Part I
Depot Maintenance Strategic Plan

Executive Summary

This *Depot Maintenance Strategic Plan* articulates the Department of Defense's strategy and plans for ensuring its organic depot maintenance infrastructure is postured and resourced to meet the national security and materiel readiness challenges of the 21st century.

The *DoD Depot Maintenance Strategic Plan* consists of the following:

Section A introduces the contents of the *DoD Depot Maintenance Strategic Plan*. It also provides an overview of maintenance of military materiel and the role of DoD's organic depot maintenance infrastructure.

Section B articulates DoD's Depot Maintenance Strategy and describes the Strategic Elements that are central to implementing the strategy. These Strategic Elements are as follows:

- Aligning Maintenance Operations Metrics with Warfighter Outcomes
- Identifying and Sustaining Requisite Core Maintenance Capability
- Sustaining a Highly Capable, Mission-Ready Maintenance Workforce
- Ensuring an Adequate Infrastructure to Execute Assigned Maintenance Workload

Section C delineates the specific DoD-wide actions that DoD is undertaking for each of the Depot Maintenance Strategy's Strategic Elements.

Section D describes the processes that will be used for overseeing the implementation of this *Depot Maintenance Strategic Plan,* including the expected content of the Military Services' depot maintenance strategic plans.

Organic maintenance depots provide both the capabilities and the management mechanisms needed for agile product support to the warfighter under a wide variety of operating conditions. As such, they constitute DoD's core weapon system sustainment capability.

One of the Under Secretary of Defense (Acquisition, Technology and Logistics)'s strategic goals is to focus DoD's entire weapon system sustainment enterprise on attaining Performance-Driven Outcomes (PDO). This *Depot Maintenance Strategic Plan* is an integral element of the efforts of the Office of the Deputy Under Secretary of Defense (Logistics and Materiel Readiness) to achieve this PDO vision.

Table of Contents

Section A—Introduction

This section introduces the contents of the *DoD Depot Maintenance Strategic Plan,* and provides an overview of maintenance of military materiel and the role of DoD's organic depot maintenance infrastructure.

Purpose and Structure of This Plan

Organic maintenance depots provide both the capabilities and the management mechanisms needed for agile product support to the warfighter under a wide variety of operating conditions. As such, they constitute DoD's core weapon system sustainment capability. The purpose of this *Depot Maintenance Strategic Plan* is to articulate DoD's strategy and the plans of the Deputy Under Secretary of Defense (Logistics and Materiel Readiness) (DUSD[L&MR]) for ensuring that DoD's organic depot maintenance infrastructure is postured and resourced to meet the national security and materiel readiness challenges of the 21st century.

The subsequent sections of this *Depot Maintenance Strategic Plan* contain the following:

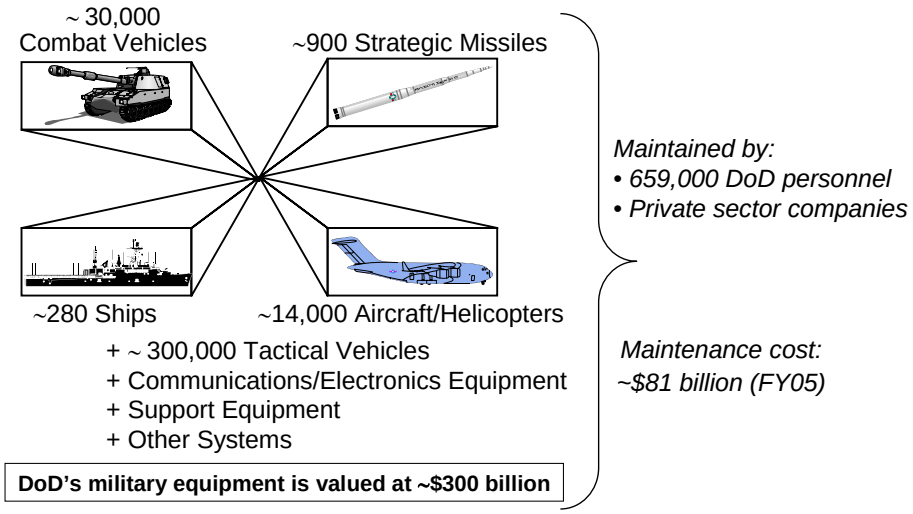
- DoD's Depot Maintenance Strategy, including a description of the Strategic Elements that are central to implementing the strategy
- A delineation of the specific DoD-wide actions that the Department is undertaking for each of the Strategic Elements
- A description of the processes that will be used for overseeing the implementation of this *Depot Maintenance Strategic Plan,* including the expected content of the Military Services' depot maintenance strategic plans.

The scope of this *Depot Maintenance Strategic Plan* is limited to the steps necessary to put into place maintenance planning and management processes that will yield the robust, flexible organic depot maintenance capabilities called for by the National Military Strategy and DoD's Depot Maintenance Strategy. This plan does not address DoD's plans for resetting the force by repairing or replacing the substantial quantities of weapon systems and equipment being worn out or lost due to the United States' military operations in Iraq and Afghanistan. Nevertheless, many of the specific actions included in this plan will better enable DoD's maintenance depots to effectively respond to the surge in workload associated with resetting the force.

Overview of Military Materiel Maintenance

The U.S. military is the most equipment-intensive military force in the world. Figure 1 portrays the magnitude of the inventory of systems supported by DoD maintenance.

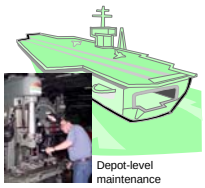
Figure 1. Weapon Systems Supported by DoD Maintenance



Keeping complex weapon systems and their components in top operating condition requires extensive maintenance at scheduled intervals, and expeditious repair when failures occur. The Department's equipment maintenance concepts typically employ three levels of maintenance:


Organizational-level maintenance

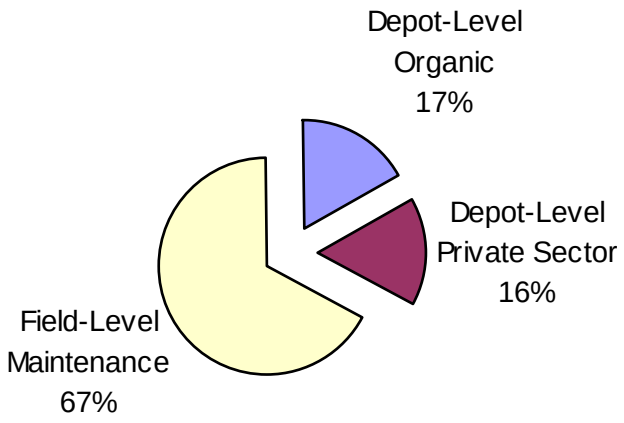

Intermediate-level maintenance


Depot-level maintenance

- Organizational maintenance consists of the on-equipment tasks necessary for day-to-day operation, including inspection and servicing and remove-and-replace operations for failed components (includes line-replaceable units or weapon-replaceable assemblies).
- Intermediate maintenance consists of off-equipment repair capabilities possessed by operating units and in-theater sustainment organizations. These capabilities can be quite extensive, and include remove-and-replace operations for subcomponents of line replaceable units (so-called shop replaceable units or assemblies), local manufacture, and other repair capabilities.
- Depot maintenance consists of all repairs beyond the capabilities of the operating units, including rebuild, overhaul, and extensive modification of equipment platforms, systems, and subsystems. The depot level is the ultimate source of repair.

One result of the United States' extensive arsenal of weapons and equipment is that about 16 percent of the annual DoD budget is spent on maintenance of military materiel.[1] As Figure 2 shows, field-level maintenance—which is composed of organizational and intermediate maintenance—comprises about two-thirds of DoD's maintenance budget.

Figure 2. DoD Budget for Maintenance of Military Materiel



Role of Depot-Level Maintenance

The scope of depot maintenance ranges from the repair, modification, or overhaul of an entire weapon system (e.g., aircraft or ship), to the work done on assemblies (e.g., engine), down to the repair of subassemblies (e.g., engine blades) and individual components. Corrosion control and structural rehabilitation are critical activities at maintenance depots, particularly with weapon systems that have been exposed to corrosive elements and severe operating conditions for extended periods. Depot maintenance also encompasses the installation of modifications to extend the operational life of weapon systems or improve their performance.

The depot-level repair and overhaul of DoD's weapon systems, equipment, and other materiel occurs in facilities owned and operated by the Military Services and at industrial sites operated by contractors. In addition, maintenance depots deploy field teams that conduct depot-level inspections, repairs, battle damage reclamation, and installation of modifications to weapon systems and components at operational locations around the world. About 52 percent of all depot maintenance expenditures are for work performed by organic depots.

Organic depot maintenance accounts for only one-sixth of DoD's expenditures on maintenance and repair of military materiel. However, unlike most private sector providers of depot-level repair, DoD's depots are multi-product capable. Each DoD maintenance depot possesses the tooling, fixtures, and technical data—and a workforce with the required range of skills and task certifications—to repair and overhaul a wide variety of weapon systems and equipment. The depots also possess integrated capabilities for a wide variety of process and product lines, and they are uniquely situated to deploy integrated cross-functional, multi-product-capable teams for warfighter support, with much smaller footprints than their commercial product-specific counterparts.

[1] Reflects actual obligational authority data for fiscal year 2005.

Section B—DoD Depot Maintenance Strategy

This section articulates DoD's Depot Maintenance Strategy. It also describes the strategic and operational context (including DoD's depot maintenance mission and vision) that constitutes the basis for DoD's depot maintenance strategy.

The DoD Strategy in Context

DoD is in the midst of a transformation of its organizations and doctrine to better focus force structure and resources on the national security challenges of the 21st century. The National Military Strategy requires transformed forces that can take action from a forward position and, when rapidly reinforced from other areas, defeat adversaries swiftly and decisively while actively defending U.S. territory.

The transformation of DoD's support infrastructure and processes is an integral part of these organizational and doctrinal changes and will enable the DoD to be more agile and responsive. Depot maintenance is increasingly becoming a capability that is not necessarily linked to specific locations. DoD must be able to rapidly put this capability where it is needed, anywhere in the world. Depot field teams (contract and organic) are directly associated with many operating units, and reliance on depot teams will continue to grow in extent and importance.

The challenge of supporting expeditionary military operations while constraining logistics costs is leading the Military Services to reshape DoD's field- and depot-level military materiel maintenance organizations in several ways:

- *Consolidations of field- and depot-level maintenance workloads*—For example, the creation of centralized intermediate repair facilities in the Air Force as well as the transfer of depot-level maintenance workload from Marine Corps Logistics Base–Barstow, Rock Island Arsenal, and Naval Weapons Station–Seal Beach to various Army depot maintenance activities and Marine Corps Logistics Base–Albany. Such consolidations increase the utilization of skilled technicians and expensive equipment by reducing the number of sites where maintenance is performed, thus permitting a reduction in the overall cost of maintenance.

- *Merging depot-level and intermediate-level maintenance activities* into regionally oriented organizations that provide maintenance, logistics, and engineering support, such as the Navy's fleet readiness centers for aircraft and regional maintenance centers for ships. Such organizational concepts decrease the total amount of time each weapon system is out of service for depot-level rework, resulting in higher weapon system availability and better material condition with no overall cost increase.

The Department of Defense has adopted Performance-Based Logistics (PBL) as the preferred approach to providing product support for military materiel. Performance-Based Logistics entails the delivery of supply, maintenance, distribution, and engineering support as an integrated, affordable, performance-oriented package designed to meet total system availability requirements while optimizing equipment reliability and mean down time, and minimizing cost and the logistics footprint.

In summary, maintenance (i.e., depot, intermediate, and organizational) in general and depot maintenance provided by organic DoD activities in particular, face challenges that are notably different from those of the Cold War era. DoD's Depot Maintenance Strategy and its supporting strategic elements are designed to ensure that DoD's organic depot maintenance infrastructure is postured and resourced to meet the challenges of the 21st century. DoD's strategy is predicated upon the following:

- *Depot maintenance mission*: Sustain the operating forces with responsive depot-level maintenance, repair, and technical support—worldwide.

- *Depot maintenance vision*: Agile depot maintenance capabilities that are fully integrated into a warfighter-focused sustainment enterprise, supporting the full spectrum of operational environments.

The Depot Maintenance Strategy

It is essential to our national security that the United States possesses and sustains a national technology and industrial base that is capable of meeting the following objectives:

- Supplying and equipping the force structure of the Armed Forces that is necessary to achieve the National Security Strategy and the Strategic Planning Guidance as reflected in the Future Years Defense Program.

- Sustaining production, maintenance, repair, and logistics for military operations of various durations and intensity.

- Maintaining advanced research and development activities to provide the Armed Forces with systems capable of ensuring technological superiority over potential adversaries.

- Providing for the development, manufacture, and supply of items and technologies critical to the production and sustainment of advanced military weapon systems.

Weapon system sustainment strategies will reflect the best use of public and private sector technical competencies and depot maintenance capabilities that are attainable while also satisfying statutory requirements.

It is also essential for the national defense that the Department of Defense maintain a core depot maintenance capability that is Government-owned and Government-operated to ensure a ready and controlled source of technical competence, with resources capable of effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements. This core depot maintenance capability encompasses the specific maintenance and repair capabilities that are necessary to maintain and repair the weapon systems and other military equipment (excluding commercial items, and special circumstances authorized by statute) that are identified as necessary to enable the Armed Forces to fulfill the strategic and contingency plans prepared by the Joint Chiefs of Staff.

The DoD Components will identify—and periodically re-verify—requisite core depot maintenance capabilities and the workload required to sustain those capabilities. Core capabilities and

the workloads required to support these capabilities will be adjusted as necessary to reflect such factors as force structure changes, introduction of new weapon systems, aging or modification of existing weapon systems, technology changes, and changes in doctrine to counter emerging threats.

Each Government-owned and Government-operated principal depot-level maintenance activity within the DoD has been designated as a Center of Industrial and Technical Excellence (CITE) for a specified set of technical competencies required for the successful fulfillment of assigned core-related capabilities. Additions or revisions to CITE designations to reflect changes in technology or force structure will occur as warranted.

The DoD Components will perform the core depot maintenance workloads necessary to maintain identified core depot maintenance capabilities in public sector depot maintenance facilities. Each CITE shall be assigned sufficient workload to ensure cost-effective utilization in peacetime while preserving the surge capacity and reconstitution capabilities necessary to fully support the Department's strategic and contingency plans.

Organic depot maintenance activities and physical capacities for performing depot-level maintenance and repair of military materiel established or retained within the DoD Components will be kept to the minimum necessary to ensure a ready, controlled source of technical competence and resources to meet military requirements. Additions or revisions to organic capacities to reflect changes in technology or force structure will occur as warranted. Should portions of organic depot maintenance capacity become no longer necessary to support military requirements, DoD will seek authorization to realign or reduce its depot maintenance infrastructure accordingly.

The implementation of DoD's depot maintenance strategy embodies the following four Strategic Elements:

- Aligning Maintenance Operations Metrics with Warfighter Outcomes
- Identifying and Sustaining Requisite Core Maintenance Capability
- Sustaining a Highly Capable, Mission-Ready Maintenance Workforce
- Ensuring an Adequate Infrastructure to Execute Assigned Maintenance Workload

Strategic Elements

Aligning Maintenance Operations Metrics with Warfighter Outcomes

Performance-Driven Outcome (PDO) and Continuous Process Improvement (CPI) programs are being employed throughout the Department to optimize the reliability of weapon systems and components, and to optimize maintenance and repair cycle times. CPI is proving to be an important tool for achieving and sustaining materiel readiness and availability while optimizing life cycle costs. The DoD Components will establish metrics and benchmarks for each of these four outcomes, and periodically measure progress.

A fundamental cornerstone of DoD's depot maintenance strategy is to reengineer maintenance and repair processes and adopt best-business practices at all Centers of Industrial and Technical Excellence. The goal is for each CITE to align its depot maintenance output metrics to warfighter outcomes, and to continue to be a recognized leader in its assigned core competencies throughout the DoD and in the national technology and industrial base.

CPI programs can include an array of process improvement tools and concepts. CPI applied to organic depot maintenance will, at a minimum, encompass these techniques:

- *Lean* is a systematic approach used to specify customer value, identify waste, focus activities on eliminating waste, and maximize (or make available) resources to satisfy other requirements by achieving uninterrupted value-added flow. Lean focuses on removing process waste in order to improve business performance. Lean is typically applied in an operations environment, where many small improvements applied in rapid succession are more beneficial than an extensive analytical study.

- *Value Stream Mapping* is a tool used to capture and analyze process data (on variables such as processing time, error rates, or work in process), and is the foundation for Lean improvement methods. It is an effective tool for improvement efforts that are designed to speed up processes and eliminate non-value-added activities and cost.

- *Six Sigma (6σ)* is a problem-focused improvement technique that relies heavily on quantitative analyses to represent and characterize a process. Statistical tools designed to understand the fluctuation of a process are used to identify improvements. Graphical representations of data are used to provide new and different perspectives on the process. Six Sigma (6σ) tools are applied when an improvement in system output can be achieved through a reduction in process variation.

- *Theory of Constraints (TOC)* is a methodology for logical thinking, scheduling and controlling resources, and measuring performance. By focusing on and eliminating constraints that affect overall process efficiencies, this methodology produces positive effects on the flow time of the product or service throughout the system. The primary effect of TOC improvements is typically faster process throughput. Secondary effects generally include reduced inventory and waste and improved quality.

DoD will employ a two-pronged approach to minimizing future maintenance requirements while attaining requisite sustained materiel readiness. First, DoD will emphasize "design for reliability, maintainability and supportability" during the system design and development phase of acquisition for new weapon systems.

The DoD Components will also rigorously apply Condition-Based Maintenance Plus (CBM+) and Reliability-Centered Maintenance (RCM) concepts for both establishing initial maintenance requirements for new weapon systems and focusing the efforts of the entire sustainment community on in-service systems and equipment. CBM^{+} is the application and integration of appropriate processes, technologies, and knowledge-based capabilities to improve the reliability and maintenance effectiveness of DoD systems and components. RCM is a logical, structured, continuous process applied across the system life cycle to determine the optimum mix of appropriate maintenance

procedures and failure management strategies based upon the inherent reliability characteristics of the system.

Identifying and Sustaining Requisite Core Maintenance Capability

The DoD employs a biennial depot maintenance core capability determination process. This process is designed to determine which depot maintenance capabilities must be maintained in organic depots to meet the readiness and sustainability requirements for the weapon systems that support contingency scenarios developed by the Joint Chiefs of Staff (JCS). Depot maintenance core sizing involves determining the skills, facilities, and equipment needed to achieve the requisite capabilities, as well as quantifying the associated workloads to sustain these requirements.

The DoD will biennially measure the capacity and utilization of each organic activity performing depot-level maintenance and repair. Particular attention will be paid to identifying and resolving bottlenecks and capability deficiencies, including budgeting for capital investments to rectify equipment and facility shortfalls.

The DoD will employ a depot source of repair (DSOR) determination process to enable the identification of depot maintenance core capability requirements early in the acquisition life cycle. DoD Component acquisition guidance will require program managers to ensure sustainment strategies satisfy core depot maintenance requirements. Toward this end, program managers will consider depot maintenance public-private partnerships within Performance-Based Logistics implementation strategies.

DoD policy encourages the heads of CITEs to employ public-private partnerships for depot maintenance whenever feasible and beneficial to foster improved support to the warfighter, and to improve the utilization of the government's facilities, equipment and personnel at DoD depot maintenance activities. Depot maintenance partnerships attract workload (in addition to work associated with PBL arrangements) which contributes to enhancing or sustaining the organic depots' core capabilities. Where possible, DoD activities will attempt to structure partnerships in ways that encourage and justify private sector capital investment at the organic activity.

The following depot capabilities can be employed in partnership agreements:

- Manufacturing (e.g., fabrication of parts, assembly of components, and final assembly and painting of end-use items)
- Repair (e.g., diagnostics, refurbishment, overhaul and rebuild)
- Technical services (e.g., testing and analysis, and repair process design, and in-service engineering).

Depot maintenance public-private partnerships can include the following:

- Production of defense-related goods and services by government employees using public sector facilities and equipment for a private sector entity

- Use by private sector entities of public sector equipment and facilities to produce goods and services for either government or commercial customers

- Collaborative arrangements, using both government and private sector employees performing distinct workload segments to accomplish defense-related work.

Sustaining a Highly Capable, Mission-Ready Maintenance Workforce

The DoD must compete effectively with the private sector for highly qualified personnel to build and operate the Total Force.[1] DoD's new Human Capital Strategy focuses on developing the right mix of people and skills across the Total Force. The Department's Human Capital Strategy is predicated upon "competency-focused" occupational planning and "performance-based" personnel management.

The DoD Components will systematically plan and forecast civilian workforce requirements to support the DoD mission with a trained and ready depot maintenance workforce. DoD Component plans will include an assessment of the critical skills and competencies needed by the depot maintenance civilian workforce to support current and future national security requirements, projected trends in the workforce based upon expected losses due to retirement and other attrition, and a detailed plan of action for developing and reshaping the civilian workforce to address current and projected gaps in critical skills and competencies.

Ensuring Adequate Infrastructure to Execute Assigned Maintenance Workload

The DoD Components will ensure the core depot maintenance capabilities required to sustain each new weapon system are assigned to specific CITEs no later than the Milestone C production decision. The DoD Components will ensure sufficient funds to acquire—either directly by Program Managers (PMs) or via a product support integrator (PSI)—the facilities, equipment, and technical data needed to execute core sustaining workloads are requested in program and budget submissions. Initial core capability will be established at the assigned CITEs no later than 4 years after the weapon system reaches initial operating capability (IOC).

DoD is aggressively pursuing transformation of its acquisition, logistics, and financial management business processes. The foundation of these transformational efforts is investment in state-of-the-art information technology. The DoD Components will continue investing in the information technology necessary to fully integrate the logistics enterprise. These investments will substantially improve the timeliness and validity of information essential to sound maintenance management decision making. Integrated information will also significantly improve materiel support to depot maintenance and integrated supply chain management activities. The Components will also invest in new or modified maintenance and repair facilities and equipment to implement CPI and other productivity-enhancing projects.

The DoD Components will assess the need for equipment replacement and real property refurbishment requirements utilizing processes which consider future core depot maintenance capabilities and competencies, the equipment densities and readiness requirements of current and

[1] The Total Force includes active, reserve and guard military personnel and DoD civilian employees.

future weapon systems, and the current state of existing organic facilities and equipment. Investments in the organic infrastructure will be programmed and budgeted whenever best value analyses demonstrate that facilitizing and modernizing that infrastructure is the most cost effective means to supplying both the near- and long-term capabilities essential to supporting the warfighter.

Section C—Strategic Elements Action Plan

This section describes the actions that are central to the implementation of DoD's Depot Maintenance Strategy. The actions in this section are applicable to all DoD Components. Additional actions may be added for any of the Strategic Elements at a later date, if the need for such additions becomes apparent.

Aligning Maintenance Operations Metrics with Warfighter Outcomes

Goal = Depot Maintenance Infrastructure that Provides Required Materiel Readiness at Least Cost

Maintenance Operations Metrics

Objective and quantifiable metrics are essential to developing weapon system sustainment infrastructure performance standards and materiel readiness measures of effectiveness. In December 2006, ODUSD (L&MR) tasked the Depot Maintenance Working Integrated Process Team (DM WIPT) with developing a means for quantifying and reporting depot maintenance–relevant metrics for each of the following Life Cycle Sustainment Outcome metrics:

- Materiel Availability
- Materiel Reliability
- Ownership Cost
- Mean Down Time.

The target date for initial reporting of the resultant metrics is no later than the end of June 2007.

ODUSD (L&MR) has undertaken an initiative to broaden the application of performance-based management techniques into an emerging enterprise-wide strategy known as "Performance-Driven Outcomes." Under PDO, the performance of all provider activities will be measured against associated Performance-Based Agreements, driven by incentives, and integrated by a single product support integrator to achieve clearly defined outcomes at the weapon system level. The PDO concept will apply equally to any combination of public sector and private sector customers and providers. A key enabler of PDO is the ability to employ standardized outcome-based metrics throughout the sustainment enterprise.

Continuous Process Improvement

ODUSD (L&MR) developed a *CPI Transformation Guidebook* as a resource for designing and managing CPI efforts. The guidebook, which was published in May 2006, standardizes terminology and incorporates examples of best practices from leading industry and DoD experiences.

A May 11, 2006, Deputy Secretary of Defense memorandum to all DoD activities encouraged the establishment of a DoD-wide CPI program. This memo endorsed the broadening and acceleration of CPI to further improve effectiveness across the full range of DoD's operational, administrative, and support functions.

In response to the Deputy Secretary's guidance, ODUSD (L&MR) has acted to institutionalize CPI efforts in the areas of CPI expert certification, guidance documentation, and the creation of forums to capture and share CPI best practices across the Department. These actions are being guided through a CPI Senior Steering Committee (CPI SSC), a two-star-level facilitation body with broad DoD representation that was established in August 2006. Teams with both Defense Agency and Military Service representation report to the CPI SSC and are addressing CPI expert certification, the creation of forums, and development of best practices topics. These teams provide periodic updates to the CPI SSC. Common certification requirements and effective forums to facilitate DoD-wide CPI knowledge sharing are targeted for implementation during the spring of 2007.

In addition to the CPI actions described above, each Military Service is implementing a CPI program with Secretary-level participation and endorsement. These Service programs are identifying key enterprise value streams, training a critical mass of CPI talent, and contain goals to implement Service-wide CPI during 2006–2008. The Military Services provide periodic updates to the CPI SSC on CPI implementation status and are integrating lead time and cost reduction metrics into enterprise CPI strategies.

Sustainment Planning During Systems Acquisition

In August 2006, the Joint Requirements Oversight Council (JROC) approved the adoption of a mandatory "Materiel Availability" key performance parameter (KPP) for all Major Defense Acquisition Programs (MDAPs) and select ACAT II and III programs. This KPP has two supporting key system attributes (KSAs): materiel reliability and ownership cost.

DoD Components will incorporate this new KPP and supporting KSAs into their guidance to program managers on the implementation schedule prescribed by the JROC. ODUSD (L&MR) will assist the cognizant OSD staff elements in revising the Defense Acquisition Management Information Retrieval (DAMIR) process to include information about the status of this new KPP and supporting KSAs. The target for completion of DAMIR revisions is no later than the end of June 2007. The target for compliance by each affected program is the first assigned quarterly update after the DAMIR revision becomes effective.

Reliability-Centered Maintenance

RCM traces its roots to the commercial airline industry's efforts to develop reliability analysis and preventive maintenance programs in the 1960s. DoD first directed incorporation of RCM practices into military equipment maintenance practices in the mid-1970s. Over the years, RCM has been implemented within the Military Services to varying degrees.

A study was conducted for ODUSD (L&MR) in the fall of 2005 to investigate the state of RCM practice across DoD. The results led to the charter in April 2006 of a RCM WIPT made up of

RCM subject matter experts from all Services to share detailed information on their processes and procedures. One of the principal tasks of the RCM WIPT is to develop proposed DoD guidance on RCM that provides a common definition and policy on RCM for the DoD Components. This RCM guidance will be incorporated into a broader policy document that ODUSD (L&MR) is currently developing which will provide a framework for life cycle management and sustainment. The target completion date for this policy document is the end of September 2007.

Using the forthcoming DoD guidance on RCM as a reference point, the DoD Components will be able to justify rigorous RCM programs and support the resource requirements needed for RCM activities. ODUSD (L&MR) will, via the RCM WIPT, monitor progress toward expanded application of RCM throughout DoD, and identify and undertake additional RCM deployment actions as warranted.

Condition-Based Maintenance Plus

CBM^+ is the application and integration of appropriate processes, technologies, and knowledge-based capabilities to improve the reliability and maintenance effectiveness of DoD systems and components. At its core, CBM^+ is maintenance performed on evidence of need provided by Reliability Centered Maintenance (RCM) analysis and other enabling processes and technologies. CBM^+ uses a systems engineering approach to collect data, enable analysis, and support the decision-making processes for system acquisition, sustainment, and operations.

CBM^+ applies to organic and commercial maintenance operations for weapon systems, equipment, and materiel throughout all life-cycle phases. Employment of CBM^+ concepts enhance maintenance efficiency and effectiveness and integrate all functional aspects of life cycle management processes (e.g., acquisition, distribution, supply chain management, engineering, and maintenance). As such, CBM^+ has profound implications for depot maintenance strategic planning.

CBM^+ will influence DoD depot maintenance requirements, structure, and operations in many ways:

- Determining appropriate maintenance approaches (i.e., the repair levels and cycles for weapon systems, equipment, and components)
- Identifying optimum opportunities (e.g., timing and location) for maintenance
- Improving reliability through enhanced analysis of failure data
- Accelerating repair cycles through use of accurate fault data
- Facilitating efficient maintenance by performing tasks only upon evidence of need
- Ensuring accurate predictions of impending failures
- Providing item tracking capabilities

To expand and accelerate the application of CBM^+ throughout the DoD, ODUSD (L&MR) established a CBM^+ Integrated Process Team (IPT) charged with formulating DoD policy guidance and a "best practices" handbook. The target completion date for the policy document and the handbook is no later than the end of September 2007.

Identifying and Sustaining Requisite Core Maintenance Capability

Goal = Depot Maintenance Infrastructure that Can Sustain Current and Future Core Capability Requirements

Source of Repair Determination

The guidance provided in the *Defense Acquisition Guidebook* concerning implementation of a Performance-Based Logistics weapon system sustainment strategy requires additional clarity to ensure program managers and product support integrators understand what is expected of them to be in compliance with 10 U.S.C. 2464 and 10 U.S.C. 2466.

ODUSD (L&MR) is preparing a proposed DoD instruction on a new *Depot Source of Repair (DSOR) Determination Process* that embodies an acquisition phase–based approach for articulating responsibilities and required actions. The target for official promulgation of this DoD instruction is no later than the end of June 2007. Each affected DoD Component is expected to publish implementing policies and procedures within 6 months of the DoD instruction issuance.

ODUSD (L&MR) will also work with the cognizant OSD staff elements to revise the DAMIR process and include information about the status of

- evaluation of DSOR alternatives,
- DSOR decisions, and
- programmed funding for depot facilitization.

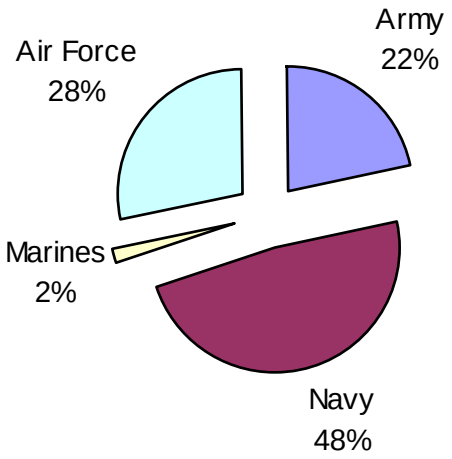
The target for completion of DAMIR revisions is no later than the end of June 2007. The target for compliance by each program reported in DAMIR is the first assigned quarterly update after the DAMIR revision becomes effective.

Core Capability Determination

The DoD first articulated a conceptual depot maintenance core-sizing methodology in 1993. This methodology was updated and substantially expanded in 1996. A further update of policy and methodological guidance, which was the culmination of several years of analyses and deliberation, was issued by DUSD (L&MR) in November 2003.

In December 2005, the DUSD (L&MR) tasked the Military Services to compute their depot maintenance core capability requirements for fiscal year 2007, and submit the results to ODUSD (L&MR) for review and approval. The resultant combined core capability requirement for DoD is 70.5 million direct labor hours. Figure 3 shows the relative size of the core capability requirement for each of the Military Services. Each Military Service is expected to annually fund sufficient workload at public sector facilities to sustain its depot maintenance core capability requirements.

Figure 3. Depot Maintenance Core Capability Requirement



ODUSD (L&MR) converted the 2003 guidance document into a new DoD instruction, *Depot Maintenance Core Capabilities Determination Process*, which was issued on January 5, 2007. Each impacted DoD Component is expected to publish implementing policies and procedures within 6 months of the DoD instruction issuance date.

ODUSD (L&MR) also prepared a substantial revision to the *DoD Depot Maintenance Capacity and Utilization Handbook*. The production shop categories defined in the forthcoming handbook have been aligned with the prescribed work breakdown structure for determining core capability requirements. This will enable depot maintenance capacity and utilization to be measured and evaluated in the same structural context used by the DoD Components to compute core capability requirements and articulate funded workload.

The target for official promulgation of the revised DoD handbook is not later than the end of March 2007. Each impacted DoD Component is expected to apply the methodology prescribed in the handbook and submit the reports required by the handbook not later than 6 months after the revised handbook is published. Subsequently, core capability requirements and capacity utilization will be determined biennially as called for in the DoD instruction and handbook.

Public-Private Partnerships

The first depot maintenance public-private partnership (PPP) was established in 1996. Since then, 264 partnerships have been established[1]—158 of these partnerships were ongoing at the end of fiscal year 2005.

The DUSD (L&MR) issued interim depot maintenance PPP policy guidance in 2002. This guidance document has been updated to reflect lessons learned and has been converted into a DoD instruction. The target for official promulgation of this new instruction is not later than the end of March 2007. Additionally, the forthcoming DoD instruction on depot source of repair will contain guidance on the timing of PPP planning and formulation activities during the acquisition

[1] Through the end of fiscal year 2005.

process. Each impacted DoD Component is expected to publish implementing policies and procedures within six months of the issuance dates of these instructions.

Depot maintenance partnerships, by their very nature, require both a business opportunity and a willing private sector partner. Thus, targets for PPP creation or expected benefits must be determined on a case-by-case basis. ODUSD (L&MR) will continue to informally monitor and review the extent and composition of depot maintenance PPPs throughout the DoD, and the benefits being attained.

Sustaining a Highly Capable, Mission-Ready Maintenance Workforce

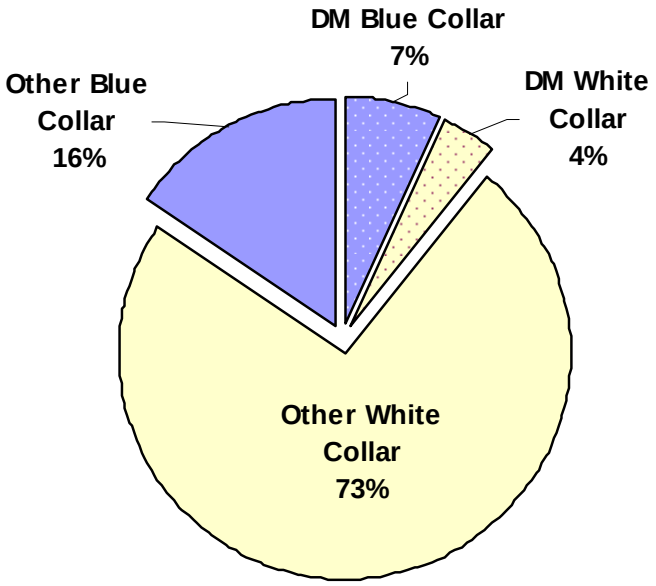
Goal = A Highly Capable, Mission-ready Depot Maintenance Workforce

DoD employees approximately 77,000 civilian personnel at depot-level maintenance activities.[2] Of these, 49,000 (or 64 percent) are "blue collar" artisans and equipment operators. Furthermore, blue collar depot maintenance workers account for 30 percent of DoD's total blue collar workforce.

The "white collar" employees at depot maintenance activities consist of engineers, technicians, and management and administrative support personnel. Although white collar depot maintenance employees comprise only 4 percent of the total DoD white collar workforce, they are essential to maintenance planning and production.

The portion of DoD's 680,000 civilian workforce that supports depot-level maintenance is portrayed in Figure 4.

Figure 4. DoD Civilian Workforce—Fiscal Year 2005



[2] As of end fiscal year 2005.

DoD's depot maintenance community, like the rest of the Federal Government, has experienced increasing numbers of retirements as the "baby boom" generation reaches retirement eligibility. The retirement-eligible population within the depot maintenance workforce, and forecasted annual retirements, are expected to increase annually for the remainder of the decade. Nevertheless, projected annual retirement losses range from 3 to 6 percent of each Service's depot maintenance workforce.

The Under Secretary of Defense (Personnel and Readiness) is DoD's Chief Human Capital Officer (CHCO). The CHCO is responsible for articulating specific workforce planning objectives, actions, metrics, and evaluating progress, for the entire Department of Defense. The Military Service depot maintenance community will assist their human capital counterparts in fulfilling the requirements of the *DoD Civilian Human Capital Strategic Plan*.[3]

Ensuring an Adequate Infrastructure to Execute Assigned Maintenance Workload

Goal = Depot Maintenance Infrastructure that is Adequate to Efficiently Execute Current and Future Workloads

During the decade of the 1990s, minimal investment in depot infrastructure and equipment occurred. Recognition that this situation was having a deleterious effect on depot maintenance capabilities has occurred in recent years. For example:

- The *Air Force Depot Maintenance Master Plan*, August 2002, concluded that the Air Force's annual capital investment of about $140 million[4] [or 3 percent of revenue] was inadequate, and that a $200 million equipment purchase backlog existed due to years of inadequate funding. The *Air Force Depot Maintenance Strategy*[5] envisions an annual capital investment level of approximately 6 percent of sales.

- The *Army Capital Investment Program Plan*, July 2003, concluded that the Army's annual working capital fund expenditures of $60 million for capital improvements at its maintenance depots resulted in a backlog of $40 million annually in unfunded projects. The Army plan also noted that FY2005–09 FYDP contained only $104 million against an estimated total investment requirement of $3.66 billion.[6]

The first step toward ensuring adequate capital investment in depot maintenance infrastructure is obtaining comprehensive visibility of current and planned expenditures from all sources of funds. ODUSD (L&MR) will assist the DoD Comptroller and the Director for Program Analysis and Evaluation (PA&E) in developing depot maintenance capital investment data displays for use in the DoD PPBES. Figure 5 reflects the categories of investment data that are envisioned by ODUSD (L&MR).

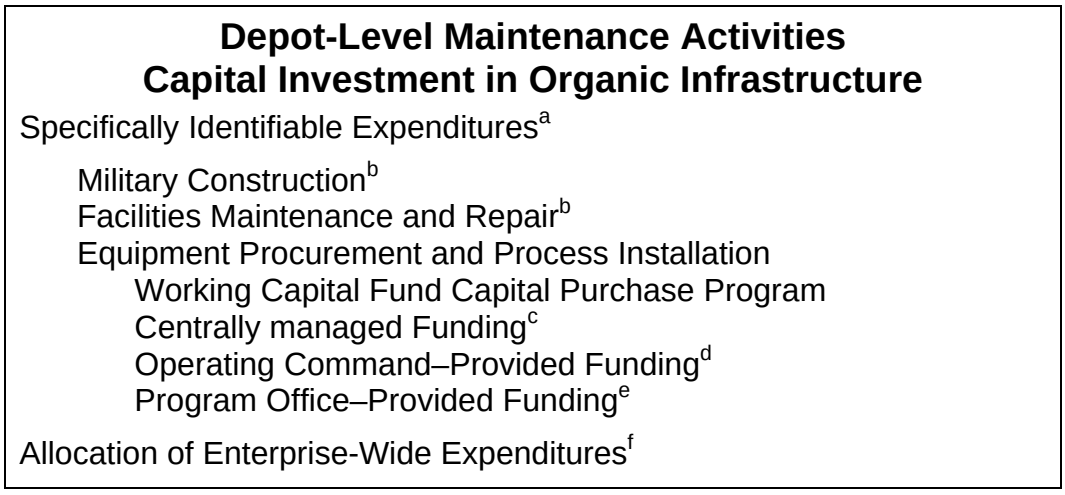
[3] Copies may be obtained via the Internet at: http://www.dod.mil/prhome/reports.html

[4] Excluding maintenance and repair, which averages about $40 million per year.

[5] First published in August 2002, and updated in 2006.

[6] Includes working capital fund, procurement, and military construction requirements.

Figure 5. Categories of Investment Data



[a] Expenditures that can be tracked to a specific depot maintenance activity.

[b] Includes only facilities that are used in direct support of depot-level maintenance.

[c] For example, Commercial Technologies for Maintenance Activities (CTMA) funds or Continuous Process Improvement (CPI) program implementation funds.

[d] Procurement appropriation-funded projects contained in the budgets of the command that has operational control over the depot maintenance activities.

[e] Includes projects financed by funding provided by program management offices directly to depot maintenance activities or operating commands, and projects paid for by DoD contractors in conjunction with PBL or PPP arrangements using funds provided by program management offices

[f] Include that portion of investments in enterprise-wide information transmission technology and resource management and/or decision support systems that benefits depot-level maintenance overall.

The target dates are as follows:

- Trial application using fiscal year 2006 data—no later than the end of March 2007
- Initial application in POM submission—no later than the end of June 2007
- Initial application in budget submission—no later than the end of September 2007
- Subsequent refinements—to be determined

Each DoD Component that operates organic depot-level maintenance activities will establish a programming goal for depot maintenance capital investment. The minimum annual funding target for each DoD Component will be an amount equal to six percent of its combined funded core-sustaining workload. Expected implementation is not later than the FY2009–14 Program Objectives Memorandum (POM) submission.

ODUSD (L&MR) will assist the DoD Comptroller and PA&E in evaluating the adequacy of programmed/budgeted funding and funding target guidance, and the need for more definitive policy and procedures, during the FY2009–14 POM review and the FY2009–10 budget review. Subsequent changes, if warranted, will be promulgated.

Section D—Depot Maintenance Strategic Planning and Implementation Process

This section describes the respective responsibilities within DoD for depot maintenance strategic planning and the processes to be used for overseeing the implementation of such strategic planning. It also delineates the expected minimum content of Military Service depot maintenance strategic plans.

Organizational Roles

The Deputy Under Secretary of Defense (Logistics and Materiel Readiness) (DUSD[L&MR]) prescribes policies and procedures for the conduct of logistics–including supply, maintenance, and transportation–materiel readiness, strategic mobility, and sustainment support in the DoD. The DUSD (L&MR) is also responsible for providing guidance to the Secretaries of the Military Departments with respect to these topics, and monitoring and reviewing Service implementation of related programs.

The Assistant Deputy Under Secretary of Defense for Materiel Readiness and Maintenance Policy (ADUSD[MR&MP]) serves as the Principal Advisor to the DUSD(L&MR) for all matters related to materiel readiness and sustainment support of major weapon systems and combat support equipment, including depot-level maintenance and repair of military materiel. As such, the ADUSD (MR&MP) is responsible for the development of DoD's Depot Maintenance Strategy, and the development and implementation of this *Depot Maintenance Strategic Plan.*

Each Military Service is responsible for strategic planning for its depot maintenance enterprise that focuses on achieving the DoD Depot Maintenance Strategy. This planning will be documented in Service depot maintenance strategic plans that incorporate the specific DoD-wide actions cited in Section C of this document, and that are responsive to the guidelines articulated later in this section. The target date for publication of these strategic plans is no later than 6 months after the publication of this *Depot Maintenance Strategic Plan.* Subsequent updates will be as described below.

Strategic Planning Oversight Mechanism

The Materiel Readiness Senior Steering Group (MRSSG)—which consists of senior representatives from the Office of the Secretary of Defense, the Joint Staff, the Military Services, and the Defense Logistics Agency, and is chaired by the ADUSD(MR&MP)—will review, at least annually, progress on the specific DoD-wide actions cited in this document and undertake appropriate actions, where warranted.

The ADUSD (MR&MP) has established a Depot Maintenance Working Integrated Process Team (DM WIPT) under the auspices of the MRSSG to, among other things, assist in the development of effective implementation strategies for depot-level maintenance-related policies and programs. The DM WIPT will, on a continuing basis, monitor the development and subsequent execution of the Military Services' depot maintenance strategic plans. The DM WIPT will also be directly

responsible for carrying out several of the specific DoD-wide actions, as stipulated in Section C of this document.

Strategic Plan Refreshment

The DoD Depot Maintenance Strategy reflects the National Military Strategy, the most recent Quadrennial Defense Review (QDR), and relevant current events and challenges. The MRSSG will assess the adequacy of the DoD Depot Maintenance Strategy in conjunction with each future QDR. The ADUSD (MR&MP) will revise the strategy as warranted.

ODUSD (L&MR), in conjunction with the MRSSG, will also quadrennially reassess the need for revised or additional strategic element specific actions. ODUSD (L&MR) will publish an updated DoD Depot Maintenance Strategy and *DoD Depot Maintenance Strategic Plan* no later than 6 months after the publication of each future QDR report.

The Military Services will publish updated depot maintenance strategic plans no later than 6 months after the publication of the updated DoD Depot Maintenance Strategy and *DoD Depot Maintenance Strategic Plan.*

Military Service Depot Maintenance Strategic Planning Responsibilities

Each Military Service will conduct strategic planning for depot maintenance that focuses on achieving the DoD Depot Maintenance Strategy. This planning shall be published in a strategic plan that shall be updated and revised at least every four years. The strategic plan shall cover a period of not less than the Future Years Defense Program.

Each Military Service may publish its depot maintenance strategic plan in a single depot maintenance–specific document, or as an integral part of one or more documents having a broader scope. If a Military Service chooses to publish a broader plan, the depot maintenance aspects of the plan must be specifically identifiable and contain the minimum contents prescribed below.

Each Military Service strategic plan will contain

- a comprehensive mission statement;
- general goals and objectives, including outcome-related goals and objectives;
- a description of how the goals and objectives are to be achieved, including a description of the operational processes, skills and technology, and the human, capital, information, and other resources required to meet those goals and objectives;
- the metrics that will be applied to gauge progress toward attainment of each of the goals and objectives;

- an identification of those key factors external to the Military Service and beyond its control that could significantly affect the achievement of the general goals and objectives; and

- a description of the program evaluations used in establishing, monitoring, or revising general goals and objectives, with a schedule for future program evaluations.

Each Military Service strategic plan will, at a minimum, incorporate the specific DoD-wide actions cited in Section C of the *DoD Depot Maintenance Strategic Plan* and address the topics cited in Table 1, *Minimum Content of Military Service Depot Maintenance Strategic Plans*.

Table 1. Minimum Content of Military Service Depot Maintenance Strategic Plans

Logistics Transformation
• Discussion of the future role/capabilities envisioned for the Service's depots, including how these capabilities will be quantified and measured • Discussion of Service-specific actions being taken to transform their depots into the envisioned future capability. For example, ▪ planned structural or organizational changes or ▪ Continuous Process Improvement program • Discussion of the applicable method or management approach for integrating various depot maintenance capabilities, including public and private sector sources, joint and inter-Service capabilities, and multinational capabilities.
Core Logistics Capability Assurance
• Discussion of the actions being taken or contemplated to ▪ ensure Core requirements are identified and depot source of repair decisions are made, upon program initiation (as stipulated in DoDI 5000.2); ▪ encourage the formation of depot maintenance public-private partnerships; and ▪ identify and rectify Core capability deficiencies • Discussion of the method used for workload estimating, and the projected effects of weapon system bed-down and retirements
Workforce Revitalization[a]
• Reengineering Strategies—Discussion of actions being taken to identify new skill requirements and to "reengineer" existing employees' skills to satisfy new capability requirements • Replenishment Requirements—Discussion of the method used and considerations employed, for forecasting workforce replenishment requirements ▪ Quantitative data on projected annual losses due to retirements and other reasons, and projected annual new hire requirements—at a minimum, blue collar and white collar portrayed separately • Replenishment Strategies—Discussion of the management approach (e.g., centralized or by depot) for developing and implementing replenishment strategies, including a description of the array of actions being used to recruit and train new employees

Table 1. Minimum Content of Military Service Depot Maintenance Strategic Plans

Capital Investment
• Discussion of the benchmark used for evaluating the adequacy of investment funding, and the basis for selecting the benchmark (if applicable) • Discussion of method for quantitatively articulating current capabilities, current and projected deficiencies, and the capabilities that planned investment will provide ▪ Method for prioritizing needed investments ▪ Quantitative data on projected funding for facilities and equipment

[a] Military Service Depot Maintenance Strategic Plans may incorporate Military Service Civilian Human Capital Strategic Plans by reference. However, quantitative replenishment requirements for the depot maintenance workforce should be identifiable in one of these documents.