory: Management Actions Needed to Improve the Cost Efficiency of Navy's Spare Parts Inventory*, GAO-09-103 (Washington, D.C.: Dec. 12, 2008); and *Defense Inventory: Opportunities Exist to Save Billons by Reducing Air Force's Unneeded Spare Parts Inventory*, GAO-07-232 (Washington, D.C.: Apr. 27, 2007).

[5]Pub. L. No. 111-84 § 328 (2009).

[6]*Economic retention stock* is materiel that has been deemed more economical to keep than to discard because it is likely to be needed in the future. *Contingency retention stock* is materiel retained for specific contingencies.

[7]The NDAA for Fiscal Year 2010 was enacted October 28, 2009.

management framework for effective implementation.[8] These characteristics are a mission statement; problem definition, scope, and methodology; goals, objectives, activities, milestones, and performance measures; resources and investments; organizational roles, responsibilities, and coordination; and key external factors that could affect the achievement of goals.

This letter and enclosure I provide our assessment of the degree to which the *Plan* addressed the eight specific elements required by section 328 and the extent to which the *Plan* addressed six key characteristics of a comprehensive, results-oriented management framework. Additionally, section 328 requires us to submit another report to the congressional defense committees not later than 18 months after the *Plan* is submitted. The second report is to document our assessment of the extent to which the *Plan* has been effectively implemented by each military department and by DLA. Additionally, we will report on DOD's progress in implementing recommendations from our prior work examining inventory management practices.

Scope and Methodology

For our assessment of the extent to which the *Plan* addressed the eight required elements of section 328 of the NDAA for Fiscal Year 2010, we reviewed the *Plan* provided to the congressional defense committees to determine the extent to which each element was addressed. Specifically, two team members concurrently conducted independent assessments of the *Plan* to determine whether the eight required elements were addressed, partially addressed, or not addressed. Then, the two analysts compared the two sets of observations and discussed and reconciled any differences. The final assessment reflected our consensus. We considered the element addressed when the *Plan* explicitly addressed all parts of the element. We considered the element partially addressed when the *Plan* addressed at least one or more parts of the required element, but not all parts of the element were explicitly addressed. We considered the element not addressed when the *Plan* did not explicitly address any part of the required element. We also interviewed Office of the Secretary of Defense (OSD), service, and DLA officials involved in the development of the *Plan* to discuss their interpretation of the legislative requirements, their perspectives on the *Plan*, and potential implementation challenges. Lastly, our assessment reflected our review of relevant DOD documents and issues raised in our recent reports that specifically relate to the required elements of the *Plan*.

For our assessment of the extent to which the *Plan* contained desirable characteristics of a comprehensive, results-oriented management framework, we identified six key characteristics from our prior work that examined national strategies and logistic issues and developed a data collection instrument to assess the

[8]GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, GAO-04-408T (Washington, D.C.: Feb. 3, 2004); *Depot Maintenance: Improved Strategic Planning Needed to Ensure that Air Force Depots Can Meet Future Maintenance Requirements*, GAO-10-526 (Washington, D.C.: May 14, 2010); and *Depot Maintenance: Improved Strategic Planning Needed to Ensure that Navy Depots Can Meet Future Maintenance Requirements*, GAO-10-585 (Washington, D.C.: June 11, 2010).

Plan.[9] We used the same methodology as above for our assessment of the extent to which the *Plan* addressed six key characteristics that help establish a comprehensive, results-oriented management framework. We reviewed the *Plan* to determine whether each characteristic was addressed, partially addressed, or not addressed. In addition, we interviewed OSD, service, and DLA officials involved in the development of the *Plan* to discuss the extent to which the *Plan* incorporated six key characteristics. We conducted this performance audit from October 2010 to January 2011, 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. Additional information regarding our scope and methodology appears in enclosure II.

DOD's *Plan* Addressed All Eight Required Elements of the NDAA for Fiscal Year 2010

Our analysis showed that DOD's *Plan* addressed each of the eight required elements in section 328 of the NDAA for Fiscal Year 2010 (see table 1). The *Plan* contains eight sub-plans that each address a required element, as well as a ninth sub-plan that focuses on accomplishing several improvements that extend beyond the elements required by section 328. The sub-plans support the *Plan*'s two overall goals: (1) DOD will reduce total on-order excess inventory from 8.5 percent of total obligated on-order dollars in fiscal year 2009 to 4 percent by the end of fiscal year 2016 and (2) DOD will reduce the on-hand excess inventory from 11.3 percent of the total value of inventory in fiscal year 2009 to 10 percent by the end of fiscal year 2012.[10] Enclosure I provides an overview of the *Plan* and detailed assessments of the nine sub-plans.

[9]GAO-04-408T, GAO-10-526, and GAO-10-585.

[10]Inventory that is not in DOD's possession but for which a contract has been awarded or funds have been obligated is considered to be on-order. Inventory that is in DOD's possession is considered to be on-hand.

Table 1: Extent to Which the *Plan* Addressed the Eight Required Elements

Eight required elements	Our assessment
(1) A plan for a comprehensive review of demand-forecasting procedures to identify and correct any systematic weaknesses in such procedures, including the development of metrics to identify bias toward over-forecasting and adjust forecasting methods accordingly.	**Addressed**
(2) A plan to accelerate DOD's efforts to achieve total asset visibility, including efforts to link wholesale and retail inventory levels through multi-echelon modeling.	**Addressed**
(3) A plan to reduce the average level of on-order secondary inventory that is excess to requirements, including a requirement for the systemic review of such inventory for possible contract termination.	**Addressed**
(4) A plan for the review and validation of methods used by the military departments and DLA to establish economic retention requirements.	**Addressed**
(5) A plan for an independent review of methods used by the military departments and the DLA to establish contingency retention requirements.	**Addressed**
(6) A plan to identify items stored in secondary inventory that require substantial amounts of storage space and shift such items, where practicable, to direct vendor delivery.	**Addressed**
(7) A plan for a comprehensive assessment of inventory items that have no recurring demands, including the development of (a) metrics to track years of no demand for items in stock; and (b) procedures for ensuring the systemic review of such items for potential reutilization or disposal.	**Addressed**
(8) A plan to more aggressively pursue disposal reviews and actions on stocks identified for potential reutilization or disposal.	**Addressed**

Source: GAO analysis of the *Plan*.

The *Plan* addressed the eight required elements, but DOD faces a number of implementation challenges, including:

- **Aggressive timelines and benchmarks.** Service and DLA officials stated that the *Plan* is executable, but expressed concern that some of its timelines and benchmarks are aggressive. In order to achieve the overall goals, OSD, the services, and DLA will need to complete 30 actions identified in the nine sub-plans. Some of these actions are interrelated and sequential, and delays in one area could affect the ability to meet subsequent milestones.

- **Identification of resources.** Implementing the *Plan*'s actions will require considerable personnel resources through fiscal year 2016, according to service and DLA officials. DOD established three working groups to assist in implementing the *Plan*, but it did not include an estimate of the extent to which additional resources, if any, would be required.

- **Implementation of enterprise resource planning (ERP) systems.** The services are either in the process of developing or implementing a number of automated business systems for managing inventory, commonly referred to as ERPs. DOD officials stated that while implementing the *Plan* does not depend

on implementing ERPs, these systems facilitate improvements to areas such as demand forecasting and multi-echelon modeling.[11] For example, according to the *Plan*, multi-echelon modeling programs are often add-on applications to ERPs that can further complicate their implementation. Delays in the implementation of ERPs and shortfalls in their expected performance could affect the services' ability to meet timelines in the *Plan*. In addition, our prior work has shown that ERPs have experienced delays in implementation, cost overruns, data quality issues, and an inability to perform as expected.[12] For example, we reported in 2010 that full deployment of the Army's ERP for inventory management, the Logistics Modernization Program, has been delayed by 6 years to fiscal year 2011 and has experienced data quality issues which could impede its functionality.[13]

- **Standardization of definitions, processes, procedures, and metrics.** In a number of areas, the *Plan* requires the services and DLA to standardize definitions, processes, procedures, and metrics. The *Plan* provides a process to develop this standardization, but reaching agreement among the services and DLA will be challenging, according to OSD, service, and DLA officials. For example, an action in the *Plan* requires the services and DLA to agree to a standard set of reasons for holding contingency retention stock. Currently, each of the services has various, often different rationales for retaining items for contingency. Additionally, OSD, the services, and DLA will need to develop common metrics to assess inventory management. For example, while the services and DLA currently differ in their approach to measuring demand forecast accuracy, the *Plan* requires the development of a standard accuracy metric and associated targets.

- **Coordination and collaboration among multiple stakeholders.** Many of the actions in the *Plan* require coordination and collaboration among OSD, the services, DLA, and commercial suppliers. For example, improving demand forecasting accuracy, a leading cause of inventory excesses and shortages, will require collaboration among the services, DLA, and commercial vendors to better identify requirements, reduce lead times for parts, and estimate future demand.

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[11]Multi-echelon modeling is the automated computation of the optimal number and type of parts needed at the wholesale and retail levels to achieve readiness and cost goals.

[12]See GAO, *Defense Logistics: Additional Oversight and Reporting for the Army Logistics Modernization Program Are Needed*, GAO-11-139 (Washington, D.C.: Nov. 18, 2010); *DOD Business Transformation: Improved Management Oversight of Business System Modernization Efforts Needed*, GAO-11-53 (Washington, D.C.: Oct. 7, 2010); *Defense Logistics: Actions Needed to Improve Implementation of the Army Logistics Modernization Program*, GAO-10-461 (Washington, D.C.: Apr. 30, 2010); and *DOD Business Transformation: Lack of an Integrated Strategy Puts the Army's Asset Visibility System Investment at Risk*, GAO-07-860 (Washington, D.C.: July 27, 2007). Also see *Insufficient Governance over Logistics Modernization Program System Development*, Inspector General, United States Department of Defense, Audit Report No. D-2011-015, Nov. 2, 2010.

[13]GAO-11-139 and GAO-11-53.

DOD's *Plan* Generally Addressed Six Key Characteristics of a Comprehensive, Results-Oriented Management Framework

Our analysis showed that DOD's *Plan* addressed three characteristics and partially addressed the three remaining characteristics of a comprehensive, results-oriented management framework to guide implementation. The *Plan* addressed the characteristics of mission statement; goals, objectives, activities, milestones, and performance measures; and organizational roles, responsibilities, and coordination. For example, the *Plan* identifies a performance management structure that is intended to provide oversight and ensure actions are progressing as planned while monitoring for adverse effects on operational readiness. The *Plan* partially addressed the characteristics of problem definition, scope, and methodology; resources and investments; and key external factors that could affect goals. In particular, the *Plan* did not present the methodology used to develop the *Plan*; fully identify resources and investments needed to carry out the actions in the *Plan*; assign responsibility for monitoring external factors; or discuss how external factors, such as challenges in implementing the ERPs, could affect the ability to achieve the desired goals. Table 2 below identifies the six characteristics and our assessment of the degree to which the *Plan* addressed each of the characteristics. Enclosure I includes a detailed assessment of the extent to which the *Plan* addressed these six key characteristics.

Table 2: Extent to Which the *Plan* Addressed Six Key Characteristics

Six key characteristics	Our assessment
(1) Mission statement—A comprehensive statement that summarizes the main purposes of the plan.	**Addressed**
(2) Problem definition, scope, and methodology—Presents the issues to be addressed by the plan, the scope of its coverage, the process by which it was developed, and key considerations and assumptions used in the development of the plan.	**Partially addressed**
(3) Goals, objectives, activities, milestones, and performance measures—The identification of goals and objectives to be achieved by the plan, activities or actions to achieve those results, as well as milestones and performance measures.	**Addressed**
(4) Resources and investments—The identification of costs to execute the plan and the sources and types of resources and investments, including skills and technology and the human, capital, information, and other resources required to meet the goals and objectives.	**Partially addressed**
(5) Organizational roles, responsibilities, and coordination—The development of roles and responsibilities in managing and overseeing the implementation of the plan and the establishment of mechanisms for multiple stakeholders to coordinate their efforts throughout implementation and make necessary adjustments to the plan based on performance.	**Addressed**
(6) Key external factors that could affect the achievement of goals—The identification of key factors external to the organization and beyond its control that could significantly affect the achievement of the long-term goals contained in the plan. These external factors can include economic, demographic, social, technological, or environmental factors, as well as conditions that would affect the ability of the agency to achieve the results desired.	**Partially addressed**

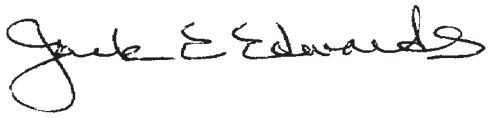
Source: GAO analysis of the *Plan*.

Agency Comments and Our Evaluation

We provided a draft of this product to DOD for review and comment. In providing oral comments, the Deputy Assistant Secretary of Defense for Supply Chain Integration agreed with our assessment of the *Plan* and recognized that the *Plan*'s implementation will have challenges. In addition, the Deputy Assistant Secretary stated that DOD is fully engaged in executing the plan to improve inventory management practices. DOD also provided technical comments which we incorporated as appropriate.

We are sending copies of this report to the congressional defense committees. We are also sending copies to the Secretary of Defense; the Deputy Secretary of Defense; the Under Secretary of Defense (Comptroller); the Under Secretary of Defense (Acquisition, Technology and Logistics); the Secretaries of the Army, Navy, and Air Force; and the Commandant of the Marine Corps. This report will also be available at no charge on our Web site at http://www.gao.gov.

Should you or your staffs have any questions concerning this report, please contact me at (202) 512-8246 or edwardsj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Suzanne Wren, Assistant Director; John Bumgarner; Grace Coleman, Terry Richardson, Adam Smith, and Michael Willems.



Jack E. Edwards
Director, Defense Capabilities and Management

Enclosures-2

List of Committees

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Committee on Appropriations
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The Honorable Howard McKeon
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House of Representatives

Overview of Department of Defense's (DOD's) *Comprehensive Inventory Management Plan*

Plan Requirement

Section 328 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010 required the Secretary of Defense to submit to the congressional defense committees a comprehensive plan for improving the inventory management systems of the military departments and Defense Logistics Agency (DLA) with the objective of reducing the acquisition and storage of secondary inventory that is excess to requirements. The plan was to include: (1) a plan for a comprehensive review of demand-forecasting procedures; (2) a plan to accelerate the efforts of DOD to achieve total asset visibility, including efforts to link levels of inventory through multi-echelon modeling; (3) a plan to reduce the average level of on-order secondary inventory that is excess to requirements; (4) a plan for the review and validation of methods used to establish economic retention requirements; (5) a plan for an independent review of methods used to establish contingency retention requirements; (6) a plan to identify items stored in secondary inventory that require substantial amounts of storage space and shift such items, where practicable, to direct vendor delivery; (7) a plan for a comprehensive assessment of inventory items on hand that have no recurring demand, including the development of metrics to track years of no demand for items in stock and procedures for ensuring the systemic review of such items; and (8) a plan to more aggressively pursue disposal reviews and actions on stocks identified for potential reutilization or disposal.

Two Overall Goals of the *Plan*

The *Plan* seeks to reduce the acquisition and storage of secondary inventory that is excess to requirements through achieving two overall goals: (1) reduce total on-order excess inventory from 8.5 percent of obligated on-order dollars in fiscal year 2009 to 4 percent by the end of fiscal year 2016, and (2) reduce the on-hand excess inventory from 11.3 percent of the total value of inventory in fiscal year 2009 to 10 percent by the end of fiscal year 2012.

Structure of the *Plan*

To achieve these goals, DOD developed nine sub-plans. Each sub-plan provides background on the respective issue, general descriptions of current and planned initiatives and efforts by the services and DLA, an objective and supporting actions with milestones for DOD-wide improvement, and existing and to-be-developed performance measures to track results. Eight of the sub-plans directly address the eight required elements of the NDAA. A ninth sub-plan, which was not required by section 328 of the NDAA, focuses on accomplishing several cross-functional improvements, such as the development of DOD-wide efficiency metrics.

Performance Management Structure of the *Plan*

The *Plan* outlines the roles and responsibilities of key stakeholders, including those of the Assistant Secretary of Defense (Logistics and Materiel Readiness), the Deputy Assistant Secretary of Defense (Supply Chain Integration), the Supply Chain Executive Steering Committee, the services, and DLA. The *Plan* establishes three working groups—inventory and stock retention, forecasting and demand planning, and supply chain metrics—responsible for the execution of the actions in the *Plan*. These working groups are to meet and report monthly to the Deputy Assistant Secretary of Defense (Supply Chain Integration) and every two months to the Supply Chain Executive Steering Committee. This performance management structure is intended to ensure actions are progressing as planned while monitoring for adverse effects on operational readiness.

Process Used to Develop the *Plan*

The *Plan* does not discuss the methodology that guided its development, but officials from Office of the Deputy Assistant Secretary of Defense (Supply Chain Integration), the services, and DLA characterized the process as collaborative and transformational in nature. The development of the *Plan* began in March 2010, and included high-level stakeholders from the Office of the Secretary of Defense (OSD), the services, and DLA setting the vision for the *Plan*. Additionally, working groups met over several months to design and develop the *Plan*. Officials we met with from the services and DLA supported the goals, objectives, and actions laid out in the *Plan*.

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan for a comprehensive review of demand-forecasting procedures to identify and correct any systematic weaknesses in such procedures, including the development of metrics to identify bias toward over-forecasting and adjust forecasting methods accordingly.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on demand forecasting addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Demand forecasting: Predicting future customer demands so inventory managers can develop inventory requirements to satisfy demands when they occur. Inaccurate forecasts lead to either excess inventory or shortfalls.

Required Element 1: A Plan for a Comprehensive Review of Demand-Forecasting Procedures

Detailed Assessment of This Sub-Plan

We found that the sub-plan on demand forecasting met the requirements of section 328 because it includes a planned review of demand forecasting across DOD and identifies steps and targets for establishing metrics to measure demand accuracy. The objective of the sub-plan is to improve the prediction of future demand so that inventory requirements more accurately reflect actual needs. To achieve this objective, DOD identified five actions: (1) identify improved methods and techniques for demand forecasting that consider an item's life cycle (i.e., new item introduction, sustainment, and end-of-life), (2) implement standard metrics to assess forecasting accuracy and bias, (3) expand and refine a DOD-wide structure for collaborative forecasting, (4) implement approaches for improving the setting of inventory levels for low-demand items, and (5) examine how investment risk for new consumable items initially entering the inventory can be reduced among the services, DLA, and suppliers. As part of the sub-plan, DOD plans to develop and implement a consistent set of metrics to assess forecasting accuracy and bias that considers the items' life cycles. DOD plans to develop these metrics by the fourth quarter of fiscal year 2012 and track these metrics thereafter.

DOD faces a number of challenges in implementing the actions outlined in the sub-plan to achieve improved demand forecasting accuracy because demand patterns for many items are highly variable and intermittent. In addition, the ability to forecast demand for weapon systems varies based on where a weapon system is in its lifecycle. Together, these factors make it difficult to forecast demand accurately. For example, in a current effort to improve demand forecasting, the Air Force was able to improve its demand forecast accuracy from 29 percent in 2008 to 40 percent in 2009. The Air Force established a stretch goal of 70 percent demand forecast accuracy for 2011, but officials told us that this will be difficult to achieve.

Related GAO Findings: Inaccurate Demand Forecasting Is the Leading Reason for the Accumulation of Excess Inventory

Our recent work identified demand forecasting as the leading reason why the services and DLA accumulate excess inventory.[1] A number of other factors also contribute to inaccurate forecasts, including variations in demand; incomplete, inaccurate, and untimely data; and a lack of timely communication among the services, DLA, and suppliers. The services are also implementing enterprise resource planning (ERP) systems that are intended to, among other things, improve demand forecasting. However, these systems have experienced delays, cost overruns, and have not performed as expected.[2] Additionally, our prior work found that inaccurate forecasts by the Army and DLA contributed to shortages of parts that caused work stoppages at Army depots in 2006 and 2007.[3] DLA stated that a major difficulty it faces as a supplier is forecasting the amount of repair parts needed when the depots' types and numbers of repairs continue to change.

[1]GAO-10-469, GAO-09-199, GAO-09-103, and GAO-07-232.
[2]GAO-11-139 and GAO-11-53.
[3]GAO-08-714.

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Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan to accelerate the efforts of the DOD to achieve total asset visibility, including efforts to link wholesale and retail inventory levels through multi-echelon modeling.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on total asset visibility addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Total asset visibility: The capability to provide all users with (1) timely and accurate information about the location, movement, status, and identity of supplies and (2) the capability to act on this information.

Multi-echelon modeling: Mathematical models capable of computing the optimal number and type of parts needed at the wholesale and retail levels to achieve readiness and cost goals.

Required Element 2: A Plan to Accelerate Total Asset Visibility

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it has steps and targets for achieving total asset visibility, including the increased use of multi-echelon modeling. The objective of the sub-plan is to minimize the size of purchases by considering all accessible inventories. To achieve this objective, DOD identified three actions: (1) expand total asset visibility capabilities to improve access to targeted inventories,[4] (2) accelerate existing and emerging multi-echelon improvement efforts, and (3) expand automated capabilities to fill customer demands and offset inventory purchases across DOD. The sub-plan seeks to develop two metrics: percentage of inventory that is visible and automatically accessible and the dollar value of backorders filled and procurements offset by assets designated for disposal. DOD will use these two metrics and an existing metric—the percentage of inventory covered by multi-echelon models—to track performance. The sub-plan establishes two performance targets over the next 5 years: (1) access 90 percent of targeted inventory, and (2) use multi-echelon modeling for setting inventory levels on 90 percent of targeted inventories, up from 34 percent in fiscal year 2009.

DOD faces challenges in implementing the actions in the sub-plan. The primary challenges include developing business rules and financial processes that allow for the visibility and redistribution of assets among the services and DLA in order to avoid or minimize future purchases. Our prior work shows that DOD does not have total asset visibility, which includes visibility over assets in transit to and from a theater of operations.[5] Also, some of the data required for the successful operation of multi-echelon modeling programs, such as configuration data that identifies the relationships among items, are not available and need to be developed for multi-echelon modeling systems to fully function.

Related GAO Findings: ERPs Have Implementation Issues

One component to achieving total asset visibility is the DOD-wide implementation of multi-echelon modeling, which is needed to set inventory requirement levels at the retail and wholesale levels. Multi-echelon modeling programs are often add-on applications that complicate implementation of the ERPs for managing inventory. However, ERPs have experienced delays and cost overruns, and have not performed as expected.[6] For example, we reported that as of November 2010, the implementation of one the Army's ERPs—Logistics Modernization Program—may not fully achieve the intended functionality due to long-standing data inaccuracies and software and system shortcomings.[7] As a result, DOD may face challenges in achieving the sub-plan's goals of increasing asset visibility and using multi-echelon modeling for setting inventory levels on 90 percent of targeted inventories within 5 years.

[4]Items in the targeted inventories will be available for redistribution to meet critical needs. Targeted inventories will not include those already identified to meet critical needs (i.e., inventories aboard ship or positioned in theaters of operation). Specific targeted inventories have not been selected.
[5]GAO-10-842T, GAO-09-150, GAO-06-366R, GAO-05-345, and GAO-05-15.
[6]GAO-11-139 and GAO-11-53.
[7]GAO-11-139.

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan to reduce the average level of on-order secondary inventory that is excess to requirements, including a requirement for the systemic review of such inventory for possible contract termination.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on reducing on-order excess inventory addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

On-order excess inventory: Items for which a contract has been awarded or funds have been obligated, but that are not needed to meet requirements.

Approved acquisition objective: Consists of inventory necessary to meet the requirements objective and materiel needed to meet 2 years of estimated future demand.

Required Element 3: A Plan for Reducing On-Order Excess Inventory

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it includes steps and targets for reducing on-order excess inventory and ensuring appropriate review of contracts for possible termination. As of September 2009, DOD had $1.2 billion of on-order excess. The objective of the sub-plan is to reduce or terminate purchases that result in inventory excesses due to a decrease in requirements. To achieve this objective, the sub-plan identified two actions: (1) establish an economically optimal point to terminate an order considering the different stages of a weapon system's life cycle (i.e., introduction, sustainment, and end-of-life) and (2) strengthen the approval and reporting procedures for on-order excess. DOD will track the percentage of on-order dollars that are above the approved acquisition objective, with the goal of reducing on-order excess from 8.5 percent of total on-order inventory in fiscal year 2009 to 6 percent by fiscal year 2014 and to 4 percent by fiscal year 2016.

DOD faces a number of challenges in implementing the actions outlined in the sub-plan to reduce on-order excess and ensure review of contracts for possible termination. DOD's *Plan* notes that several factors can cause on-order excess, such as inaccurate demand forecasts, vendor minimum order quantities, and the need to purchase a lifetime supply of an item that will no longer be produced. Additionally, service and DLA officials must carefully consider altering or terminating a contract because of associated costs and the possibility that requirements will change in the future, resulting in the need to reorder the item. While the services and DLA can limit the accumulation of excess inventory during the procurement request stage, altering or terminating established contracts is sometimes not economical (i.e., when the cost of holding an item in inventory is less than the cost of terminating the order). Given these challenges, the establishment of an economically optimal point to terminate a purchase request or order will be difficult and require the services and DLA to change business rules.

Related GAO Findings: Difficulties in Canceling Contracts Lead to Excess Inventory

Our prior work identified on-order excess inventory as an area of potential financial savings for Navy, Air Force, and DLA.[8] Specifically, we found that existing business rules hampered efforts to cancel on-order excess inventory. For example, the Navy's management practices for on-order items limited its ability to modify purchase decisions when demand changes. We also found that Air Force policies did not provide incentives to reduce the amount of inventory on-order that was not needed to support requirements. Further, DLA did not identify and review potential over-procurements because they did not meet or exceed DLA-established minimum thresholds, which limited the number of items being reviewed for on-order excess. DLA also had business rules that exempted certain programs from reviews. Those rules contributed to one item accruing more than 20 years of supply based on the current demand. Finally, DLA's lengthy review processes made it difficult to execute a timely cancellation.

[8]GAO-10-469, GAO-09-103, and GAO-07-232.

Required Element 4: A Plan to Review Economic Retention Stock

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan for the review and validation of methods used by the military departments and DLA to establish economic retention requirements.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on economic retention addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Economic retention stock: Items that have been determined to be more economical to keep than to dispose of because the items are likely to be needed in the future.

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it includes a review of economic retention stock, including steps to ensure the validation of the services' and DLA's methods for establishing economic retention stock. For September 2009, the *Plan* reported that DOD held $8 billion dollars (8.8 percent) of its secondary inventory as economic retention stock. The objective of the sub-plan is to ensure economic retention decisions are based on current cost factors and economic principles. To achieve this objective, the sub-plan identified three actions: (1) review and validate current economic retention methods, (2) review and evaluate enhancements to these methods, and (3) ensure annual reviews of service and DLA economic retention procedures. DOD will validate economic retention methods in accordance with DOD policy. The target is to conduct annual reviews of 100 percent of items held as economic retention stock to ensure that retention decisions are based on approved economic methods. Economic retention methods will be revalidated on a 3-year cycle. Additionally, DOD plans to develop a metric that will quantify the expected savings from holding economic retention stock.

DOD faces a number of challenges in implementing the actions outlined in the sub-plan. Economic retention methods depend not only on economic analysis, but also the probability of an item's future use, which varies based on operational tempo and the stage of a weapon system's life cycle (i.e., introduction, sustainment, and end-of-life). While DOD incurs a cost for storing retained items, DOD reports that storage cost is generally less than the cost of re-ordering an item. In addition, while economic analysis can help minimize the risk of unnecessarily retaining an item, some items are used so rarely or intermittently that it can be difficult to use economic retention methods in determining whether to keep or dispose of items. Lastly, the sub-plan emphasizes that economic retention stock is comprised of items that were originally purchased as operating stocks but are no longer needed due to downturns in demand, changes in programs, or other reasons. Improved demand forecasting would generally reduce such purchases, according to DOD officials.

Related GAO Findings: Economic Retention Decisions Lack Sound Analytical Support and Proper Review

We found in 2001[9] and again in 2006[10] that the services and DLA did not have sound analytical support for determining which items should be kept as economic retention stock, and that they were not conducting required annual reviews of the methodologies used to determine which items in the inventory to retain for economic reasons. Similarly, in 2008 we found that the Navy could not document that it had conducted required annual reviews of its economic retention method.[11] In 2009, the Navy instituted a requirement for the annual documentation of its retention methodology, but we have not verified that this documentation has occurred.

[9]GAO-01-475.
[10]GAO-06-512.
[11]GAO-09-103.

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan for an independent review of methods used by the military departments and the DLA to establish contingency retention requirements.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on contingency retention stock addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Contingency retention stock: Items that exceed the approved acquisition objective and economic retention inventory (items that are more economical to keep than to dispose of) but are retained to support specific contingencies, such as to support foreign military sales, future military operations, minimum stock levels, and disaster relief or humanitarian aid, or to mitigate risk associated with diminished manufacturing sources or non-procurable stock.

Required Element 5: A Plan to Review Contingency Retention Stock

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements section 328 because it includes steps to complete an independent review of methods for retaining contingency stock. In September 2009, DOD held $7.2 billion dollars (almost 8 percent) of its secondary inventory as contingency retention stock. The objective of the sub-plan is to ensure the services and DLA justify the retention of contingency stock. To achieve this objective, the sub-plan identified four actions: (1) complete an independent review that examines the services' and DLA's processes and develop a more effective way to categorize contingency retention stock, (2) ensure annual reviews of the services' and DLA's contingency retention stock, (3) employ a consistent approach for approving decisions to retain inventory for contingencies, and (4) establish a DOD-wide metric to monitor sales of contingency retention stock. DOD will use two metrics—the percentage of contingency stock in dollars and the dollar value of contingency retention that the services and DLA use to fill demand—as a way of tracking the amount of contingency retention stock. The target for the sub-plan is to ensure annual reviews are based on approved criteria. The sub-plan also notes that DOD will establish a quantitative contingency retention stock target pending the results of the independent review mandated by section 328.

DOD faces a number of challenges in implementing the actions in the sub-plan. The amount of contingency stock and the reasons for retaining it varies widely. In addition, the services and DLA use different management processes for determining which stock should be retained. Standardization will require cooperation among stakeholders and changes in the services' and DLA's business rules.

Related GAO Findings: The Services and DLA Do Not Always Follow Policies and Procedures and Lack DOD Oversight

Our prior work found that the services and DLA have not followed their own and DOD-wide policies and procedures to ensure they are retaining the appropriate amount of contingency retention stock.[12] We found examples of organizations not properly assigning codes that describe the reasons for holding items as contingency retention stock, retaining items for which there had been little or no recent demand, and not conducting required annual reviews to verify reasons for retaining contingency retention stock. In addition, we found that DOD did not provide sufficient oversight to ensure that the services and DLA are conducting required annual reviews of their contingency retention stock. We also found that the services sometimes did not provide input to DLA on which items were no longer needed, which DLA officials stated limited their ability to reduce unneeded contingency retention stock.[13] As a result, DOD cannot be certain that the services and DLA are retaining the right amount of contingency retention stock to meet potential future needs in the most effective and efficient manner.

[12]GAO-06-512.
[13]GAO-10-469.

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan to identify items stored in secondary inventory that require substantial amounts of storage space and shift such items, where practicable, to direct vendor delivery.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on storage space and direct vendor delivery, addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Direct vendor delivery: A materiel acquisition and distribution method that requires supplier delivery directly to the customer. This arrangement can reduce the storage of items by the services and DLA.

Required Element 6: A Plan to Reduce Storage Space for Secondary Inventory through Direct Vendor Delivery Arrangements

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it includes actions to identify items requiring large amounts of storage space and shift these items, where practicable, to direct vendor delivery to save storage costs. DOD reported that it has reduced its storage footprint from about 100 million cubic feet in September 2004, to 80 million in September 2009. Additionally, DOD estimated that in fiscal year 2009, storage costs were $252 million, approximately 0.3 percent of the total value of inventory across DOD. The objective of the sub-plan is to use commercial vendors to store items when use of those vendors represents the best value to the government. To achieve this objective, the sub-plan identified four actions: (1) examine items with high storage requirements for potential management as direct vendor delivery, (2) track reduction of depot storage space that can be attributed to alternative sourcing strategies, (3) identify the method and criteria for including depot storage space as a cost factor in the business case analyses for alternative sourcing strategies, and (4) review DOD-wide policies and procedures for shifting items to direct vendor delivery arrangements to ensure they do not cause the acquisition of excess inventories. To monitor the success of the sub-plan, DOD plans to collect three metrics, two of which exist—the total storage footprint in distribution depots for secondary item inventory and total costs of distribution depots' storage for these items—and one that must be developed—the reduction in storage that results from items shifting to direct vendor delivery arrangements. DOD has reported it reduced storage space by 11.1 million gross square feet since 2005, with a target of a 15.4 million gross square feet reduction by the end of fiscal year 2011, as part of DOD's response to one of the recommendations from the 2005 Base Realignment and Closure round. DOD also plans to track storage reduction metrics in subsequent years, but has not identified formal targets for later years.

DOD reports that the opportunity to save on the cost of storage space through use of direct vendor delivery arrangements may be limited. For example, DOD reports in the *Plan* that 39 percent of DOD's storage space is occupied by a relatively small number of bulk items. Also, a business case analysis is required to support decisions to use direct vendor delivery. Although storage cost is one factor in that analysis, DOD also considers the ability to provide customers what they need, when they need it, and at the least cost. The services and DLA determine the right mix of vendor and stock support on a case-by-case basis during the acquisition planning process. This requires the services and DLA to conduct an analysis that balances cost and reliability factors. According to DOD, the cost of storage is a small fraction of materiel cost and thus space reduction may not be a determining factor in awarding direct vendor delivery arrangements. An exception would be bulk items, such as tires or lumber, where the volume of the assets are an obvious factor in storage costs. In addition, direct vendor delivery arrangements are often elements of broader agreements for maintenance and logistical support, which involve not only the provision of supply parts, but also the actual maintenance conducted on an end-item.

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Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan for a comprehensive assessment of inventory items that have no recurring demands, including the development of metrics to track years of no demand for items in stock; and procedures for ensuring the systemic review of such items for potential reutilization or disposal.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on inventory items that have no recurring demands addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Items with no recurring demand: Secondary inventory that has not been needed over a specified period of time. Although service and DLA time periods vary, the *Plan* intends to implement a DOD-wide standard of greater than 5 years.

Required Element 7: A Plan to Assess Items with No Recurring Demand

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it includes a plan for assessing inventory items with no recurring demand, including metrics to track and procedures to help ensure reutilization or disposal reviews. For September 2009, DOD reported holding $7.9 billion (9 percent of the total value of inventory) of items that had 5 or more years of no demand. The objective of the sub-plan is to eliminate items with a history of no recurring demand and a low probability of future demand, unless there is sufficient justification for further retention. To achieve this objective, DOD identified two actions: examine the services' and DLA's definitions, methods, and rationales for retaining or disposing items with no recurring demand to determine the potential for applying a life cycle approach; and develop an annual review and reporting process for items with no recurring demand based on dollar thresholds. The sub-plan states that its annual reviews should ensure that items retained are essential to the operation of weapon systems at a level that guards against their catastrophic failure. To measure success, DOD plans to monitor three metrics currently being developed: (1) percentage of total inventory dollars with no recurring demand, (2) an inventory segmentation based on years of no demand, and (3) the amount of stock with no recurring demand that is both retained and disposed. Lastly, the sub-plan targets completing the first annual review by the beginning of fiscal year 2012 and disposing of 100 percent of non-justified inventory with no recurring demand for 5 or more years by the third quarter of fiscal year 2012.

DOD faces a number of challenges in implementing these actions. Items with no recurring demand are potentially found across various inventory segmentation categories, including economic and contingency retention stock. Executing the actions in the sub-plan will require inventory managers to examine demand for all items. In addition, retention decisions must be based on an evaluation of the likelihood of future need and the amount of stock needed. The *Plan* identifies examples of items that had 5 or more years of no demand, but were later needed by the services and would have required repurchase had they been disposed.

Related GAO and Other Audit Findings: DOD Has Large Investments in Items with No Recurring Demand

We previously reported that DLA estimated that as of September 2008, it held $1 billion of items for which there had been no demand for at least 8 years, and incurred about $2.5 million in associated storage costs.[14] In addition, in 2007 we reported that the Air Force had not performed a comprehensive assessment of its on-hand inventory items that were not needed to support requirements and that had no recurring demand. Similarly, the Air Force had not revalidated the need to continue to retain these items.[15] Finally, the Army Audit Agency reported that in fiscal year 2008, the Army had $717 million of inventory without demand in over 5 years and that item managers were not performing required reviews.[16]

[14]GAO-10-469.
[15]GAO-07-232.
[16]*Dormant Stock*, U.S. Army Audit Agency, Audit Report No. A-2010-0183-ALR, September 1, 2010.

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 required a comprehensive plan for improving the inventory management systems of the military departments and DLA to include a plan to more aggressively pursue disposal reviews and actions on stocks identified for potential reutilization or disposal.

Our Assessment: Addressed

Based on our assessment, we found that the sub-plan on disposal reviews and actions addressed the requirements of section 328 of the NDAA for Fiscal Year 2010.

Key Terms

Potential reutilization stock: Materiel that exceeds the approved acquisition objective, as well as economic and contingency retention stock, and has been identified for possible disposal but with potential for reutilization.

Required Element 8: A Plan to Pursue Disposal Reviews and Actions More Aggressively

Detailed Assessment of This Sub-Plan

We found that the sub-plan met the requirements of section 328 because it includes actions and targets to more aggressively pursue disposal reviews and actions. For September 2009, DOD reported that it held $10.3 billion dollars (11.3 percent) of its secondary inventory as potential reutilization stock. The objective of the sub-plan is to ensure timely disposition of these stocks. The sub-plan identified three actions: (1) review the methods, frequency, and timeliness of reviews of potential reutilization stock and the execution of disposal releases, (2) establish a process to pre-screen retail materiel returns for disposal before returns are shipped to a distribution depot, and (3) develop new reporting requirements on inventory being reviewed and disposed of to evaluate the process. OSD, the services, and DLA plan to develop timeliness and effectiveness metrics for disposal as well as track the total dollar value of disposals for reparable and consumable items, the portion of disposal dollars that are associated with condemned or unserviceable assets, and the percentage of dollars and items reviewed and released to disposal. Within the next 2 years, DOD plans to reduce the time needed to review potential reutilization stock for disposal from 12 months to 3 months and the time for directing a disposal action from 6 months to 1 month.

OSD, the services, and DLA face a number of challenges in implementing the actions outlined in the sub-plan. First, the services and DLA report workload constraints at their facilities that hamper the review and disposal of excess inventory. Second, DOD lacks the necessary technical procedures for the demilitarization of some items, which prevents disposal. Third, the services' and DLA's reviews of potential reutilization stock occur on varying timeframes (e.g., monthly, quarterly, and semi-annually); and standardization of these time frames and procedures will require agreement among DOD, the services, and DLA.

Related GAO and Other Audit Findings: Excess Determination Process Lacks Coordination and Is Wasteful

Our prior work found that DLA lacked input from the services to make disposal decisions.[17] DLA made progress toward rebalancing its inventory between items held as part of the approved acquisition objective and items retained for retention purposes in fiscal years 2008 and 2009 by disposing of unneeded parts. However, DLA continued to hold large amounts of contingency retention stock that could be declared excess, but the services had not provided input that DLA needed to make this determination. Also, we found that the services, and DLA did not have management controls in place to ensure that excess inventory is reutilized to the maximum extent possible.[18] At the same time, DOD organizations continued to buy many of these same items that had been disposed. In addition, the Army Audit Agency found that U.S. Army Aviation and Missile Life Cycle Management Command sometimes did not perform complete or thorough reviews of dormant stock.[19]

[17]GAO-10-469.
[18]GAO-05-277.
[19]*Dormant Stock*, U.S. Army Audit Agency, Audit Report No. A-2010-0183-ALR, September 1, 2010.

A Plan to Address Cross-Functional Improvements for Inventory Management

Plan Requirement

Section 328 of the NDAA for Fiscal Year 2010 did not require DOD to address cross-functional improvements, such as developing efficiency metrics and reducing procurement lead times. However, DOD believes that these cross-functional issues are important to improving inventory management practices.

Key Terms

Cost efficiency metric: A measurement to monitor the efficient use of resources for inventory management that would provide a means for assessing costs versus benefits.

Lead time: DOD's estimate of when an item will be received from a supplier. Management of inventory acquisition lead times is important in maintaining cost-effective inventories, budgeting, and having material available when needed.

Detailed Assessment of This Sub-Plan

The objective of the sub-plan is to accomplish several cross-functional improvements needed to ensure that DOD's investment in inventory supports the warfighter at the lowest cost. To achieve this objective, DOD identified four actions: (1) define and establish a new segmentation of DOD inventory that will better capture the rationale behind inventory decisions and improve inventory reporting, (2) establish DOD-wide procedures for seeking reduced procurement lead times, (3) provide for improved data accuracy and a better system for improving inventory management practices, and (4) establish DOD-wide metrics to monitor the efficiency of inventory operations. The *Plan* noted that these actions will contribute to reducing on-hand excess inventory from 11.3 percent of the total value of inventory in fiscal year 2009 to 10 percent in fiscal year 2012, which is one of the overall goals of the *Plan*.

DOD faces a number of challenges in implementing the actions outlined in the sub-plan. First, DOD officials stated that current inventory segmentation is outdated and does not reflect changes in inventory management, such as multi-echelon modeling and direct vendor delivery strategies. However, reaching agreement among the services and DLA on a new method for segmenting the inventory could be difficult. Second, automated capabilities for revised processes, such as demand forecasting, requirements determination, and asset visibility are essential to improvements targeted by this *Plan*. Implementation of the ERPs is critical to institutionalizing needed processes and business practice upgrades, but the services and DLA are at varying stages of implementation. As noted earlier, our work has shown that there have been implementation delays, cost overruns, data quality issues, and an inability to perform to expected capabilities.[20]

Related GAO Findings: DOD Needs to Track Cost Efficiency and Improve Management of Lead Times for Spare Parts

Our prior work found that the Army, Navy, and DLA need to develop cost efficiency metrics for its inventory management operations.[21] Currently, there is no DOD-wide set of metrics to track the cost efficiency of its inventory management. The Navy, in response to one of our recommendations, developed a metric that tracks materiel replacement within its inventory. We found that in fiscal year 2005 the Army underestimated lead times, DLA overestimated lead times, and the Air Force and Navy both overestimated and underestimated lead times.[22] Underestimates resulted in almost $12 billion in spare parts arriving more than 90 days later than anticipated, which could have negatively affected unit readiness. The effect of overestimated lead times resulted in obligating $2 billion more than 90 days earlier than necessary. We also found that until steps are taken by DOD to renew management focus on reducing lead times, the services and DLA may continue to experience spare parts shortages and increased inventory levels to ensure inventory availability.

[20]GAO-11-139, GAO-11-53, GAO-10-461, and GAO-07-860.
[21]GAO-10-469, GAO-09-199, and GAO-09-103.
[22]GAO-07-281.

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Key Characteristics

Our prior work identified six key characteristics that help establish a results-oriented plan. Section 328 of the NDAA for Fiscal Year 2010 did not require these to be included, but our prior work has shown that they can facilitate implementation. They are:

(1) Mission statement—A comprehensive statement that summarizes the plan's purpose.

(2) Problem definition, scope, and methodology—Presents the issues to be addressed by the plan, the scope of its coverage, the process by which it was developed, and key considerations and assumptions.

(3) Goals, objectives, activities, milestones, and performance measures—The identification of goals and objectives to be achieved by the plan, activities or actions to achieve those results, as well as milestones and metrics.

(4) Resources and investments—The identification of costs to execute the plan and the sources and types of resources and investments, including skills and technology and the human, capital, information, and other resources required.

(5) Organizational roles, responsibilities, and coordination—The development of roles and responsibilities in managing and overseeing the implementation of the plan and the establishment of mechanisms for multiple stakeholders to coordinate their efforts and make adjustments as necessary.

(6) Key external factors that could affect the achievement of goals—The identification of key factors external to the organization and beyond its control that could significantly affect the achievement of the long-term goals contained in the plan.

Assessment of Six Key Characteristics of a Comprehensive, Results-Oriented Framework

Six key characteristics	Assessment
(1) Mission statement **Comments:** The *Plan* states that it was developed to guide and direct DOD's collective efforts to improve inventory management and support to the warfighter. It seeks to do this through a "prudent" reduction in current inventory excesses as well as a reduction in the potential for future excesses without degrading materiel support to the customer.	**Addressed**
(2) Problem definition, scope, and methodology **Comments:** The *Plan* identifies the key problems, the scope, and considerations and assumptions. However, the *Plan* does not discuss the methodology used to develop it. OSD, service, and DLA officials said the development process was collaborative and supported the goals, objectives, and actions in the *Plan*.	**Partially addressed**
(3) Goals, objectives, activities, milestones, and performance measures **Comments:** The *Plan* outlines two overall goals focused on the reduction of on-order and on-hand excess inventory. The nine sub-plans are intended to support achieving the two overall goals. The *Plan* identifies an objective for each of these sub-plans as well as activities, milestones, and existing or to-be-developed performance measures.	**Addressed**
(4) Resources and investments **Comments:** The *Plan* notes that two working groups responsible for implementing the *Plan*'s actions must also ensure the availability of in-house and contractual resources to execute the plan by elevating resourcing issues to the Deputy Assistant Secretary of Defense (Supply Chain Integration). The *Plan* does not identify the costs necessary to execute it or the sources of funding for particular actions. DOD is contracting two actions in the *Plan*: the review of contingency retention and demand forecasting.	**Partially addressed**
(5) Organizational roles, responsibilities, and coordination **Comments:** The *Plan* outlines the roles and responsibilities of key stakeholders. The *Plan* also establishes three working groups—inventory and retention, forecasting and demand planning, and supply chain metrics—responsible for the execution of the actions in the *Plan*. The *Plan* identifies a performance management structure. This structure allows for adjustments to the *Plan*.	**Addressed**
(6) Key external factors that could affect the achievement of goals **Comments:** The *Plan* highlights that acquisition and materiel retention decisions rely on incomplete information due to unpredictable demand patterns, lack of data during the introduction of new weapons systems, and various other factors. However, the *Plan* does not completely address how these or other external factors could affect actions to achieve the *Plan*'s two main goals. The performance management framework does not explicitly assign responsibility for monitoring external factors. Additionally, the services are in the process of developing or implementing ERPs. Our work identified challenges in the implementation of ERPs, such as implementation delays, cost overruns, data quality issues, and potential inability to perform to expected capabilities.[a] DOD officials stated that the *Plan*'s implementation does not depend on ERPs, which facilitate improvements to areas such as demand forecasting and total asset visibility. However, delays in the implementation of ERPs and their inability to perform as expected could affect the ability to meet the *Plan*'s timelines.	**Partially addressed**

[a]GAO-11-139, GAO-11-53, GAO-10-461, and GAO-07-860.

Enclosure II: Scope and Methodology

To assess the extent to which the Department of Defense (DOD) addressed the requirements of section 328 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010, we evaluated DOD's *Plan* provided to the congressional defense committees on November 8, 2010. We determined that the extent to which DOD addressed each element required by the law would be rated as either "addressed," "partially addressed," or "not addressed." These categories were defined as follows:

- **Addressed**: All parts of a required element are explicitly addressed.
- **Partially addressed**: One or more parts of the required element, but not all parts of the element are explicitly addressed.
- **Not addressed**: No part of the required element is explicitly addressed.

To conduct this analysis, we developed a data collection instrument that incorporated the required elements established by section 328. Two GAO analysts independently assessed whether each element was addressed, partially addressed, or not addressed, and recorded their assessment and the basis for the assessment on the data collection instrument. The final assessment reflected the analysts' consensus. In addition, we reviewed documentation related to the *Plan*'s development and interviewed DOD officials involved in developing the *Plan* to discuss DOD's strategy for improving inventory management, their interpretation of the legislative requirements, current inventory management improvement initiatives, and implementation challenges faced by DOD inventory managers in each sub-plan area. To provide context, our assessment also reflected our review of relevant DOD documents and issues raised in recent GAO reports that specifically relate to some of the required elements of the *Plan*. A list of our related products is included at the end of this report.

Our second objective was to assess the extent to which the *Plan* and its supporting sub-plans contain the desirable characteristics of a comprehensive, results-oriented management framework. To answer this question, we developed a data collection instrument that contained desirable characteristics and elements that help establish a comprehensive, results-oriented management framework using information from prior GAO work examining national strategies and logistics issues.[1] The data collection instrument included the following six desirable characteristics:

1. Mission statement: A comprehensive statement that summarizes the main purposes of the plan.

[1]GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, GAO-04-408T (Washington, D.C.: Feb. 3, 2004); *Depot Maintenance: Improved Strategic Planning Needed to Ensure that Navy Depots Can Meet Future Maintenance Requirements*, GAO-10-585 (Washington, D.C.: June 11, 2010); and *Depot Maintenance: Improved Strategic Planning Needed to Ensure that Air Force Depots Can Meet Future Maintenance Requirements*, GAO-10-526 (Washington, D.C.: May 14, 2010).

2. Problem definition, scope, and methodology: Presents the issues to be addressed by the plan, the scope of its coverage, the process by which it was developed, and key considerations and assumptions used in the development of the plan.
3. Goals, objectives, activities, milestones, and performance measures: The identification of goals and objectives to be achieved by the plan, activities or actions to achieve those results, as well as milestones and performance measures.
4. Resources and investments: The identification of costs to execute the plan and the sources and types of resources and investments, including skills and technology and the human, capital, information, and other resources required to meet the goals and objectives.
5. Organizational roles, responsibilities, and coordination: The development of roles and responsibilities in managing and overseeing the implementation of the plan and the establishment of mechanisms for multiple stakeholders to coordinate their efforts throughout implementation and make necessary adjustments to the plan based on performance.
6. Key external factors that could affect the achievement of goals: The identification of key factors external to the organization and beyond its control that could significantly affect the achievement of the long-term goals contained in the plan. These external factors can include economic, demographic, social, technological, or environmental factors, as well as conditions that would affect the ability of the agency to achieve the results desired.

For our assessment of the extent to which the *Plan* addressed these six key characteristics, we used the data-collection instrument to determine whether each characteristic was addressed, partially addressed, or not addressed. We used the same assessment methodology and rating scheme to assess whether the *Plan* incorporated six key characteristics as we did in assessing whether the *Plan* addressed the required elements of section 328 of the NDAA for Fiscal Year 2010. In addition, we interviewed Office of the Secretary of Defense, service, and DLA officials involved in the development of the *Plan* to discuss the incorporation of the six key characteristics.

To address our objectives, we reviewed documentation and interviewed officials from:

- Office of the Deputy Assistant Secretary of Defense for Supply Chain Integration;
- Office of the Joint Chiefs of Staff, Supply Division;
- Defense Logistics Agency Headquarters;
- Headquarters Army, Office of the Deputy Chief of Staff of the Army, Logistics;
- Headquarters Navy, Deputy Assistant Secretary of the Navy, Acquisition & Logistics Management;
- Navy Supply Systems Command Headquarters;
- Headquarters Air Force, Deputy Chief of Staff for Logistics, Installations, and Mission Support, Directorate of Logistics Policy Division;
- Air Force Materiel Command Headquarters;
- Marine Corps Headquarters, Installations and Logistics Department;
- Marine Corps Logistics Command Headquarters.

We conducted this performance audit from October 2010 to January 2011, 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.

Related GAO Products

Defense Logistics: Additional Oversight and Reporting for the Army Logistics Modernization Program Are Needed. GAO-11-139. Washington, D.C.: November 18, 2010.

DOD Business Transformation: Improved Management Oversight of Business System Modernization Efforts Needed. GAO-11-53. Washington, D.C.: October 7, 2010.

DOD's High-Risk Areas: Observations on DOD's Progress and Challenges in Strategic Planning for Supply Chain Management. GAO-10-929T. Washington, D.C.: July 27, 2010.

Warfighter Support: Preliminary Observations on DOD's Progress and Challenges in Distributing Supplies and Equipment to Afghanistan. GAO-10-842T. Washington, D.C.: June 25, 2010.

Defense Inventory: Defense Logistics Agency Needs to Expand on Efforts to More Effectively Manage Spare Parts. GAO-10-469. Washington, D.C.: May 11, 2010.

Defense Logistics: Actions Needed to Improve Implementation of the Army Logistics Modernization Program. GAO-10-461. Washington, D.C.: April 30, 2010.

Military Base Realignments and Closures: DOD Needs to Update Savings Estimates and Continue to Address Challenges in Consolidating Supply-Related Functions at Depot Maintenance Locations. GAO-09-703. Washington, D.C.: July 9, 2009.

High-Risk Series: An Update. GAO-09-271. Washington, D.C.: January 2009.

Defense Inventory: Army Needs to Evaluate Impact of Recent Actions to Improve Demand Forecasts for Spare Parts. GAO-09-199. Washington, D.C.: January 12, 2009.

Defense Logistics: Lack of Key Information May Impede DOD's Ability to Improve Supply Chain Management. GAO-09-150. Washington D.C.: January 12, 2009.

Defense Logistics: Improved Analysis and Cost Data Needed to Evaluate the Cost-effectiveness of Performance Based Logistics. GAO-09-41. Washington, D.C.: December 19, 2008.

Defense Inventory: Management Actions Needed to Improve the Cost Efficiency of the Navy's Spare Parts Inventory. GAO-09-103. Washington, D.C.: December 12, 2008.

DOD Business Transformation: Air Force's Current Approach Increases Risk That Asset Visibility Goals and Transformation Priorities Will Not Be Achieved. GAO-08-866. Washington, D.C.: August 8, 2008.

Army Working Capital Fund: Actions Needed to Reduce Carryover at Army Depots. GAO-08-714. Washington, D.C.: July 8, 2008.

DOD's High-Risk Areas: Efforts to Improve Supply Chain Can Be Enhanced by Linkage to Outcomes, Progress in Transforming Business Operations, and Reexamination of Logistics Governance and Strategy. GAO-07-1064T. Washington, D.C.: July 10, 2007.

DOD Business Transformation: Lack of an Integrated Strategy Puts the Army's Asset Visibility System Investments at Risk. GAO-07-860. Washington, D.C.: July 27, 2007.

High-Risk Series: An Update. GAO-07-310. Washington, D.C.: January 2007.

Defense Inventory: Opportunities Exist to Improve the Management of DOD's Acquisition Lead Times for Spare Parts. GAO-07-281. Washington, D.C.: March 2, 2007.

DOD's High-Risk Areas: Progress Made Implementing Supply Chain Management Recommendations, but Full Extent of Improvement Unknown. GAO-07-234. Washington, D.C.: January 17, 2007.

Defense Inventory: Opportunities Exist to Save Billions by Reducing Air Force's Unneeded Spare Parts Inventory. GAO-07-232. Washington, D.C.: April 27, 2007.

DOD's High-Risk Areas: Challenges Remain to Achieving and Demonstrating Progress in Supply Chain Management. GAO-06-983T. Washington, D.C.: July 25, 2006.

Defense Inventory: Actions Needed to Improve Inventory Retention Management. GAO-06-512. Washington, D.C.: May 25, 2006.

Defense Logistics: More Efficient Use of Active RFID Tags Could Potentially Avoid Millions in Unnecessary Purchases. GAO-06-366R. Washington, D.C.: March 8, 2006.

Defense Logistics: Better Strategic Planning Can Help Ensure DOD's Successful Implementation of Passive Radio Frequency Identification. GAO-05-345. Washington, D.C.: September 12, 2005.

DOD Excess Property: Management Control Breakdowns Result in Substantial Waste and Inefficiency. GAO-05-277. Washington, D.C.: May 13, 2005.

High-Risk Series: An Update. GAO-05-207. Washington, D.C.: January 2005.

Defense Inventory: Improvements Needed in DOD's Implementation of Its Long-Term Strategy for Total Asset Visibility of Its Inventory. GAO-05-15. Washington, D.C.: December 6, 2004.

Defense Inventory: Approach for Deciding Whether to Retain or Dispose of Items Needs Improvements. GAO-01-475. Washington, D.C.: May 25, 2001.

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