Department of Defense

Comprehensive Inventory Management Improvement Plan

Assistant Secretary of Defense
for Logistics and Materiel Readiness

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Globally Responsive, Operationally Precise, and Cost-Effective Joint Logistics Support for the Projection and Sustainment of America's Warfighters

A Message from the Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness

This plan was developed to guide and direct DoD's collective efforts to improve inventory management and support to the warfighters. The Plan details specific objectives, namely to improve forecasting and reduce or terminate orders to ensure the inventory accurately reflects actual needs, to enhance the methods for determining the amount of inventory to retain, and to ensure timely review and disposal of excess inventory. The plan establishes improved ways to invest resources and manage the Department's inventory.

Section 328 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010 established a formal requirement for the Secretary of Defense to submit "a comprehensive plan for improving the inventory management systems of the Military Departments and the Defense Logistics Agency with the objective of reducing the acquisition and storage of secondary item inventory that is excess to requirements." The improvements embodied in this plan extend beyond the eight areas cited in the legislation, addressing a broad range of improvements to size the DoD inventory to meet the needs of the warfighter.

The overall objective of the Plan is 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. The plan outlines two overall goals. First, by the end of FY2016, the Department will reduce total on-order excess inventory from 8.5 percent in FY2009 to 4 percent of total obligated on-order dollars. Second, the Department will reduce the on-hand excess inventory from 11.3 percent in FY2009 to 10 percent of the current value of potential reutilization stocks (PRS) by the end of FY2012.

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Chapter 1
Inventory Management Improvement—An Overview

The Department of Defense developed this *Comprehensive Inventory Management Improvement Plan* to document and guide its collective efforts to improve inventory management. This Plan also fulfills the congressional requirement in Section 328 of the *National Defense Authorization Act* (NDAA) *for Fiscal Year 2010* for the Secretary of Defense to submit "a comprehensive plan for improving the inventory management systems of the Military Departments and the Defense Logistics Agency (DLA) with the objective of reducing the acquisition and storage of materiel inventory that is excess to requirements."

The overall objective of the Plan is 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.

DOD INVENTORY MANAGEMENT

The mission of the Department of Defense is to protect the American people and advance our nation's interests. Public law assigns specific responsibilities to the Department and its principal Components—the Army, Navy, Air Force, Marine Corps, and DLA—to provide the materiel support and services needed to sustain all military operations directed by the President, Congress, and the Secretary of Defense.

To provide that materiel support, the Department manages more than 4 million secondary items,[1] with inventory valued at approximately $90 billion. For management purposes, the inventory is segmented into four categories:

- Stock within the approved acquisition objective (AAO)—the quantity of an item authorized for peacetime and wartime requirements to equip and sustain U.S. and allied forces, according to current DoD policies and plans.

- Economic retention stock (ERS)—stock above the AAO that is more economical to retain than to dispose.

[1] A secondary item is an item of supply that is not defined as a principal item and includes reparable components, subsystems and assemblies, consumable repair parts, bulk items and material, subsistence, and expendable end items, including clothing and other personal gear.

- Contingency retention stock (CRS)—stock above the AAO and above the ERS level that is held to support specific contingencies.

- Potential reutilization stock (PRS)[2]—stock identified for potential reuse.

The first three categories of inventory (AAO, ERS, and CRS) are regarded by the Department and the Section 328 as inventory necessary for the military mission.

The Department is improving its inventory management practices to ensure investment in future purchases and repairs, and the costs associated with maintaining its inventory, are aligned with customer needs.

Acquisition of Secondary Item Inventory

The acquisition of secondary item inventory is a function of the Department's inventory management procedures that determine the requirement levels for individual items of supply. Those procedures extend throughout the life cycle of an item; it starts when a weapon system program or inventory manager first introduces the item into the supply system, and it ends when all assets are disposed of and the item is removed from the system.

The inventory management procedures encompass three consecutive activities. The first is to determine the support strategy. Typical support strategy decisions are made early in the life of an item as part of the weapon system acquisition strategy, but these may change at any point in the item's life cycle. The inventory manager for an item must decide if customer requirements for an item should be satisfied from DoD-owned and managed inventory stored in DoD distribution depots, from contractor-owned and managed inventory stored within commercial warehouses, or a hybrid of DoD and contractor ownership and management.

The second activity for inventory management of secondary items is to determine the inventory requirements. If the decision is to provide support organically, the inventory manager must determine how much customer demand to expect and what inventory levels should be available to fill that demand. While the majority of inventory dollars are for items that have forecasted demand, some inventory dollars are for items with insufficient demand to warrant a forecast but have a level of stock based on a management decision to meet mission needs. Table 1-1 shows how an item's life cycle influences the methods and data that inventory managers use to forecast customer demand.

[2] Within the Department of Defense, PRS is valued at the expected return of sales from the disposal activity. For the purposes of this Plan, PRS is valued at its full acquisition price, or, for an unserviceable item in need of repair, at its acquisition price less the cost of repair. By valuing PRS in the same way as AAO, ERS, and CRS, it is possible to compare efforts to reduce PRS relative to the total inventory. A significant portion of PRS inventory also consists of unserviceable items, which the operating forces may have used multiple times before disposal.

Table 1-1. Life-Cycle Challenges to Demand Forecasting

Stage in life cycle	Technical challenges to demand forecasting
When an item is first introduced in a new program	• No historical demand data exists for building a forecast, although its weapon system application may be fairly well defined. • The range of available forecasting models that are effective for newly introduced items is severely limited.
When an item is in the system for some time in a steady-state program	• Historical demand data is available, but its application may be imprecise due to weapon system modifications and item upgrades. • A full range of models for a steady-state system is available, but dynamic operations require the use of filters to deal with non-recurring outliers.
When an item is leaving the system in a declining program	• Actual demand data is no longer representative of future demand and uncertainty of application makes it difficult to determine exactly when it will no longer be needed. • Forecasts from models must be constrained to account for the end of demand when system usage and population is declining.

The third activity is to procure and maintain inventory. With inventory levels in place, the inventory manager must decide when to initiate a buy or repair action and how much to buy or repair. The manager must also follow any buy or repair action through the procurement or repair lead time cycle and react to any significant change in expected customer demand that might change the buy or repair quantity. Organic and commercial sources satisfy procurement requirements for new reparable and consumable items[3] and repair requirements for reparable items.

Table 1-2 outlines the structured procedures the Department uses to acquire secondary item inventory.

Table 1-2. Current Policy on Acquiring Secondary Item Inventory

Procedures	Description	Objective
Determine support strategy		
Item categorization	The classification of items by their weapon system application, commercial availability, life-cycle stage, and repairability.	Identify all attributes of an item that are a factor in determining its optimal support strategy.
Item support goals	The establishment of support goals for all items.	Provide inventory managers with quantitative targets they can use to plan for support.
Support strategy	The assessment of commercial and organic support alternatives based on best value (i.e., required level of support and quality at the lowest cost).	Ensure the timely, accurate, and complete satisfaction of customer requirements at a minimum cost.

[3] Commercial sources satisfy procurement requirements for reparable and consumable items with the limited exception of ammunition supplies that may be fabricated by Army arsenals in accordance with 10 USC Section 4532.

Table 1-2. Current Policy on Acquiring Secondary Item Inventory

Procedures	Description	Objective
Determine inventory requirements		
Demand forecasting	The use of quantitative models and customer collaboration to forecast future demand for an item.	Forecast as accurately as possible what customer demand will be.
Stockage computations	The setting of inventory levels that determine when to buy an item and how much to buy, as well as when to repair and how much to repair for reparable items.	Set levels that meet item support goals relative to expected customer demand at the lowest cost.
Procure and maintain inventory		
Order placement	The process of initiating a procurement request (from contract award to final delivery) or the process of inducting an unserviceable item and making it a serviceable item through repair.	Place and receive economical orders that are timely and meet all required specifications.
Order management	The process of tracking and adjusting orders through their procurement or repair cycle.	Ensure the quantities being procured or repaired align with the most current expectation of future demand.

Source: DoD 4140.1-R, *DoD Supply Chain Materiel Management Regulation*.

Materiel Retention

DoD's inventory managers plan, buy, and repair materiel to meet anticipated customer demand in the near future. The quantity needed to satisfy the near-term forecast is categorized as within the AAO. Many factors affect the Department's ability to forecast customer demand and maintain the appropriate level of inventory. Changes in mission and operating tempo, technical and engineering changes, and extended system life cycles are significant drivers of materiel retention decisions. Because of these factors, the inventory managed by the Department is subject to a high variability of demand. As a result, DoD inventory managers must frequently make and justify decisions to retain stocks—above the AAO—that are already purchased or repaired for use.

Some level of secondary items is always in excess to requirements at a point in time. Research shows that, even if inventory managers had perfect knowledge of future customer requirements (that is, forecasted demand is equal to actual demand), there could still be excesses from one year to the next as these requirements change.

Table 1-3 illustrates this phenomenon for a reparable item. In this example, an operating level of 10 units is established in Year 1 based on perfect knowledge of the next 5 years of demand.

Table 1-3. Perfect Knowledge of the Future Does Not Guarantee Perfect Results
(data are simplified and illustrative only)

	Year 1	Year 2	Year 3	Year 4	Year 5
Customer demands (actual and forecasted)	10	8	5	8	10
AAO	10	8	5	8	10
ERS	0	2	3	2	0
PRS (apparent excess)	0	0	2	0	0

If a level of stock equal to the initial expected level of demand is procured and repaired as customers turn in failed components and demand replacements, requirements may decrease in the intervening years and then return to its initial level. In this example, 10 units are procured in Year 1 because the AAO was set at 10 from the "perfect knowledge" of customer demand. As the demand goes down in subsequent years, the stratification of the Year 3 inventory lists two assets as excess. By Year 5, however, there is no longer excess inventory as the demand returns to 10. If the item manager had disposed of the potential excess inventory in Year 3, a reprocurement of two assets would be required in Year 5.

DoD Components continually seek improvements to existing retention and disposal procedures with the objective of limiting inventory stockage above AAO and retaining the necessary levels of materiel based on economic factors and to satisfy the probability that retained items will be needed to support both military and other contingencies worldwide.

The Department expects to see a continued near-term reduction in retention stocks as a portion of the total inventory; however, retention stocks may actually increase during the interim as demand in theater decreases and the redeploying forces return materiel to the continental United States (CONUS) distribution centers, where inventory managers will evaluate it for retention or disposal.

The Department has a structured approach to the process of retaining inventory above the AAO requirement. As shown in Table 1-4, that approach has three major activities with associated procedures and objectives.

Table 1-4. Major Activities Associated with Materiel Retention

Procedures	Description	Objective
Determine ERS levels		
Determination of economic retention limits	An economic analysis is performed to set the maximum quantity of stock that warrants economic retention. The analysis considers the costs of retaining items, storage capacity, potential long-term demand, potential repurchase costs, expected life of the systems supported, and the number of systems in use.	Set valid upper economic retention limits based on the cost of retention, the cost of disposal, and the cost of potential item repurchase.

Table 1-4. Major Activities Associated with Materiel Retention

Procedures	Description	Objective
Identification of ERS	The stratification of inventory assets above the AAO against the economic retention limit.	Identify as ERS those assets supported by an economic analysis of all costs and savings.
Management of no-demand items	Identification of items with no demand for extended periods.	Identify reasons for retaining or disposing of items with no demand over extended periods.
Determine CRS levels		
Identification of reasons for CRS	Periodic reviews of the reasons for retaining contingency stocks.	Validate the reasons for contingency retention and verify the accuracy in using the reasons.
Identification of CRS	The stratification of inventory assets above the sum of the AAO and ERS for items with valid contingency retention.	Identify as CRS those assets supported by a valid CRS reason.
Review PRS		
PRS review	The accomplishment of all required legal and policy materiel reviews to determine proper items and quantities of materiel for disposal.	Accomplish timely reviews and direct to disposal those assets not needed for AAO requirements or to meet economic and contingency retention criteria.

STRATEGY FOR IMPROVING INVENTORY MANAGEMENT

The Department has developed this *Comprehensive Inventory Management Improvement Plan* as a management tool to direct DoD inventory management improvement. The Plan details specific objectives, namely to improve forecasting and reduce or terminate orders to ensure the inventory accurately reflects actual needs, to enhance the methods for determining the amount of inventory to retain, and to ensure timely review and disposal of excess inventory. The Plan documents better ways to invest resources and manage inventory, while not degrading materiel support to the warfighter. The improvements embodied in this Plan extend beyond the eight areas cited in Section 328, and address a broad range of improvements to better size the DoD inventory to meet the needs of the warfighter.

The Department's strategy is to improve inventory management processes and systems so the DoD Components can size and manage their inventories to meet the needs of the military forces while reducing excess inventory. It balances investment and risk with a number of other factors that contribute to the complexity of the Department's inventory management systems, like erratic demand, fluctuating operating tempo of the military forces, changing maintenance practices, multiple weapon system configurations, extended procurement lead times, and diminishing manufacturing and repair sources. These factors directly influence inventory management decision of whether to procure or repair items, and whether to retain inventory. Unplanned materiel returns from customers also affect inventory management decisions.

This Plan builds on the ongoing efforts of the Department to address the above factors. Its detailed sub-plans list the specific actions the Department is taking in the areas of demand forecasting, total asset visibility (TAV) and multi-echelon modeling, on-order

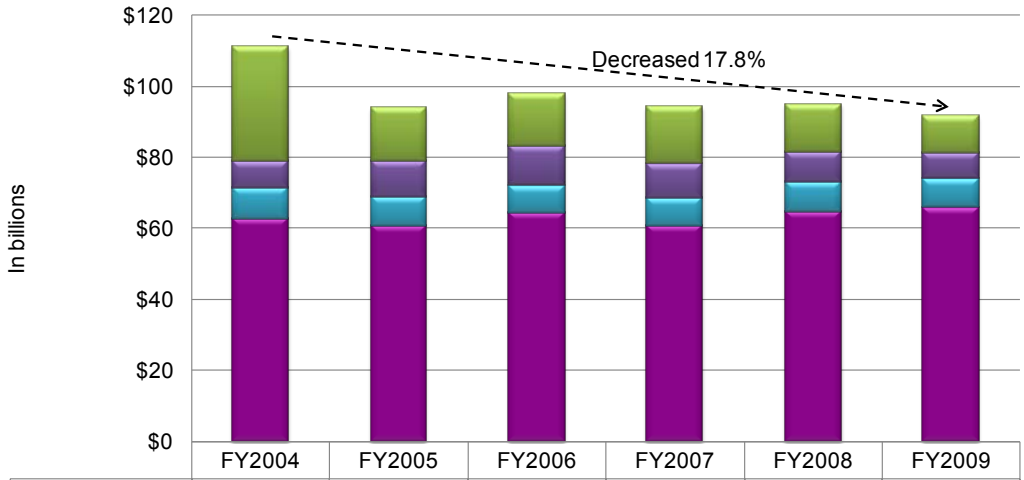
excess, economic retention, contingency retention, storage and direct vendor delivery (DVD), items with no demand, and the disposition of PRS. Table 1-5 identifies the targeted objectives that support the outcomes of the eight required elements of the Plan.

Table 1-5. DoD Objectives for Required Sub-Plans

Required sub-plan	DoD objective
Demand forecasting	Improve the prediction of future demands so that inventory requirements more accurately reflect actual needs.
TAV and multi-echelon modeling	Minimize the size of buys by considering all inventories in the system.
On-order excess	Reduce or terminate buys with a decrease in requirements.
Economic retention	Ensure economic retention decisions are based on current cost factors and economic principles.
Contingency retention	Ensure contingency retention stockage is justifiable in terms of the probability of future need to support contingency use.
DVD impact on warehouse storage	Use commercial vendors to store items that generate increased storage costs when use of those vendors represents the best value to the Government.
Items with no demand	Eliminate storage of items with a history of no demand and a low probability of future demand unless there is an overriding reason to retain it.
Disposition of PRS	Ensure timely disposal of PRS that the DoD Components stratify as excess.

In developing this Plan, the Department focused on those actions necessary to minimize the initial acquisition and subsequent retention of unneeded inventories. The Department and the taxpayer benefit when unnecessary buys and repairs do not occur. Those actions address materiel acquisition, retention of inventory that may be needed in the future, and expediting the elimination of unneeded assets. They also build on the improvement efforts currently ongoing across the Department. Figure 1-1 shows the end of fiscal year dollar value for AAO, ERS, CRS, and PRS during FY2004–FY2009 and how, relative to the total inventory, the Department has reduced PRS from 29 percent (FY2004) to 11 percent (FY2009).

Figure 1-1. Value of DoD Secondary Item Inventory by Category
(constant FY2009 dollars, less fuels)

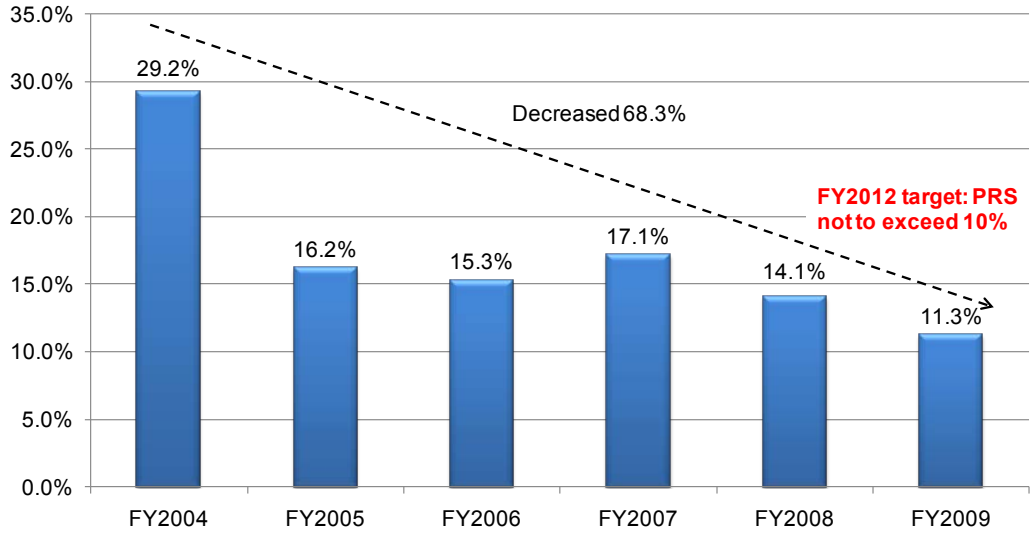


	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
PRS at full price	$32.5	$15.2	$15.0	$16.2	$13.3	$10.3
CRS	$7.3	$9.9	$10.9	$9.6	$8.4	$7.2
ERS	$8.9	$8.3	$7.8	$7.9	$8.4	$8.0
AAO	$62.5	$60.5	$64.3	$60.7	$64.6	$65.9

Source: Supply System Inventory Report (SSIR).

During the same period, the overall value of PRS decreased 68.3 percent. As shown in Figure 1-2, both the absolute value of PRS (in constant FY2009 dollars) as well as the percentage of PRS to total inventory has declined since FY2004.

Figure 1-2. Value of PRS in Relation to Total Materiel Inventory
(constant dollars, less fuels)

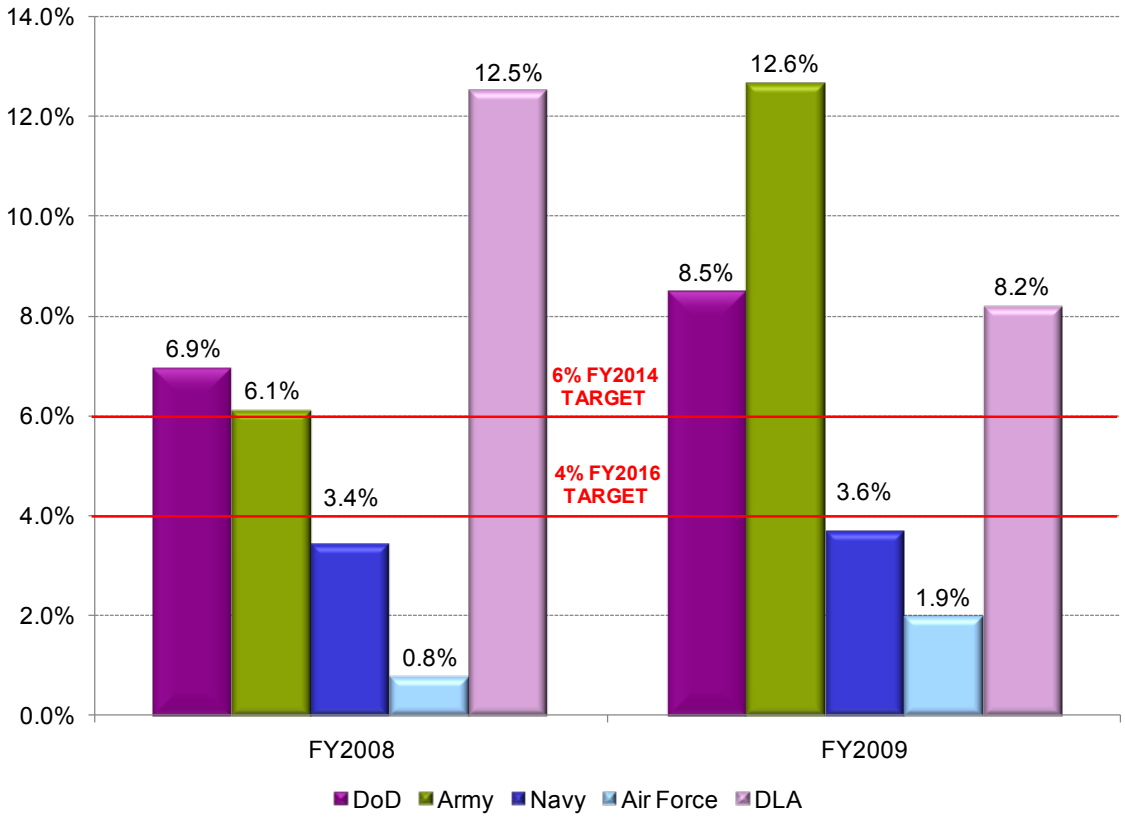


PRS at full price	$32.5	$15.2	$15.0	$16.2	$13.3	$10.3
Total inventory	$111.2	$93.9	$97.9	$94.3	$94.8	$91.4

Source: SSIR.

Figure 1-3 shows the percentage of on-order dollars that are above the AAO for individual items for the last 2 years. The Army, Navy and Air Force percentages have increased while the DLA percentage decreased. The significant Army increase is attributable to their transition to a new inventory management system. The Army is in the process of ensuring that their new system will address termination of on-order excess.

Figure 1-3. Percentage of On-Order Dollars above the AAO



Source: DoD Component data.

To maintain a focus on mitigating and reducing excess inventory, the Plan outlines two overall goals. First, by the end of FY2016 the Department will reduce total on-order excess inventory from 8.5 percent in FY2009 to 4 percent of total obligated on-order dollars (see Figure 1-3). Second, the Department will reduce the on-hand excess inventory from 11.3 percent in FY2009 to 10 percent of the current value of PRS (see Figure 1-2).

PLAN ACTIONS

To accomplish the above goals, the Plan identifies ongoing efforts within the Components along with the Department-wide actions that enable the effective execution of the eight plans required under Section 328. Table 1-6 summarizes the specific sub-plan actions and the associated targets.

Table 1-6. DoD Actions and Targets for Required Sub-Plans

Required sub-plan	Actions	Targets
Demand forecasting	Implement improved demand forecasting methods and techniques; establish standard forecasting metrics; reduce or share investment risk for new items.	Establishment of enterprise level forecast accuracy metric and forecast bias metric by FY2012Q4.
TAV and multi-echelon modeling	Apply TAV to minimize the size of buys by expanding automated capabilities to access and redistribute assets in targeted inventories and by increasing the application of multi-echelon modeling.	Access to 90 percent of targeted inventory, with appropriate business rules, within 5 years; use of multi-echelon modeling on 90 percent of targeted inventories within 5 years.
On-order excess	Establish an economically optimal point for terminating a materiel order and strengthen approval and reporting procedures for order termination.	Reduction of on-order excess from 7.5 percent in FY2009, to 6 percent in FY2014, and to 4 percent by FY2016.
Economic retention	Review and validate current retention methods and establish a process for the periodic review of economic retention.	Completion of annual reviews of 100 percent of items held as ERS to ensure retention decisions are based on approved economic methodology; revalidate all Component methods and cost factors on a 3-year cycle.
Contingency retention	Improve the categorization of contingency inventory and establish a process for the periodic review of contingency retention.	Ensure annual reviews of items held as CRS are based upon approved criteria.
DVD impact on warehouse storage	Identify items with high storage requirements for potential DVD.	Reduce storage space in accordance with 2005 Defense Base Closure and Realignment (BRAC) Commission by FY2011 and track storage reduction metrics in subsequent years.
Items with no demand	Improve the management of items with no demand and establish an annual review and reporting process	Complete 100 percent annual review and categorization for items with no demand for 5+ years by FY2012Q3 and every year thereafter.
Disposition of PRS	Validate Component methods for timely review of PRS stock and accelerate the screening, disposition, and reporting of materiel returns and disposals	Reset within 2 years the time standards for PRS reviews from 12 to 3 months and for completion of disposal action from 6 to 1 month.

Chapters 2–9 are the detailed sub-plans required by the elements of Section 328. Each sub-plan follows the structure listed in Table 1-7.

Table 1-7. Required Sub-Plan Format

Required sub-plan section	Description
Introduction	Discusses the general topic of the sub-plan.
Congressional tasking	Quotes the congressional requirement for the sub-plan.
Issue statement	Addresses the challenges faced by DoD inventory managers in sub-plan area.
Overall objective	Describes the primary objective the Department wants to achieve upon implementation.
Current Military Department and DLA practices and improvement efforts	Presents the current practices and improvement efforts of each DoD Component relative to the sub-plan area.
Department-wide actions	Describes the actions planned to improve current management in the sub-plan area and lists applicable Office of the Secretary of Defense (OSD) and DoD Component assignments for each action milestone.
Measures of success	Identifies the management target for the sub-plan and discusses how the Department intends to use metrics to judge the success of the sub-plan actions in meeting its management target. This section also contains graphics that illustrate available service and DLA historical data applicable to each measure.

In addition to the required sub-plans, the Department identified other actions (Chapter 10) to improve inventory management that are outside the specific elements identified in Section 328. They include defining and establishing an improved segmentation of DoD inventory, establishing DoD-wide procedures for reducing procurement lead times, and facilitating modernization of information technology systems related to inventory management.

PLAN STRUCTURE, RESPONSIBILITIES, IMPLEMENTATION, AND OVERSIGHT

To ensure successful implementation, a defined and accountable management structure is established to oversee the Plan's execution and to track progress. Likewise, the organizational responsibilities are assigned both to oversee the Plan's implementation and to accomplish the required actions.

Responsibilities

Assistant Secretary of Defense for Logistics and Materiel Readiness

- Advises the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) and other senior leaders with respect to the approval and oversight of this Plan.

- Prescribes Department-wide policies and procedures for the conduct of inventory management matters in accordance with this Plan.

- Receives and approves Plan implementation and action execution updates.

Deputy Assistant Secretary of Defense for Supply Chain Integration

- Advises the Assistant Secretary of Defense for Logistics and Materiel Readiness (ASD(L&MR)) with respect to the development, approval, and oversight of this Plan.

- Provides Department-wide oversight for development, coordination, approval, and implementation of this Plan.

- Reviews and analyzes Plan implementation progress.

- Develops and coordinates Department-wide policies and procedures necessary for improving inventory management in accordance with this Plan.

- Chairs the Supply Chain Executive Steering Committee for the purpose of ensuring Component awareness, development, updating, implementation, and progress reporting of this Plan.

Supply Chain Executive Steering Committee

- Advises the Deputy Assistant Secretary of Defense for Supply Chain Integration (DASD(SCI)) in matters relevant to the development and execution of this Plan.

- Provides a common forum for inter-Component discussion and Component input to this Plan.

Military Departments and DLA

- Provide Component representation on Plan working groups and input related to Plan development, implementation, studies, and analysis, as well as measurement of progress for all applicable elements and actions.

- Accomplish Component implementation of this Plan, including, as required, policies, procedures, metrics, training, system modernizations, and technology innovations in support of this Plan.

- Provide input to the in-progress reviews of Plan implementation for the DASD(SCI).

Inventory Management Working Groups

Inventory management working groups are responsible for the execution of the actions in the Plan and will review progress with the Supply Chain Executive Steering Committee. Each group is chaired by the Office of the DASD(SCI) and has membership from each of the DoD Components as well as other DoD elements, as required. The groups will receive status on their respective milestone actions from the Components responsible for them.

Inventory and Retention Group

This group is responsible for all actions outlined under the on-order excess, economic retention, contingency retention, storage and DVD, no-demand items, and disposition of PRS sub-plans (Chapters 4, 5, 6, 7, 8, and 9 respectively). The group is also responsible for all actions associated with inventory segmentation, systems modernization, and efficiency metrics under the sub-plan for other inventory improvement actions (Chapter 10). Specific responsibilities include the following:

- Ensure the organic or contractual resources needed to complete Plan actions are available. The group's chair will bring all resourcing issues to the attention of the DASD(SCI) for resolution.
- Monitor progress on actions, including success in meeting milestones and assigned targets.
- Reshape or revise actions that are not progressing as planned and submit revisions to DASD(SCI) for approval.
- Develop actions that result in either improved inventory acquisition or retention.
- Develop or refine metrics in collaboration with the Supply Chain Metrics Group (SCMG).

Forecasting and Demand Planning Group

This group is responsible for all actions under the demand forecasting and TAV and multi-echelon modeling sub-plans (Chapters 2 and 3 respectively). The group is also responsible for all actions associated with procurement lead time reductions under the sub-plan for other inventory improvement actions (Chapter 10). Specific responsibilities include the following:

- Ensure the organic or contractual resources needed to complete Plan actions are available. The group's chair will bring all resourcing issues to the attention of the DASD(SCI) for resolution.
- Monitor progress on actions, including success in meeting milestones and assigned targets.
- Reshape or revise actions that are not progressing as planned and submit revisions to DASD(SCI) for approval.
- Develop new actions that result in either improved forecasting or improved multi-echelon modeling.
- Develop or refine metrics in collaboration with the SCMG.

Supply Chain Metrics Group

The SCMG is responsible for ensuring appropriate performance measures are enabled and in place to support the performance outcomes of the Plan. Specific responsibilities in collaboration with the other groups include the following:

- Ensure consistent approaches are used to assess accomplishments and to manage performance.
- Lead efforts to standardize the definitions and computations of selected metrics and ensure consistent measurement.
- Validate the effectiveness of measures as indicators of progress toward related performance objectives and expected outcomes.
- Translate metrics and relate measured results to outcomes to inform future decisions.
- Integrate the metrics that are included in this Plan into the DoD Performance Measurement Framework.[4]

In-Progress Reviews

To ensure the Plan actions are progressing as expected, the Department will conduct in-progress reviews and report findings to the Supply Chain Executive Steering Committee. A detailed plan of actions and milestones (POA&M) has been established from the actions in this Plan. Progress will be measured regularly against the POA&M to include actions completed, actions underway, and measures of success. Additionally, the Department will regularly review how the actions of the Plan are reducing the acquisition and retention of excess inventory. Quantifiable targets have been established for each area of improvement and are listed in each of the sub-plans, along with the metrics that will be used to measure success. The Department is developing at least one Department-wide metric to measure the efficiency of the total DoD supply system, which is detailed in Chapter 10. Lastly, the Department must balance improvements to efficiency against any degradation in customer support. It will use materiel readiness indicators (e.g., non-mission capable rates, and customer wait time) to quantitatively assess whether the attainment of targets, established for inventory management improvement and efficiency, is resulting in any adverse impact the operating forces.

[4] *DoD Strategic Management Plan*, July 2009, pp. 13–20.

Chapter 2
Sub-Plan A: Demand Forecasting

INTRODUCTION

Accurate forecasting of materiel demand is an essential element of properly sizing future inventory. A direct relationship exists between the administrative and production lead time levels and economic order quantities for an item and the demand forecast for that item. A direct relationship also exists between the safety level for an item and its forecasted demand and demand variance. Consequently, inaccurate forecasting leads to imperfect level setting, which may result in either excess inventory or shortfalls when filling customer demand.

This sub-plan lays out a course of action to improve the inventory level setting process, demand planning accuracy, and forecast accuracy. The Department will baseline current demand forecast methodologies, review best practices, establish diagnostic metrics on forecast accuracy and over-forecast bias, identify improved ways for collaboration, and improve its approach to forecasting of inventory levels for items that do not have sufficient demand histories for traditional modeling.

In this chapter, the term "NSN" (i.e., national stock number) refers to an item of supply for which a forecast is being generated.

CONGRESSIONAL TASKING

Element (1) of Section 328 called for, "[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."

ISSUE STATEMENT

The purpose of demand forecasting is to predict future customer materiel demands so inventory managers can develop inventory requirements to satisfy those demands when they occur.

DoD demand forecasts are educated estimates of future demands. The forecasted demands are predominantly for components and repair parts to support scheduled and unscheduled repair actions and for consumable items within other commodities, such as medical supplies. The processes that generate those demands are often random and differ by inventory segment

The demand patterns themselves are highly variable and unpredictable. A recent article on spare parts forecasting[1] indicates there are two primary reasons for this. First, intermittent demand patterns are common for spare parts (i.e., sequences of zero demands are interspersed with non-zero demands). Secondly, when demands do occur, they are highly variable in size. The combination of intermittent demand and variable size makes forecasting of spare parts very difficult. Private sector industries, such as telecommunication and airline industries, hold a wide range of spares in stock; and forecasting their requirements is important to operational issues that involve material availability and inventory holding.[2] This is also true within the Department of Defense, where spares shortages can degrade readiness and spares excesses can increase holding costs.

Examples of Unpredictable Demand Drivers for Air Force Items

- A Class A mishap for TF-34 engines drove a risk mitigation time compliance technical order to replace life-limited parts, significantly creating variability in parts requirements between the FY2009 forecast and the FY2010 forecast.
- With exposure to harsh operational environmental conditions (including excessive heat and sand ingestion), the average time on wing for the F101 engine decreased between FY2009 and FY2010, which led to variability in engine overhauls and an increase in parts requirements.
- The operating tempo for the F108 also increased, thus creating a 21 percent increase in the total accumulated cycles per flying hour and leading to increased engine overhauls based on scheduled and unscheduled removals. When large overhauls occur within lead time, the supply chain cannot catch up, leaving parts shortages that affect maintenance.

The methods for forecasting vary over the life cycle of a weapon system and the associated life cycle of the items supporting that weapons system. There are three primary life-cycle stages:

- *New item introduction*. When an item is first introduced, no actual demand data exists for building a demand forecast, even when its weapon system application is fairly well defined. The range of available forecasting models is very limited. Opportunities to collaborate with customers and suppliers to improve forecast data are minimal.

- *Sustainment*. After an item is in the system for some time, actual demand data is available for forecasting, but an item's application may be clouded by modifications and upgrades. A full range of forecasting models is available, but dynamic operations require the use of filters to deal with non-recurring outliers. Opportunities to collaborate with customers and suppliers are more plentiful.

- *End of life*. When an item is leaving the system, actual demand data is no longer representative of future demand, and uncertainty of application may make it difficult to determine exactly when it will no longer be needed. Forecasts from models must be constrained to account for the declining demand. Customer and supplier collaboration opportunities remain, but they, too, may be declining.

[1] Boylan and Syntetos, *IMA Journal of Management Mathematics Advance Access*, "Spare parts management: a review of forecasting research and extensions," November 12, 2009, p. 1.

[2] Ibid.

OVERALL OBJECTIVE

The objective of this sub-plan is to improve the prediction of future demands so that inventory requirements more accurately reflect actual needs. Desired outcomes are as follows:

- *A forecasting process that captures best practices and minimizes systematic weaknesses throughout an item's life cycle*. The enterprise resource planning (ERP) systems the Department is implementing emphasize demand planning. Moreover, the ERP systems allow the introduction of new techniques for statistical modeling and collaboration. The goal is to take full advantage of those techniques.

- *A Department-wide capability to measure forecast accuracy across DoD and within the Components by weapon system, commodities, items or other relevant breakouts*. Statistical measures of forecast accuracy have their own bias and may not correctly identify the best techniques for statistical forecasting in terms of inventory investment, level of support to the customer, and number of secondary item procurements. The goal is to establish a measurement capability that minimizes bias and can produce results for different inventory segments.

- *The ability to address forecast error quickly and reduce bias toward over-forecasting of materiel requirements*. If demand forecasts are too high, inventory managers will invest too much in inventory, which creates excess. If demand forecasts are too low, inventory managers will invest too little in inventory, creating the need to backorder a customer demand. The goal is to correct over- and under-forecasts before inventory managers make investment decisions.

- *A routine collaborative process between forecasters, customers and suppliers to improve demand forecasts*. If customers are able to communicate their best estimates of what they will demand, then demand forecasts should improve. Similarly, inventory requirements should improve when customers clearly identify their best estimates of what they will demand. When suppliers understand customer needs, lead time reductions and improved production quantities will result in less inventory investment for the Department. The goal is to produce a more accurate forecast for suppliers to meet.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

The demand forecasting approaches employed by the Military Departments and DLA vary by lifecycle phase. Table 2-1 summarizes how each of the DoD Components forecasts demands for each lifecycle phase.

Table 2-1. Demand Forecast Basis

Army	Navy	Air Force	Marine Corps	DLA
New item introduction				
Engineering estimates blended with historical demand, operating tempos, and end item densities	Engineering estimates blended with historical demand, operating tempos and end item densities	Engineering estimates blended with historical demand, operating tempos and end item densities	Engineering estimates blended with historical demand, operating tempos and end item densities	Supply support requests from the Military Departments; based on engineering estimates
Sustainment				
Historical demand adjusted for operating tempo	Historical demand adjusted for operating tempo	Historical demand adjusted for operating tempo	Historical demand	Historical demand adjusted based on customer/supplier collaboration
End of Life				
Historical demand adjusted for drawdown	Historical demand adjusted for drawdown	Historical demand adjusted for drawdown	Historical demand adjusted for drawdown	Historic demand adjusted for drawdown based on customer/supplier collaboration

As shown, the data used for forecasting are similar among the DoD Components by life-cycle phase:

- For new item introduction, all of the Military Departments rely on contractor-provided engineering estimates (combined with limited historical demand data when it is available) to forecast future demand.

- During sustainment, the DoD Components primarily rely on actual demand data to predict future demand.

- At the end of the item's life, the Military Departments and DLA continue to use historical demand data to forecast requirements, but they adjust the data based on expected phase out of the item. Usually the phase-out is based on the projected retirement of the equipment to which the item applies. In the case of a system modification or replacement product introduction, it may also be based on the introduction of a replacement item.

The Components differ in how they adjust actual demand history using filters to eliminate outliers and automated tools to determine trends. They also differ in how they factor in operating tempo changes to future demand predictions. Most of the DoD Components are in the process of converting from legacy management information systems to ERP systems. The transitions will produce additional variations in how the Components adjust past demand data to predict future demands.

Army

The Army uses readiness-based sparing (RBS) to compute requirements for new item introductions if, and only if, the new item is part of a provisioning weapon system; otherwise the Army uses engineering estimates to forecast demand.

The Army uses two systems to forecast demand and compute requirements during sustainment. The Army's legacy system, the Commodity Command Standard System (CCSS), uses the latest demand history to compute a moving average and adjusts the average based on planned changes in operating tempo. CCSS can calculate demands by customer area or type. A subroutine determines which items should be stocked—or not-stocked—based on the number of demands experienced.

The Army's ERP system, the Logistics Modernization Program (LMP), forecasts demand using several models (i.e., exponential smoothing, moving average, weighted moving average, and Cronston's Method) and adjusts for operating tempo changes. The Army is assessing the usefulness of these models to recognize improvements in forecast accuracy. Currently, LMP calculates demand on a worldwide basis but a system change has been proposed to provide customer area breakouts, which will provide an enhanced forecasting capability. This may require adding program capability above the LMP-ERP baseline. LMP has no formal decision model for determining stocked versus not-stocked items.

Table 2-2. Current Army Forecasting Improvement Efforts

Improvement	Goal	Target
An assessment of the benefits of advanced commercial off-the-shelf forecasting techniques. Four packages are under review. They use an asymmetrical error approach that weights forecast errors depending on the error's effect on total inventory and performance cost. This deviates from traditional measures of forecast error (e.g., mean square error and mean absolute percentage error) that give equal weight to over-and under- forecasts of similar magnitude (i.e., symmetrically).	Identify a package that improves forecasting for high-dollar-value performance-driver items and determine the next steps for implementation.	No savings or cost avoidances estimated to date. Assessment runs through April 2011.

Table 2-2. Current Army Forecasting Improvement Efforts

Improvement	Goal	Target
A collaborative prototype effort of ERP-to-ERP demand data exchange between the Army's LMP and the DLA's Enterprise Business System (EBS). Proof-of-concept test covers 150 NSNs.	Refine demand data exchange between the Army and DLA by • testing processing of Defense Logistics Management Standards–approved 830D transactions between LMP and EBS with minimal manual intervention; • developing a web-based collaborative requirements management process between DLA and Army inventory managers to improve two-way visibility of assets and requirements; • improving timeliness of support by allowing DLA customers to increase or decrease requirements every 30 days, inside and outside of DLA lead times; • reducing last-minute "parts chasing" in support of Army maintenance programs; and • applying new efficiency metrics to the process to track the impact of implemented actions from a cost perspective.	Reduced DLA inventory levels of parts required by Army depot maintenance programs. Improved DLA demand plan accuracy. Initial results show 47 percent demand plan accuracy for the 150 NSNs in the proof-of-concept test. No savings or cost avoidance to date.
Joint Army/DLA initiative to improve special program requirement (SPR)	Improve the accuracy of the SPR forecast process before it is subsumed by the demand data exchange process.	Initial focus was on improving SPR forecasts for high-dollar NSNs. SPR reject rates (due to data errors or being within the DLA lead times) were tracked and improved. Primary metric is "zero buyback" rates, which measure Army SPR forecasts for which DLA never received a demand from the Army. The Army also focused on improving the accuracy of its repair depot parts consumption history, which is a key factor in calculating SPRs. The Army's zero buyback rate fell 75 percent, from $28.5 million in 2006 to $7.12 million in 2008.

Navy

The Navy uses RBS models to compute inventory requirements during the new item introduction phase.

Like the Army, the Navy is transitioning from a legacy system, the Uniform Inventory Control Point (UICP) system, to an ERP system to forecast demand and compute inventory requirements. The UICP system uses the latest demand history to compute a 2-year moving average demand forecast and computes inventory levels based on the forecasts.

The UICP uses filters to eliminate outliers, determine which items should be stocked (or not-stocked), and, for aviation items, determine which items demands should be adjusted based on trend analysis.

The new ERP system uses 5-years of global historical demand to forecast future demands and compute inventory requirements. Filters eliminate outliers and analysis is performed to segregate items with continuous demands from those with intermittent demand. The ERP has no formal decision model for determining stocked versus not-stocked items.

The Marine Corps' legacy system uses a forecast method that is based on historical demand. It lacks the capability to consider operating tempo changes. This system is being phased out and is expected to be replaced by an ERP, but a firm schedule is not yet in place. The Marine Corps does have actions underway to improve its forecasting and inventory computation capabilities.

Table 2-3. Current Navy Forecasting Improvement Efforts

Improvement	Goal	Target
Implement advanced ERP forecasting method.	Establish baseline method in July 2010 and set improvement goals in September 2010.	Targets will be set after establishing a baseline, but they may require an adjustment given the recent conversion to ERP.
Determine the accuracy of initial provisioning estimates. Commissioned a Temple University study that is reviewing the initial provisioning estimates on five airframes.	Compare provisioning estimates with observed demand over large number of items. Allows Navy to demonstrate extent to which estimates are over or under estimated demand/failure rates and take appropriate action.	Targets will be set after establishing a baseline.
Modernize Marine Corps' demand forecasting program. Implement dynamic forecasting method that applies most suitable statistical methodology based on NSN demand history analysis.	Increase accuracy of demand forecast with downstream benefits in inventory and order management.	After implementation of the program in 2012, increase forecast accuracy by 50 percent by the end of FY2013 (stretch target).

Air Force

The Air Force uses an RBS model to compute inventory requirements during the new item introduction phase. The Air Force system, D200, forecasts demand by computing a moving average based on past historical demand, projected optempo changes and exponential smoothing. Separate rates are computed for base and wholesale depot demands.

Table 2-4. Current Air Force Forecasting Improvement Efforts

Improvement	Goal	Target
Improved quarterly forecast computations for numeric stockage objective (NSO) items, over/under-forecasted NSNs, and NSNs with no programmed demands but that experienced actual demands.	Improve demand forecast accuracy for reviewed items	Demand forecast accuracy of 50 percent by the end of 2010, and a stretch goal of 70 percent by the end of 2011.
Analyses to determine the effects of low demand NSNs and program changes to demand forecast accuracy.	Identify actions necessary to mitigate the effects if analyses determine an impact on demand forecast accuracy.	These studies are in support of the overall effort to improve demand forecast accuracy to 70 percent as stated above; no additional benefits beyond that are expected.

DLA

DLA does not develop initial forecasts for weapon systems; rather, the Services provide DLA with forecasts for DLA-managed items applicable to their weapon systems through supply support requests (SSRs). DLA does not always procure inventory based on the Military Departments' SSRs because the historical accuracy of SSRs has been low. In some cases, DLA waits until actual customer orders are received before initiating procurements for new item introductions. While this approach minimizes the risk of excess inventory, it can produce lengthy backorders that undermine achievement of the Military Departments' readiness goals. The DoD actions in this sub-plan include an action that will address this shortfall.

DLA uses an ERP system, EBS, to forecast demand and compute requirements for sustainment. DLA evaluates items to determine if there is sufficient demand for forecasting, and, if there is, how demand planning will be accomplished. For forecastable items, demand data is analyzed and outliers eliminated. Demand forecasts may be adjusted based on collaboration and forecasting tools. Once completed, the forecasted demand is passed to supply planners to determine sourcing.

Table 2-5. Current DLA Forecasting Improvement Efforts

Improvement	Goal	Target
Significant strategic sales & operations planning (S&OP) effort that includes input on forecasts from the Military Departments.	Determine worst over-forecasts and identify areas to focus on for improvements. Review forecasts to increase accuracy, identify significant bias, and align supply plans to mission needs of service.	No single target exists, but improvement goals are built into service level agreements between each Military Department and DLA.
A monthly analysis of DLA items to determine if an item is over/under-forecasted and to determine if the item's forecast is biased over an extended period.	Identify and categorize the degree of forecast bias and recommend ways to downwardly adjust the forecast. These adjustments have resulted in significant reductions in net forecast error. Net reductions, while not necessarily additive, have averaged over $10million per month and reduced corresponding percent forecast error by approximately 5 percentage points each month.	Targets vary by demand chain, but overall target is to have each demand planner review the portion of the demand plan with the largest bias.
Use of a sophisticated supply chain simulation tool (Demand Planning Simulation Tool) that permits testing of alternative forecasting techniques within DLA's JDA forecasting environment.	Implement tool to identify the most accurate forecasting technique.	Use the simulation tool to identify changes in policies that will yield inventory savings, and identify the effect of changes in inventory and demand planning policies.
A forecastability analysis team is reviewing and updating the forecastability business rules and analysis of JDA models.	Reduce forecast error and develop new min./max. rules for items that do not meet forecasting criteria.	Identify which items should be managed by forecasting and which should use a business rule to determine inventory levels.
Focused improvement initiatives with teams of demand planners.	Provide specialized training so demand planners know the tools and techniques necessary to improve demand plans.	Reduced inventory levels, reduced over-procurements, reduced demand planning bias.
A pilot program is testing the concept of the Department of the Navy and DLA sharing the cost of SSR forecast equally for the UH-1 (Huey). DLA is working with the Marine Corps and Navy on the "shared investment risk" pilot for provisioning requirements. The pilot program focuses on provisioning requirements for the UH-1 upgrade.	Complete pilot effort and implement shared investment risk initiative.	The Department of the Navy has committed to make an initial 50 percent investment of total SSR requirements for this effort.
Identify and review upward moving forecasts.	Determine root cause of these trends, implement actions to reduce upward trends where necessary, aggressive over-procurement management for over-forecasted national item identification number (NIIN), and use of S&OP operating model to monitor performance.	A review of a percentage of the top upward moving forecasts to ensure that increasing forecasts are reasonable.

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this demand-forecasting sub-plan.

Action A-1: Identify Improved Methods and Techniques for Demand Forecasting That Consider an Item's Life Cycle.

In an effort to improve demand forecasting, last year the Office of the DASD(SCI) embarked on a two-phased evaluation of DoD lifecycle forecasting approaches. In June 2009, the Department initiated the first phase of the evaluation to improve DoD forecasting approaches during the item introduction stage. The results are expected in first quarter FY2011. The second phase of the evaluation is scheduled to begin in FY2011 and will review forecasting approaches for items in the sustainment and retirement stages.

This evaluation corresponds directly to the congressional requirement by performing a systematic evaluation of DoD Component methods for forecasting demand during the three stages of an item's life cycle. The objectives of the total lifecycle review are to identify and correct weaknesses in modeling, collaboration, data management, and demand management.

Key milestones	Target dates	OPR
Identify improved demand forecasting methods and techniques and complete the ongoing review for item introduction.	FY2010Q4	OSD
Assess results and develop policy and implementation plans as required.	FY2011Q2	OSD, Military Departments, DLA
Identify improved demand forecasting methods and techniques for remaining two item life cycles.	FY2012Q3	OSD
Evaluate results and develop policy guidance.	FY2013Q2	OSD, Military Departments, DLA

Action A-2: Implement Standard Metrics to Assess Forecasting Accuracy and Bias.

The objective of this action is to identify and implement Department-wide metrics that quantify the accuracy of the demand forecasts that the DoD Components use to set inventory levels and make buys and quantify any bias towards over or under forecasting.

Key milestones	Target dates	OPR
Identify Department-wide metrics on forecast accuracy and error that capture forecast bias.	FY2011Q4	OSD, Military Departments, DLA
Establish processes within the DoD Components to produce measurements and set quantitative targets for improving demand forecasting accuracy and reducing bias.	FY2012Q4	Military Departments, DLA

Action A-3: Expand and Refine a Department-Wide Structure for Collaborative Forecasting.

The objective of this action is to put in place more automated methods for exchanging information that can be used to improved forecasts between inventory managers and customers, from program offices to weapon system maintainers. This action builds on DLA efforts to collaborate with the Military Departments as a means to improve its forecast accuracy.

Key milestones	Target dates	OPR
Pilot a collaborative process between the Military Departments and DLA demand planners for distributing and using program and maintenance data.	FY2011Q4	OSD, Military Departments, DLA
Pilot a Department-wide, OSD-led sales and operations planning process to enhance the demand and supply planning process across the Department.	FY2012Q1	OSD, Military Departments, DLA

Action A-4: Implement Approaches for Improving the Setting of Inventory Levels for Low-Demand Items.

This action identifies and implements approaches to more effectively and efficiently set inventory levels for low-demand items whose demand is too sparse for statistical models. Low-demand items pose a special challenge for DoD forecasting. The numerous periods of zero demand are not conducive to traditional forecasting methodologies. One new approach, known as Peak Policy, looks at largest peak demand for an item over an extended period and takes a percentage of it as the item's inventory requirement. Tests have shown that, for DLA items, Peak Policy can reduce inventory investment up to 10 percent, with no degradation in support.

This action plans to take the lessons learned from DLA implementation of Peak Policy as well as other alternative forecast methodologies and approaches and extend them into the Military Departments.

Key milestones	Target dates	OPR
Complete implementation of alternative forecast methodologies (e.g., peak policy) for low-demand consumable items.	FY2011Q4	OSD, DLA
Determine forecastability of low-demand items and how alternative forecast methods could be implemented for reparable items managed by each of the Military Departments.	FY2012Q2	OSD, Military Departments

Action A-5: Examine How Investment Risk for New Consumable Items Can Be Reduced between DLA and the Military Departments and Suppliers.

The objective of this action is to improve the forecasts for new consumable items entering the supply system by putting in place financial incentives for those making the forecasts. Today, the weapon system program offices of the Military Departments provide new-item forecasts based primarily on supplier engineering estimates of failures. The Components face challenges in efficiently meeting the additional inventory requirements generated from those estimates. The supply support requests, which communicate the requirements for new consumable items to DLA, often overstate requirements. In addition, special program requirements, which communicate demand estimates for established items, often do not materialize. This action looks to improve those estimates by potentially sharing the investment risk between DLA, which is purchasing the inventory, and the particular Military Department that is setting the purchase quantity.

Key milestones	Target dates	OPR
Execute a pilot program for potential provisioning risk sharing alternatives.	FY2011Q2	DLA, Navy
Evaluate results for potential wider application.	FY2011Q4	Military Departments

MEASURES OF SUCCESS

To accomplish the goals in Table 2-6, the Department will establish and implement a consistent set of forecast accuracy metrics that consider the following:

- Item life cycle categories
  - New item introductions
  - Sustainment
  - End of life
- Forecast bias
  - Over percentage
  - Under percentage.

Use of a consistent set of DoD metrics, coupled with improved demand forecasting, will result increase forecast accuracy with less forecasting bias (either over or under).

Table 2-6. DoD Forecasting Goals and Targets

Sub-plan goal	Target
Increase percentage of demand accuracy for demand-based inventory items.	Develop and track enterprise level forecast accuracy metric by FY2012Q4 based on Action A-2.
Reduce percentage of over-forecasting bias for demand-based inventory items.	Develop and track enterprise level forecast bias metric by FY2012Q4 based on Action A-2.

Chapter 3
Sub-Plan B: Total Asset Visibility and Multi-Echelon Modeling

INTRODUCTION

Asset visibility and multi-echelon modeling are critical elements of the Department's inventory improvement efforts. TAV is the capability to provide all users, including commercial activities, with timely and accurate information about the location, movement, status and identity of units, equipment, materiel, and supplies. TAV also includes the capability to act on information to improve overall performance of DoD logistic practices.[1] Multi-echelon modeling generally refers to RBS models, which are mathematical models capable of computing the optimal range and depth of spare and repair parts at wholesale and retail echelons of supply to achieve a weapon system readiness goal at least cost or to maximize readiness for a fixed cost.[2]

The intent of this sub-plan for multi-echelon modeling is to achieve efficient utilization of inventory through increased asset visibility and the capability to use that visibility to offset the need to procure or repair additional assets.

CONGRESSIONAL TASKING

Element (2) of Section 328 called for, "[a] plan to accelerate the efforts of the Department of Defense to achieve total asset visibility, including efforts to link wholesale and retail levels through multi-echelon modeling."

ISSUE STATEMENT

The Department has largely succeeded in providing Component inventory management systems—regardless of echelon—with visibility of all assets managed by that Component. While the Department continues to pursue technologies that improve the timeliness and granularity of asset information and improve visibility across the Components, the challenge is improved accessibility that will enable redistribution of any visible assets to satisfy critical needs. Of course, 100 percent accessibility of assets for certain specialized commodities, such as nuclear items, pilferable items, classified material, and sensitive items, is not desirable without appropriate security and safety restrictions. In addition, redistribution of theater inventory (e.g., Army supplies in Afghanistan and ship supplies at sea) is generally limited to within theater to sustain the readiness of operating forces.

Another challenge related to asset visibility is the DoD-wide implementation of multi-echelon modeling in setting inventory requirements levels. Implementation of multi-echelon modeling would enable the Department to increase the utility of inventory.

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[1] DoD 4140.1-R, *DoD Supply Chain Materiel Management Regulation*.

[2] Ibid.

DoD supply policy requires that inventory levels be computed using RBS whenever possible. While the Department's capabilities are improving, implementation of multi-echelon modeling is ongoing.

Most Components are in the process of replacing legacy inventory management systems with commercial ERP systems. Multi-echelon modeling is often a bolt-on application to the ERP system, which adds more difficulty and complexity to the transition to ERP systems. While all of the DoD Components expect their ERP systems to produce inventory management efficiencies, successful implementation of the multi-echelon models will be critical to ensuring those efficiencies do not come with a readiness cost.

The models require not only visibility of wholesale and retail stocks, but also configuration data that identifies the relationships among items. For many items, this information is not available. Even when configuration management data is available for a system, data integrity and accuracy are critical to the execution of multi-echelon models.

OVERALL OBJECTIVE

The overall objective is to minimize the size of buys by considering all inventory in the system. Complete information about assets within the supply system and the ability to use that information to satisfy demands and adjust inventory levels should reduce overall DoD inventory investment as well as reduce the potential for generating excess inventory. The Plan's focus in this area is to increase the utilization of assets across the Department of Defense and the use of multi-echelon modeling. Desired outcomes are as follows:

- DLA has full visibility of consumable item demands and assets at all echelons. This would allow DLA to forecast demand using multi-echelon information on demand.

- Multi-echelon models are in place for all reparable items managed by the Military Departments. Reparable items are typically more expensive than consumable items, and their failure often has a direct effect on the readiness of a weapon system.

- Optimal stock accessibility[3] across wholesale and retail stock points. This includes using asset visibility capability coupled with modernized business rules to facilitate optimal asset re-allocation including inter-Service asset sharing.

Modernized inventory management systems in place at all DoD Components and at all inventory echelons will facilitate the above outcomes and maximize the benefits of TAV and multi-echelon modeling.

[3] Stock accessibility refers to the capability of the materiel management system to provide authorized inventory managers access to inventory across process or organizational boundaries for the purpose of applying those assets against future buy or repair requirements or to accomplish redistribution of assets, within applicable business rules, to satisfy approved operational or support requirements.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

Army

The Army's Logistics Information Warehouse is the Army's integrated corporate logistics data warehouse. It provides visibility of both wholesale and retail stocks. The Commercial Asset Visibility II (CAV II) system provides visibility of assets at contract repair locations. CAV II currently tracks more than 70,000 pieces of Class IX materiel worth $2.4 billion. Between FY2000 and FY2003, the Army implemented the Single Stock Fund (SSF) business process improvement to include retail requirements and assets in national echelon requirements computations. SSF globally redistributes localized excess retail assets to offset national echelon procurement requirements. The Single Army Logistics Enterprise (SALE) integrates legacy national and tactical echelon logistics systems to provide corporate visibility and accountability.

The Army and Marine Corps established an in-theater capability for Middle Eastern theater operations to provide visibility and accessibility of materiel assets across Military Departments. This facilitates asset sharing among operational ground forces within a theater to satisfy operational support requirements. It also reduces materiel delivery times and helps minimize unneeded orders to the wholesale supply system. Currently, this is an ongoing effort between Afghanistan Marine Corps Camp Leatherneck and Army Camp Bastion.

The Army effectively implemented multi-echelon modeling for provisioning, war reserve computations, and level of repair analysis, but it has not yet incorporated the capability into its ERP for global sustainment. The Army's primary multi-echelon, multi-indenture inventory model is the Selected Essential-Item Stockage Availability Method (SESAME). SESAME provides the following multi-echelon capabilities:

- SESAME multi-echelon modeling computes provisioning requirements.
- SESAME enables the Optimum Stock Requirements Analysis Program to compute National echelon war reserve requirements.
- SESAME model enables the Computerized Optimization Model for Predicting and Analyzing Support Structures (COMPASS) to conduct level of repair analysis.

In addition to SESAME, the Centralized Authorized Stockage List (ASL) Management uses an enhanced dollar cost banding (EDCB) process to compute, analyze, and optimize the effectiveness of retail echelon stockage levels. EDCB determines stockage levels at tactical and fixed based organization levels. The method EDCB employs in its requirements development model determines the range of items that will be included within a banding echelon by applying add and retain criteria based on an item's cost, size, and criticality. EDCB determines depth of stocks by evaluating the timing and quantity of demands in an effort to establish an acceptable level of satisfaction for requirements filled by the ASL. It further applies economic criteria by incorporating a modified economic order quantity that balances costs with unit workload. Finally, the EDCB process

is enhanced by integrating data from the Army's maintenance systems to refine the range qualification and depth logic to improve support for weapon system readiness.

Table 3-1. Current Army TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
Expert ASL team. Centrally computes below-depot stock levels. Uses EDCB method.	Implement model to centrally control what goes in ASL. Decrease global inventory levels.	35 percent ASL fill rate for all issue priority designator requisitions. 60 percent fill rate for dollar-driver items. ASL re-computation every 120 days for supply support activities (SSAs) supporting deployed troops; every 180 days for other outside the continental United States (OCONUS) SSAs; and every 360 days for CONUS SSAs. No direct savings or cost avoidance reported. Indirect savings and cost avoidance include lower customer wait time and fewer urgent requisitions requiring priority processing and shipping.
SALE-integrating legacy national and tactical echelon logistics systems.	Consolidate legacy tactical and national logistics systems into a modernized ERP to provide improved corporate visibility and accountability.	Complete third and final fielding of LMP in 1QFY2011. Field Release 1.1 of Global Combat Support System-Army in 2012.
Army's development of end-to-end (E2E) supply chain metrics. Development will be done via the following work streams: Joint Supply Chain Architecture (JSCA) Program; the Supply Chain Executive Steering Group Metrics Workgroup; and the Army E2E Metrics program with the University of Alabama in Huntsville.	Develop E2E supply chain metrics to supplement current Class IX inventory management metrics.	Develop total supply chain management cost, perfect order fulfillment, national echelon demand plan accuracy, and inventory turnover metrics for the Army.
Army SPR accuracy improvement rate.	Improve accuracy of ERP bill of materials for repair and provisioning to enable multi-echelon modeling and to improve accuracy of SPR and demand data exchange requirements submitted to DLA.	N/A

Marine Corps

The Marine Corps has an effort underway to apply RBS and multi-echelon modeling to improve inventory management and reduce spare parts costs.

Table 3-2. Current Marine Corps TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
Assess the USMC's current inventory management systems and target areas where RBS modeling can improve weapon system readiness or save on inventory costs. RBS solutions will build on basic components; collecting the appropriate data, developing part-specific forecasts from historical data, implementing RBS algorithms to solve a range of issues. Analyze multi-echelon capability and develop wholesale-retail linkage.	Implement RBS solutions to balance multiple objectives and focus on providing the best overall benefit and efficiency across a total system, as opposed to evenly allocating resources for individual items within the system.	Reduce spare part costs by 5–20 percent across the enterprise.

Navy

The Navy TAV program is currently focused on utilizing asset visibility to improve retrograde management. Three tracking systems enhance the Navy's ability to track retrograde inventory, to optimize repair schedules, and to avoid new procurements:

- *Electronic Retrograde Management System* (eRMS) is a web-based program used by the warfighter. It interfaces with the supply, maintenance, transportation, and financial data of the Navy's legacy and ERP systems.

- *Advanced Traceability and Control* (ATAC) *Organization* coordinates global transportation with a network of hubs, nodes, and expeditionary mobile nodes and features packaging and transshipment capabilities. In FY2009 ATAC moved and tracked more than 920,000 items valued at $35 billion. It achieved an average global retrograde time (including ships at sea) of 18 calendar days, an average redistribution time (mostly CONUS) of 6 calendar days, and a 99.6 percent signature proof-of-delivery rate.

- *Technical Assistance for Repairables Processing* (TARP) includes Navy contractors with expertise in reparables handling, packaging, and eRMS usage. The contractors are stationed around the world and at sea to provide assistance and over-the-shoulder training of Sailors and Marines.

The Navy will not attain true multi-echelon RBS modeling capability with its ERP system until 2012; however, between 2006 and 2009, the Navy conducted an RBS pilot to evaluate multi-echelon, multi-indenture modeling. The Navy utilized Common Rate Computation System/Common Allowance Development System (CRCS/CADS) and implemented the Multi-Indenture/Linked Echelon RBS modeling techniques to produce inventory levels that approximate what it will eventually achieve though multi-echelon models. Through the RBS pilot, the Navy Retail Allowance Team substantially improved both the efficiency and effectiveness of carrier Aviation Consolidated Allowance Lists (AVCALs). Efforts over the 4 years culminated in a 13 percent cost savings per nuclear-powered aircraft carrier (CVN)

AVCAL for each of the six CVNs outfitted throughout 2007 and 2008, for an aggregate cost savings of approximately $216 million. In addition, the improvement led to a 50 percent reduction in high-priority requisitions passed off-ship and a 75 percent reduction in onboard CVN expeditious repairs. All of this was achieved despite a 7 percent increase in CVN operating tempo (measured in flight hours). The CRCS/CADS and Multi-Indenture/Linked Echelon RBS enhancements produced tangible improvements while simultaneously providing a bridging strategy towards the Multi-Indentured/Multi Echeloned allowancing solution, which is envisioned to be a key enabler within the Naval Supply Systems Command's ERP Single Supply Solution.

When the Navy implements its true multi-echelon model for the ERP system in 2012, the model will

- provide availability-based optimization, replenishment planning and optimization, and time-phased consumable and repairable planning;
- determine wholesale and retail stockage and stock positioning;
- link wholesale and retail computations via wholesale delay times;
- optimize repair schedules to avoid new procurements using retrograde asset visibility; and
- establish common business rules to improve visibility and access for in-scope sites through an enterprise-level information technology structure.

Table 3-3. Current Navy TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
Implementing multi-echelon modeling as a bolt-on to the Navy ERP beginning in 2012.	Achieve required readiness at least cost.	100 percent of items going through multi- echelon system in 2012.
Increasing capabilities to track retrograde inventory and optimize repair schedules to obviate procurements through eRMS, ATAC Organization, and TARP.	Optimize repair schedules and avoid unnecessary procurement.	Not ready for issue time: • Beyond capability of maintenance at intermediate repair level to ATAC receipt < 14 days. • ATAC receipt to proof of delivery (POD) at final destination < 10 days • POD to final destination receipt in transaction item report (TIR) (D6 TIR) < 4 days Not ready for issue quality: • percent turned in > 90 percent • percent ATAC delivered ≥ 99 percent • percent TIRed ≥ 90 percent

Air Force

The Air Force Global Logistics Support Center (AFGLSC) Automated Information Technology (AIT) Program Office is enabling systems of record to achieve TAV through the use of radio frequency identification (RFID) and item unique identification (IUID). Multi-echelon modeling is the cornerstone of Air Force requirements computations. Both spares and engine requirements are computed using them. The AFGLSC Diagnostics and Flight Analysis is building Arena software models to simulate "what if" supply chain scenarios for Air Force–managed items. AFGLSC is also working with the Air Force Institute of Technology (AFIT) to conduct multi-echelon-related modeling and simulation projects, such as centralized versus decentralized stockage objectives.

Table 3-4. Current Air Force TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
Move enterprise from wholesale/retail asset management to global inventory management. Execute merger and integration methodology life cycle through completion of support equipment and vehicles.	Select and Implement two supply chain management integration initiatives in 2011.	Unserviceable inventory reduced by 5 percent.
Use AIT and IUID.	Improve nuclear weapons-related materiel (NWRM) inventory accuracy and decrease requirements for adjustments.	IUID marking plans approved for all assets with NWRM (except intercontinental missile) by Dec 2010. Marking complete for F-15/F-16, Bomber Weapon Integration Equipment/Cruise Missiles for assets in supply by Dec 2010. Use of AIT to support worldwide inventory at NWRM storage facilities (pass/fail).
Conduct a worldwide NWRM Inventory semi-annually.	Achieve positive inventory control defined as 100 percent awareness of location and condition of NWRM at all times.	0 percent repeat of administrative discrepancies from one inventory to another; 0 percent losses and finds at locations where inventory previously conducted; 100 percent inventory performed at contractors with NWRM inventory.
Build Air Force diagnostics and analysis flight Arena software models to simulate "what if" Air Force supply chain scenario.	Implement new software into decision-making process.	Arena software purchased, 402nd operations research analyst trained, currently using Arena to build predictive models. Initial operating capability (IOC) by July 2010
Build a pipeline flow model for Air Force–managed items. Working with AFIT to provide additional modeling and simulation projects for graduate students.	Implement new model.	Initial Arena model built, to be presented to leadership 11June 2010. AFIT scheduled to brief additional modeling and simulation projects. IOC by July 2010.

Table 3-4. Current Air Force TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
The Air Force plans to evaluate the Navy's eRMS for potential application in the Air Force to track retrograde materiel.	If evaluation is positive, evaluate Air Force implementation.	Achieve at least 99.5 percent POD of Air Force serviceable or reparable assets shipped via eRMS. Reduce second destination transportation costs for items shipped within the scope of the pilot program. Reduce the number of transportation discrepancy reports for materiel shipped within the scope of the pilot.

DLA

Several DLA programs use visibility from the one Military Department's inventory to offset the requirements of other DoD customers. For example, the In-Storage Visibility Program provides DLA this capability for most items that it stores for the Military Departments; Inventory Management and Stock Positioning (IMSP) provides this capability specifically for BRAC stocks. The Inventory Policy Optimization (IPO) tool provides DLA a multi-echelon/multi-indenture computation capability for BRAC and other supply chain integration improvements.

Table 3-5. Current DLA TAV and Multi-Echelon Modeling Improvements

Improvement	Goal	Target
IMSP provides visibility of BRAC stock that offsets DoD requirements. Process provides functionality to use visibility and access to inventory stored in DLA warehouses to offset both planned buys of materiel and to fill orders for DLA-managed materiel that are not currently in DLA's own managed stock.	Provide the IMSP framework for managing multi-echelons of inventory within the DLA EBS system.	Successful achievement of BRAC business case goals.
JDA IPO tool—an extension to DLA's demand planning tool within EBS—provides the multi-echelon utilization of inventory across segments of DoD's inventories.	Use the IPO tool to set safety stock levels for forecastable, DLA-managed materiel across multiple echelons of operating inventory, including inventory in direct support of industrial depot maintenance. The IPO tool determines safety stock levels required to optimize customer wait time, requisition fill rate, or backorder avoidance.	Control inventory investment and achieve multi-echelon utilization of inventory in EBS.

DEPARTMENT-WIDE ACTIONS

The DoD Components have a number of TAV and multi-echelon improvements underway or planned (see Table 3-1 through Table 3-5). These improvements are an integral

part of the Department's overall inventory management strategy, and they support the Department's efforts to improve inventory management.

While most improvements are limited to a single Component, the results of these efforts will be evaluated to determine Department-wide application. In addition, DoD has established the following actions for execution as part of this sub-plan.

Action B-1: Expand TAV Capabilities to Improve Access to Targeted Inventories.

This action supports current efforts to achieve actionable TAV. The Department has largely succeeded in providing Component inventory management systems, regardless of echelon, with visibility of all assets managed by that Component. While the Department is continuing to pursue the use of technologies to improve the timeliness and granularity of asset information, it recognizes that accessibility to visible assets will allow for redistribution to meet critical needs and thereby maximize the productivity of assets across targeted inventories. This action is aimed at expanding accessibility to inventories that are visible and suitable for redistribution.

Key milestones	Target dates	OPR
Identify targeted inventories for improved accessibility.	FY2012Q3	OSD, Military Departments, DLA
Fully implement recommendation (reference B-3).	FY2014Q4	OSD, Military Departments, DLA

Action B-2: Accelerate Existing and Emerging Multi-Echelon Improvement Efforts.

This action focuses on the results of Components' multi-echelon pilots. The results will be evaluated to determine Department-wide processes, policies, and goals.

Key milestones	Target dates	OPR
Approve FY2011 multi-echelon projects.	FY2011Q2	OSD
Complete multi-echelon FY2010 projects.	FY2012Q1	OSD, Military Departments, DLA
Evaluate project results.	FY2012Q3	OSD, Military Departments, DLA
Develop enterprise-wide processes, policies, and goal.	FY2013Q4	OSD, Military Departments, DLA

Action B-3: Expand Automated System Capabilities to Fill Customer Demands and Offset Inventory Buys across the DoD Components.

The Department is seeking to increase the Department-wide utilization of its inventory. Some efforts to increase utilization will require expanding current DoD Component programs that focus on specific segments of the supply chain, such as materiel in retrograde pipelines and disposal. Others may require the development of new business rules to

allow inventory managers greater access to stocks that are currently protected for specific purposes.

This action targets different inventories for increased visibility and accessibility within specific business rules. The focus is on expanding the automated system capabilities to use assets other than those at DoD distribution depots to fill customer demands and offset inventory acquisitions including an automated capability to fill backorders and offset procurements across the DoD Components.

Key milestones	Target dates	OPR
Establish measures of accessibility for targeted inventories.	FY2012Q1	OSD, Military Departments, DLA
Refine business and financial rules and system interfaces that would support an automated capability to fill backorders and offset procurements across the DoD Components in DLA's in-storage visibility process.	FY2013Q1	OSD, Military Departments, DLA
Examine expansion of automated recoupment capability of assets in disposal.	FY2011Q4	OSD, Military Departments
Implement results of examination of automated recoupment capability of assets in disposal.	FY2013Q4	Military Departments
Expand visibility of retrograde pipeline.	FY2013Q4	Military Departments
Ensure consistent approach to assess performance or develop metrics.	FY2013Q4	OSD, DLA, Military Departments

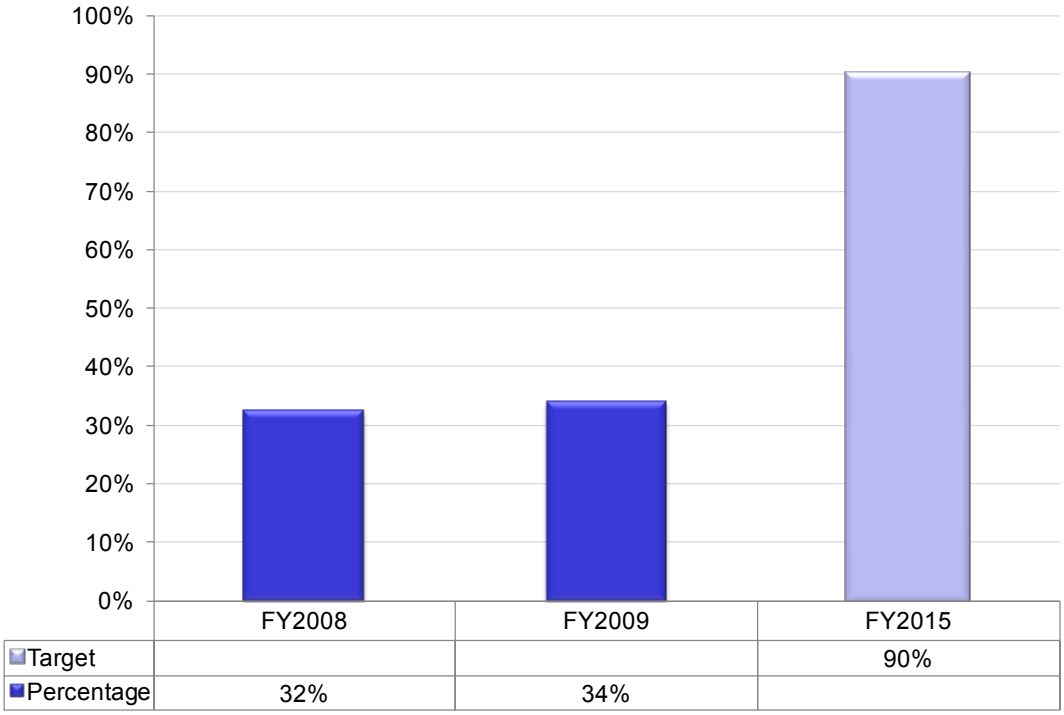
MEASURES OF SUCCESS

The expansion of TAV accessibility and multi-echelon modeling capabilities is the goal of this sub-plan. To measure success in reaching that goal, the Department will collect the following metrics:

- Percentage of inventory in Component inventory management systems that other organizations or materiel inventory management systems can automatically access. Quantitative measures will be developed (Action B-3).
- Dollar value of backorders filled and procurements offset by assets in disposal. Quantitative measures will be developed (Action B-3).
- Percentage of inventory covered (by dollar, by line item) by multi-echelon models.

Figure 3-1 shows the percentage of inventory dollars whose inventory levels involved multi-echelon modeling.

Figure 3-1. Percentage of Inventory Dollars Associated with Multi-Echelon Modeling



Source: Component data on inventory dollars associated with multi-echelon modeling.

As shown in Table 3-6, the Department established goals to increase the portion of assets visible and accessible across DoD inventory systems and the applicable items managed under a multi-echelon capability.

Table 3-6. DoD TAV and Multi-Echelon Modeling Goals and Targets

Sub-plan goal	Target
Increase percentage of inventory dollars visible and accessible to other DoD inventory systems.	Access to 90 percent of targeted inventory, with appropriate business rules, within 5 years.
Increase total percentage of inventory dollars associated with items using multi-echelon modeling.	Use multi-echelon modeling for setting inventory levels on 90 percent of targeted inventories within 5 years, up from 34 percent in FY2009.

Chapter 4
Sub-Plan C: On-Order Excess

INTRODUCTION

On-order excess is on-order inventory that stratifies as PRS. The Military Departments and DLA follow DoD policy that requires timely action to reduce or cancel orders (purchase requests) before contract award and to consider terminating items under contract when changes in mission and consumption factors, etc., cause part or all of the on-order stock to stratify as PRS. Contract terminations are governed by Part 49 of the Federal Acquisition Regulation (FAR), which establishes policies and procedures relating to the complete or partial termination of contracts for the convenience of the Government or for default. As an exception to termination, the FAR states, "When the price of the undelivered balance of the contract is less than $5,000, the contract should not normally be terminated for convenience but should be permitted to run to completion."[1]

According to DoD policy, termination decisions should generally be reached within 30 days of generating a notification that items under contract should be considered for termination.[2] Termination actions are pursued if the termination is determined to be cost effective and in the best interest of the U.S. Government. Cost effectiveness is usually ascertained by comparing what it will cost to hold items in inventory versus the cost to terminate the same items from contracts, plus re-procurement costs, if they are known.

The intent of this sub-plan is to reduce orders with quantities above item approved acquisition objectives, or AAO.

CONGRESSIONAL TASKING

Element (3) of Section 328 called for, "[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."

ISSUE STATEMENT

The Department's dynamic environment and fluctuating demands continue to generate on-order inventory that is stratified as PRS destined for disposal or reuse. In addition, market factors, such as vendor minimum order quantities and diminishing sources with life-of-type buys, can initially appear as excess procurements until they are correctly stratified within AAO levels.

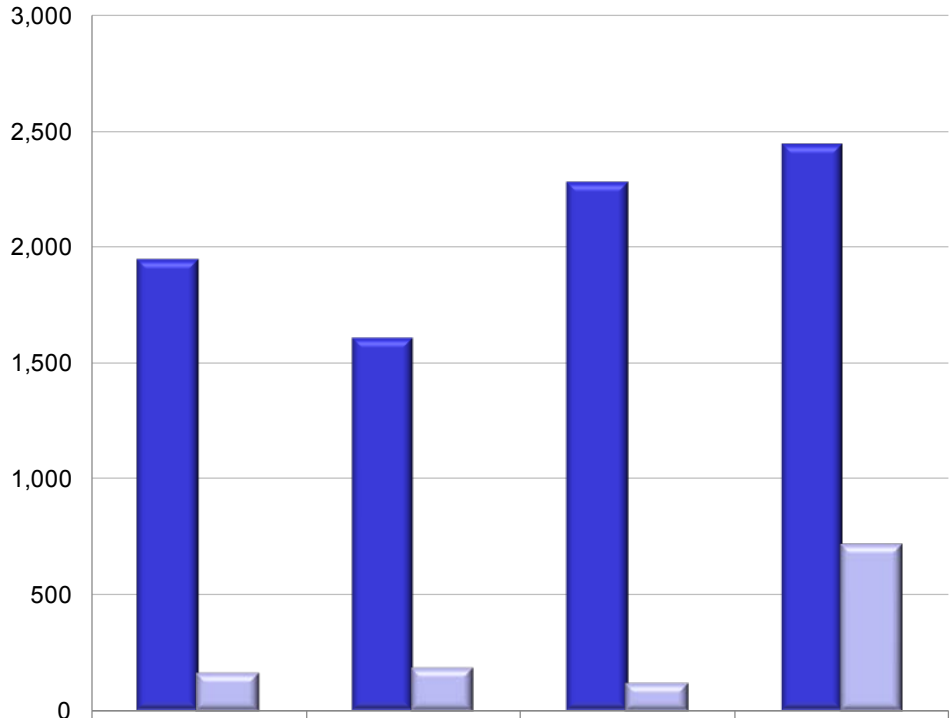
As previously stated, the Department actively manages contracts with PRS. Although the Component stratification reports show PRS year after year, the individual PRS items are not the same from one year to another. For example, at the end of FY2008, the Department

[1] Paragraph (c) of FAR section 49.101, *Authorities and responsibilities*, page 49.1-1.

[2] DoD 4140.1-R, *DoD Supply Chain Materiel Management Regulation*.

had 8,260 items on contract that had on-order quantities above the AAO. By the end of FY2009, only 1,153 (or 14 percent) had on-order quantities above the AAO. Figure 4-1 shows those results by DoD Component.

Figure 4-1. FY2008 Items with Excess on Order That Had Excess on Order in FY2009



	Army*	Navy	Air Force	DLA
FY2008	1,944	1,601	2,276	2,439
FY2008 and FY2009	157	177	111	708

Source: DoD Components (*Army data only for its Tank and Automobile Command)

Once inventory managers become aware that an inventory buy is excess, their ability to cancel or reduce the buy quantities depends on whether the buy is on contract. If the buy is still in the procurement request stage and no award has been made, inventory managers can make quick reductions because no funds are obligated and they are not bound by any agreement with their suppliers. Once a contract is in place, termination may become uneconomical and more difficult.

OVERALL OBJECTIVE

The overall objective of this Plan is to reduce or terminate buys with excesses on order due to a decrease in requirements. The Department continues to seek proactive solutions. Current system modernization efforts should increase forecast accuracy and improve information sharing to help minimize excessive buys. Moreover, system modernization efforts will enable more frequent reviews of buy/repair plans and provide increased order termination capability.

This sub-plan establishes two desired outcomes directed at termination of excess on order:

- Inventory managers will use optimal economic termination models to review excessive buys.
- Decisions not to terminate or modify those buys will be approved by senior level management.

This sub-plan establishes DoD incremental targets for reduction of the value of on-order excess inventory for each Component.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

In recent years, the DoD Components accelerated their efforts to reduce excess on-contract inventory and established termination and on-order excess reduction goals that they strive to achieve. Several DoD Components have improvements efforts either underway or planned to reduce on-order excess inventory purchases, many of which are listed in Table 4-1 and Table 4-2. These actions are an integral part of the Department's overall inventory improvement strategy and support its efforts to improve inventory management as envisioned by this Plan.

Army

The Army LMP system generates monthly reschedule and cancellation recommendations for procurements that are due-in (open purchase requests and on-contract orders) and exceed requirements. The Army conducts formal quarterly on-order excess reviews. Unawarded purchase requests are reduced or cancelled as applicable. Cost, weapon system life-cycle stage, marketplace support, and other programmatic inputs are used to make reduction and termination decisions for excess on-contract orders.

The Army Materiel Command (AMC) revised its policy governing on-order excess management. The dollar value thresholds and approval levels for all supply cancellation actions were adjusted. In addition, items procured as a life-of-type buy were authorized for retention with appropriate LMO system coding to prevent them from being designated as excess within LMP. While LMP does provide inventory managers the capability to generate a "dynamic" recommendations list on a daily basis, the "official" material requirements planning process is generated monthly from the valid workload considerations, which produces a "static" recommendations report. The item managers use this report to validate any on-order excess material and cancel contracts as appropriate and in accordance with the AMC policy.

Marine Corps

The Marine Corps is implementing a new capability and process to review item-level inventory stratification reports. This semi-annual process will review on-order excess and better validate due-ins, historical demand, forecasted demand, application data, and supply considerations. This process will also investigate the terms of contracts and adjust

or cancel pending deliveries, as necessary. This improved process was utilized for the first time using March 2010 inventory stratification data and is being formalized and expanded to additional users.

Navy

The Navy runs a monthly supply demand review process that matches requirements to assets and provides recommendations to buy, terminate, or recall inventory from disposal when necessary. A logistics manager can also run an item computation at any time to review inventory levels and recommendations. Generally, these processes terminate procurement that exceed protection levels. The protection levels consider future demand and economic order quantities and are set to prevent churn. A termination review board reviews selected supply demand review termination recommendations. If the logistics manager recommends that no termination action be taken, the logistics manager must present justification to the Weapon System Department Deputy Director for review and a final decision on the non-termination action.

The Navy also established due-in long supply goals at the budget project (BP) level, written them into item manger supervisors' performance evaluations, and reports them semi-annually to the Naval Supply Systems Command (NAVSUP) Headquarters.

Table 4-1. Current Navy On-Order Excess Improvements

Improvement	Goal	Target
Utilize new ERP capability to cancel repair due-ins that would result in excess inventory. Baseline (and subsequent goals) to be established in early FY2012.	Minimize excess inventory.	Target will be set once the data is baselined.
The Navy established goals for on-order excess at the BP level: BP-85 is aviation repairable items; BP-34 is aviation consumable items; and BP-81 is combined ships' material.	Cancel open procurement requests and contracts within FAR constraints that stratify beyond the AAO while minimizing buy-cancel-buy churn.	Targets for on-order excess as a percentage of total on-order within a BP are 6.5 percent for BP-85, 4.5 percent for BP-34, and 5.6 percent for BP-81.

Air Force

The Air Force instituted a quarterly review process for excess on-contract inventory to ensure it is as low as possible. Policy requires the immediate supervisor for the inventory management specialist to sign all non-termination decisions, and all termination reviews must be completed within 10 days. Higher level signatures maybe required, depending on dollar threshold. To further emphasize this effort, the Air Force established a goal to reduce on-contract excess to $100 million by the end of FY2010 and is reporting against this goal quarterly. The Air Force is also presenting bi-annually an inventory status brief to congressional staffers.

DLA

DLA has a monthly over-procurement process to identify and manage purchase requests and contracts that exceed current requirements. On-order excess targets (percentage of overall purchase request and on-contract order dollar values that exceed requirements objective) are set annually for DLA overall and by supply chain. Each fiscal year, DLA reserves a portion of obligation authority and conditionally releases it to each supply chain as performance goals are achieved in the areas of demand plan accuracy, attainment to plan, excesses on-order, and strategic materiel sourcing. This provides organizational incentives for keeping excess inventory low and further reducing inventory through progressively more aggressive goals.

Table 4-2. Current DLA On-Order Excess Improvements

Improvement	Goal	Target
Organizational performance incentives tied to keeping the dollar value of on-order excess below target thresholds.	Achieve annual targets for on-order excess.	FY2010 targets for excess on-contract purchase orders (obligations) are as follows: • 9.8 percent or less of total on-contract dollars should not exceed 150 percent of the calculated requirements objective, that is, excess purchase requests (commitments) • 6.9 percent or less of total on purchase request dollars should not exceed 150 percent of the calculated requirements objective.
Use of same organization performance incentives to keep excesses from dues-in for consumable item transfer (CIT) items below target thresholds.	Achieve same on-order targets for CIT items.	FY2010 targets for excess on-contract purchase orders (obligations) are as follows: • 9.8 percent or less of total on contract dollars should not exceed 150 percent of the calculated requirements objective, that is, excess purchase requests (commitments) • 6.9 percent or less of total on purchase request dollars should not exceed 150 percent of the calculated requirements objective.

DEPARTMENT-WIDE ACTIONS

The Department of Defense established the following actions for execution as part of this sub-plan.

Action C-1: Establish an Economically Optimal Point in the Procurement Cycle to Terminate an Order, Considering the Different Life-Cycle Phases.

This action seeks to improve current economic termination models by combining the economics of contract termination with the program life cycle that the buy is supporting. The action further seeks to establish a point where procurements with excess materiel on order must be reviewed for termination or modification.

Key milestones	Target dates	OPR
Establish the optimal point for reviewing if a contract should be terminated.	FY2011Q2	OSD, Military Departments, DLA
Implement Department-wide.	FY2011Q3	Military Departments, DLA

Action C-2: Strengthen the Approval and Reporting Procedures for On-Order Excess.

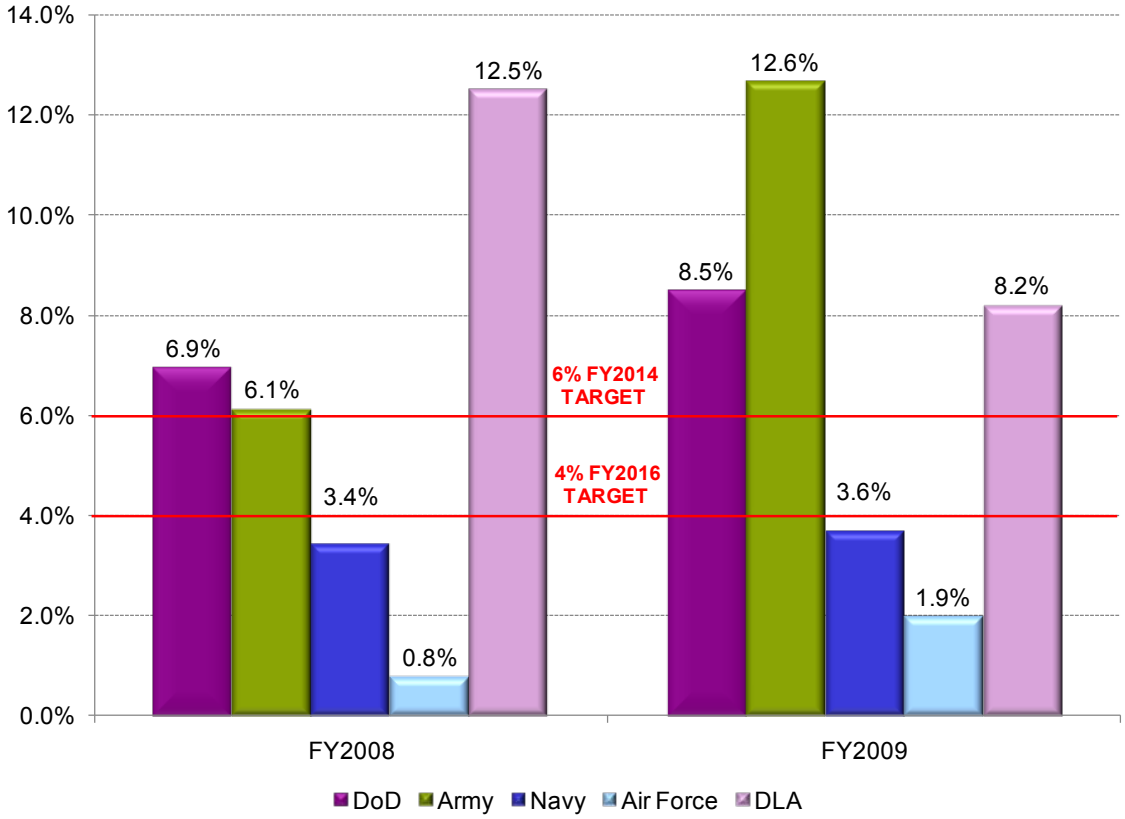
This action seeks to improve contract termination decisions by ensuring the decision not to terminate or modify a contract with excesses is approved at a senior level.

Key milestones	Target dates	OPR
Establish the required level of authority to retain materiel on order in excess of approved acquisition objectives.	FY2011Q2	OSD, Military Departments, DLA
Ensure consistent approach to assess performance or develop metrics.	FY2011Q2	OSD, Military Departments, DLA

MEASURES OF SUCCESS

To track progress in reducing on-order excess, the Department will track the percentage of on-order dollars that are above the AAO (i.e., the quantity approved for acquisition). Figure 4-2 shows end-of-year percentages for FY2008 and FY2009 for on-order dollars above the AAO. The Army and Air Force percentages increased, while the Navy and DLA percentages have decreased. The Army increase is attributable to the transition to a new inventory management system, which is being modified to address termination of on-order excess.

Figure 4-2. Percentage of On-Order Dollars above the AAO



Source: DoD Component data.

As shown in Table 4-3, the Department has established incremental goals to reduce the portion of on-order excess assets to 6 percent in FY2014 and 4 percent in FY2016.

Table 4-3. DoD On-Order Excess Goal and Target

Sub-plan goal	Target
Reduce percent of inventory dollar value of on-order assets above requirements through the budget year.	Reduce on-order excess from 8.5 percent in FY2009 to 6 percent in FY2014 and to 4 percent by FY2016.

Chapter 5
Sub-Plan D: Economic Retention

INTRODUCTION

ERS is stock that is above the approved acquisition objective for which it is less costly to retain than dispose. Current DoD policy requires that the method used to set an economic retention limit (ERL) be based on an economic analysis that balances the costs of retention and the costs of disposal. Pertinent factors include the cost of retaining items in stock, the potential long-term demand for the items, potential repurchase costs, and, for items essential to the operation of a weapon system, the expected life of the system and the number of systems in use. The fundamental policy pertaining to the retention of stocks previously purchased on economic factors is based on the Office of Management and Budget circular on economic analysis.[1]

The overall intent of this sub-plan is to review and validate Component methods to establish ERLs.

CONGRESSIONAL TASKING

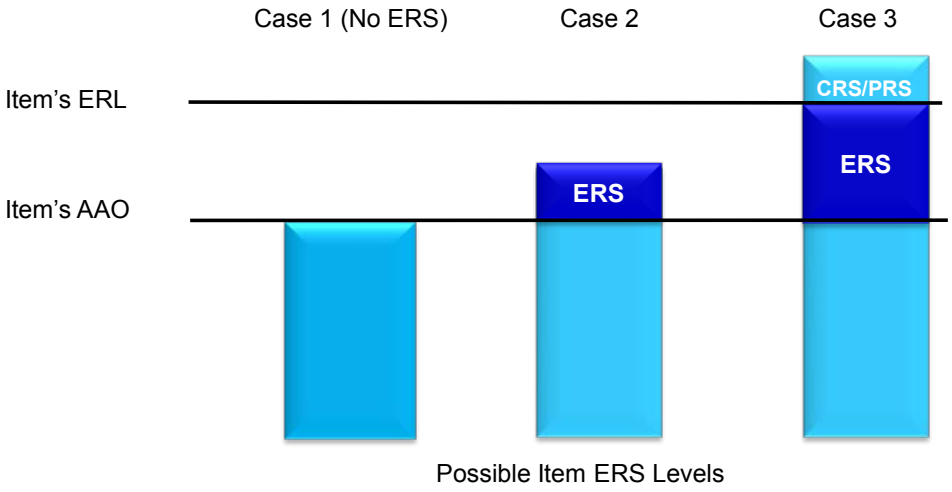
Element (4) of Section 328 called for, "[a] plan for the review and validation of methods used by the Military Departments and the Defense Logistics Agency to establish economic retention requirements."

ISSUE STATEMENT

As illustrated in Figure 5-1, inventory managers use ERLs to determine the maximum amount of stock above the AAO that they can retain as ERS. As shown in the Case 1 example, if an item's assets are equal to or below the AAO, no ERS is identified. Case 2 shows that, if an item has assets greater than the AAO but equal to or less than the ERL, the assets above the AAO are categorized as ERS. Finally, in Case 3, item assets greater than the AAO and equal to or less than the ERL are categorized as ERS with any remaining assets above the item's ERL stratifying as either CRS or PRS.

[1] OMB Circular A-94 (Revised), *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, October 29, 1992.

Figure 5-1. Illustrating the Use of ERL to Determine ERS



Inventory managers do not purchase inventory for the purpose of stocking as economic retention. ERS assets were originally purchased as operating stocks and later re-categorized as ERS because of downturns in demand, changes in programs, or for other reasons. When such circumstances occur, stocks that no longer qualify as operating inventory (AAO) become retention stocks. Regardless of why inventory becomes ERS, its continued retention is a question of economics.

The cost of storing ERS is a tangible cost that the Government must pay until demand reduces ERS to zero. In general, the cost of storing ERS is less than the cost of repurchasing if that item is later needed.

In an economic analysis for computing ERL, cost and savings factors should be based on life cycle, risk, and inventory segmentation considerations.

Life-Cycle Phase

As shown in Table 5-1, a key factor in computing an ERL is the life-cycle phase of the program that the item is supporting.

Table 5-1. Key ERL Computing Factors

Program life-cycle phase	ERL consideration
Ascending	Ascending programs are associated with new weapon systems when more systems are fielded and operating rates (e.g., flying hours) expand. With the exception of items designed out of the weapon systems, future demand is likely to expand and the ERL should be higher than in other phases.
Steady state	If a program is in a steady state with no significant increases or decreases, the retention decision carries the greatest risk and requires the greatest attention. In this phase, the risk of repurchase after disposal is significant, as is the potential to impact readiness rates.
Declining	Declining programs are associated with weapon systems nearing the end of their life cycle, but they also could be associated with any program that the Department is phasing out (e.g., an old uniform that is going out of the system). Declining programs will have declining demand. Consequently, the ERL should be lower than in other phases. As soon as the Department decides to phase out a program, the risk of repurchasing an item after disposal becomes significantly lower if not zero. Items in this phase must either be removed from the sustainment-type retention models, or remain in the models with altered demand expectations.
Post DoD retirement	Occasionally, a program may retire from DoD application but a financial benefit still exists to retain its inventory. One example is a program that has potential foreign military sales. Another is a program awaiting demilitarization instructions or dollars. The ERL model is clearly different for such programs.

Risks and Costs

A retention decision, like a buy decision, involves some risk due to the uncertainty of future demand. To minimize such risk, the ERL analysis should include a probability-based approach to modeling demand.

Retention decisions may also run the risk using limits that are less than optimal and include the associated costs. The method for setting limits should ensure inventory managers have the cost information they need to make decisions fully cognizant of the consequences of lowering or raising limits.

Because the Department relies on economic analysis for setting the economic basis for retention, the improvement efforts of this sub-plan focus on how the Components' analyses could be improved. Economic analysis is a systematic approach to choosing the best method of allocating scarce resources to achieve a given objective. DoD guidance on how to conduct an economic analysis is contained in DoD Instruction 7041.3, *Economic Analysis*. Table 5-2 lists the key elements of an economic analysis as they apply to the determination of an ERL.

Table 5-2. Elements of an Economic Analysis for Setting Retention Limits

Element	ERL description
Objective	The objective in determining an ERL is to determine the optimal amount of stock to retain that minimizes total future life-cycle costs
Assumptions	The following assumptions apply to ERL determination: • Long-term demand history is the best predictor of future long-term demand. • ERLs should be developed for logical groupings of items (not individual items). • 20 years is the minimum value for the remaining life of an item.
Alternatives	The alternatives for an ERL are the different possible quantities.
Cost and benefits	The ERL needs to consider the cost of storage, cost to repurchase, and net benefit from disposal. For unserviceable reparable assets, it also needs to consider the cost of repair.
Comparison of alternatives	The ERL is derived by solving the mathematical inequality for the maximum quantity where the cost of retention is less than or equal to the cost of disposal.
Results and recommendations	The final solution to the retention problem is subject to real-world constraints on storage space and to the repurchase risk that management is willing to take to reduce inventory levels in the face of uncertain demand.

Inventory managers cannot rely on the same demand probability-based approach to set their ERL for all items. The following are categories of items that may qualify for ERS, if inventory managers use the appropriate model:

- Low demand items (sometimes called numeric stockage items), which have insufficient demand to generate creditable demand probabilities.
- Items with no demand in recent years.
- Items used regularly but with very long intervals between demands.

The methods for setting ERS limits should account for these differences whenever possible.

OVERALL OBJECTIVE

The objective of this sub-plan is to ensure economic retention decisions are based on current cost factors and economic principles. To satisfy this objective, DoD will review and validate the methods used by the Military Departments and DLA to establish ERLs. The intent of the ongoing and planned actions in this sub-plan is to provide the Components with effective policies and tools to retain in ERS only those stocks whose retention is most economical to the Government. To that end, this sub-plan has three desired outcomes:

- ERLs are based on an economic analysis that addresses all costs and savings (including storage costs) associated with retaining or not retaining stock.
- The DoD Components will annually review—and update as required—all factors used to compute levels. Those reviews will ensure the costs and savings associated with retaining or not retaining stock are correct.

- As appropriate, a long-term reduction in ERS due to the Department's continuing efforts to address the reasons leading to ERS.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

The DoD Components currently use several different approaches for the computation of ERLs and the criteria for retaining ERS. Marine Corps, Navy, Air Force, and DLA have ongoing improvement efforts in this area.

Army

Army uses an economic model to compare the cost of holding versus disposing a given quantity of stock. The Army's model also compares the net present value of assets against the potential net sale value through immediate disposal. It assumes an obsolescence probability, which causes an asset to have lower value the longer it waits to be used.

Marine Corps

The Marine Corps uses a period-of-demand rule derived from an economic assessment for setting their retention limits. The Marine Corps uses 48 months of average monthly demand for all ERS items.

Navy

The Navy uses a period-of-demand rule for setting its retention limits. It also has a separate rule for each life-cycle phase (ascending, steady, and declining). These rules are based on an economic model, which is used periodically to adjust the values. For non-demand-based items, the Navy uses a quantitative minimum retention level, which depends on life-cycle phase. The Navy's minimum, stock level rules for non-demand items also depend on life-cycle phase.

Table 5-3. Current Navy ERS Improvements

Improvement	Goal	Target
Annual update of ERS parameters, which are set by weapon system lifecycle and implementation within modernized inventory management system.	Assign valid parameters for setting ERLs assigned to individual items (versus current weapon system assignment).	For items in ascending weapon system programs, limit equal to 5 units for non-demand based items and 12 years of attrition demand. For items in steady programs, limit equal to 3 units for non-demand based items and 8 years of attrition demand for demand-based items. For items in declining programs, limit equal to 1 unit for non-demand based items and 4 years of attrition demand for demand-based items.

Air Force

The Air Force uses a period-of-demand rule derived from an economic assessment for setting retention limits. The Air Force uses a 12-years-of-supply rule for all ERS items.

Table 5-4. Current Air Force Economic Retention Improvements

Improvement	Goal	Target
Analysis of retention formula for computing items and retention levels for insurance (INS) and numeric stockage objective (NSO) items to provide recommendations concerning retention formula and INS/NSO levels. The Air Force spare computational model contains an economic retention computational factor that can be adjusted by weapon system. The analysis will provide recommendations for retention factors by weapon system and determine differences in computed long-supply assets that would result from the change. The Air Force will also examine the formula for the calculation of INS/NSO retention levels in D200A, focusing on what could be changed without a computer systems requirements document; recommend needed changes and determine differences in computed long supply assets that would result from the change.	Improve item and ERLs for INS and NSO items.	Estimated completion date: Complete analysis by June 1, 2012.
Update of the 2006 study on Air Force rules for economic retention. The study is considering how the Air Force could implement the new DLA risk based retention model, which treats demand likelihood differently for replenishment versus non-replenishment (limited demand) items. The study will provide estimated inventory impacts and implementation recommendations.	Establish new rules for economic retention.	Complete update by March 31, 2011.

DLA

DLA's model is similar to the Army in that it compares the expected net present value cost of retaining or disposing of a given quantity of stock. It uses depletion probability curves, which allow for the possibility that any asset can be demanded in any future year. These probabilities are derived from long-term demand history, using separate approaches for replenishment and non-replenishment (limited demand) items.

Table 5-5. Current DLA Economic Retention Improvements

Improvement	Goal	Target
Implementation of new economic-based retention model	Establish new economic based retention model.	Complete implementation by October 2010 and correctly categorize the inventory identified for economic retention.

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this sub-plan.

Action D-1: Review and Validate Current Economic Retention Methods.

This action directly corresponds to the congressional requirement for this sub-plan. It involves a review by each DoD Component of its method for determining ERLs. The objectives of the review are to validate the method (1) constitutes an economic analysis as defined in DoD Instruction 7041.3, *Economic Analysis for Decision-Making*, (2) includes the factors called for in DoD Regulation 4140.1-R, *DoD Supply Chain Materiel Management*, and (3) uses current values for cost factors.

Key milestones	Target dates	OPR
Assess current methods against policy for computing economic retention.	FY2011Q2	Military Departments
Make recommendations for process improvements to Component systems.	FY2012Q2	Military Departments

Action D-2: Review and Evaluate Enhancements to Current Methods

This action corresponds to the Department's guidelines for improving inventory management. The review will identify opportunities and consistent approaches for incorporating

- a lifecycle perspective to current methods,
- the quantification of the economic risk for using other than optimal limits, and
- limits tailored to special inventory segments. Those segments include non-demand-based, low-demand, unserviceable assets, and unique commodities.

Key milestones	Target dates	OPR
Identify enhancements to the economic basis for retention.	FY2012Q1	OSD, Military Departments, DLA
Implement the enhancements and incorporate in policy as required.	FY2013Q1	Military Departments, DLA
Ensure consistent approach to assess performance and develop economic benefit metrics	FY2013Q1	OSD, Military Departments, DLA

Action D-3: Ensure Annual Reviews of DoD Component Economic Retention Procedures

This action provides for continuous improvement in the identification and retention of ERS.

Key milestones	Target dates	OPR
Conduct first annual review of the top items driving FY2010 economic retention to examine the sources of ERS and identify continuous improvement opportunities in economic retention procedures.	FY2011Q3	Military Departments, DLA
Conduct first triennial validation of cost and demand factors for economic retention.	FY2013Q3	Military Departments, DLA

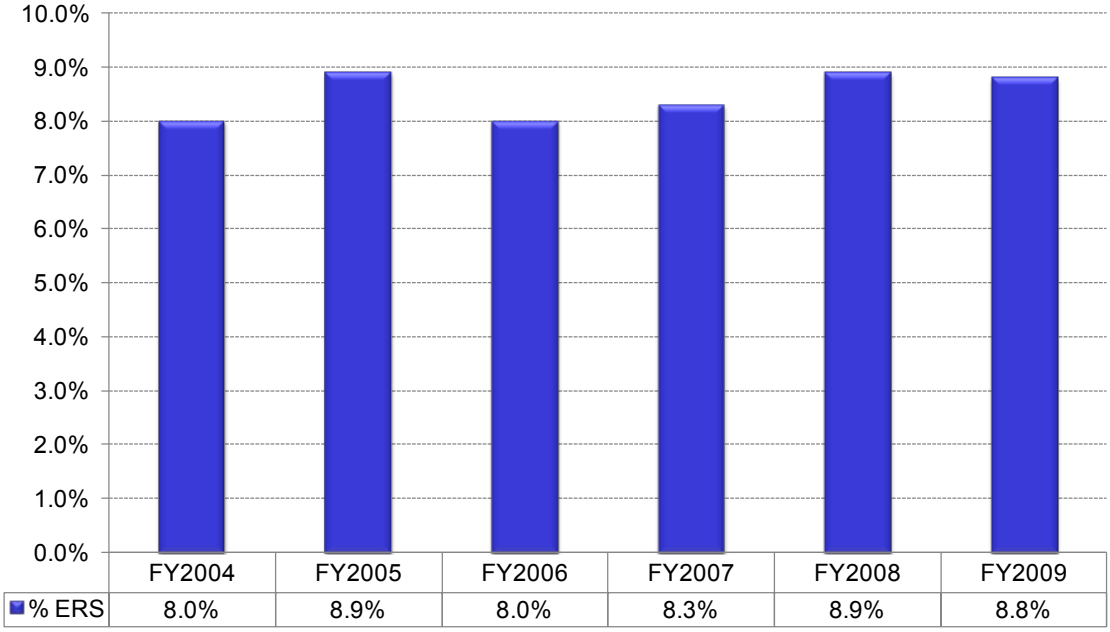
MEASURES OF SUCCESS

The percentage of inventory in dollars that is economic retention is one way of measuring ERS, but it does not reflect the economic benefit of holding ERS. Action D-2 will develop an economic benefit metric for ERS that will quantify the savings the Department can expect from holding ERS.

Figure 5-2 and Figure 5-3, respectively, show the Department and Component percentage of inventory dollars that is ERS from FY2004 to FY2009.[2] After a high in 2005, Department-wide ERS quantities have remained between 8 and 9 percent of total inventory in recent years.

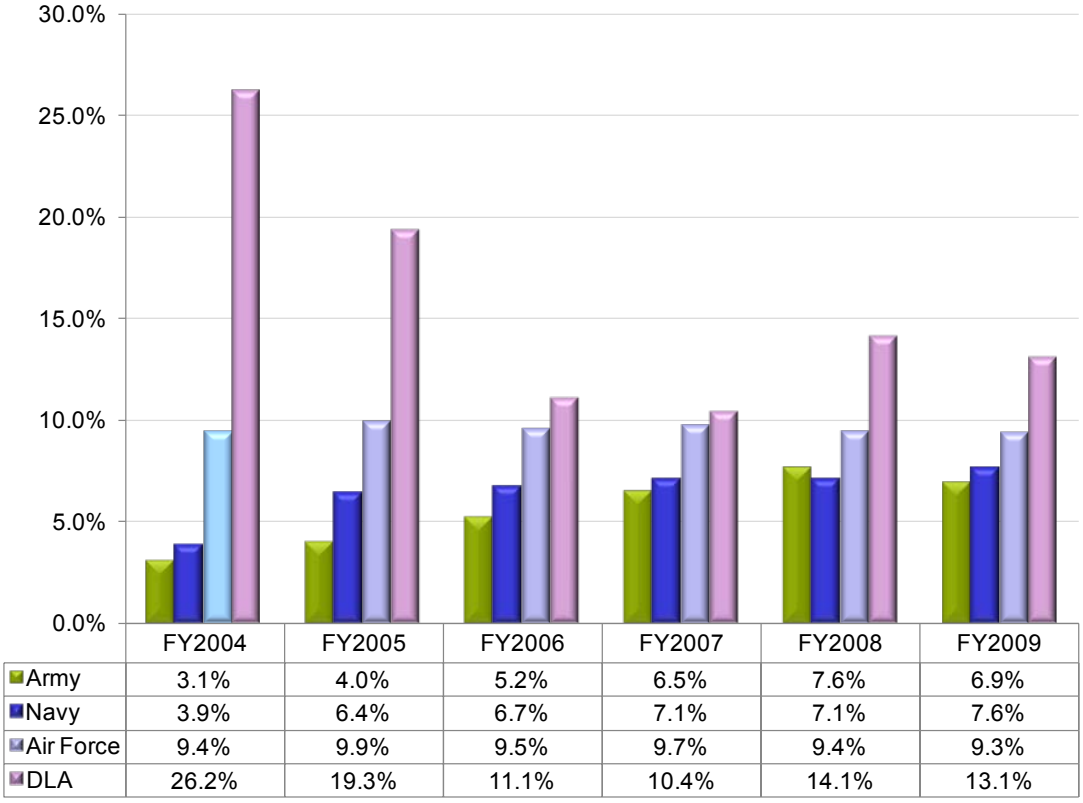
[2] The Department's SSIR is the source for this data. Each percentage is equal to the value of ERS for that year divided by the total value of the inventory for that year. Both values are in constant FY2009 dollars. The total value excludes intransit stock and fuels but includes PRS at its full value instead of its expected disposal value.

Figure 5-2. Percentage of Inventory Dollars Representing ERS



Source: SSIR, less fuels and intransit stocks.

Figure 5-3. Percentage of Inventory Dollars Representing ERS by DoD Component



Source: SSIR, constant FY2009, less fuels and in-transit, PRS at full value.

As shown in Table 5-6, the Department established a goal to perform annual reviews to ensure all items held as ERS are based on approved economic methods. In addition, a goal has been set to periodically validate the Components' ERS methods and computational factors. The 100 percent evaluation will be performed for these elements every 3 years.

Table 5-6. DoD Economic Retention Goal and Target

Sub-plan goal	Target
Validate Component ERS methods.	Conduct annual reviews of 100 percent of items held as ERS to ensure that retention decisions are based on an approved economic method.
Periodically revalidate Component methods and computational factors.	Revalidate all Component methods and computational factors (on a 3-year cycle).

Chapter 6
Sub-Plan E: Contingency Retention

INTRODUCTION

CRS is materiel assets above the AAO and above the ERS level that is held to support specific contingencies. To warrant stockage as CRS, the inventory manager must provide rationale that associates CRS to a military contingency, security assistance, or general contingency. To ensure CRS corresponds with current and future force levels, DoD policy prescribes the Components review and validate their methods for making contingency retention decisions. The review must occur at least annually, and the inventory control point commander or designee must attest to its validity in writing. The heads of the DoD Components, or their appointed designees, ensure an annual review of CRS is conducted.

The intent of this sub-plan for contingency retention is to complete an independent review of DoD policies, processes, and procedures to determine if further improvements can be made.

CONGRESSIONAL TASKING

Element (5) of Section 328 called for, "[a] plan for an independent review of methods used by the Military Departments and the Defense Logistics Agency to establish contingency retention requirements."

ISSUE STATEMENT

Current DoD policy allows for several categories of contingency retention, as defined by the type of contingency:

- Stocks for U.S. forces supporting a military contingency, such as stocks potentially needed for mobilization or surge (beyond that provided by war reserves)
- Stocks held in expectation of foreign military sales (FMS)
- Stocks for a general contingency, including non-procurable items and stocks needed for civil emergencies or disaster relief.

Currently, the DoD Components use different combinations of rules and criteria for classifying stock as CRS and for reviewing those decisions. The DoD Components collectively identified reasons for retaining CRS. The major categories are as follows:

- *Potential security assistance stocks* (PSAS) *or FMS reserve.* When the Department phases out a weapon system once used by U.S. forces, it may be sold to allied countries, creating a potential market for spare parts. In 1995, the Department of Defense approved the concept of an FMS reserve, allowing

spare parts for phased-out weapon systems to be retained for future sales to FMS customers.

- *Diminished manufacturing source, life-of-type buy, or non-procurable stock*. Items still in use and in demand on active weapon systems often encounter a loss of manufacturing source. This is most prevalent in electronics, where technological obsolescence occurs rapidly, but it can happen with almost any technology. When manufacturers offer the opportunity for one last production run, inventory managers may make a final purchase to obtain stock to support the remainder of the weapon system's expected life. They may also protect existing stock of diminished manufacturing source items from disposal for the same reason. Beyond declared diminished manufacturing source cases (i.e., the manufacturer has declared an end to production), items are found to be non-procurable when attempts to purchase the items find no qualified sources. Such items are declared non-procurable and held in CRS along with diminished manufacturing source and life-of-type items.

- *Materiel awaiting action before disposal.* Sometimes parts must undergo demilitarization before disposal. Similarly, hazardous materials may need some sort of processing before disposal. While awaiting action or funding for processing, these stocks are held as CRS.

- *Future military operations.* When U.S. forces must mobilize rapidly, war reserve stocks of some items may not be sufficient. Weapon system parts and other items with low peacetime demand may have a large mobilization demand, which, for a variety of reasons, is not included in war reserve requirements. Items believed to be needed for mobilization or other military operations may be protected from disposal in CRS.

- *Disaster relief or humanitarian aid*. Items believed to be potentially useful in civilian emergencies are sometimes held in CRS. This category does not generally apply to weapon system parts, but it often applies to personnel items (food, clothing, and medical commodities), textiles, shelters (tents, tarps, etc.), or construction and equipment items.

- *Reclamation or cannibalization.* Reparable items no longer needed are sometimes used as a source of their sub-components to repair other end items. It is generally less costly to strip the sub-component from the excess reparable item than to buy new, so the reparable is held in CRS as a source for parts.

- *Minimum stock level*. For items used on an active weapon system, stocks are retained. For example, DLA retains at least 12 each of all weapon system items.

Table 6-1 shows the 18 reasons the Components cite for including inventory in CRS.

Table 6-1. Current DoD Component Reasons for CRS

Types of inventory	Army	Navy	Air Force	Marine Corps	DLA
Cannibalization		✓			
Chemical, biological, or hazardous materiel	✓				
Component reclamation		✓			
Diminished manufacturing source/life-of-type buy items	✓	✓			
Family item		✓			
FMS reserve/PSAS	✓	✓	✓		
Future military operations	✓				
Humanitarian aid or peacekeeping	✓				
Inactive end item	✓				
Insurance Items	✓				
Living off repair	✓				
Minimum stock level					✓
Needs beyond requirements computation			✓		
Non-procurable/out of production	✓	✓	✓		✓
Performance based logistics items	✓				
Request of weapon system program manager					✓
Shelf life items	✓				
Weapon system modification		✓			

Note: The Marine Corps has very limited CRS.

OVERALL OBJECTIVE

The objective in this sub-plan is to ensure CRS is justifiable in terms of the probability of future need to support contingency use. This means the range and depth of DoD Component CRS is justifiable in terms of the probability of future need to support contingency use. To that end, the desired outcomes are as follows:

- An independent examination of the DoD Component processes and controls associated with proper categorization of CRS and implementation of required actions.
- The development of a standard set of contingency descriptions with related coding used to document justification of all DoD Component CRS.
- Components validate CRS at least annually. The DoD Components would validate high value items and other items driving significant contingency retention dollars more frequently. Specifically, the DoD Component validation would include an inventory manager review for re-categorization of CRS as PRS and subsequent disposal or senior component manager approval for continued CRS based on a consistent approach to documenting and reporting this approval.

Periodic validations should eliminate the continuation of contingency retention when the supporting justification no longer exists.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

All DoD Components have controls and regular validations in place to manage CRS.

Army

Army CRS levels are reviewed and validated quarterly (LMP) or monthly (Legacy). All CRS automatically deleted from records each year must be revalidated, approval obtained, and reloaded by the item manager.

Navy

The Navy requires management review board approval to keep items in CRS. CRS remains for one stratification cycle and then the CRS retention code is dropped. At that point, CRS items must be revalidated. Approvals are limited to 1 year, and 100 percent annual review of CRS is accomplished each year. If not used, CRS must be reclassified, disposed, or revalidated as CRS and approved. The Navy works with DLA to validate its requirement for DLA-managed CRS. This review accomplishes a 100 percent validation of actual requirements for both direct customer support and inventory levels.

Air Force

The Air Force requires annual evaluation and management approval for its CRS.

Marine Corps

The Marine Corps has very limited CRS; however, it is working to use a new summary inventory stratification report (STRAT) Tool to validate current levels for CRS and to standardize the annual validation process.

DLA

In response to a request from Military Departments, DLA stratifies into contingency retention all above-ERL assets that are coded to a limited number of weapon systems. These weapon system–based disposal exemptions were validated on a yearly basis as a CRS review. Beginning in 2009, DLA migrated to annual item-by-item CRS reviews with the Military Departments.

Table 6-2. Current DLA Contingency Retention Improvements

Improvement	Goal	Target
Working with the Military Departments to convert weapon system CRS inclusion and justification to specific negotiated items and quantities with yearly validation.	Validated justification for CRS held by DLA.	100 percent validation each year.

DEPARTMENT-WIDE ACTIONS

The Department of Defense established the following actions for execution as part of this sub-plan.

Action E-1: Complete an Independent Review That Examines the DoD Component Processes and Develop a More Effective Categorization of Inventory Designated as Contingency Retention, as Directed by Congress.

This action corresponds directly to the congressional requirement for this sub-plan. It involves a systematic review of DoD Component methods for establishing contingency retention. The review will address the range and depth of contingency retention and a detailed assessment of current CRS categories. The objectives of the review are to determine whether CRS

- should be designated as ERS or as part of the AAO,
- is justified based on a viable contingency requirement, or
- should be sent to disposal.

The second part of this action is to assess the results of the independent review and act on them.

Key milestones	Target dates	OPR
Complete independent review.	FY2011Q2	OSD
Assess results, make necessary policy changes relative to the categorization of CRS, and implement those changes.	FY2011Q4	OSD, Military Departments, DLA

Action E-2: Ensure Annual Reviews of DoD Component Contingency Retention.

This action provides for improvement in the identification and retention of CRS. The goal is to optimally size CRS. This action involves the establishment of

- consistent CRS review criteria and standard definitions and codes for documenting CRS across the DoD Components,
- criteria for quantifying the range and depth of how much CRS each Component should have, and
- a process for reviewing the sources and justification of CRS every year to identify emerging issues.

Key milestones	Target dates	OPR
Complete the FY2010 annual review of the top dollar value and cube of items driving contingency retention to examine the sources of CRS and scrutinize continuing justifications.	FY2011Q2	Military Departments, DLA
Revise criteria for timely CRS reviews, based upon the independent review.	FY2011Q3	OSD, Military Departments, DLA
Refine targets for contingency retention.	FY2011Q4	OSD, Military Departments, DLA

Action E-3: Employ a Consistent Approach for Approving Decisions to Retain CRS.

This action provides for development and implementation of a consistent level of authority for the approval of decisions to retain CRS. The goal is to apply a standard for inventory managers to document their recommendations for retaining CRS and to establish consistent rules and levels of approval authority for CRS decisions by the appropriate senior logistics manager. This action involves the establishment of

- consistent documentation to be used to record CRS retention actions across the DoD Components, and
- criteria and actions to obtain, document and report senior management approval of CRS retention decisions.

Key milestones	Target dates	OPR
Develop and publish procedures for inventory manager documentation of CRS retention decisions.	FY2012Q1	OSD, Military Departments, DLA
Establish criteria and steps to obtain and record senior management approval of CRS decisions	FY2012Q1	OSD, Military Departments, DLA
Implement this approval process across the DoD Components.	FY2012Q2	Military Departments, DLA

Action E-4: Establish a Department-Wide Metric to Monitor Sales against CRS.

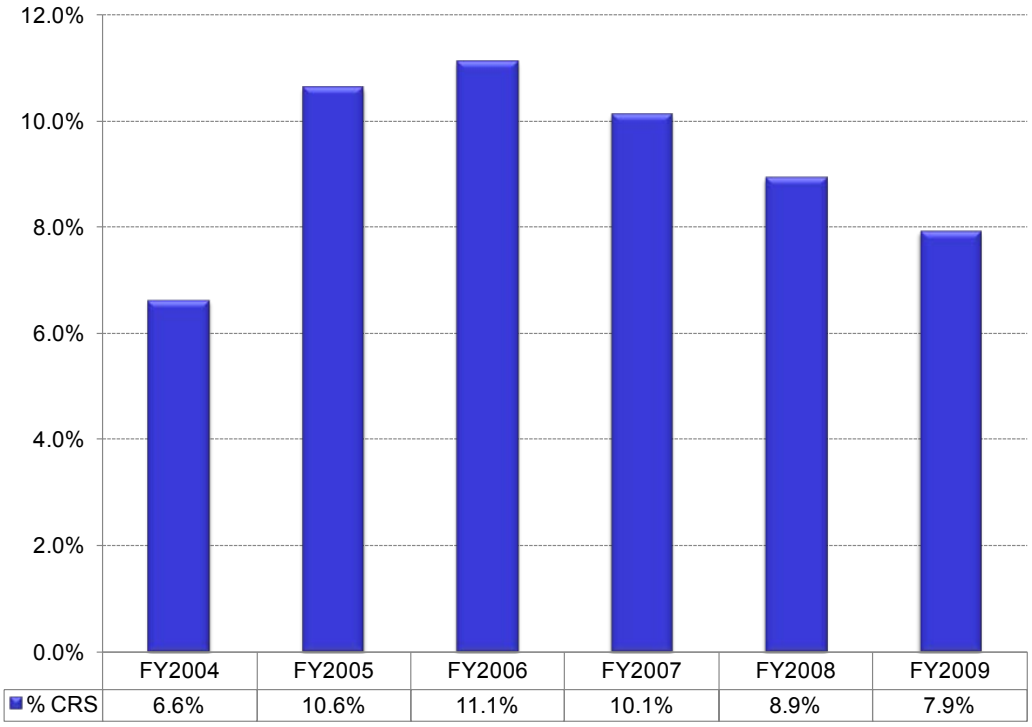
The annual dollar value of contingency retention the DoD Components use to fill demand, as identified in this sub-plan as a measure of success, is currently not available. This action develops the required measurements for this metric.

Key milestones	Target dates	OPR
Identify standard Department-wide metric for monitor sales against CRS	FY2012Q1	OSD, Military Departments, DLA
Establish procedures for collecting and reporting approved metric	FY2013Q1	OSD, Military Departments, DLA

MEASURES OF SUCCESS

Figure 6-1 shows the Department-wide percentage of inventory dollars that is CRS between FY2004 and FY2009.[1]

Figure 6-1. Percentage of Inventory Dollars That Is Contingency Retention

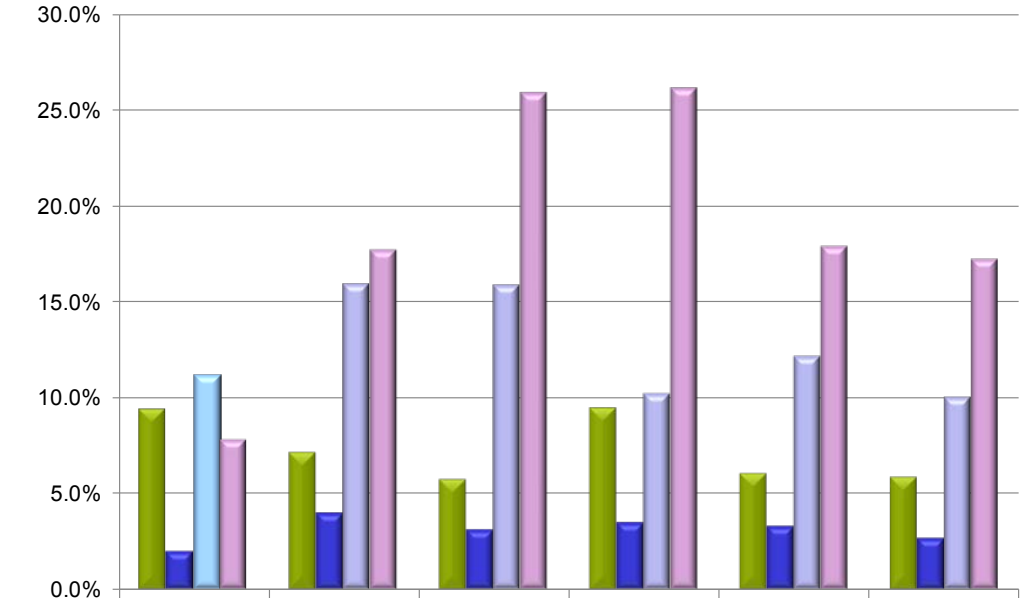


Source: SSIR, less fuels and intransit stocks.

After an initial increase experienced from FY2004 to FY2006, the metric has declined. Because of the actions in this sub-plan, the Department expects to see a continued reduction in CRS as a share of the total inventory. Figure 6-2 shows the percentage of inventory dollars identified as CRS by Military Department and DLA.

[1] The Department's SSIR is the source for this data. Each percentage is equal to the value of CRS for that year divided by the total value of the inventory for that year. Both values are in constant FY2009 dollars. The total value excludes intransit stock and fuels but includes PRS at its full value instead of its expected disposal value.

Figure 6-2. Percentage of Inventory Dollars Categorized as Contingency Retention by Each DoD Component



	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Army	9.3%	7.1%	5.7%	9.4%	6.0%	5.8%
Navy	1.9%	3.9%	3.0%	3.4%	3.2%	2.6%
Air Force	11.1%	15.9%	15.8%	10.2%	12.1%	10.0%
DLA	7.8%	17.7%	25.9%	26.1%	17.9%	17.2%

Although the goal and target of this sub-plan do not identify quantitative measures in terms of reduced CRS, the following two metrics are potential ways of continually checking that CRS is reasonably constrained:

- The percentage of inventory in dollars that is contingency retention
- The annual dollar value of contingency retention that the DoD Components use to fill demand.

These metrics will be tracked as part of the implementation of this sub-plan. Table 6-3 shows the prescribed goal and targets for improving management of CRS items.

Table 6-3. DoD Contingency Retention Goal and Target

Sub-plan goal	Target
Ensure CRS is justified.	Annual reviews to ensure all items held as CRS are based on approved criteria. The CRS target will be established pending the results of the independent study.

Chapter 7
Sub-Plan F: Storage and Direct Vendor Delivery

INTRODUCTION

Management of the DoD distribution depots, which serve as wholesale storage sites for secondary item inventory, is performed by the DLA Defense Distribution Center (DDC). The distribution depots have 52.1 million square feet of covered storage and 24.8 million square feet of open storage. DDC manages 25 distribution depots with 660 buildings and has an annual operating budget of $1.5 billion to cover the receipt, storage, and issue of materiel.[1]

The intent of this plan is to continue reducing the DoD storage footprint by using vendors to store items that have the greatest potential for generating significant organic storage costs. DoD policy requires a business case analysis support the decision to use vendors to support DoD customers directly. Although the cost of storage is a factor in that analysis, it is not the only factor.

CONGRESSIONAL TASKING

Element (6) of Section 328 called for, "[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."

ISSUE STATEMENT

The Military Departments and DLA have significant numbers of DVD contracts in place in the form of prime vendor (PV), virtual prime vendor (VPV), and performance based logistics (PBL) contracts. By their nature, DVD contracts for materiel reduce organic storage. For example, the Navy has had success establishing a DVD arrangement for tires, decreasing retail allowances by 67 percent and reducing wholesale inventory from 50,000 to 5,000 units.

The opportunity to save the cost of storage space through use of direct delivery contract arrangements may be limited to a relative small number of items. For example, as shown in Table 7-1, the Army's top 25 largest cube items comprise three-fourths of their total space requirement.

[1] From an April 2009 DDC briefing.

Table 7-1. Total Space Used by Top 25 Items with Largest Cube per Component

Owner	Top 25 items cube (ft3)	Total component cube (ft3) used	Percent of total
Air Force	2,228,280	12,945,306	17 percent
Army	19,362,678	25,287,605	77 percent
DLA	6,421,683	32,717,026	20 percent
Marine Corps	1,142,282	2,043,026	56 percent
Navy	1,568,978	8,697,619	18 percent
Total	30,723,900	79,648,046	—

Overall, the Department has reduced its storage footprint over time (see Figure 7-1 on page 7-7), and continues to take aggressive action and promote further reduction. The Department has leveraged DVD-type arrangements and consequently eliminated unnecessary layers of inventory and achieved cost savings. It has successfully applied this approach to select commodities, such as medical, clothing, subsistence, tires, and lumber.

Although DVD-type arrangements can stand alone, they are often elements of broader PV, VPV, and PBL support arrangements. Any logistics solution must result in customers receiving what they need, when they need it, and at the least cost. Through discussions with customers and vendors, the Components determine the right mix of vendor and stock support on a case-by-case basis during the acquisition planning process. This requires the Components to conduct a cost/benefit analysis that balances cost drivers and reliability factors.

Table 7-2 lists examples of current commercial vendor support arrangements.

Table 7-2. Current PV and VPV Arrangements

Category	Description
Subsistence	56 prime vendors in place world-wide
Food service equipment	Equipment, parts plus full life-cycle support
Pharmaceutical supplies	29,000 pharmaceutical supplies; replenishment support to the TRICARE Mail Order Pharmacy program; returns management service
Medical/surgical equipment	118,000 items including many equipment items; customer defined delivery options; surgical pre-packs
Integrated	Integrator responsible for tailored logistics support to depot maintenance activities including industrial support planning, bench stock, kitting
Maintenance repair and operations	Regional support for facilities maintenance, public works, family housing, and base supply customers

Table 7-2. Current PV and VPV Arrangements

Category	Description
Fire and emergency	Aircraft firefighting equipment, personal protective equipment, hazardous materiel response, detection and decontamination systems, alarm and suppression systems, force protection equipment, extinguishers, hoses and hose assemblies, nozzles, weapon of mass destruction response equipment, environmental control, safety and search and rescue equipment, and hand tools
Special Operational Equipment Tailored Logistic Support Program	Allows authorized customers to order special operations and marine diving and life saving products and services
Administrative Products Program	Allows use of a special blanket purchase agreement for next-day desktop delivery of more than 800 commonly used office supply items.

OVERALL OBJECTIVE

The objective in this Plan is to use commercial vendors to store items that generate increased storage costs when use of those vendors represents the best value to the Government. The desired outcome is reduced organic storage requirements. The Department will achieve that reduction with DVD-type contracts when such contracts are in the best interest of the Government. DoD plans to include storage considerations in acquisition decisions to establish DVD and similar types of contracts.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

The management of the wholesale distribution depots is consolidated under DLA; however, DoD acquisition policy requires all Components to consider DVD and PBL arrangements as viable options for the product support of new weapon systems and equipment. For legacy systems, the PBL support strategy has been employed when the contractor can improve support to the warfighter at an equal or lower cost to DoD. Thus, the use of DVD and PBL is a standard, on-going practice among the Military Departments and DLA, and all aggressively pursue these product support relationships where they make economic sense.

The business case analysis templates used by the Military Departments and DLA to perform economic analysis of product support contain one or more line items for warehouse savings. However, because storage cost is a fraction of materiel cost, this line item has not had great weighting, and thus space reduction alone has not been a determining factor in awarding DVD, PV, VPV, or PBL contracts with commercial suppliers. An exception would be bulk items, such as tires or lumber, where the volume of the assets is an obvious factor in storage costs.

Navy

The Navy's robust PBL program has succeeded in moving Navy Working Capital Fund items from organic to commercial storage. The Navy reviews all new systems as PBL candidates and provides a thorough economic analysis for renewal of existing PBL programs. The Navy utilizes commercial warehousing when there is an economic benefit to the Government. As an example of a successful contracting effort, Navy has achieved a 40 percent cost reduction since FY2004 by utilizing PBL support in lieu of organic stockage of materiel.

DLA

The storage footprint (in cubic feet) and the cost of that footprint for items managed by DLA are captured by DLA on behalf of the Military Departments. To date, only the Navy has tracked space savings specific to DVD-related efforts. Also, DLA has tracked the space savings (square feet) from the BRAC and supply, storage and distribution (SS&D) efforts. Actions to improve use of contractor support are underway or planned. These are listed in Table 7-3. These improvements are an integral part of the Department's overall inventory improvement strategy; they support the efforts to improve inventory management as envisioned by this Plan. The results of these efforts will be evaluated to determine whether they merit an expansion into Department-wide actions.

Table 7-3. Current DLA Storage and DVD Improvements

Improvement	Goal	Target
Inventory reduction pursued through strategic materiel sourcing.	Reduce lead times and up-front obligation dollars by placing items on long-term contracts.	Meet established targets for dollar value of contracts awarded using strategic sourcing methods.
Targeted reviews of large weight or cube items for potential migration to DVD.	Accomplish reviews of large weight or cube items and migrate to DVD where deemed feasible.	100 percent review of the top 25 cube storage items by supply chain.

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this storage and DVD sub-plan.

Action F-1: Examine Items with High Storage Requirements for Potential Management as DVD.

This action corresponds directly to the congressional requirement for this sub-plan. It involves DLA identifying items with high storage requirements and the DoD Components evaluating the potential for these items being managed by commercial vendors as inventory they stock, store, and issue directly to DoD customers.

Key milestones	Target dates	OPR
Initial identification of top 25 items for each Component.	Completed	Military Departments, DLA
Evaluation of potential for DVD contracts.	FY2011Q3	Military Departments, DLA
Establishment of a process for periodic high storage DVD reviews.	FY2011Q3	OSD, Military Departments, DLA

Action F-2: Track Reduction of Depot Storage Space That Can Be Attributed to Alternative Sourcing Strategies (DVD, PBL, etc.).

This action will allow the Department to identify the reasons for changes to the DoD storage footprint.

Key milestones	Target dates	OPR
Establishment of a data collection capability for tracking space reduction in depot storage attributed to alternative contract sources.	FY2011Q4	Military Departments, DLA
Identification of a standard Department-wide metric for monitoring storage reduction.	FY2012Q1	OSD, Military Departments, DLA

Action F-3: Identify Selection Method and Criteria for Including Depot Storage Space as a Cost Factor in the Business Case Analyses for Alternative Sourcing Strategies (DVD, PBL, etc.).

This action will facilitate the DoD inventory managers' and procurement officers' capability to use depot storage space reduction opportunities as one of the cost factors in accomplishing required business case analyses. This allows the use of depot storage space as a criterion when determining the selection of commercial sources for directly supplying materiel to satisfy the operational forces' support requirements.

Key milestones	Target dates	OPR
Identification of applicable business case analysis method and criteria for assessing depot storage space as an element of business case decisions for selecting materiel support providers.	FY2011Q4	OSD, Military Departments, DLA
Documentation of the applicable selection method and criteria in appropriate DoD policy issuances.	FY2012Q1	OSD, Military Departments, DLA

Action F-4: Review Department-wide Policies and Procedures for Shifting Items to DVD Arrangements to Ensure They Do Not Cause the Acquisition of Excess Inventories.

If the Components do not effectively utilize inventories before shifting items to DVD arrangements, the same inventories may be procured again, thereby causing excesses. This action will examine Department- and Component-level policies and procedures to ensure they effectively account for existing inventories in transitioning from organic to commercial support.

Key milestones	Target dates	OPR
Review DoD and Component policies and procedures for shifting items to DVD arrangements.	FY2011Q2	OSD, Military Departments, DLA
Revise policies and procedures that might cause excesses for items supported by DVD arrangements.	FY2012Q2	OSD, Military Departments, DLA

MEASURES OF SUCCESS

The selection of contractor support or DVD arrangement will result in a decrease in storage requirements within the DoD distribution depots. Other programs, such as 2005 BRAC and facilities modernization efforts, can affect the overall size of the Department's physical storage capacity. Figure 7-1 and Figure 7-2, respectively, show the Department-wide and Component-specific storage requirements by volume for inventory managed by the Military Departments and DLA for FY2005–FY2009.

Figure 7-1. Storage Footprint for Total DoD Secondary Item Inventory

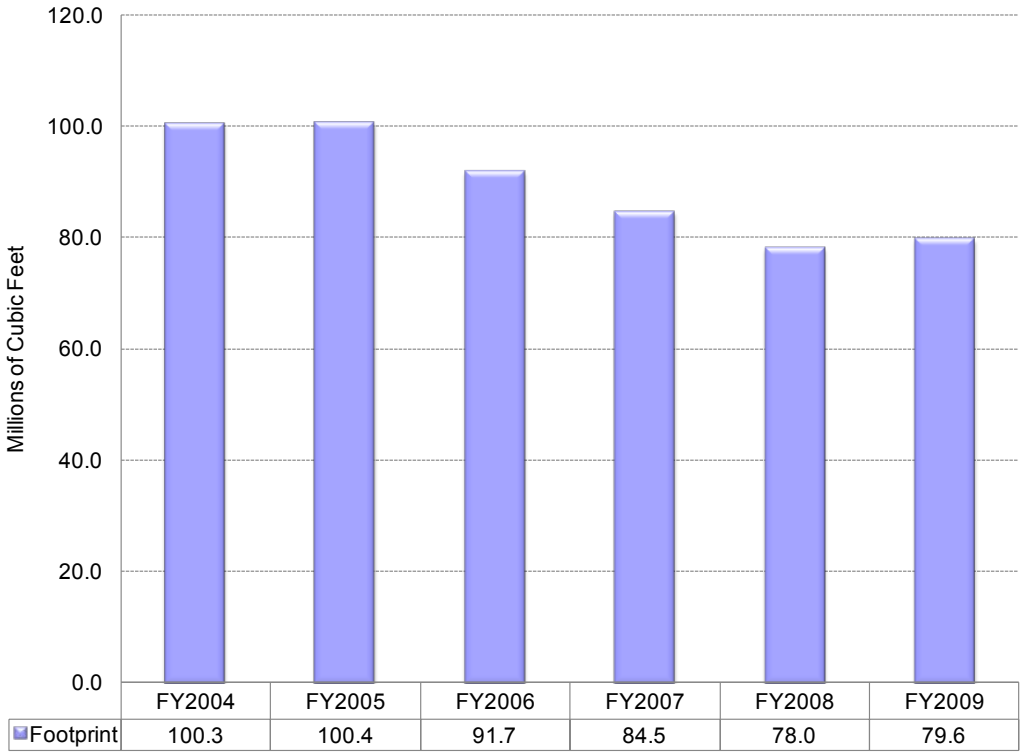
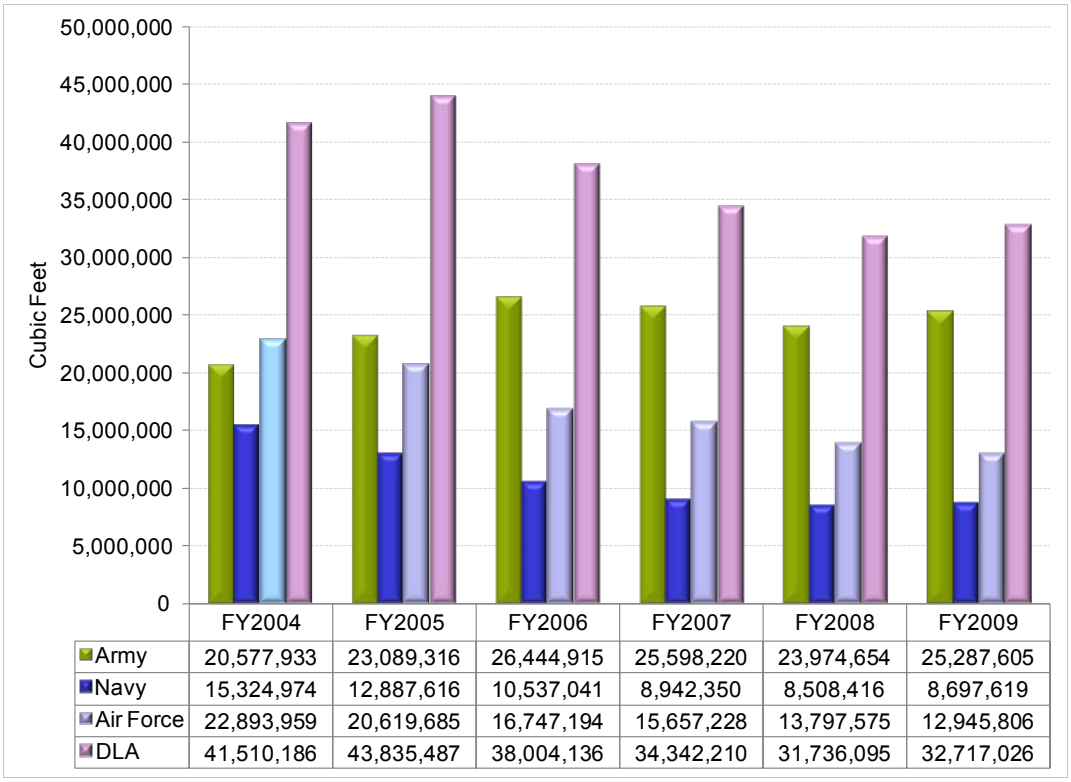


Figure 7-2. Storage Footprint by DoD Component



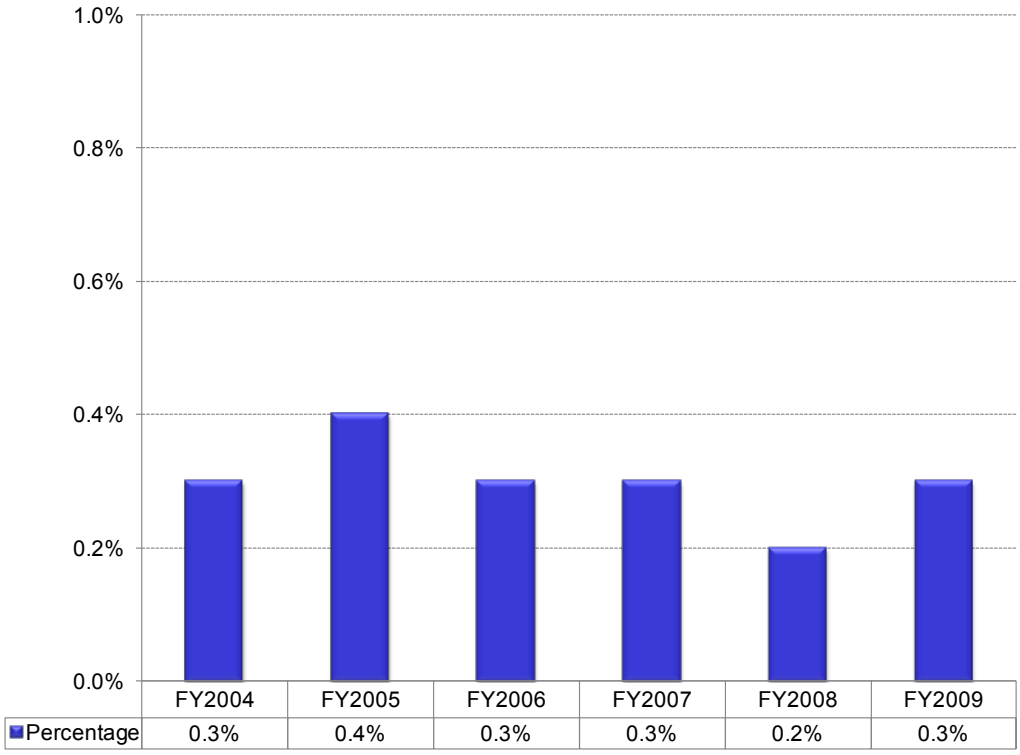
	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Army	20,577,933	23,089,316	26,444,915	25,598,220	23,974,654	25,287,605
Navy	15,324,974	12,887,616	10,537,041	8,942,350	8,508,416	8,697,619
Air Force	22,893,959	20,619,685	16,747,194	15,657,228	13,797,575	12,945,806
DLA	41,510,186	43,835,487	38,004,136	34,342,210	31,736,095	32,717,026

The 2005 BRAC had three recommendations for supply and distribution, the first of which dealt with moving items to commercial storage:

- Disestablishing storage and distribution functions for tires; packaged petroleum, oils, and lubricants; and compressed gases within DoD distribution depots.
- Disestablishing the Defense Distribution Depot Columbus, Ohio.
- Consolidating all supply, storage, and distribution functions and associated inventory at DoD distribution depots collocated with depot-level maintenance operations.

As seen in Figure 7-3, the annual cost of storage is less than 1 percent of the cost of inventory.[2] Consequently, the cost of storage is not a primary driver when deciding if DVD is preferred over organic support.[3] Even though storage costs are not a large portion of DoD logistics costs, the execution of this Plan should facilitate the Department's continued focus in reducing the amount of inventory in storage.

Figure 7-3. Storage Cost as a Percentage of Inventory Value



[2] Appendix 5 (page 222) of the DoD 4140.1-R, *DoD Supply Chain Materiel Management Regulation*, specifies that 1 percent is the maximum value for storage costs. The percentages shown in Figure 7-3 were computed by dividing that annual storage cost by the total inventory value for the respective fiscal year.

[3] To reaffirm this conclusion, and to address the issue raised in Element 6 of Section 328, Action F-1, looks at the top 25 items occupying space in DoD distribution depots to see if any are candidates for a DVD support strategy.

Figure 7-4 and Figure 7-5, respectively, show the Department-wide and Component costs for distribution depot storage.

Figure 7-4. Total DoD Secondary Item Distribution Depot Storage Costs

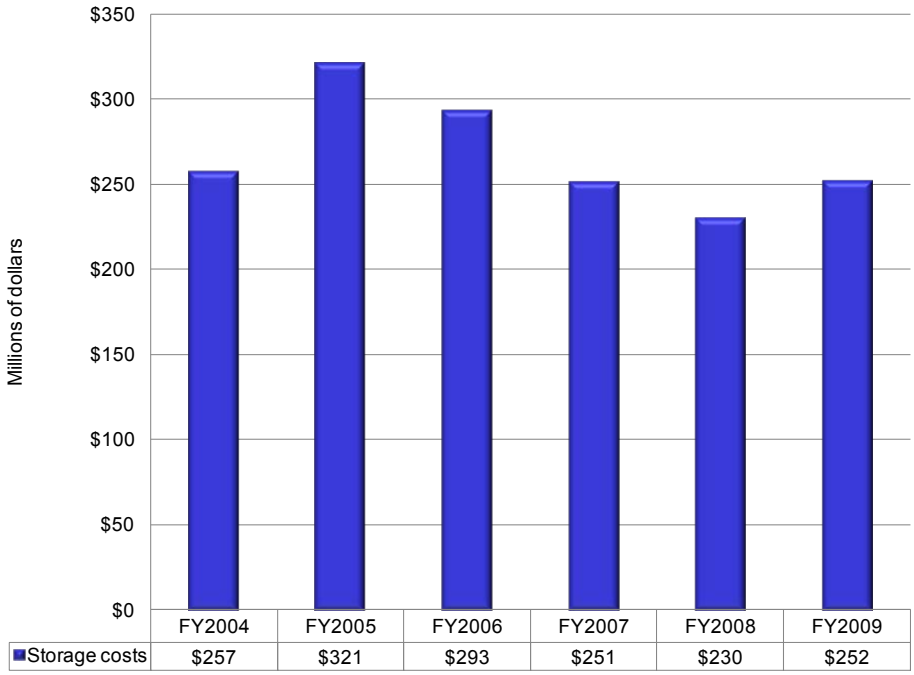
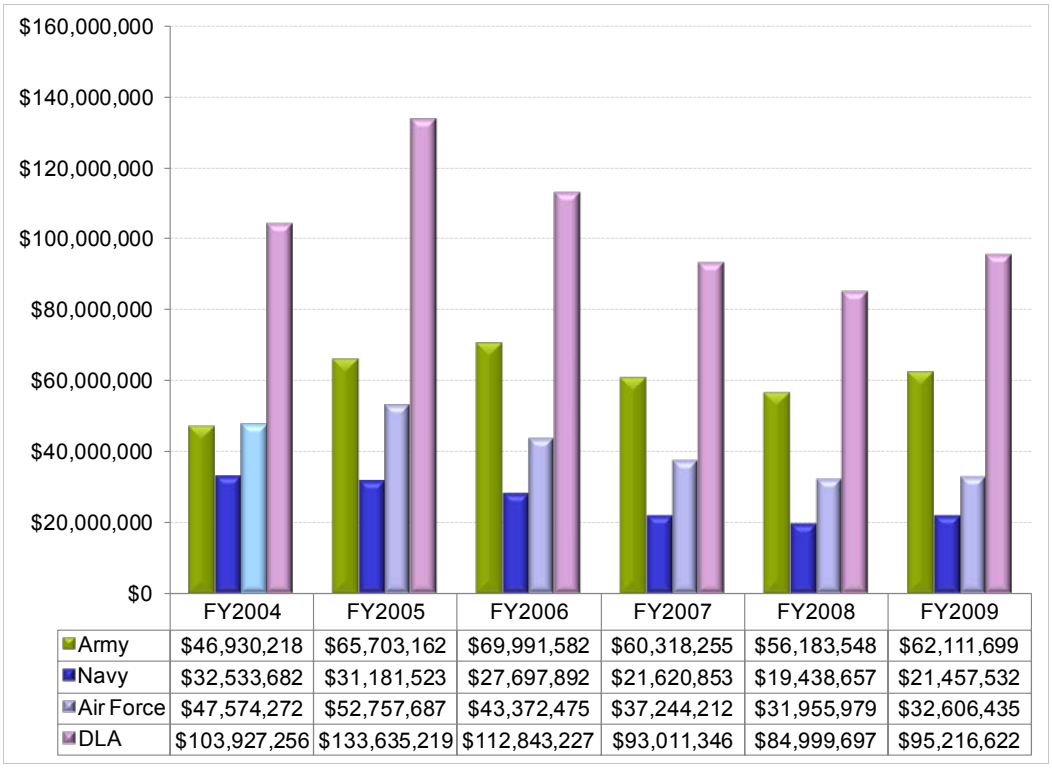


Figure 7-5. Storage Costs by DoD Component



To monitor the success of this plan, the Department will collect the following three metrics:

- The total storage footprint in distribution depots for secondary item inventory
- The total costs of distribution depot storage for these items
- Storage reduction that result from items shifting to DVD arrangements (to be developed).

Although the target of this sub-plan does not yet identify quantitative measures in terms of reduced storage space, the metrics described above will be tracked as part of the implementation of this plan. Table 7-4 shows the goal and targets for this plan.

Table 7-4. DoD DVD and Storage Space Goal and Target

Sub-plan goal	Target
Reduce storage space where it is cost effective.	Reduce storage space in accordance with 2005 BRAC by FY2011. Track storage reduction metrics in subsequent years.

Chapter 8
Sub-Plan G: Items with No Demand

INTRODUCTION

No-demand items are items that have not had a demand over a specified period. The Department is taking action to review items that experience no-demand over a greater than 5 year period to determine to retain or dispose. The Department retains a minimum level of stock of no-demand items to guard against potential failure of items used in an active weapon system.

The intent of this sub-plan is to ensure items without demand greater than 5 years are not held in the inventory unless there is justification for retention or disposition.

CONGRESSIONAL TASKING

Element (7) of Section 328 called for, "[a] plan for a comprehensive assessment of inventory items on hand 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."

ISSUE STATEMENT

Even after long periods without recurring demand, many items may still have a probability of future demand that justifies retention. Therefore, the question is *how much* to keep. Stock for items with no recurring demands is held for various reasons: potential failure of a weapon system, economic retention, or contingency retention.

OVERALL OBJECTIVE

The objective of this sub-plan is to eliminate inventory on items with a history of no recurring demand and a low probability of future demand unless there is sufficient justification for retention. Actions will be taken to ensure that the number of years of no recurring demand is included in inventory level setting and retention decisions.

The desired outcomes for items with no recurring demand in 5 years are as follows:

- A set of stockage and retention rules that the DoD Components incorporate and apply within their materiel management systems. The rules would cover the congressional requirement that the Department have procedures for systematically reviewing no-demand items for disposal.

- Metrics for tracking items with years of no demand and their inventory. The Department would use the metrics to monitor annual increases or decreases in the number of no-demand items and in the dollar value of this inventory.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

Army

The Army aligns its disposal review criteria with the DLA DDC dormant stock project, using that program's criterion of 2 years without demand. That criterion does not consider repurchase risk.

Navy

The Navy recently conducted a zero-demand study that reviewed all NIINs continuously managed from 1996 to the present. In the simulation, the Navy hypothetically issued a disposal action in December 2003 for items with no-demand since 1996 (8 years).

This disposal would have yielded the following results:

- NIINs disposed: 76,758
- Storage space reduction: 1.14 million cubic feet
- Storage savings: $25.97 million (from January 2004 to October 2009)

However, between January 2004 and October 2009, customer requisitions for material sent to disposal would have resulted in $129.8 million in re-procurement costs and 15,416 backorders, with an average lead time of 5 quarters.

The Navy's study illustrates that disposal policy cannot be predicated solely on historical demand. Simply disposing of material with no demand would be uneconomical for the taxpayer, and may negatively affect fleet readiness.

Air Force

The Air Force's item review program applies to items with no assets and no demand. The Air Force is reviewing and refining its computational models for low demand items.

DLA

DLA plans an analytical review of items with no demand, and a project to begin capturing retail demand at certain depot maintenance materiel storage locations. These demands are not currently recorded in DLA wholesale forecasts (items with no wholesale demand may, in fact, be active at the retail level).

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this sub-plan for items with no demand.

Action G-1: Examine DoD Component Definitions, Methods, and Rationale for Retaining or Disposing of Items with No Recurring Demand, and Examine the Potential Applicability of a Life-Cycle Approach.

This action corresponds directly to the congressional requirement for an assessment of no-demand items. It includes the development of metrics for items with years of no demand and the inventory level setting and disposal rules for those items.

Key milestones	Target dates	OPR
Complete the development of metrics for categorizing and tracking inventory for no demand items.	FY2011Q4	OSD, Military Departments, DLA
Review rules and identify best practices for stocking and disposing of items with no demand.	FY2011Q4	OSD, Military Departments, DLA
Revise policy for stocking and disposing of items with no demand.	FY2013Q1	OSD, Military Departments, DLA
Implement improvements within DoD Components.	FY2013Q1	Military Departments, DLA

Action G-2: Develop an Annual Review and Reporting Process for No-Demand Items, Based on Dollar Thresholds

This action builds on the metrics established in Action G-1. The objective is to ensure the Department

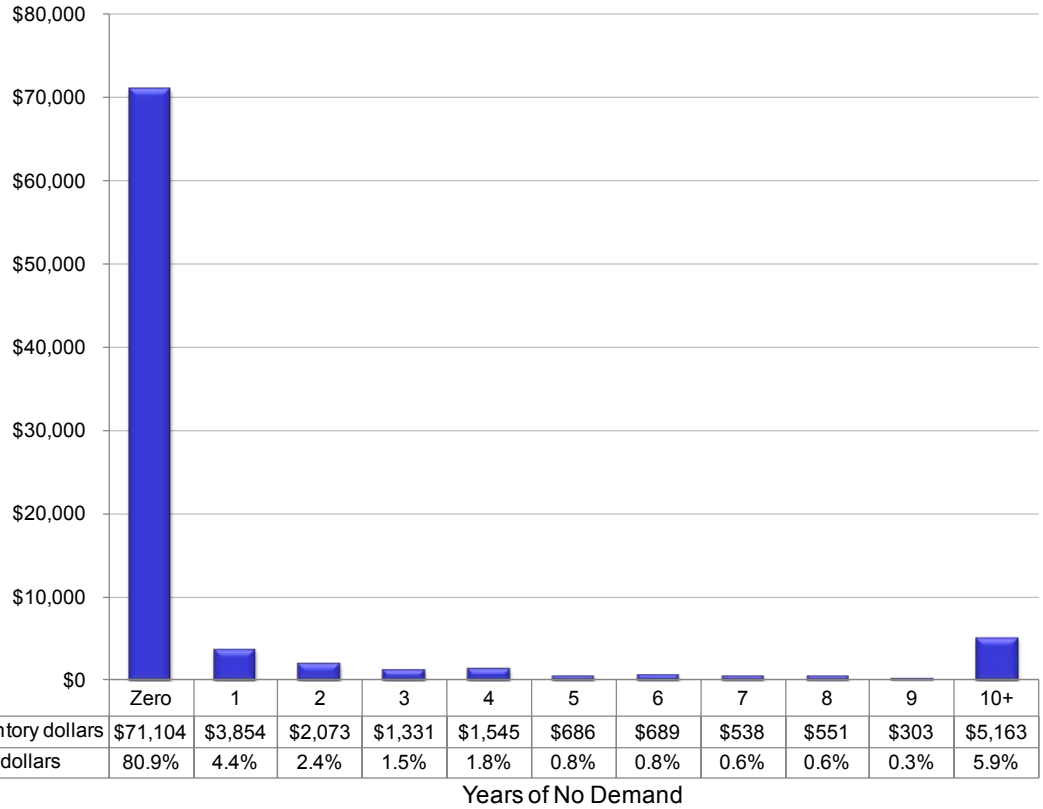
- stocks only no-demand items that are essential to the ability of a weapon system to perform its mission at a level that guards against potential catastrophic failure of the weapon system and
- disposes of items that have years of no demand and are not needed to guard against catastrophic failure of a weapon system.

Key milestones	Target dates	OPR
Establish implementation plan for no-demand item metrics.	FY2011Q2	Military Departments, DLA
Establish a Component process for conducting annual reviews of no demand items including metrics that measure the disposition of items reviewed and required level of authority.	FY2011Q4	Military Departments, DLA
Establish a process for annually reviewing Components' top no-demand items based on dollar value at the DoD level to ensure that the rules for stocking and disposing of no-demand items are adequate.	FY2011Q4	Military Departments, DLA

MEASURES OF SUCCESS

Figure 8-1 shows the inventory value of items with zero to 10 years of no demand across the Department.

Figure 8-1. Inventory Dollars with 0–10 Years of No Demand



	Zero	1	2	3	4	5	6	7	8	9	10+
Inventory dollars	$71,104	$3,854	$2,073	$1,331	$1,545	$686	$689	$538	$551	$303	$5,163
% of dollars	80.9%	4.4%	2.4%	1.5%	1.8%	0.8%	0.8%	0.6%	0.6%	0.3%	5.9%

Source: Component data.

To assess success in the management of items with no recurring demand, the Department will collect and monitor three metrics.

- The percentage of total inventory dollars that is for no-demand items. This metric currently does not exist within or across the DoD Components; it is being developed.

- An inventory segmentation based on years of no demand. (Figure 8-1 shows FY2009 measurements for this metric obtained by a one-time data query.) This metric currently does not exist within or across the DoD Components; it is being developed.

- Quantification of how much no-demand item stock is retained and disposed. These metrics currently do not exist within or across the DoD Components; they are being developed.

These metrics will be tracked as part of the implementation of this sub-plan. Table 8-1 shows the prescribed goal and targets for improving management of Non Demand items.

Table 8-1. DoD No Demand Items Goal and Target

Sub-plan goal	Target
100 percent annual review and categorization for items with no demand for 5+ years.	Complete the first annual review and categorization by FY2012Q1. 100 percent disposal of non-justified inventory on items with no demand for 5+ years by FY2012Q3.

Chapter 9
Sub-Plan H: Disposition of PRS

INTRODUCTION

PRS is classified as excess inventory by both the Congress and the Department of Defense. These items are reviewed by the inventory manager for potential reuse within the Department or transfer as excess to the Defense Reutilization and Marketing Service (DRMS) for possible reutilization by another DoD Component; donation to a federal, state, or local governmental agency; or for disposal through sale to the public. The majority of the PRS identified for disposal are reparable components the Department has used at least once and possibly several times and they are at the end of their useful life. The DoD Component inventory managers validate stock identified as PRS to ensure these assets are no longer needed to satisfy DoD materiel requirements before they are transferred to the DRMS.

The intent of this sub-plan is to reduce the time to review excess inventory and move it to DRMS for disposal.

CONGRESSIONAL TASKING

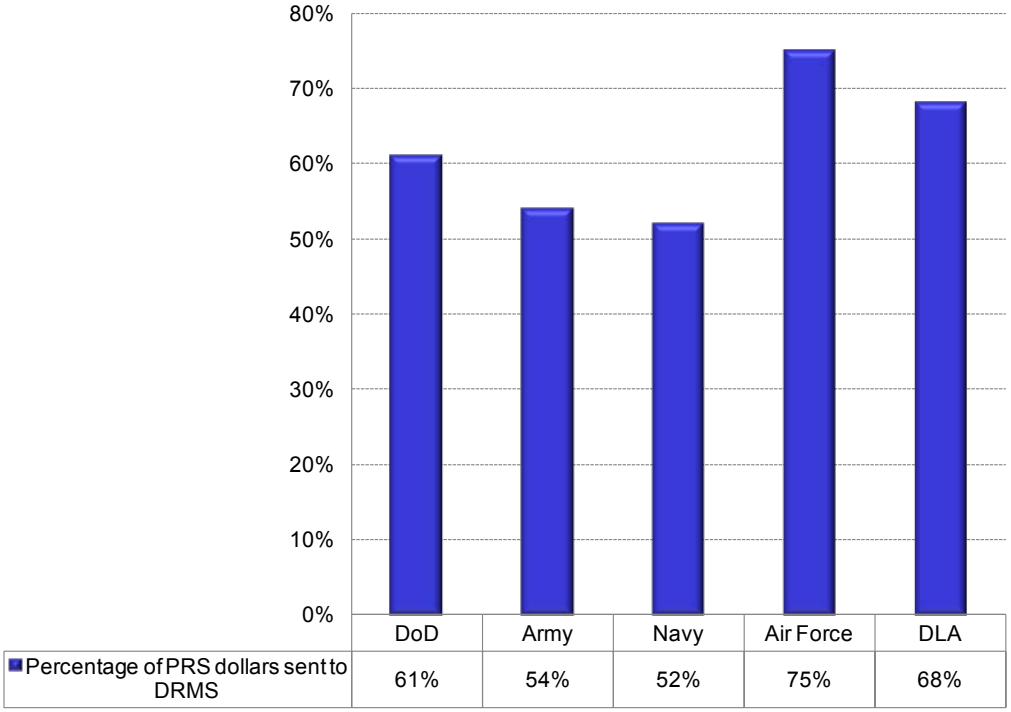
Element (8) of Section 328 called for, "[a] plan to more aggressively pursue disposal reviews and actions on stocks identified for potential reutilization or disposal."

ISSUE STATEMENT

Factors for retaining PRS include changes in warfighters' operating tempo that results in unanticipated demand, workload constraints at the supply warehouses or disposal facilities, or non-availability of technical information to ensure that adequate demilitarization can be accomplished when necessary. If senior managers agree the rationale for holding the inventory is sound, the inventory managers take actions that will re-categorize the items to CRS, ERS, or AAO, as appropriate. If senior managers disagree, the Component releases the materiel to DRMS. At that point, the inventory moves from the Component's supply accountable record to the DRMS accountable record.

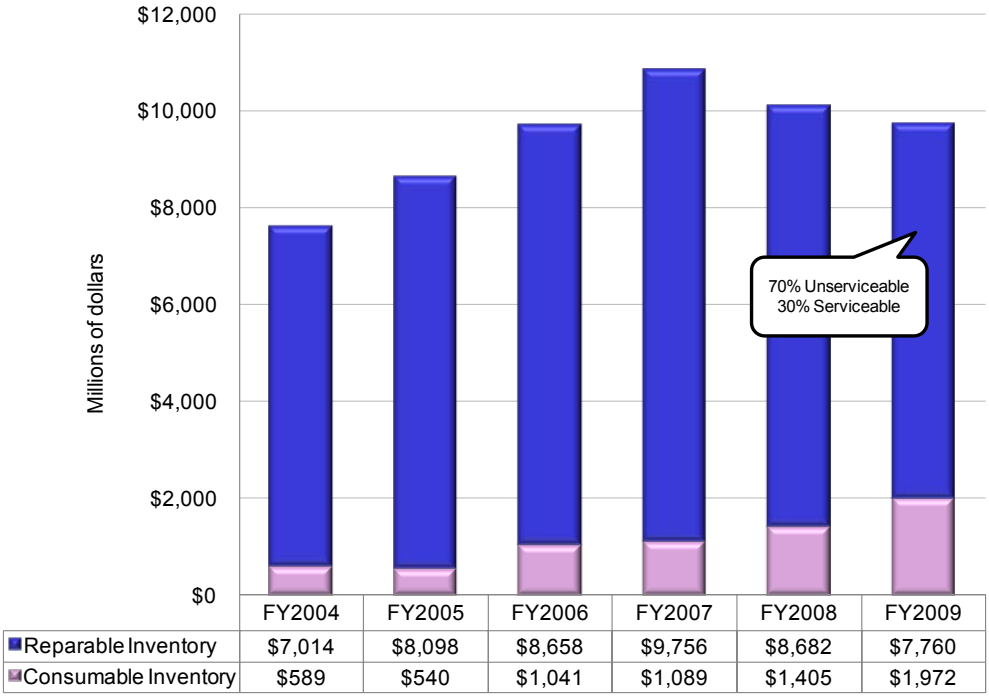
In FY2009, the Department sent 61 percent of the PRS reviewed to DRMS, as shown in Figure 9-1. Figure 9-2 breaks out by dollar value of materiel that was sent to DRMS between FY2004 and FY2009. Much of that materiel was comprised of reparable components that have been used, sometimes repeatedly, and was at the end of its useful life. For FY 2009, 70 percent of the reparable items in PRS were unserviceable.

Figure 9-1. Percentage of PRS Dollars Sent to DRMS in FY2009



Source: Component data.

Figure 9-2. Dollar Value of Disposals FY2004–FY2009 by Reparable and Consumable Items



Source: Component data.

OVERALL OBJECTIVE

The Plan's objective is to ensure timely disposition of PRS (i.e., retain in different categories or move to DRMS for disposal). The following are the desired outcomes for disposition of PRS:

- Ensure the times associated with PRS reviews and releases are tracked and minimized. Without knowing how long it is taking to do reviews and releases, it is impossible to measure the success of any action to reduce those times.

- Reset the time standards for PRS reviews and subsequent releases of materiel to DRMS. Current DoD policy gives inventory managers 12 months to review PRS and it allows 6 months for materiel identified for disposal to be held in the DoD distribution system. The DoD target is to reset the time standard for conducting PRS reviews from 12 months to 3 months and shift the time allowed to release materiel declared unneeded to DRMS from 6 months to 1 month.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENT EFFORTS

There are no Component disposition improvement efforts ongoing at this time.

Army

The Army's review of PRS inventory depends on the system the inventory manager is using, either the new LMP or the legacy CCSS. LMP produces a quarterly excess report for inventory manager's review and action; CCSS produces monthly reports. In either case, the inventory manager validates the PRS, considering requirements levels, weapon systems application, and other factors. The Army applies a two-person rule for all disposal recommendations, with the dollar value determining the final approval authority.

The Army tracks disposals by transaction, total price, and cubic feet of inventory. It does not track the number of reviews or number of resulting disposal actions. Nor does it track the average time to complete a review, the cost of reviews, re-procurement actions, or revenues from disposal.

Marine Corps

The Marine Corps' inventory managers for ground support items have different PRS review procedures than those of the Navy. The Marine Corps identifies PRS quarterly. The *Plan Return* (P5) *of Excess Materiel for Depot Level Reparables and Consumables* defines organizational and individual roles and responsibilities and data sources related to the stratification process, which includes PRS information. The Supply Management Center generates a list of items that are candidates for disposal. That list is reviewed by a logistics management specialist, who makes an initial recommendation to retain or dispose of items on the list. The recommendation is subsequently reviewed by a higher level manager before a final decision is made.

Navy

The Navy identifies PRS semi-annually as part of its inventory stratification process. Inventory managers review PRS and either send this inventory to DRMS or recategorize the items as CRS. Management review boards oversee and approve or reject these determinations to dispose or recategorize items. The Navy estimates that it sends about 50 percent of its PRS to DRMS, recategorizes about 25 percent as contingency retention, and identifies the remaining 25 percent as record-keeping adjustments. Approximately 85–90 percent of the reparable items sent to disposal have been used (often, multiple times) and are such a condition that they would need to be repaired before they could be put back into use.

The Navy equates the cost of PRS reviews to 3.07 full time equivalent man-years of effort. Revenue from disposal is fully offset by the DRMS Department-level bill.

Air Force

The Air Force identifies PRS quarterly. The Air Force requires all PRS items be reviewed prior to disposal to ensure no known or projected requirements exist. This review includes exploring possible needs associated with the next higher assembly application, potential modification to a usable configuration, use for other than its intended purpose, or reclamation of component parts. The review process includes the inventory manager and the equipment specialist and their respective supervisors. This review may result in the retention of PRS items; however, a decision to retain PRS items must be approved by the inventory manager's supervisor.

The Air Force produces a disposal/re-buy report and other reports, which are management tools that help inventory managers analyze the quality of decisions to retain or dispose. Items determined to be excesses must be processed to the disposal activity in a timely manner. Each air logistics center is permitted to establish its own processing timeframe.

DLA

DLA inventory managers review PRS monthly. As part of this review, managers follow established procedures to exclude certain PRS items from disposal. Examples of excluded items include those requiring demilitarization but where the technical procedures for demilitarization are not yet available, stocks at Military Department depot maintenance sites where supply support is transitioning to DLA, and items that cannot be disposed of yet because of data anomalies and other similar technical reasons.

DLA tracks disposal actions at the aggregate supply chain level using individual transactions and the number and dollar value of items disposed of that are eventually reprocured. DLA does not track the cost of performing reviews; however, it estimates the review-and-disposition process takes about 60 days to complete.

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this disposition of PRS sub-plan.

Action H-1: Review and Validate the DoD Components' Methods and Frequency for the Timely Review of PRS Assets and Execution of Disposal Releases.

This action corresponds directly to the congressional requirement for this sub-plan. It involves a systematic review of DoD Component methods for reviewing PRS, including all Component time standards that may apply. The review will determine the feasibility of more definitely categorizing materiel held in PRS based on commodity, source, and condition. The review will also consider criteria for prioritizing disposal reviews by item essentiality, value, ease of disposal, storage space occupied, or other factors.

Key milestones	Target dates	OPR
Evaluate the timeliness and effectiveness of current disposal processes.	FY2011Q4	OSD, Military Departments, DLA
Revise policy guidance, as required.	FY2012Q3	OSD
Incorporate revised guidance in DoD Component processes for PRS reviews and execution of disposal releases.	FY2013Q1	Military Departments, DLA

Action H-2: Establish a Process for the DoD Components to Pre-Screen Retail Materiel Returns for Disposal Before Returns Are Shipped to a Distribution Depot.

This action aims to reduce the flow of excess inventory into distribution depots through materiel returns. It examines alternative methods and procedures for screening potential reparable item returns at their source before the Department incurs the expense of shipping them back to a distribution depot, where later screening sends them to disposal.

Key milestones	Target dates	OPR
Examine potential pre-screening alternatives to expedite disposal actions on excess returns.	FY2012Q1	OSD, Military Departments, DLA
Select and implement best alternative Department-wide.	FY2012Q2	OSD, Military Departments, DLA

Action H-3: Develop New Reporting Requirements on Inventory Being Reviewed and Disposed of as a Means of Evaluating the Disposition Process.

This action establishes the metrics that directly address timely reviews and movement of declared excess to DRMS. This action establishes procedures within the DoD Components to collect and report the following data:

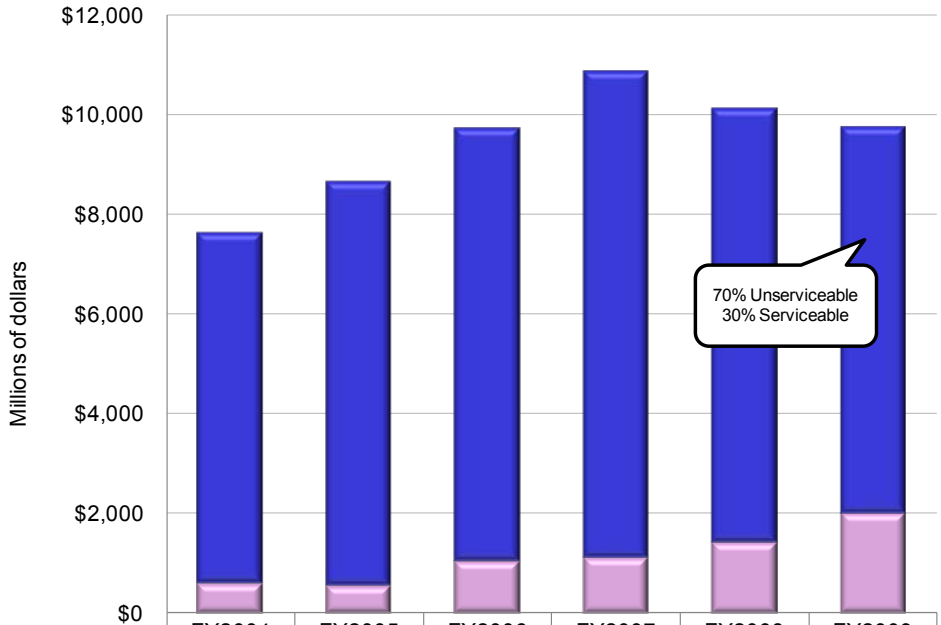
- The time to conduct PRS reviews
- The time to move materiel identified for disposal to DRMS.

Key milestones	Target dates	OPR
Develop new reporting requirements on inventory being disposed of as a means of evaluating the disposal process.	FY2012Q2	Military Departments, DLA
Ensure consistent approach to assess performance and/or develop metrics.	FY2012Q2	OSD, Military Departments, DLA

MEASURES OF SUCCESS

Figure 9-3 shows the value of DoD inventory sent to disposal for consumable and reparable items. Disposal of reparable items in an unserviceable condition means those items were used at least once during the time that they were in the DoD inventory. It also indicates a decision was made not to repair the unserviceable item because it was at the end of its useful life.

Figure 9-3. DoD Inventory Sent to Disposal



	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Reparable Inventory	$7,014	$8,098	$8,658	$9,756	$8,682	$7,760
Consumable Inventory	$589	$540	$1,041	$1,089	$1,405	$1,972

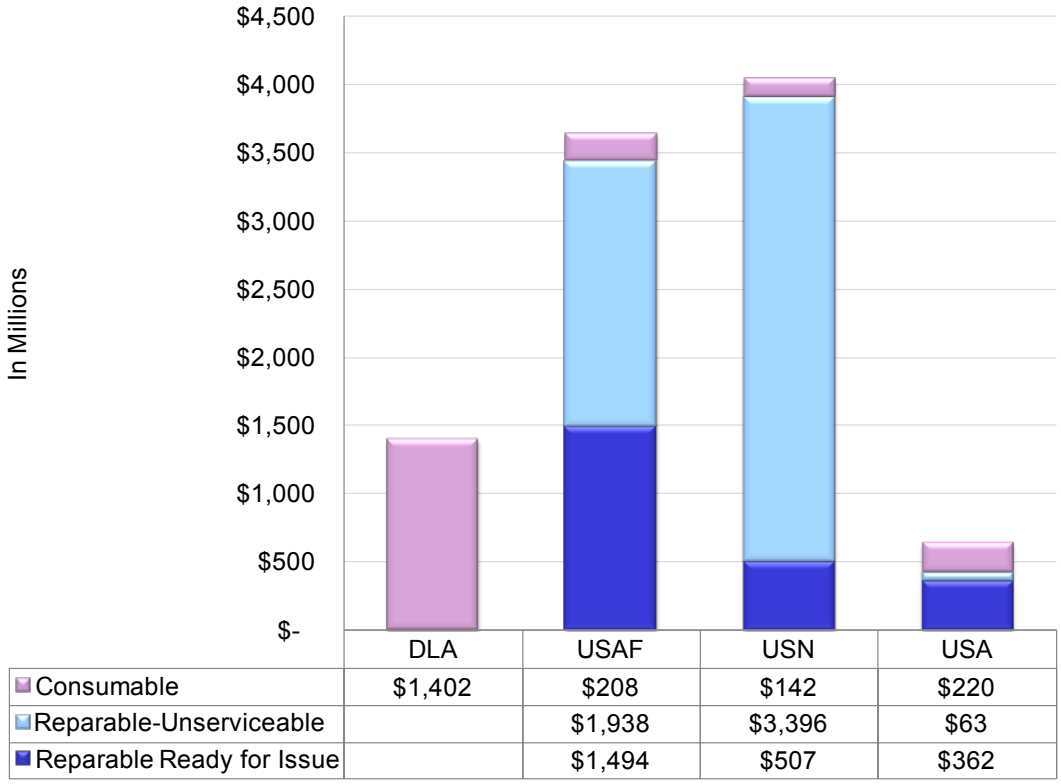
Source: Component data.

Successful reviews and releases must be timely and accurate. Therefore, this sub-plan develops timeliness and effectiveness metrics to assess the disposal review process.

Until the new metrics are developed, the Department will focus on three existing metrics to measure what PRS is being retained or sent to disposal. The first metric is the total dollar value of disposals for reparable and consumable items, as shown in Figure 9-2. This metric indicates the overall size of disposal actions taken annually by the Components.

The second metric is the portion of disposal dollars that are associated with condemned or unserviceable assets and no longer usable or required. Unlike PRS that goes to disposal, condemned items do not undergo a PRS review; they go directly to DRMS from depot maintenance. Figure 9-4 shows the FY2009 dollars for the Military Departments. Comparing the serviceable to the unserviceable reparable item disposal dollars shows that 70 percent of reparable item value disposed of in FY2009 was associated with unserviceable items. As the Department continues to collect data for this metric, it will be able to see if this ratio is recurring, indicating a high percentage of disposed inventory had been used to support weapon systems and equipment.

Figure 9-4. FY2009 Disposal Dollars by Serviceable and Unserviceable Reparables and Consumables



The third metric is the percentage of dollars and items reviewed that inventory managers released to disposal. Figure 9-5 shows the PRS review dollars for FY2009, while Figure 9-6 shows the number of items included in PRS reviews for FY2009. As the Department continues to collect data for these metrics, it will be able to benchmark the number of reviews that result in disposal. Note: the Navy's reviews include both a review of PRS and a review of CRS. [1]

[1] Navy PRS value reflects removal of CRS protection from September 2008 stratification. The CRS protection code is automatically removed annually, causing any inventory beyond ERS to move into PRS pending management review board.

Figure 9-5. FY2009 PRS Review Dollars

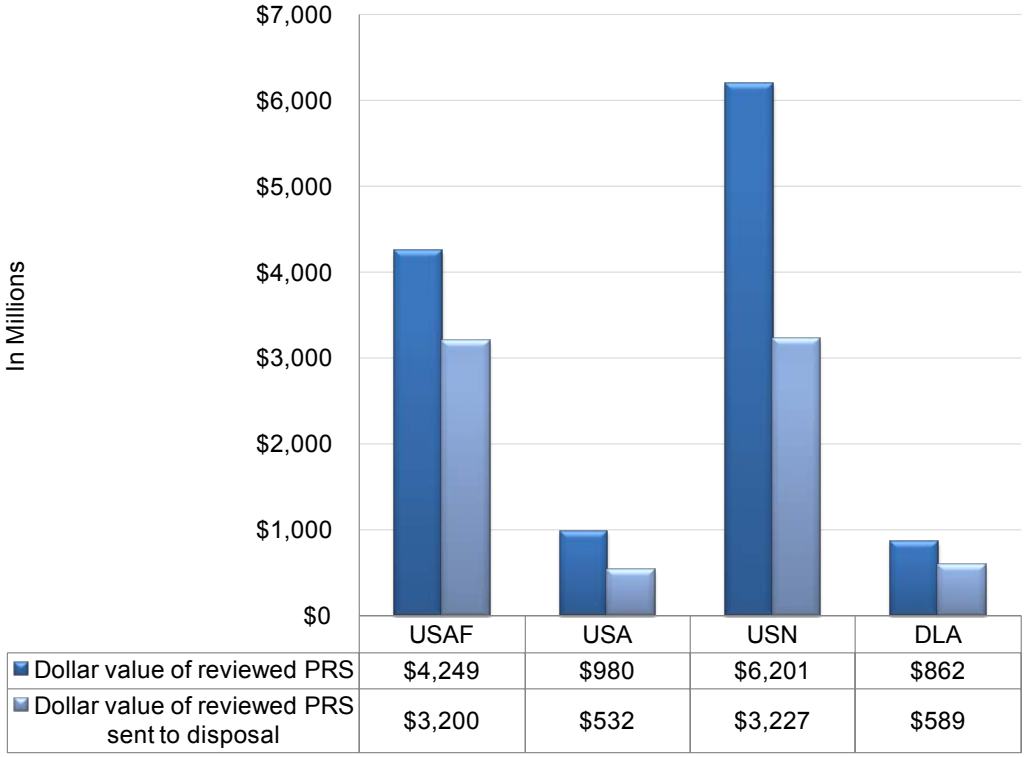
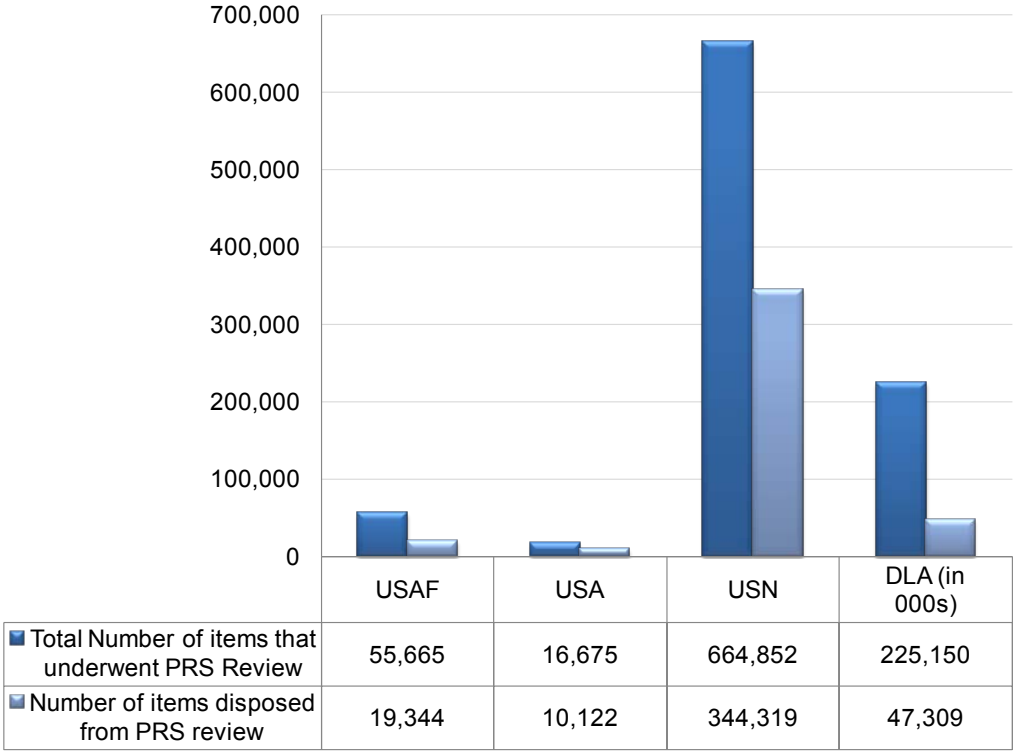


Figure 9-6. FY2009 PRS Item Reviews



The Department will monitor these metrics as part of the implementation of this sub-plan. Table 9-1 shows the prescribed goal and targets for improving the timeliness of PRS reviews.

Table 9-1. DoD PRS Disposition Goal and Target

Sub-plan goal	Target
Reset the time standards for review and movement of excess inventory to disposal.	Reset, within the next 2 years, the DoD time standards for PRS reviews from 12 months to 3 months; and for taking the action to direct disposal from 6 months to 1 month.

Chapter 10
Sub-Plan I: Other Inventory Improvement Actions

INTRODUCTION

The inventory management improvements in this Plan extend beyond the sub-plans required by Section 328. This sub-plan includes actions to improve inventory segmentation, reduce procurement lead times, accelerate inventory systems modernization, and improve the monitoring of inventory efficiency and reporting. These actions support the Department's intent to improve DoD inventory management and reduce excesses.

CONGRESSIONAL TASKING

Section 328 does not address topics and associated actions in this sub-plan.

ISSUE STATEMENT

For the actions in this sub-plan, the issues are the same as the overall Plan—the Department of Defense maintains a large inventory to support the military forces and needs to continually improve its inventory management to ensure its inventory investment is sized to yield the required performance at the lowest cost. The actions described in this sub-plan are enablers that will support the improvements envisioned in the actions outlines in the other sub-plans.

OVERALL OBJECTIVE

The overall objective of this sub-plan is to accomplish several cross-functional improvements required to achieve the Department's commitment to support materiel requirements. The Department's objective is a prudent reduction in current excesses as well as a reduction in the potential for future excesses. The Department includes these additional efforts to improve the overall DoD inventory management process.

CURRENT MILITARY DEPARTMENT AND DLA PRACTICES AND IMPROVEMENTS

Current Component inventory management practices are described in Chapters 2–9. Component-level practices and improvements are addressed below under the Department-wide actions.

DEPARTMENT-WIDE ACTIONS

The Department of Defense has established the following actions for execution as part of this supplemental sub-plan.

Action I-1: Inventory Segmentation—Define and Establish a New Segmentation of DoD Inventory That Will Better Capture the Rationale behind Inventory Decisions and Improve Inventory Reporting and the Tracking of Future Improvements.

Although DoD Components do not maintain inventory for all of the 4.5 million cataloged items, the inventory does span more than 2 million items. The purpose of that inventory is a function of the type of item (reparable or consumable), the item's class of supply, the weapon system or program the item is supporting, how the item applies to that weapon system or program, the item's life cycle, its demand frequency, and other factors.

Historically, DoD inventory reporting has been limited by data availability and computer system capabilities. Consequently, current inventory stratification processes are outdated and do not reflect changes in the DoD Component's inventory management processes and systems. The results of the implementation of concepts such as multi-echelon requirements development, PBL and DVD strategies, partnerships, integration of wholesale or intermediate organizations, RBS concepts, supply chain management approaches, and other inventory management approaches are not reflected in current inventory stratification processes or formats. Part of this action is to conduct an analysis on how the Department should update its inventory stratification process.

Further, the DoD SSIR, as mandated by law, is based on the current segmentation of inventory categories. The Department will examine and update the SSIR based on the results of the updated inventory segmentation.

Key milestones	Target dates	OPR
Identify the new segmentation of inventory.	FY2011Q3	OSD, Military Departments, DLA
Complete requirements analysis for updating stratification process.	FY2012Q2	OSD, Military Departments, DLA
Conduct requirements analysis for updating SSIR process.	FY2013Q2	OSD, Military Departments, DLA
Develop plans for the DoD implementation of updated stratification and SSIR processes.	FY2013Q4	OSD, Military Departments, DLA

Action I-2: Procurement Lead Times—Establish Department-Wide Procedures for Seeking Reduced Procurement Lead Times.

DoD procurement lead times, particularly the production lead time (the period from contract to materiel delivery), continue to be inordinately long. For example, lead times for complex, military-unique items can be 2 to 3 years or longer. Some of the reasons lie in the nature of the items themselves. Nevertheless, long lead times directly impact the efficiency of the DoD supply system by causing inventory managers to project materiel demands over these long lead time periods, particularly for Military Department–managed reparable items.

The DoD Components have lead time reduction efforts underway. For example, the Air Force has established commodity councils to leverage its buying in particular marketplaces to gain, among other things, reduced lead times. The Army conducts long production lead time analyses on items with long lead times, high cost, and weapon system essentiality and then works with vendors using such techniques as Lean Six Sigma to see how they could reduce their production times. Component efforts mirror commercial approaches to supplier management, such as the use of collaboration and partnering strategies.

The objective of this action is to create a Department-wide forum for the following:

- Gathering and sharing specifics on Component lead time reduction efforts.
- Institutionalizing those efforts Department-wide wherever possible.
- Identifying new approaches to working with vendors to reduce lead times.

Key milestones	Target dates	OPR
Review Component efforts for reducing procurement lead times.	FY2011Q3	Military Departments, DLA
Evaluate individual Component efforts for Department-wide application.	FY2012Q1	OSD, Military Departments, DLA
Develop and execute implementation plans for approved efforts.	FY2012Q3	Military Departments, DLA
Establish annual process for reviewing new approaches to supplier management targeted at reducing lead times	FY2012Q2	OSD, Military Departments, DLA

Action I-3: Systems Modernization—Provide for Improved Data Accuracy and a Better System Platform for Improving Inventory Management Practices.

Implementation of the systems modernization efforts within each DoD Component is an essential part of any long-range improvement in DoD inventory management. Obtaining automated capabilities for new processes, such as demand forecasting, on-order processing, requirements determination, asset visibility, asset segmentation, and timely disposal of unneeded inventory are essential to improvements targeted by this Plan and Section 328. Incorporation of those capabilities in DoD Component's systems will transform DoD inventory management practices.

Each DoD Component is implementing an ERP-based system. The Components have found that implementation of these complex, integrated systems is a major effort and is not a simple "plug and play;" however, those implementations are the critical path for institutionalizing needed process and business practices upgrades. The Components must share with each other any issues associated with implementation and the resolution of those issues.

The objective of this action is to facilitate and accelerate the implementation of required inventory management actions as part of systems modernization efforts.

Key milestones	Target dates	OPR
Develop a comprehensive list of required system functionalities for Component inventory management systems to successfully execute all elements of the Plan.	FY2011Q2	OSD
Assess functionality requirements list against each Component's inventory management system and identify capability gaps.	FY2011Q4	Military Departments, DLA
Plan and implement system changes necessary for systems to meet all required functionalities.	FY2014Q2	Military Departments, DLA

Action I-4: Efficiency Metrics—Establish Department-Wide Metrics to Monitor the Efficiency of DoD Inventory Operations.

Each DoD Component has metrics to measure the efficiency of its operations. This action seeks to build on those metrics to identify and implement one or more metrics that measure overall efficiency of DoD inventory operations while measuring any readiness or other risk that efficiency efforts may introduce.

Combined with other metrics, the Department will be able to judge the success of this Plan with answers to these questions:

- Is the Department meeting the targets for improvement actions?
- Are the improvement actions adversely affecting the support provided to our customers?
- Are the improvement actions adversely affecting the efficiency of the Department's inventory operations?

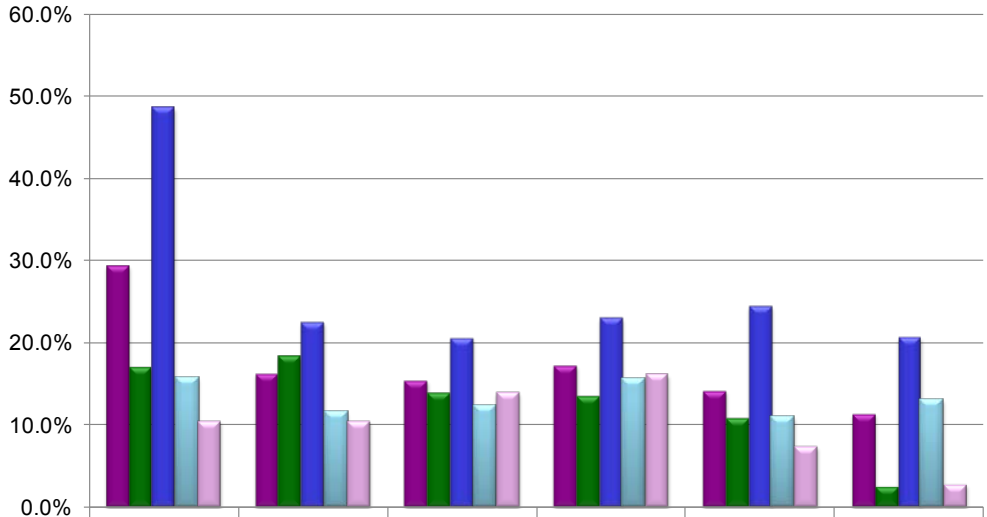
Key milestones	Target dates	OPR
Identify standard Department-wide efficiency metrics.	FY2011Q1	OSD, Military Departments, DLA
Establish procedures for collecting and reporting approved metrics.	FY2011Q3	OSD, Military Departments, DLA
Ensure consistent approach to assess readiness and risk against efficiency and/or develop metrics.	FY2012Q2	OSD, Military Departments, DLA

MEASURES OF SUCCESS

The measure of success for the above actions is the same as for the measure of success for the overall improvement plan. That is, this sub-plan should contribute to a reduction in excess inventory as measured by a reduction in the percentage of PRS inventory

compared to total inventory. Figure 10-1. shows those percentages for the DoD Components and Department in total from FY2004 to FY2009.[1]

Figure 10-1. Percentage of Component and DoD Inventory That Is Excess



	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
DoD Total	29.2%	16.2%	15.3%	17.1%	14.1%	11.3%
Army	16.9%	18.2%	13.7%	13.3%	10.7%	2.4%
Navy	48.5%	22.4%	20.4%	22.9%	24.4%	20.6%
Air Force	15.7%	11.5%	12.4%	15.6%	10.9%	13.1%
DLA	10.5%	10.4%	13.9%	16.1%	7.3%	2.7%

Table 10-1. DoD Other Inventory Improvement Actions Goal and Target

Sub-plan goal	Target
Reduce the overall amount of excess inventory across DoD.	Reduce the on-hand excess inventory from 11.3 percent in FY2009 to 10 percent of the current value of PRS by the end of FY2012.

[1] The SSIR is the source of the data used to portray the data in Figure I-1; however, the PRS dollars used to compute the percentages are at full value, and fuels and in-transit dollars are excluded from total inventory dollars. All dollars were FY2009 constant dollars.

Appendix A
Inventory Management Plan Relationship to Other DoD Strategies, Plans, and Efforts Impacting Secondary Item Inventory

The implementation actions in this Inventory Management Improvement Plan are consistent and supportive of the strategies, plans, and efforts listed in Table A-1. Conversely, this Plan will synergistically interface and use applicable concepts, actions, measures or other resources being derived from these complementary efforts.

Table A-1. DoD Logistics-Related Strategies, Plans, and Efforts

DoD strategy, plan, or effort	Related sub-plans
DoD Logistics Strategic Plan (LSP): LSP identifies high level goals, performance measures, and key initiatives that support the DoD priorities and drive the logistics enterprise improvements necessary to achieve the desired outcomes. It also establishes an approach for measuring, tracking, and reporting progress toward achieving the goals. This is a living document which is updated annually to remain aligned with changes in the economic, political, and threat environments as well as with improvements in technology.	ALL
Supply Chain Operations Reference Model (SCOR): SCOR provides a unique framework to link business processes, metrics, best practices, and technology features into a unified structure to improve supply chain management effectiveness. The Department uses SCOR processes as a framework for developing, improving, and conducting materiel management activities. The SCOR framework links logistics processes with integration and improvement efforts.	ALL
Joint Supply Chain Architecture (JSCA): JSCA is a Department-wide SCOR-based process model that clearly defines supply chain configuration elements and links them to driving precise and reliable outcomes. JSCA fosters a common understanding among stakeholders of supply chain objectives, terminology, and performance measures and provides a mechanism to improve unity of effort (see description below).	ALL
Operational Contract Support (OCS): The Department has implemented several efforts to increase both OCS integration and contractor management capability and capacity. The Joint Contingency Acquisition Support Office (JCASO) was established to enhance OCS synchronization and standardization. Joint Operational Contract Support Planners (JOCSPs) were place in each of the geographic Combatant Commands to institutionalize and synchronize OCS planning across all operations and concept plans. The Department has fielded and deployed the Synchronized Pre-deployment Operational Tracker (SPOT) and Joint Access Management Movement System, which provides visibility and accountability of U.S. Government funded contractors in designated contingency operations.	TAV/M-E
Distribution Process–DPO Strategic Opportunities (DSO): DSO seeks to dramatically reduce enterprise-level distribution costs and improve distribution service levels to warfighters. DSO opportunity areas include optimization of air and surface transportation, inventory placement, distribution network design, and targeted distribution process improvements.	TAV/M-E Storage & DVD

Table A-1. DoD Logistics-Related Strategies, Plans, and Efforts

DoD strategy, plan, or effort	Related sub-plans
Joint Life Cycle Forecasting: The Department began a systematic evaluation of its demand forecasting processes, procedures, and metrics used for inventory management. This evaluation will consider the entire item life cycle for both retail and wholesale levels, and it will reach out to industry and academia for strategy initiatives and best practices. The goal is to identify root causes of inventory excesses and shortages, determine areas of improvement in demand forecasting, and address them with the most effective solutions.	Demand Forecast, On-Order Excess, Economic and Contingency Retention, Disposal
Asset Visibility - Radio Frequency Identification (RFID): The Department has fully implemented active RFID to provide in-transit visibility of consolidated shipments destined or Combatant Commands overseas. The Services and DLA are implementing passive RFID to enable supply chain operational efficiencies and to enhance visibility of high value reparables. The Department is also implementing satellite tracking and container intrusion detection devices in hostile environments in Afghanistan to enhance real-time visibility and improve personnel safety.	TAV/M-E
Life Cycle Management - Weapons System Acquisition Reform-Product Support Assessment: This effort focuses on implementable recommendations to drive the next generation of product support strategies to achieve aligned and synchronized operational, acquisition, and sustainment communities working together to deliver required and affordable warfighter outcomes.	ALL
Life Cycle Management - Item Unique Identification (IUID): The Department is pursuing use of IUID to improve overall lifecycle management, enhance visibility of individual assets, and intensively manage and control critical and sensitive items. IUID provides from making personal property items with a machine-readable Unique Item Identifier (UII), which is a set of globally unique data elements. This information is used to ensure accurate acquisition, repair, and deployment of items is efficient and effective throughout its lifecycle.	Demand Forecast TAV/M-E
Item Unique Identification (IUID)–Serialized Item Management (SIM) in Maintenance: IUID is a critical enabler of maintenance transformation that facilitates life history data recording at the item level. It automates data capture and upline reporting, making SIM practical and affordable. IUID implementation needs to be aggressively managed within the DoD maintenance enterprise, as does planning for establishing robust SIM capability. All legacy parts marking and associated data transactions will be accomplished by the DoD maintenance enterprise. Demonstrating IUID-enabled SIM builds the case for transformed, information-centric DoD maintenance operations.	Demand Forecast TAV/M-E
Handling and Security of Nuclear Weapon Related Material: The Department has accomplished a comprehensive review and physical inventory of nuclear weapons and nuclear weapons-related materiel (NWRM). The Air Force, Navy, and DLA have worked aggressively to identify all possible NWRM candidates for special handling and are closing any gaps identified in the investigations. USD (AT&L) published the first-ever Department-wide inventory control policies on NWRM and is currently codifying those policies into a DoD issuance. In response to past instances, the Air Force has adopted these additional strategies: • Re-establish Excellence in Supply Chain Management for the Nuclear Enterprise. • Develop adequate policy, train and certify supply chain managers in the proper item NWRM processes, ensure responsibility for proper management of items. • Execute Enterprise Supply Chain Command, Control, and Integration - Implement NWRM TCC capability at Scott AFB, Develop SCC2C Event Management Framework, Implement initial SCC2C enabling physical and information technology infrastructure, Implement Air Clearance Authority capability at Scott AFB.	TAV/M-E Storage & DVD

Table A-1. DoD Logistics-Related Strategies, Plans, and Efforts

DoD strategy, plan, or effort	Related sub-plans
Prevention of Counterfeit Materiel in Supply Chains: The Department uses several approaches to prevent introduction of counterfeit items into the supply chains. Approaches with industry include such procurement methods as qualified supplier and distributor programs, 100 percent traceability to original component manufacturers programs, and commercial certification documents. More rigorous methods include performing physical inspections and testing. The Department has also organized specific teams that collaborate with other government agencies, commercial partners, and law enforcement to address counterfeit issues in electronic systems and components as well as in the logistics supply chain.	ALL
Management of Human Capital: This DoD strategy envisions an integrated, agile, and high-performing future workforce of multi-faceted, interchangeable logisticians able to succeed in a joint operating environment. The foundation of this vision is competency-based management of the DoD's logistics workforce, enabled by creation of a logistics career development roadmap. Once operationalized, this roadmap will provide the future logistics workforce with the right mix of function-specific subject matter experts and multi-faceted enterprise logisticians.	ALL
Commodity Management in Acquisition: Commodity Management aligns requirements and market dynamics to optimize total cost of ownership, ensure sources of supply and a strong supply base, and bring supplier innovation to weapons systems acquisition and sustainment.	ALL
Transportation Payment Business Rules: In 1999, DoD began using a commercial third-party payment system to process commercial transportation payments. Since inception, oversight of the program and its underlying business rules has evolved. However, the program has not been the subject of a comprehensive review to ensure that rules and processes are consistent with the intent of the program, that sufficient internal controls are in place, and that no significant gaps exist. This initiative is planned to undertake such a review.	TAV/M-E
Readiness Based Sparing (RBS) Implementation: RBS is a requirements determination process that computes the levels of secondary item spares needed to support a weapon system readiness goal at the least cost. A joint RBS effort was established to facilitate an expanded and common approach to the application of RBS software and business processes within and across the Department. This effort will deliver component-level RBS capabilities using commercial off-the-shelf (COTS) solutions as well as define and execute a Department-wide RBS vision. Initial RBS pilots were established to explore RBS COTS capabilities and determine how these could be applied to the DoD environment.	Demand Forecast On-Order Excess TAV/M-E Economic and Contingency Retention
Mission Critical Asset Existence and Completeness (E&C): Validating the existence and completeness of mission critical assets is one of the Department's top priorities in preparation for a clean financial audit. To that end, the Components are focused on ensuring that key information in the accountable property systems is accurate and reliable and validated through E&C audits. By asserting to E&C, management is asserting that all assets reported on financial records actually exist and that all physical assets are being reported on the financial records.	ALL

Appendix B
GAO Findings

The Department compiled the findings from the following 12 recent documents produced by the Government Accountability Office (GAO) and related to secondary item inventory management:

- *Defense Logistics: More Efficient Use of Active RFID Tags Could Potentially Avoid Millions in Unnecessary Purchase*s, March 2006 (GAO-06-366R)
- *Defense Inventory: Actions Needed to Improve Inventory Retention Management*, May 2006 (GAO-06-512)
- *DOD'S High-Risk Areas: Challenges Remain to Achieving and Demonstrating Progress in Supply Chain Management*, Statement of Williams M. Solis, Director Defense Capabilities Management, July 2006 (GAO-06-983T)
- *High-Risk Series: An Update*, January 2007 (GAO-07-310)
- *Defense Inventory: Opportunities Exist to Improve the Management of DOD's Acquisition Lead Times for Spare Parts*, March 2007 (GAO-07-281)
- *Defense Inventory: Opportunities Exist to Save Billions by Reducing Air Force's Unneeded Spare Parts Inventory*, April 2007 (GAO-07-232)
- *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*, Statement of William M. Solis, Director Defense Capabilities Management, July 2007 (GAO-07-1064T)
- *Defense Inventory: Management Actions Needed to Improve the Cost Efficiency of the Navy's Spare Parts Inventory*, December 2008 (GAO-09-103)
- *Defense Logistics: Lack of Key Information May Impede DOD's Ability to Improve Supply Chain Management*, January 2009 (GAO-09-150)
- *Defense Inventory: Army Needs to Evaluate Impact of Recent Actions to Improve Demand Forecasts for Spare Parts*, January 2009 (GAO-09-199)

- *Defense Acquisitions: Sound Practices Critical to Ensuring Value for the Defense Logistics Agency's Acquisitions*, Statement of William M. Solis, Director Defense Capabilities and Management, September 2009 (GAO-09-1040T)

- *Defense Logistics Agency Needs to Expand on Efforts to More Effectively Manage Spare Parts*, May 2010 (GAO-10-469) ***DRAFT–FOUO.***

The findings were segregated by major topic as follows:

- DoD high-risk areas
- Supply chain management practices and tools
- DoD inventory retention
- DoD-level spare parts
- Air Force spare parts
- Army spare parts
- DLA spare parts
- Navy spare parts.

For each major topic, a table of findings lists if and how the Plan addresses each finding. In creating the table, the actions under each required sub-plan were reviewed for their ability to address one or more of the GAO findings. The review indicated that the actions in this Plan will address the majority of the topics included in these findings. As these efforts progress and GAO reviews the results of the Plan, additional actions or Plan revisions will be made. Table B-1 through Table B-8 present the results of that review.

Table B-1. DoD's High Risk Areas

GAO report	GAO findings	Related parts of Plan
GAO-06-983T	DoD continues to implement its supply chain improvement plan, but the time frames for fully implementing the 10 initiatives in the plan will take longer than the originally-planned 2 years.	In this Inventory Management Improvement Plan, DoD has updated specific milestones for many relevant inventory improvement actions and will identify additional targets as plan implementation progresses.
	DoD continues to lack outcome-focused performance measures for many of the initiatives in its supply chain improvement plan, making it difficult to track and demonstrate progress toward improvement.	DoD has identified specific quantifiable metrics for most of the actions in this Plan or has specified that metrics will be developed, where required, as part of the plan implementation milestones.
	DoD has multiple plans aimed at improving aspects of logistics, including supply chain management, but it is unclear how these plans are aligned with one another.	Appendix A describes the interaction between this Plan and several other key DoD logistics improvement efforts related to inventory management.
GAO-07-310	Consequently, the Department has been unable to consistently meet its goal of delivering the "right items to the right place at the right time" to support the deployment and sustainment of military forces.	All sub-plans in chapter 2–9 have goals and targets that will drive improved inventory management towards the cited Department goal.
	Since the onset of OIF, systemic deficiencies contributing to supply shortages have included inaccurate Army war reserve requirements, inaccurate supply forecasts, insufficient and delayed funding, delayed acquisition, and ineffective distribution.	Chapter 2, Sub-Plan A: Demand Forecasting
	Although DoD has taken actions to improve and streamline aspects of its supply chain, barriers remain. For example, DoD's ability to make coordinated, systemic improvements that cut across the multiple organizations involved in the materiel distribution system has been hindered by problems defining who has accountability and authority for making such improvements.	This Plan assigns the organizations responsible for conducting each milestone under each action. In addition, the Plan specifies 3 working groups for monitoring progress on each action as well as a senior leadership committee to oversee and guide plan implementation.
	Beginning in 2005, DoD developed a plan to address long-term systemic weaknesses in supply chain management. Although DoD is making progress implementing initiatives in the plan, it will take several years to fully implement these initiatives.	In this Plan, DoD has updated specific milestones for many relevant inventory improvement actions and will identify additional targets as plan implementation progresses.
	The department faces challenges and risks in successfully implementing its proposed changes across the department and measuring progress. For example, DoD lacks outcome-focused performance measures for many of its initiatives, making it difficult to track and demonstrate progress in improving the three focus areas.	All sub-plans in chapters 2–10 have goals and targets that will drive improved inventory management.

Table B-1. DoD's High Risk Areas

GAO report	GAO findings	Related parts of Plan
GAO-07-310 (cont'd)	In a separate effort, DoD has been developing a "road map" for its future logistics programs and initiatives. Once completed, the road map could potentially fill a long-term need for a comprehensive, department wide logistics re-engineering strategy to guide implementation of DoD, service, and defense agency supply chain initiatives.	The actions in this Plan are a road map to improve DoD inventory management.
GAO-07-1064T	DoD has made progress in developing and implementing the initiatives in its supply chain improvement plan, but the plan lacks outcome-focused performance measures which limit DoD's ability to fully demonstrate the results achieved.	DoD has identified specific quantifiable metrics for most of the actions in this Plan or has specified that metrics will be developed, where required, as part of the plan implementation milestones.
	Requirements forecasting problems exist in managing spare parts and prepositioned stocks.	Chapter 2, Sub-Plan A: Demand Forecasting
	Effective management of supplies is hindered by problems in achieving asset visibility.	Chapter 3, Sub-Plan B: Total Asset Visibility and Multi-Echelon Modeling
	Challenges remain in coordinating and consolidating distribution and supply support within a theater.	Not addressed in the Plan
	Transforming and improving defense business operations are integral to resolving supply chain management problems.	All sub-plans (chapters 2–9) and actions in Chapter 10.
	Improving supply chain management may involve reexamining fundamental aspects of DoD's logistics governance and strategy.	Chapter 1 describes the assignment of specific responsibilities related to the action in this Plan.

GAO-06-983T, *DOD'S High-Risk Areas: Challenges Remain to Achieving and Demonstrating Progress in Supply Chain Management*, Statement of Williams M. Solis, Director Defense Capabilities Management, July 2006.

GAO-07-310, *High-risk series: An Update*, January 2007. Note: Findings only those for DOD inventory- and SCM-related item.

GAO-07-1064T, *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*, Statement of William M. Solis, Director Defense Capabilities Management, July 2007.

Table B-2. Supply Chain Management Practices and Tools

GAO report	GAO findings	Related parts of Plan
GAO-09-150	DoD's Logistics Roadmap documents numerous initiatives and programs but falls short of providing a comprehensive, integrated strategy to address logistics problems department-wide.	This Plan presents a comprehensive, integrated strategy to address department-wide logistics problems related to secondary item inventory management.
	The Logistics Roadmap lacks key elements needed by decision makers to identify and address logistics problems across DoD: (1) the roadmap does not identify the scope of logistics problems and capability gaps; (2) the roadmap lacks outcome-based performance measures; and (3) the roadmap has not been integrated into decision-making processes.	Chapters 2–10 present a roadmap for improved decision-making relative to secondary item inventory management. In addition, Appendix A describes the interaction between this Plan and several other key DoD logistics improvement initiatives related to inventory management.
	DoD may face challenges achieving widespread implementation of IUID and passive RFID.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
	DoD efforts to implement IUID and passive RFID include issuing guidance, sharing information, allocating resources, and conducting pilot projects.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
	Full implementation of IUID and passive RFID remains several years away.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
	DoD does not collect information needed to fully demonstrate return on investment for IUID and passive RFID.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
GAO-09-1040T	Sound practices are vital to ensuring DLA receives value when acquiring commodities. For DLA, there are challenges in clearly defining requirements, using the appropriate contract type, and effectively overseeing contractors.	Chapter 2, Sub-Plan A: Demand Forecasting
	Proper requirements definition is essential to obtaining value. Without a good understanding of customers' projected needs (requirements definition), DLA is not assured it is buying the right items in the right quantities at the right time.	Chapter 2, Sub-Plan A: Demand Forecasting
	Sound business arrangements are essential to reducing the government's risks. Selecting the appropriate type of business arrangement is important because certain contracting arrangements may increase the government's cost risk where others transfer some of that cost risk to the contractor.	Chapter 7, Sub-Plan F: Storage and Direct Vendor Delivery

Table B-2. Supply Chain Management Practices and Tools

GAO report	GAO findings	Related parts of Plan
GAO-06-366R	DoD's use of active RFID tags can be more efficiently managed, potentially avoiding millions of dollars in unnecessary tag purchases.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
	DoD's current RFID policy (dated 2004) does not require active tags to be returned or reused even though these tags are designed for repeated reuse; DoD tag reuse data indicate that few active RFID tags have been returned or reused more than twice.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3
	DoD does not routinely monitor or account for reuse of all active RFID tags because it has not developed procedures to do this.	Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling, Action B-3

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

GAO-09-1040T, *Defense Acquisitions: Sound Practices Critical to Ensuring Value for the Defense Logistics Agency's Acquisitions*, Statement of William M. Solis, Director Defense Capabilities and Management, September 2009.

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

Table B-3. DoD Inventory Retention

GAO report	GAO findings	Related parts of Plan
GAO-06-512	Some DoD inventory management centers have not followed department-wide and individual components' policies and procedures in managing their contingency retention inventories.	Chapter 6, Sub-Plan E: Contingency Retention
	The Army's Aviation and Missile Command and the Air Force's Ogden Air Logistics Center are not properly assigning category codes that describe the reasons they are holding items in contingency retention inventory.	Chapter 6, Sub-Plan E: Contingency Retention
	Some DoD inventory management centers are retaining items in contingency retention inventory that have experienced little or no recent demands.	Chapter 6, Sub-Plan E: Contingency Retention Chapter 8, Sub-Plan G: Items with No Demand
	Some DoD inventory management centers are not conducting annual reviews as required to verify reasons for retaining contingency retention inventory.	Chapter 6, Sub-Plan E: Contingency Retention
	DoD is not providing sufficient oversight to ensure that components are conducting annual reviews of their contingency retention inventory.	Chapter 6, Sub-Plan E: Contingency Retention
	DoD had made no progress in implementing our 2001 recommendations concerning the components' management of economic retention inventory. We reported then that (1) components were not properly documenting their approaches in making economic retention decisions, (2) they lacked sound analytical support for the maximum levels of economic inventory they used in calculating how much inventory should be retained, and (3) they had not annually reviewed their approaches as required by DoD policy.	Chapter 5, Sub-Plan D: Economic Retention

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

Table B-4. DoD-Level Spare Parts

GAO report	GAO findings	Related parts of Plan
GAO-07-281	The military components' estimated lead times to acquire spare parts varied considerably from the actual lead times they experienced.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Acquisition lead time estimates for all components rarely approximated actual lead times.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Army tended to underestimate lead time estimates.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	DLA tended to overestimate lead time estimates.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Air Force tended to underestimate and overestimate lead time estimates.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Navy tended to underestimate and overestimate lead time estimates.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	The USD (AT&L) and the components' management actions and initiatives to reduce lead times were more effective from 1994 to 2002 than they were from 2002 to 2005.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	There was a slower rate of reductions in lead times from 2002-2005 than from 1994-2002.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	The military components pursued various initiatives to reduce lead times with varying results.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Initiatives to streamline administrative processes were implemented by all components.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	USD (AT&L) no longer provided oversight and guidance on lead times from 2002 to 2005.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	Initiatives to develop relationships with suppliers were implemented by components. All military components implemented initiatives to improve contracting practices from 1994 to 2002 and continued them from 2002 to 2005.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2
	More aggressive lead time reductions could have resulted in decreases in inventory requirements and monetary savings.	Chapter 10, Sub-Plan I: Other Department-wide Inventory Improvement Actions, Action I-2

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

Table B-5. Air Force Spare Parts

GAO report	GAO findings	Related parts of Plan
GAO-07-232	More than half of the Air Force's secondary inventory was not needed to support on-order and on-hand requirements from fiscal years 2002 through 2005, although increases in the demand for items due to ongoing military operations has contributed to a slight reduction in the percentage of this on-hand inventory and the number of years of supply the inventory represents.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess Chapter 8, Sub-Plan G: Items with No Demand
	The amount of Air Force on-order inventory not needed to support requirements has increased.	Chapter 4, Sub-Plan C: On-Order Excess
	With higher demands, still more than half of the Air Force's on-hand inventory was not needed to support requirements.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess
	Much of the Air Force inventory not needed to support requirements had no demands, although demands for some items increased.	Chapter 8, Sub-Plan G: Items with No Demand
	Reasons vary for Air Force maintaining on-order and on-hand inventory not needed to support requirements and include (1) decreasing demands or demands not materializing at all, (2) retaining items used to support aging weapon systems that have diminishing sources of supply or are being phased out of service, (3) retaining current items that may be used to support new weapon systems, and (4) not terminating eligible contracts for on-order items.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess Chapter 5, Sub-Plan D: Economic Retention Chapter 6, Sub-Plan E: Contingency Retention Chapter 8, Sub-Plan G: Items with No Demand
	Air Force inventory shortages remained the same. Although more than half of its secondary inventory was not needed to support requirements, the Air Force still had shortages of certain items in its inventory.	Chapter 2, Sub-Plan A: Demand Forecasting

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

Table B-6. Army Spare Parts

GAO report	GAO findings	Related parts of Plan
GAO-09-199	For the 4-year period examined for this report, the Army had significantly more secondary inventory than was needed to support current requirements.	Chapter 2, Sub-Plan A: Demand Forecasting
	About $3.6 billion, or 22 percent, of the Army's on-hand and on-order inventory value exceeded current requirements each year.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess Chapter 8, Sub-Plan G: Items with No Demand
	Army on-hand inventory exceeding current requirements increased.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 8, Sub-Plan G: Items with No Demand
	Army on-order inventory exceeding current requirements decreased.	Chapter 4, Sub-Plan C: On-Order Excess
	Army inventory deficits decreased, but remained substantial.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling,
	Army secondary inventory did not align with current requirements due in part to two factors—(1) a lack of cost efficiency metrics and goals and (2) inaccurate demand forecasting.	DoD has identified specific quantifiable metrics for most of the actions in this Plan or has specified that metrics will be developed, where required, as part of the plan implementation milestones. Chapter 2, Sub-Plan A: Demand Forecasting
	Army is taking steps to improve forecasting.	Chapter 2, Sub-Plan A: Demand Forecasting
	Army has the opportunity to increase its oversight of inventory management.	Not addressed in this Plan. Chapter 1 assigns specific oversight responsibilities related to this Plan for improved inventory management.

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

Table B-7. DLA Spare Parts

GAO report	GAO findings	Related parts of Plan
GAO-10-469	A significant portion of DLA's secondary inventory did not align with current requirements and had limited demand.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 8, Sub-Plan G: Items with No Demand
	About $7.1 billion (52 percent) of DLA's on-hand and on-order inventory value exceeded the requirement objective each year.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 8, Sub-Plan G: Items with No Demand
	Inventory beyond the requirements objective varied by supply chain, and some items had many years of projected demand.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 5, Sub-Plan D: Economic Retention Chapter 6, Sub-Plan E: Contingency Retention
	On-hand inventory deficits were identified for some items.	Chapter 2, Sub-Plan A: Demand Forecasting
	Several factors (the next 7 items) contributed to DLA's having inventory levels of spare parts that did not align with current requirements.	In this Inventory Management Improvement Plan, DoD has updated specific milestones for many relevant inventory improvement actions and will identify additional targets as plan implementation progresses.
	Inaccurate demand forecasts may results in acquiring more spare parts than needed to meet requirements.	Chapter 2, Sub-Plan A: Demand Forecasting
	DLA has not resolved problems with accurately estimating suppliers' lead times needed to acquire spare parts.	Chapter 10, Sub-Plan I: Other DoD Inventory Improvement Actions, Action I-2
	DLA faces challenges in efficiently meeting the military services' estimated additional requirements for spare parts–supply support requests have included overstated requirements forecasts and special program requirements have often not materialized.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 3, Sub-Plan B: TAV and Multi-Echelon Modeling
	DLA inventory managers do not consistently have accurate, timely data to make informed purchase decisions.	Chapter 2, Sub-Plan A: Demand Forecasting
	DLA's process for modifying or canceling unneeded purchases of spare parts has been implemented on a limited basis.	Chapter 4, Sub-Plan C: On-Order Excess
	DLA has reported progress in reducing the proportion of inventory that is inactive, but the agency continues to store large amounts of contingency retention stock.	Chapter 6, Sub-Plan E: Contingency Retention
	DLA does not assess and track the cost efficiency of its inventory management.	Chapter 10, Sub-Plan I: Other DoD Inventory Improvement Actions, Action I-4.

GAO-10-469, *Defense Logistics Agency Needs to Expand on Efforts to More Effectively Manage Spare Parts*, May 2010 (DRAFT–FOUO).

Table B-8. Navy Spare Parts

GAO report	GAO findings	Related Plan Actions
GAO-09-103	For the 4-year period examined for this report, the Navy had significantly more inventory than was needed to support current requirements.	Chapter 2, Sub-Plan A: Demand Forecasting
	About $7.5 billion, or 40 percent, of the Navy's on-hand and on-order inventory value exceeded current requirements each year.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess Chapter 8, Sub-Plan G: Items with No Demand
	Inventory excess to current requirements was retained for anticipated future needs.	Chapter 5, Sub-Plan D: Economic Retention Chapter 6, Sub-Plan E: Contingency Retention
	Based on Navy demand forecasts, inventory that exceeded current requirements had enough parts on hand to satisfy several years, or even decades, of anticipated supply needs.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 8, Sub-Plan G: Items with No Demand
	Inventory that exceeded current requirements included both serviceable and unserviceable parts, and was predominantly associated with steady programs—that is, programs that were not significantly growing or declining.	Chapter 2, Sub-Plan A: Demand Forecasting
	Relatively few inventory deficits were identified, but some items had persistent deficits.	Chapter 2, Sub-Plan A: Demand Forecasting
	The Navy has not established metrics and goals for tracking and assessing the cost efficiency of inventory management. While the Navy has performance measures for meeting warfighter needs, it lacks metrics and targets for tracking and assessing the cost efficiency of its inventory management.	DoD has identified specific quantifiable metrics for most of the actions in this Plan or has specified that metrics will be developed, where required, as part of the plan implementation milestones.
	The Navy has not systematically evaluated the effectiveness of its demand forecasting procedures.	Chapter 2, Sub-Plan A: Demand Forecasting
	The Navy has not adjusted certain inventory management practices—in initial provisioning, on-order management, and retention—in response to demand unpredictability.	Chapter 2, Sub-Plan A: Demand Forecasting Chapter 4, Sub-Plan C: On-Order Excess Chapter 5, Sub-Plan D: Economic Retention Chapter 6, Sub-Plan E: Contingency Retention
	Initial provisioning practices can result in the purchase of unneeded stock.	Chapter 2, Sub-Plan A: Demand Forecasting
	On-order management practices limit flexibility in modifying purchases.	Chapter 4, Sub-Plan C: On-Order Excess
	The Navy has not adjusted retention practices in response to prior recommendations.	Chapter 5, Sub-Plan D: Economic Retention Chapter 6, Sub-Plan E: Contingency Retention
	The Navy has not defined the oversight role of Chief and Deputy Chief management officers regarding inventory management improvements.	Chapter 1 describes the assignment of specific responsibilities related to the actions in this Plan. Milestones in each sub-plan include identification of responsibilities for each action.

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

Appendix C
Section 328 of 2010 National Defense Authorization Act

SEC. 328. IMPROVEMENT OF INVENTORY MANAGEMENT PRACTICES

(a) Inventory Management Practices Improvement Plan Required.

Not later than 270 days after the date of the enactment of this Act, the Secretary of Defense shall submit to the congressional defense committees a comprehensive plan for improving the inventory management systems of the military departments and the Defense Logistics Agency with the objective of reducing the acquisition and storage of secondary inventory that is excess to requirements.

(b) ELEMENTS; The plan under subsection (a) shall include the following

(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.

(2) A plan to accelerate the efforts of the Department of Defense to achieve total asset visibility, including efforts to link wholesale and retail inventory levels through multi-echelon modeling.

(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.

(4) A plan for the review and validation of methods used by the military departments and the Defense Logistics Agency to establish economic retention requirements.

(5) A plan for an independent review of methods used by the military departments and the Defense Logistics Agency 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 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.

(8) A plan to more aggressively pursue disposal reviews and actions on stocks identified for potential reutilization or disposal.

(c) GAO Reports

(1) ASSESSMENT OF PLAN.–Not later than 60 days after the date on which the plan required by subsection (a) is submitted as specified in that sub-section, the Comptroller General shall submit to the congressional defense committees a report setting forth an assessment of the extent to which the plan meets the requirements of this section.

(2) ASSESSMENT OF IMPLEMENTATION.–Not later than 18 months after the date on which the plan required by subsection (a) is submitted, the Comptroller General shall submit to the congressional defense committees a report setting forth an assessment of the extent to which the plan has been effectively implemented by each military department and by the Defense Logistics Agency.

(d) Inventory that is excess to requirements defined

In this section, the term "inventory that is excess to requirements" means inventory that

- is excess to the approved acquisition objective concerned; and
- is not needed for the purposes of economic retention or contingency retention.

Appendix D
Abbreviations

AAO	approved acquisition objective
AFGLSC	Air Force Global Logistics Support Center
AFIT	Air Force Institute of Technology
AIT	automated information technology
AMC	Army Materiel Command
ASD(L&MR)	Assistant Secretary of Defense for Logistics and Materiel Readiness
ASL	authorized stockage list
ATAC	Advanced Traceability and Control
AVCAL	Aviation Consolidated Allowance List
BP	budget project
BRAC	Defense Base Closure and Realignment
CADS	Common Allowance Development System
CAV II	Commercial Asset Visibility II
CCSS	Commodity Command Standard System
CIT	consumable item transfer
COMPASS	Computerized Optimization Model for Predicting and Analyzing Support Structures
CONUS	continental United States
COTS	commercial off-the-shelf
CRCS	Common Rate Computation System
CRS	Contingency retention stock
CVN	nuclear-powered aircraft carrier
DASD(SCI)	Deputy Assistant Secretary of Defense for Supply Chain Integration
DDC	Defense Distribution Center
DLA	Defense Logistics Agency
DRMS	Defense Reutilization and Marketing Service
DVD	direct vendor delivery
E2E	end-to-end

EBS	Enterprise Business System
EDCB	enhanced dollar cost banding
ERL	economic retention limit
eRMS	Electronic Retrograde Management System
ERP	enterprise resource planning
ERS	economic retention stock
FAR	Federal Acquisition Regulation
FMS	foreign military sales
IMSP	Inventory Management and Stock Positioning
INS	insurance
IOC	Initial operating capability
IPO	Inventory Policy Optimization
IUID	item unique identification
JSCA	Joint Supply Chain Architecture
LMP	Logistics Modernization Program
LSP	Logistics Strategic Plan
NAVSUP	Naval Supply Systems Command
NDAA	National Defense Authorization Act
NIIN	national item identification number
NSN	national stock number
NSO	numeric stockage objective
NWRM	nuclear weapons-related materiel
OCONUS	Outside the Continental United States
OCS	operational contract support
OPR	office of primary responsibility
OSD	Office of the Secretary of Defense
PBL	performance based logistics
POA&M	plan of actions and milestones
POD	proof of delivery
PRS	potential reutilization stock
PSAS	potential security assistance stocks
PV	prime vendor

RBS	readiness-based sparing
RFID	radio frequency identification
S&OP	sales and operations planning
SALE	Single Army Logistics Enterprise
SCMG	Supply Chain Metrics Group
SCOR	Supply Chain Operations Reference Model
SESAME	Selected Essential-Item Stockage Availability Method
SIM	serialized item management
SPR	special program requirement
SS&D	supply storage and distribution
SSA	supply support activity
SSF	Single Stock Fund
SSIR	Supply System Inventory Report
SSR	supply support request
STRAT	summary inventory stratification report
TARP	Technical Assistance for Repairables Processing
TAV	total asset visibility
TIR	transaction item reporting
UICP	Uniform Inventory Control Point
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology and Logistics
VPV	virtual prime vendor

DEPARTMENT OF DEFENSE

UNITED STATES OF AMERICA