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August 3, 2012

The Honorable Carl Levin  
Chairman  
The Honorable John McCain  
Ranking Member  
Committee on Armed Services  
United States Senate

The Honorable Howard P. McKeon  
Chairman  
The Honorable Adam Smith  
Ranking Member  
Committee on Armed Services  
House of Representatives

*Subject: Defense Logistics: DOD Has Taken Actions to Improve Some Segments of the Materiel Distribution System*

The Department of Defense (DOD) operates a complex, multibillion-dollar distribution system for delivering needed supplies and equipment to U.S. forces across the world. DOD's goal in operating its global distribution system is to deliver the right item to the right place at the right time, and also at the right cost. The materiel distribution system covers multiple legs, from the movement of supplies in the continental United States to tactical movement on the battlefield, and must be capable of reaching its military customers whether they are located on large, well-established bases or at small, remote outposts. As we have reported, the federal government is facing serious long-term fiscal challenges, and DOD may confront increased competition over the next decade for federal discretionary funds.<sup>1</sup> Given the fiscal environment DOD must operate in now and into the future, the distribution of supplies and equipment to the warfighter must be performed as effectively and efficiently as possible to ensure the best use of limited resources. Strategic guidance issued by the Secretary of Defense in January 2012 emphasized that DOD must continue to reduce the cost of doing business, in particular finding further efficiencies in overhead, business practices, and support activities.<sup>2</sup>

Since 1990, GAO has identified DOD supply chain management as a high-risk area, with materiel distribution as one focus area for improvement.<sup>3</sup> Our prior work, for example, has

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<sup>1</sup>GAO, *The Federal Government's Long-Term Fiscal Outlook: January 2010 Update*, [GAO-10-468SP](#) (Washington, D.C.: March 2010); and *21st Century Challenges: Reexamining the Base of the Federal Government*, [GAO-05-325SP](#) (Washington, D.C.: February 2005).

<sup>2</sup>Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Jan. 5, 2012).

<sup>3</sup>This high-risk area was originally identified in 1990 as DOD inventory management. In 2005, it was expanded to DOD's management of its entire supply chain, which includes three focus areas for improvement: requirements

# Report Documentation Page

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identified challenges DOD faced in distributing materiel to the warfighter in Iraq and Afghanistan, which contributed to shortages of some critical items and limited DOD’s ability to track the status and location of cargo shipments. In its high-level logistics and supply chain management plans,<sup>4</sup> DOD highlighted the need to improve materiel distribution and identified various improvement initiatives, but in our prior work we found that these high-level plans did not specify how DOD would integrate, guide, and measure the outcomes of these various improvement initiatives. In July 2011, we recommended that DOD develop a comprehensive corrective action plan for improving materiel distribution, and we identified key elements that we believe should be included in such a plan to maximize its usefulness.<sup>5</sup> However, DOD did not concur with that recommendation, citing ongoing improvement efforts as sufficient. In particular, DOD highlighted Distribution Process Owner Strategic Opportunities (DSO) as one such effort. According to the department, DSO began in 2008 and its main goals are to dramatically reduce enterprise-level distribution costs and improve distribution service levels to the warfighter. DSO comprises five distinct improvement efforts, including four that have been implemented and are ongoing and one, strategic network optimization, that is still in development and is now considered a stand-alone effort. Within DOD, U.S. Transportation Command (TRANSCOM) and the Defense Logistics Agency (DLA) have had key roles and responsibilities for developing and implementing DSO. Table 1 summarizes the five DSO improvement efforts.

**Table 1: DOD’s Five DSO Improvement Efforts**

Effort	Description	Status
Process improvement	Removing unnecessary wait time from distribution processes across the supply chain	Ongoing
Strategic surface optimization	Increasing container utilization and appropriately shifting cargo from 20-foot containers to 40-foot containers	Ongoing
Strategic air optimization	Increasing aircraft utilization and optimizing use of lift options, such as using commercial (rather than military) aircraft when appropriate	Ongoing
Supply alignment	Properly configuring inventory levels at forward supply depots located nearer to the customer	Ongoing
Strategic network optimization <sup>a</sup>	Designing the optimal number, location, and function of supply chain sites	In development

Source: TRANSCOM and DLA.

<sup>a</sup>Strategic network optimization began under DSO and is currently being managed as a stand-alone effort.

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forecasting, asset visibility, and materiel distribution. For our most recent update, see GAO, *High-Risk Series: An Update*, [GAO-11-278](#) (Washington, D.C.: February 2011).

<sup>4</sup>These include DOD’s *Supply Chain Management Improvement Plan* (2005), *Focused Logistics Roadmap* (2005), *Logistics Roadmap* (2008), and *Logistics Strategic Plan* (2010).

<sup>5</sup>Specifically, our recommendation stated that DOD’s corrective action plan for materiel distribution should (1) identify the scope and root causes of capability gaps and other problems, effective solutions, and actions to be taken to implement the solutions; (2) include the characteristics of effective strategic planning, including a mission statement; goals and related strategies (for example, objectives and activities); performance measures and associated milestones, benchmarks, and targets for improvement; resources and investments required for implementation; key external factors that could affect the achievement of goals; and the involvement of all key stakeholders in a collaborative process to develop and implement the plan; and (3) document how the department will integrate these plans with its other decision-making processes; delineate organizational roles and responsibilities; and support department-wide priorities identified in higher-level strategic guidance (such as the *Strategic Management Plan* and *Logistics Strategic Plan*). See GAO, *Defense Logistics: DOD Needs to Take Additional Actions to Address Challenges in Supply Chain Management*, [GAO-11-569](#) (Washington, D.C.: July 28, 2011).

Because of continuing congressional interest in GAO's high-risk areas, including DOD supply chain management, this report was prepared under the authority of the Comptroller General to conduct evaluations on his own initiative. This report provides an assessment of DOD's implementation of DSO and the results achieved. Our specific objectives were to assess the extent to which (1) DOD has developed and implemented DSO consistent with results-oriented management practices and (2) DSO has made improvements to DOD's materiel distribution system and addressed supply chain management challenges identified as part of our work related to this high-risk area.

To assess the extent to which DOD developed and implemented DSO consistent with results-oriented management practices, we reviewed key planning documents and met with agency officials to obtain further information on its management and execution.<sup>6</sup> We assessed the extent to which these planning documents showed evidence that DOD had incorporated key characteristics of results-oriented management practices.<sup>7</sup> To conduct our analysis, three team members concurrently conducted independent assessments of the planning documents to determine whether the characteristics for each improvement effort were addressed, partially addressed, or not addressed. Next, the team members compared the three sets of observations and discussed and reconciled any differences. Once consensus was achieved, assessments for each improvement effort were rolled up into one comprehensive assessment for each characteristic. We considered the characteristic addressed when the planning documents generally incorporated all parts of the characteristic. We considered the characteristic partially addressed when the planning documents generally incorporated at least one or more parts of the characteristic. We considered the characteristic not addressed when the planning documents did not incorporate any part of the characteristic. Because strategic network optimization is still under development, we reviewed it separately from the implemented efforts. To assess the extent to which DSO has made improvements to DOD's materiel distribution system and has addressed issues identified in our past work, we obtained and analyzed performance data and reports from TRANSCOM and DLA, including information on cost avoidances and shipment delivery times. We assessed the reliability of the cost avoidance and shipment delivery time data by reviewing related data documentation, analyzing the methodology used to determine DSO improvements, and interviewing and obtaining written comments from knowledgeable TRANSCOM and DLA officials. We determined that the data were sufficiently reliable for our purposes to assess the extent to which DSO has made improvements to DOD materiel distribution. We also reviewed planning documents and interviewed Office of the Secretary of Defense, TRANSCOM, DLA, and service officials to determine the scope of DSO improvement efforts across DOD's materiel distribution system. Additional information on our scope and methodology is provided in enclosure I.

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<sup>6</sup>According to TRANSCOM officials, the two main planning documents for DSO were *Distribution Process Owner Strategic Opportunities Fiscal Year 2008 Report* (Sept. 26, 2008) and *DPO Strategic Opportunities Recommended Implementation Plan: Process Improvement, Strategic Surface Optimization, and Strategic Air Optimization* (Sept. 30, 2009).

<sup>7</sup>Our prior work has identified six desirable characteristics that help establish a comprehensive, results-oriented management framework to guide the development and implementation of improvement efforts. The six characteristics of the results-oriented management framework are: (1) mission statement; (2) problem definition, scope, and methodology; (3) goals, objectives, activities, milestones, and performance measures; (4) resources and investments; (5) organizational roles, responsibilities, and coordination; and (6) key external factors that could affect the achievement of goals. See GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, [GAO-04-408T](#) (Washington, D.C.: Feb. 3, 2004); *Depot Maintenance: Improved Strategic Planning Needed to Ensure That Air Force Depots Can Meet Future Maintenance Requirements*, [GAO-10-526](#) (Washington, D.C.: May 14, 2010); and *DOD's 2010 Comprehensive Inventory Management Plan Addressed Statutory Requirements, But Faces Implementation Challenges*, [GAO-11-240R](#) (Washington, D.C.: Jan. 7, 2011).

We conducted this performance audit from November 2011 to August 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Results in Brief

DOD incorporated results-oriented management practices into the planning and development of the four ongoing DSO improvement efforts. Additionally, it appears that DOD is incorporating those practices into its planning for the fifth effort—strategic network optimization—which is still under development. On the basis of our assessment of DOD’s key planning documents and other information for the process improvement, surface optimization, air optimization, and supply alignment efforts, we found that DOD addressed the six characteristics found in the framework. For example, DOD identified the main purpose of the improvement efforts, their scope, and the resources needed to execute individual efforts. Preliminary observations of DOD’s planning for strategic network optimization indicate that agency officials are also incorporating results-oriented management practices for this effort. For example, DOD has developed a mission statement and established mechanisms to coordinate with stakeholders. However, because planning is still underway for strategic network optimization, we were unable to fully assess the extent to which DOD has used result-oriented management practices to develop and implement this improvement effort. For example, DOD has not yet decided how to implement the effort nor developed specific performance measures to assess progress.

The implemented DSO efforts have improved some segments of DOD’s materiel distribution system, but these efforts were not intended to address all challenges that DOD faces in materiel distribution and that we have identified in our past work. When DSO began in 2009, the department emphasized two overarching goals: (1) achieve \$500 million in cost avoidances and (2) improve shipment delivery times by 25 percent by 2012.<sup>8</sup> With regard to the first goal, DOD has reported cost efficiencies through increasing utilization of containers, pallets, and aircraft; shifting more cargo to larger containers; and positioning supplies closer to overseas customers. According to DOD, these efficiencies led to over \$490 million in cost avoidances. With regard to the second goal, DOD reported better shipment delivery times for a limited number of customers. For example, TRANSCOM’s process improvement effort led to better delivery times on 31 (6 percent) of DOD’s approximately 500 shipping lanes.<sup>9</sup> TRANSCOM and DLA have been institutionalizing some improvements from the four ongoing DSO efforts into their business operations. For example, DLA has revised its model for determining the types and amount of inventory to position at forward locations to factor in transportation costs. The institutionalization of these improvements could result in additional efficiencies to DOD’s materiel distribution system. In addition, following DOD’s initial implementation of DSO, the Distribution Process Owner Executive Board set a new goal in February 2012 for DSO to achieve another \$500 million in cost avoidances by the end of fiscal year 2015, and TRANSCOM is pursuing new

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<sup>8</sup>Cost avoidance refers to costs that DOD would have incurred if the DSO initiatives had not been implemented. Shipment delivery time, also known as logistics response time, measures the time from submission of a requisition for an item to the delivery of the item to a retail supply organization, such as an Army supply support activity.

<sup>9</sup>Shipping lanes are defined by the location of the military customer, the mode of transportation used to deliver requisitioned supplies, and the location of the supply source. For example, DOD operates a shipping lane that delivers repair parts to customers in South Korea by means of U.S. military aircraft from Defense Depots located in the continental United States.

initiatives to meet this updated goal.<sup>10</sup> Although DOD has achieved some positive results from its DSO efforts, the initiative was not developed with the intent to address all challenges that DOD faces in its materiel distribution system, including some that we have identified in our prior work on supply support to the warfighter. For example, DOD reported better delivery times for some customers in three geographic combatant commands as a result of DSO, but often did not meet its delivery standards for shipments to those commands. Additionally, DSO was designed to improve the distribution operations of TRANSCOM and DLA, which does not include tactical movement of supplies and equipment within theaters of operation, such as Afghanistan.

We are not making any new recommendations in this report.

## **Background**

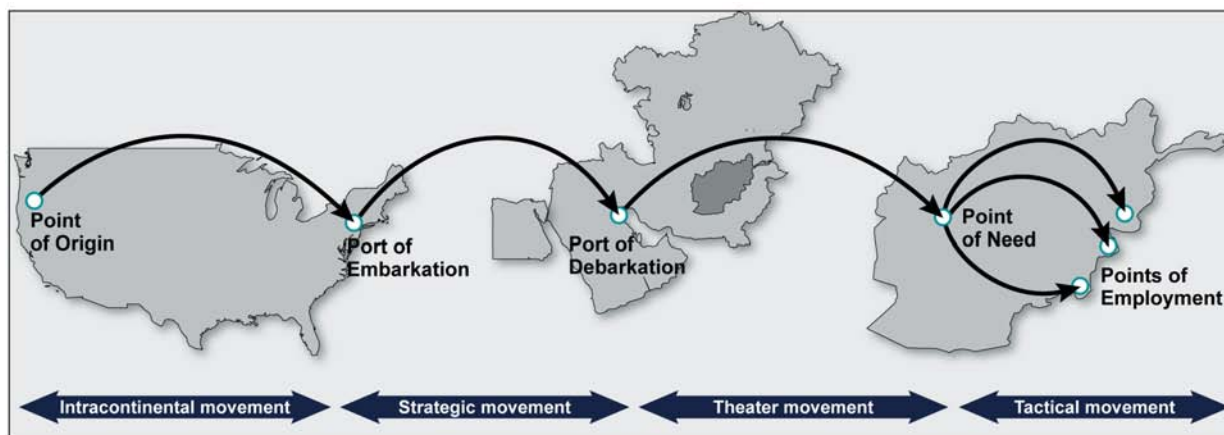
The performance of DOD's materiel distribution system relies on many stakeholders, each with different responsibilities, systems, and processes. Two key stakeholders are TRANSCOM and DLA. With annual operating expenses of over \$13 billion, TRANSCOM delivers supplies and equipment to major hubs across the globe and often across oceans, whether by air or by sea. In fiscal year 2011, TRANSCOM shipped more than 700,000 tons of cargo by air and nearly 800 million cubic feet of cargo by sea. DLA purchases and provides the majority of the spare parts needed to maintain weapon systems and other military equipment. The agency also supplies food, water, fuel, and many other necessities. DLA manages 5 million supply items at 26 distribution centers worldwide while processing over 100,000 requisitions for supplies every day.

DOD's materiel distribution system includes four segments—*intracontinental movement, strategic movement, theater movement, and tactical movement.* (See fig. 1.)

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<sup>10</sup>The Distribution Process Owner Executive Board is the senior decision-making forum charged with implementing initiatives in this area. The board is chaired by the TRANSCOM Commander, and members include the Deputy Under Secretary of Defense for Logistics and Materiel Readiness; General Services Administration; the Director of the Joint Staff J4; the DOD Deputy Chief Management Officer; and the Director of the Defense Logistics Agency. Other DOD stakeholders—such as the combatant commands and military services—also provide representatives.

Figure 1: Four Segments of DOD’s Materiel Distribution System



Source: GAO analysis of DOD joint doctrine.

- **Intracontinental movement.** This segment includes movement from the materiel’s point of origin (e.g., DLA warehouse or service installation) to a port of embarkation (e.g., seaport or aerial port in the United States). DLA and the military services normally perform distribution functions in this leg.
- **Strategic movement.** This segment, also known as the intertheater leg, includes movement from the port of embarkation to the port of debarkation in another geographic combatant command’s area of responsibility (e.g., Kuwait aerial port in the U.S. Central Command area of responsibility). TRANSCOM normally performs distribution functions in this leg.
- **Theater movement.** This segment, also known as the intratheater leg, includes movement from the port of debarkation to the point of need, which is a physical location designated by the geographic combatant commander as a receiving point for materiel for subsequent use or consumption (e.g., a major base in Afghanistan, such as Bagram Airfield). The geographic combatant commander is responsible for movement in this leg. TRANSCOM can also provide distribution support in this leg.
- **Tactical movement.** This segment includes movement from the point of need to the point of employment, which is a physical location designated by the commander at the tactical level where materiel consumption occurs (e.g., a forward-operating base in Afghanistan). The geographic combatant commander assigns responsibility to a military service for movement in this leg.

Two organizations within DOD have important oversight roles and responsibilities for supply chain management and materiel distribution—the Under Secretary of Defense for Acquisition, Technology and Logistics, and TRANSCOM. The Under Secretary of Defense for Acquisition, Technology and Logistics serves as the principal staff assistant and advisor to the Secretary of Defense for all matters relating to defense logistics, among other duties. The Under Secretary has also been designated as the department’s Defense Logistics Executive with overall responsibility for improving and maintaining defense logistics and the global supply chain system. In addition, in his capacity as the Defense Logistics Executive, the Under Secretary of Defense for Acquisition, Technology and Logistics has the responsibility, in coordination with the Chairman of the Joint Chiefs of Staff, to prepare any directives, instructions, and decision memos, and to suggest legislative changes, in his area of responsibility. TRANSCOM, in addition to its responsibilities for transporting supplies and equipment in support of military operations, has been designated as DOD’s Distribution Process Owner with responsibility for

overseeing the overall effectiveness, efficiency, and alignment of DOD-wide distribution activities.<sup>11</sup> According to the Office of the Secretary of Defense, that role extends to the first three legs of distribution and does not include the fourth—tactical movement. We have previously reported that excluding this portion of the distribution process from TRANSCOM's Distribution Process Owner responsibilities leaves a fragmented process without any comprehensive oversight or visibility across all four levels of the distribution system.<sup>12</sup>

TRANSCOM—in its role as the Distribution Process Owner—began DSO in 2008 as an effort to identify opportunities to significantly improve the performance of DOD-wide distribution processes. This effort was intended to identify an actionable set of opportunities—approximately five—that would generate substantial cost avoidances and significant improvements in the DOD supply chain. A DSO project team began a process for identifying potential opportunities to pursue. The team first developed criteria for defining a potential “strategic opportunity.” Some of these criteria included falling within the scope of authority granted to the Distribution Process Owner; being based on strategies and processes proven to generate results in leading supply chains and applicable in the DOD environment; having a plausible path to implementation; and being able to produce measurable improvements. The next step in the process was to identify possible opportunities for improvement. The team identified performance gaps; held brainstorming sessions with relevant transportation stakeholders; conducted literature reviews; assessed the feasibility of the opportunities; and analyzed potential cost avoidances and performance improvements. Using this process, the DSO project team identified over 38 possible opportunities and, by September 2008, had narrowed the list down to five actionable efforts. In March 2009, the Distribution Process Owner Executive Board approved DSO for implementation.

Although TRANSCOM initially developed and centrally managed DSO, the responsibility for implementing the individual efforts evolved. Currently, TRANSCOM is providing oversight for the first three efforts—process improvement, strategic surface optimization, and strategic air optimization—and DLA is responsible for overseeing supply alignment. Strategic network optimization has become a stand-alone effort. DLA, in collaboration with the military services, is involved in the planning for this effort, which is expected to begin implementation in October 2013. According to DOD officials, the Office of Supply Chain Integration within the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics is overseeing the effort.

### **DOD Used Results-Oriented Management Practices to Develop and Implement DSO**

Our assessment of planning documents and other information for the four DSO improvement efforts that have been implemented determined that DOD incorporated results-oriented management practices into the development and implementation of these efforts. Specifically, our analysis showed that the process improvement, surface optimization, air optimization, and supply alignment improvement efforts addressed the six characteristics of a results-oriented management framework. The results of our assessment of these four implemented efforts are summarized in table 2. Although development of the fifth DSO effort—strategic network

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<sup>11</sup>According to DOD Instruction 5158.06, *Distribution Process Owner (DPO)* (Sept. 11, 2007), the process owner “has the responsibility for coordinating, sustaining, and improving processes; coordinating the creation of new processes, where appropriate; and being accountable for their outcomes. Process owners advocate improvements for and across all DoD Components for effectiveness, efficiency, and alignment relevant to a particular process.” See also DOD Directive 5158.04, *United States Transportation Command (USTRANSCOM)* (Sept. 11, 2007).

<sup>12</sup>GAO, *Warfighter Support: DOD Has Made Progress, but Supply and Distribution Challenges Remain in Afghanistan*, [GAO-12-138](#) (Washington, D.C.: Oct. 7, 2011).

optimization—is still underway, DOD’s planning process to date also appears to be incorporating results-oriented management practices.

**Table 2: Characteristics of Results-Oriented Management Practices Used in Four DSO Improvement Efforts That Have Been Implemented**

Characteristics	GAO assessment
<p><b>(1) Mission Statement:</b> A comprehensive statement that summarizes the main purposes of the plan.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts generally included comprehensive statements that identified the main purposes of each respective plan.</p> <p>For example, the process improvement effort’s comprehensive statement is to reduce unnecessary downtime (namely, delays or redundancies) in end-to-end distribution processes that will enable DOD to synchronize and optimize elements of its distribution system.</p>
<p><b>(2) Problem definition, scope, and methodology:</b> Presents the issues to be addressed by the plan, the scope of its coverage, the process by which it was developed, and key considerations and assumptions used in the development of the plan.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts generally identified problems to be addressed (e.g., identifying potential cost avoidances and efficiencies), the scope of coverage, and the methodology by which each effort was developed.</p> <p>For example, the strategic surface optimization effort determined that surface transportation of materiel was not as efficient as it could be and that if DOD better-utilized containers to transport cargo, it could potentially save as much as \$105 million per year. The DSO team identified potential opportunities for cargo consolidation and shipment delivery-time improvements within the U.S. Central Command, the U.S. European Command, and the U.S. Pacific Command areas of responsibility.</p>
<p><b>(3) Goals, objectives, activities, milestones, and performance measures:</b> The identification of goals and objectives to be achieved by the plan, activities or actions to achieve those results, as well as milestones and performance measures.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts identified a comprehensive goal of achieving \$500 million in cost avoidances and improving shipment delivery time by 25 percent by the end of fiscal year 2012. Each improvement effort identified specific objectives/targets tied to the comprehensive goal, including how shipment delivery-time improvements will be measured.</p> <p>For example, the strategic air optimization effort identified objectives of up to \$123 million in cost avoidances and up to 10 percent improvement to shipment delivery times by 2012. In addition, the supply alignment effort identified a potential to achieve up to \$241 million in cost avoidances and a 5 to 15 percent improvement to shipment delivery times.</p>

Characteristics	GAO assessment
<p><b>(4) Resources and investments:</b> The identification of costs to execute the plan and the sources and types of resources and investments, including skills and technology and the human, capital, information, and other resources required to meet the goals and objectives.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts generally identified resources and investments needed to reach their goals or desired end states.</p> <p>For example, the strategic air optimization effort identified a onetime needed investment of up to \$15 million over 3 years to develop and implement increased weight and volume utilization of aircraft and to institutionalize air optimization processes across DOD's distribution operations.</p>
<p><b>(5) Organizational roles, responsibilities, and coordination:</b> The development of roles and responsibilities in managing and overseeing the implementation of the plan and the establishment of mechanisms for multiple stakeholders to coordinate their efforts throughout implementation and make necessary adjustments to the plan based on performance.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts generally identified key stakeholders or organizations that have roles in coordinating, implementing, or executing these efforts.</p> <p>For example, DLA is the lead organization for the supply alignment effort and coordinates with stakeholders that include the Defense Distribution Centers, the General Services Administration, TRANSCOM, and other DOD supply chain management officials at locations outside the continental United States.</p>
<p><b>(6) Key external factors that could affect the achievement of goals:</b> The identification of key factors external to the organization and beyond its control that could significantly affect the achievement of the long-term goals contained in the plan. These external factors can include economic, demographic, social, technological, or environmental factors, as well as conditions that would affect the ability of the agency to achieve the results desired.</p>	<p><b>Addressed</b></p> <p>The four implemented DSO efforts generally identified key external factors, such as coordinating with stakeholders/organizations that are not under the control of the respective effort's lead organization (e.g., TRANSCOM or DLA).</p> <p>For example, TRANSCOM officials said that as part of their process improvement effort, they needed to get cooperation from other DOD or federal organizations that play a role in DOD's distribution system. By getting cooperation from the General Services Administration for distribution of hazardous materials to Afghanistan, DOD was able to improve shipment delivery times. Without cooperation from organizations outside of TRANSCOM's direct control, officials said that they are limited in the amount of shipment delivery time improvements that DOD is able to realize.</p>

Source: GAO analysis of DOD data.

Note: The four DSO improvement efforts included in this assessment are process improvement; strategic surface optimization; strategic air optimization; and supply alignment.

The descriptions of the individual improvement efforts below provide illustrative examples of how results-oriented management practices were incorporated into the development and implementation of DSO.

## Process Improvement Incorporated a Comprehensive Statement and Pilot Testing

The DSO planning team addressed the first and second characteristics of results-oriented management practices by developing a comprehensive statement describing the purpose of the process improvement effort, and by refining a methodology to accomplish the effort's purpose that was ultimately applied to other locations. The process improvement effort focuses on the removal of unnecessary wait time from distribution processes. According to DSO planning documents, unnecessary wait time often develops within supply chain centers as they modify their formal business practices or adopt informal norms that become standard operating procedures. Therefore, the purpose of the process improvement effort as identified in DSO planning documents is to remove unnecessary wait time and rapidly deploy those improved processes across the supply chain.

As part of their effort to refine the methodology to remove unnecessary wait time, the DSO team conducted a pilot test in Europe and applied the general methodology from the results of the pilot to other locations. For example, TRANSCOM officials identified a 2-week delay in processing orders at a facility that held and shipped hazardous materials to Afghanistan. Officials said that the amount of time it takes to pack materiel into containers for most orders at the facility is generally about 20 minutes. However, officials noticed that in some cases, certain batches of orders would take more than 2 weeks to arrive at the warehouse for the cargo to be retrieved and packed. In concert with officials at the organization running the facility, the DSO team assessed the potential causes for the delay and attributed it to some of the order processing procedures at the facility. Specifically, the standard operating procedure at the facility was to process orders in batches—that is, when individual orders were received by the facility, the individual orders would be processed as a group. In some cases, the facility would receive an individual order that was complicated and required more time to process because of the nature of the materiel. Because the processing procedures dictated that the orders be processed in batches, the relatively easy orders would be delayed while the more-complicated order was processed. To address this concern, rather than having orders sent in batches, TRANSCOM officials said once an order is processed it is sent to the warehouse for packing rather than waiting for the entire batch of orders to be processed. As a result of this and other process improvements, TRANSCOM officials reported that the time it takes to process, pack, and ship hazardous materials from the facility to Afghanistan had dropped from 36 days in June 2011 to 11 days in April 2012.

## Strategic Surface Optimization Identified Clear Goals and Estimated Resources

As part of the planning and implementation of the strategic surface optimization effort, the DSO team addressed the third and fourth characteristics of results-oriented management practices by developing goals and identifying resources and investments necessary to achieve these goals. The strategic surface optimization effort focuses on consolidating cargo in the continental United States for certain customers into well-utilized, mix-packed 40-foot containers rather than pure-packed 20-foot containers.<sup>13</sup> Pure packing refers to filling a container with cargo intended to arrive at a single destination, while mix packing refers to filling a container with a mix of cargo that is intended for multiple destinations. Mixed containers are often shipped to a regional location outside of the continental United States, where the container's contents are unpacked, sorted, and shipped to their final destination within that region. According to DSO planning documents, the goal of this effort is to improve the utilization of containers and packing

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<sup>13</sup>According to Marine Corps officials, 40-foot containers generally cannot be used for cargo being moved to forward-operating bases in tactical environments.

processes, which the planning documents originally estimated could improve the speed of delivery by up to 5 percent and result in potential cost avoidances of \$52 million to \$105 million per year through reduced shipping costs. To implement initiatives within this DSO effort, the DSO planning documents estimated that the resources and investments necessary to facilitate the improvement totaled approximately \$7 million to \$10 million over a 3-year period. According to the DSO planning documents, this investment would institutionalize the use of 40-foot containers as a common operating practice for surface shipments. TRANSCOM officials said that the consolidation of materiel into 40-foot containers saves money and improves delivery speed at the strategic level. For example, TRANSCOM officials said that, on average, 20-foot pure-packed containers take 10 days to fill prior to shipping, while 40-foot mix-packed containers take 1.5 days to fill. In addition, TRANSCOM officials said that 40-foot containers have twice the capacity of 20-foot containers but only cost slightly more per container to transport.

### Strategic Air Optimization Identified Inefficiencies and Modified Existing Metrics

The DSO team addressed the second and third characteristics of results-oriented management practices by determining that potential cost avoidances could be achieved through the increased utilization of pallets on air shipments and by modifying pallet utilization metrics. The strategic air optimization effort focused on selecting the best mode of air transport service (e.g., military versus commercial carriers) on the basis of customer requirements and the amount of traffic bound for a specific destination. According to DSO planning documents, DOD officials did not always optimize cost when using air to ship cargo as some planes were not fully utilized. Increasing utilization of the pallets on aircraft could potentially reduce air transportation costs and, in some cases, improve the speed of delivery. The DSO planning documents identified specific goals for initiatives conducted under this DSO effort, such as potentially avoiding up to \$123 million in air cargo costs. To illustrate how the strategic air optimization effort could improve efficiency and potentially cut costs, TRANSCOM analyzed aircraft utilization at the four major aerial ports of embarkation in the continental United States<sup>14</sup> and identified that changing the metrics used to gauge performance could increase pallet utilization. For example, TRANSCOM officials found that aerial porters at Dover Air Force Base were measuring the number of pallets being transported on aircraft but not measuring how much materiel was on each pallet. According to TRANSCOM officials, shifting the focus to building fuller pallets resulted in 3,200 more tons being shipped on 121 fewer aircraft missions.

### Supply Alignment Established Clear Organizational Roles

The DSO team addressed the fifth characteristic of results-oriented management practices by defining the roles of stakeholders; and addressed the fourth characteristic by developing a model to determine the appropriate amount of resources needed to implement this effort globally. The supply alignment effort focuses on adjusting inventory levels at forward supply depots in order to account for transportation costs. According to DSO planning documents, by stocking the right types and amounts of inventory at forward supply depots, DOD could potentially minimize distribution costs and improve customer-service levels. During the development of specific initiatives in this DSO effort, the DSO planning documents noted that coordination would be necessary for multiple organizations—such as DLA, TRANSCOM, the General Services Administration, and the services. To identify the type and quantity of supplies needed at forward supply depots, DLA developed an Economic Movement Quantity model that

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<sup>14</sup>The four aerial ports of embarkation are: Dover Air Force Base, Delaware; Joint Base McGuire-Dix-Lakehurst, New Jersey; Travis Air Force Base, California; and Naval Air Station Norfolk, Virginia.

is based on July 2010 demand data for supplies at locations outside the continental United States. DLA officials stated that implementation of the model's results began in July 2011 and involved purchasing additional inventory and repositioning existing inventory, including the acquisition of \$60 million in up-front investments of cash and equipment from TRANSCOM and the Army.

Preliminary Observations Indicate Planning for Strategic Network Optimization Is Incorporating Results-Oriented Management Practices

Preliminary observations of DOD's planning for strategic network optimization indicate that agency officials are incorporating results-oriented management practices. The strategic network optimization effort is being designed to improve logistics efficiencies in DOD's distribution network and reduce transportation costs by storing materiel at strategically located DLA supply sites (see enc. II). Because planning is still underway for strategic network optimization, we were unable to fully assess the extent to which DOD has used result-oriented management practices to develop and implement this improvement effort. Our preliminary observations are summarized in table 3.

**Table 3: Preliminary Observations on DOD's Incorporation of Results-Oriented Management Practices into the Planning of the Strategic Network Optimization Improvement Effort**

Characteristics	Preliminary observations
<p><b>(1) Mission Statement:</b> A comprehensive statement that summarizes the main purposes of the plan.</p>	<p>This effort's <b>mission statement</b> is to optimize the DOD global storage and distribution network while continuing to meet customer requirements at the best value and provide timely, agile, and effective support to the warfighter.</p>
<p><b>(2) Problem definition, scope, and methodology:</b> Presents the issues to be addressed by the plan, the scope of its coverage, the process by which it was developed, and key considerations and assumptions used in the development of the plan.</p>	<p>Officials defined the <b>problem</b> as being significant constraints on supply chain performance including location, function, and capacity of supply sites and routes. The <b>scope</b> is identified as sourcing, storage, and distribution centers inside and outside the continental United States. The <b>methodology</b> includes three potential courses of action for developing strategically placed sourcing and distribution centers inside and outside the continental United States, as well as global and domestic centers for the disposal of materiel.</p>
<p><b>(3) Goals, objectives, activities, milestones, and performance measures:</b> The identification of goals and objectives to be achieved by the plan, activities or actions to achieve those results, as well as milestones and performance measures.</p>	<p><b>Objectives</b> include (1) leveraging joint collaboration across DOD to implement a more efficient strategic network that supports the warfighter; and (2) optimizing the global storage and distribution network that provides responsive and cost-effective service.</p> <p><b>Milestones</b> identified by DLA officials include (1) computer simulation of the effort's model in summer 2012; and (2) development of DOD budget documents that will identify projected cost savings in fiscal year 2014.</p> <p>DLA officials said that specific <b>performance measures</b> are being developed.</p>

Characteristics	Preliminary observations
<b>(4) Resources and investments:</b> The identification of costs to execute the plan and the sources and types of resources and investments, including skills and technology and the human, capital, information, and other resources required to meet the goals and objectives.	<b>Resources and investments</b> include onetime implementation costs totaling about \$52.1 million, according to DLA (Army: \$6.4 million; Navy: \$0.2 million; Air Force: \$4.1 million; Marine Corps: \$1.1 million; and DLA: \$40.3 million).
<b>(5) Organizational roles, responsibilities, and coordination:</b> The development of roles and responsibilities in managing and overseeing the implementation of the plan and the establishment of mechanisms for multiple stakeholders to coordinate their efforts throughout implementation and make necessary adjustments to the plan based on performance.	<b>Lead organization:</b> DLA  <b>Stakeholders:</b> Collaboration by the Army, Navy, Air Force, and Marine Corps. Stakeholders fund implementation costs and are projected to realize savings from this effort.
<b>(6) Key external factors that could affect the achievement of goals:</b> The identification of key factors external to the organization and beyond its control that could significantly affect the achievement of the long-term goals contained in the plan. These external factors can include economic, demographic, social, technological, or environmental factors, as well as conditions that would affect the ability of the agency to achieve the results desired.	<b>External factors</b> identified by DLA officials that could affect the achievement of the effort's goals include (1) adoption of business rules for acquisition of materiel by stakeholders; (2) DLA's reliance on the services to provide accurate cost savings data; and (3) collaboration with stakeholders outside of DLA's control.

Source: GAO analysis of DOD data.

In its planning process for strategic network optimization, DOD appears to be addressing the characteristics of results-oriented management practices. For example, DOD appears to be addressing the first characteristic by developing a mission statement. According to DOD, the mission of this effort is to optimize the global storage and distribution network while continuing to meet customer requirements at the best value and provide timely, agile, and effective support to the warfighter. Additionally, DOD appears to be addressing the fifth characteristic by establishing mechanisms for stakeholders to coordinate planning efforts. For example, DLA officials said that they lead a planning team that meets biweekly, thus enabling stakeholders to raise and address concerns associated with this effort. Representatives on this team include officials from TRANSCOM, the Joint Staff, and all the services. In addition, DLA officials said that the Joint Logistics Board<sup>15</sup> and the Distribution Process Owner Executive Board serve as governing structures for strategic network optimization and are venues where DOD's senior leadership are regularly briefed on its progress and can also raise concerns. Overall, DLA's planning and development processes for strategic network optimization appear to be factoring in input and relevant concerns from its stakeholders, including the services. For example, DLA initially estimated cost-savings projections<sup>16</sup> to be approximately \$596 million across the services for strategic network optimization for fiscal years 2014 to 2018. However, DLA officials said that upon further consultation with the services and other DOD components, DLA obtained revised data and updated its cost savings projections to approximately \$476 million.

<sup>15</sup>The Joint Logistics Board is co-chaired by the Assistant Secretary of Defense for Logistics and Materiel Readiness and the Joint Staff Director for Logistics, J-4.

<sup>16</sup>According to DLA officials, the projected cost savings for the strategic network optimization improvement effort are estimates of potential reductions from the operations and maintenance budgets for the services and DOD components.

Although these examples reflect characteristics of results-oriented management practices, we were unable to fully assess this effort because planning is still underway. For example, DOD officials told us that the latest report on the implementation and cost-savings projections for strategic network optimization is still under review, and a decision on how to implement the effort has yet to occur. Similarly, DLA officials told us that they were in the process of developing specific performance measures for strategic network optimization, and that these measures would incorporate input from the services.

## **DSO Has Led to Some Improvements but Does Not Address All Materiel Distribution Challenges**

### DOD Reported Transportation Cost Avoidances Attributable to DSO

DOD has reported that implementation of DSO resulted in transportation cost avoidances. When the Distribution Process Owner Executive Board approved implementation of DSO in 2009, it set a goal of achieving \$500 million in cost avoidances by the end of fiscal year 2012.<sup>17</sup> As of April 2012, TRANSCOM and DLA reported that the implemented DSO initiatives had led to over \$490 million in transportation cost avoidances. According to DOD, two DSO efforts—strategic surface optimization and strategic air optimization—resulted in approximately \$481 million in cost avoidances, and a third effort—supply alignment—resulted in about \$9.5 million in cost avoidances. DOD has established processes for calculating, validating, and reporting DSO cost avoidances on a regular basis. For example, according to TRANSCOM, the DSO team uses a methodology—agreed upon by distribution stakeholders including TRANSCOM, DLA, General Services Administration, combatant commands, and the services—to calculate cost avoidances resulting from a DSO initiative. After the cost avoidance has been calculated, TRANSCOM’s financial office validates the cost-avoidance number or works with the DSO team to correct it. The DSO team then publishes its cost-avoidance totals in a monthly report.

TRANSCOM and DLA attribute most of their reported cost avoidances to increased use of 40-foot containers and greater utilization of container capacity in general; increased utilization of pallet and aircraft capacity; and positioning supplies closer to overseas customers. These improvements are discussed in greater detail below.

- **Strategic surface optimization.** This improvement effort has led to increased use of 40-foot containers and greater utilization of container capacity, particularly for some cargo shipments to Afghanistan, Iraq, and Kuwait. According to TRANSCOM, 40-foot containers are more cost-effective than 20-foot containers; they provide at least double the allowable space and 12 percent more allowable weight, while incurring only a slightly higher cost per container and significantly less cost per pound or per cubic foot. Since implementation began in January 2009, the percentage of 40-foot containers shipped to U.S. Central Command has increased between 22 and 100 percent for shipments from some DLA and General Services Administration locations. Greater use of 40-foot containers, along with more-fully utilizing available space and weight capacity in both 40-foot and 20-foot containers, has reduced the average transportation costs per container. Overall, the strategic surface optimization effort has resulted in approximately \$197 million in cost avoidances, according to TRANSCOM.

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<sup>17</sup>The minutes of the Distribution Process Owner Executive Board’s March 2009 meeting stated that the goals for DSO were to be achieved by January 2012. However, according to TRANSCOM, the board’s goals were subsequently understood to be achieved by the end of fiscal year 2012.

- **Strategic air optimization.** Under this improvement effort, DOD has increased utilization of pallets and aircraft for shipments out of the four major aerial ports of embarkation in the United States. Since implementation began in August 2010, TRANSCOM reports that pallet utilization has increased between 2 to 10 percent at the four major aerial ports, while aircraft utilization has increased between 2 to 7 percent. More-fully utilizing available capacity of pallets and aircraft at these four locations has reduced the average cost per pound for air cargo. Overall, the strategic air optimization effort has resulted in approximately \$284 million in cost avoidances, according to TRANSCOM.
- **Supply alignment.** The supply alignment effort aims to reduce transportation costs by optimizing the amounts and types of safety-level supplies<sup>18</sup> located at DLA distribution centers outside the United States. By optimizing the amounts and types of safety-level stock at forward locations, DLA can deliver those supplies to its overseas customers by means of theater transportation assets, and then replenish its stock levels by surface transportation from the United States. According to DLA, this process is less expensive than delivering supplies to overseas customers by air from the United States. Since implementation began in July 2011, DLA reports that supply alignment has allowed DOD to avoid transportation costs of approximately \$9.5 million.

The implementation of these DSO efforts has reduced some costs for transportation, but other factors can offset the financial benefits of DSO. According to TRANSCOM, DSO cost avoidances accrue to the services' overseas contingency operations budgets and allow the services to fund other priorities. For example, the supply alignment effort enables DOD to reduce transportation costs by shipping more cargo on surface routes, which is less expensive than transporting cargo by air. Additionally, according to TRANSCOM, transportation efficiencies obtained through implementing DSO initiatives—such as using more 40-foot containers—could lead to reductions in transportation rates charged to the services and other customers. However, other factors—including higher fuel prices, expenses incurred by commercial contractors, and DOD actions to encourage use of military transportation<sup>19</sup>—also affect transportation rates and can offset the financial benefits of DSO. Service officials stated that it is unclear to what extent DSO has affected transportation rates in recent years, and in some cases officials have actually seen transportation rates increase. However, they added that it is possible that the DSO cost avoidances had kept the rates from increasing any further.

TRANSCOM and DLA officials told us that they are institutionalizing into their business operations some of the improvements from the ongoing DSO efforts. For example, according to TRANSCOM officials, the command has revised its business processes to better utilize pallet and container space, and to use more cost-effective 40-foot containers for shipping cargo to overseas locations. TRANSCOM also has incorporated certain DSO-related metrics into executive-level briefings to provide visibility to commanders. For example, according to TRANSCOM officials, these briefings now include aircraft and pallet utilization rates, which were

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<sup>18</sup>Safety levels are the amount of stock that is to be kept on hand in case of minor interruptions in the resupply process or fluctuations in demand.

<sup>19</sup>According to TRANSCOM, DOD sets some air transportation rates according to what commercial companies charge for similar services, in order to encourage use of DOD-operated air services. Because these rates do not always cover all transportation costs, DOD uses a dedicated funding account to pay for the difference. Any DSO initiatives that make these air transportation services more efficient could reduce the amount DOD must pay out of its dedicated funding account to cover the difference between the actual costs incurred and DOD's air transportation rates, but they would not necessarily reduce DOD's rates.

not previously tracked and reported. Additionally, DLA has incorporated into its business operations the revised model it used to optimize the positioning of safety level supplies at overseas locations. According to DLA officials, the model will continue to assess demand levels and transportation costs to achieve an optimal design for the positioning of safety-level supplies, whether they be at overseas distribution centers or sites in the United States. The institutionalization of these DSO improvements could result in additional cost avoidances and better delivery performance along some segments of the distribution system. In addition, following DOD's initial implementation of DSO, the Distribution Process Owner Executive Board set a new goal in February 2012 for DSO to achieve another \$500 million in cost avoidances by the end of fiscal year 2015. According to TRANSCOM officials, the DSO team is pursuing new initiatives to meet this goal, such as minimizing the number of aircraft flights to locations outside of the United States by consolidating cargo from multiple locations within the United States.

#### DOD Reported Better Delivery Times for Customers on a Limited Number of Shipping Lanes as a Result of DSO

DOD also reported that the implemented DSO efforts have contributed to better delivery times for some customers. When the Distribution Process Owner Executive Board approved implementation of DSO in 2009, it set a goal of improving shipment delivery times by 25 percent by the end of the fiscal year 2012. According to DOD, TRANSCOM's process improvement effort and DLA's supply alignment effort led to better delivery times for customers on a limited number of shipping lanes and from certain overseas distribution centers. These improvements are discussed in greater detail below.

- **Process improvement.** According to TRANSCOM, the DSO process improvement effort, which includes efficiency concepts from the strategic surface optimization and strategic air optimization efforts, improved shipment delivery times ranging from 7 to 40 percent on a limited number of shipping lanes to customers in three geographic combatant commands—U.S. European Command, U.S. Pacific Command, and U.S. Central Command. TRANSCOM estimates that 31 shipping lanes were affected by this improvement effort. These lanes represent a small number—approximately 6 percent—of DOD's 500 shipping lanes worldwide. TRANSCOM officials told us they targeted for improvement those shipping lanes that had the greatest potential for increasing delivery performance within a geographic combatant command—such as those with poor delivery performance and those with distribution partners willing to undergo change. TRANSCOM officials cited a number of initiatives under the process improvement effort that contributed to improved shipping delivery times across the three geographic combatant commands. For example, in an effort to maximize container and pallet utilization, as well as reduce the time cargo spends at the source of supply, the U.S. European Command adopted new procedures to consolidate cargo bound for different customers and to better align its distribution operations with commercial transportation schedules. Process improvements in the U.S. Pacific Command included reconfiguring warehouse operations to more-quickly receive and process cargo, as well as better consolidating cargo into containers at a U.S.-based distribution center. Furthermore, for shipments to Afghanistan in the U.S. Central Command, DOD increased the efficiency of floor operations and set goals for how quickly shipments should be processed and packed at their U.S.-based supply warehouse.
- **Supply alignment.** DLA reported improvements to delivery performance for some customers as a result of supply alignment. Specifically, DLA data show average delivery times improved for shipments from seven distribution centers outside the continental

United States. According to DLA, these improved delivery times, ranging from 6 to 43 percent at the affected distribution centers as of April 2012, resulted from positioning some safety-level supplies closer to overseas military customers, rather than from DLA centers in the United States.

Since the Distribution Process Owner Executive Board approved DSO for implementation in March 2009, DOD has placed greater emphasis on achieving cost avoidances through DSO and less emphasis on reducing shipment delivery times, according to TRANSCOM. TRANSCOM no longer tracks shipment delivery-time improvements specifically resulting from DSO,<sup>20</sup> and the Distribution Process Owner Executive Board has not set a new goal for improving delivery times to coincide with the goal of \$500 million in cost avoidances to be achieved by the end of fiscal year 2015. Although the board did not set a new goal for improving delivery times, shipment delivery times continue to be a consideration. For example, TRANSCOM has a metrics branch that regularly analyzes shipment delivery times along the first three segments of the distribution system, assesses performance against DOD's time-definite delivery standards, and coordinates with distribution stakeholders to address performance gaps as they occur. Additionally, TRANSCOM officials stated that future cost avoidance initiatives to be conducted as part of the DSO improvement efforts will include an assessment of delivery times.

#### DSO Was Not Designed to Address All Challenges DOD Faces in Materiel Distribution

Although DSO has had some positive results, it was not designed to address all challenges that DOD faces in materiel distribution. In prior reports, we have identified challenges in the distribution of supplies and equipment to the warfighter, most recently in Afghanistan.<sup>21</sup> For example, we found that DOD did not always meet time-definite delivery standards for shipments to Afghanistan. Time-definite delivery is a key metric the department uses to track supply chain performance over time. According to DOD guidance, time-definite delivery standards are designed to provide customers with the assurance that, in a specified level of probability, they will receive items ordered through DOD's logistics system in a definite period. TRANSCOM officials stated DOD has set a goal that 85 percent of shipments<sup>22</sup> transported on shipping lanes to the geographic combatant commands meet established time-definite delivery standards. However, from December 2009 through March 2011, surface shipments of supplies to Afghanistan did not once meet this goal for time-definite delivery, and commercial air shipments from the United States met the goal only six times over that time frame.

As previously stated, DOD has improved delivery performance on a limited number of lanes in three combatant commands—U.S. European Command, U.S. Pacific Command, and U.S. Central Command. However, overall time-definite delivery performance for shipments to those combatant commands is varied. In the 31 months between October 2009 and April 2012, which includes the time frame of DSO implementation, DOD often did not achieve its goal for meeting

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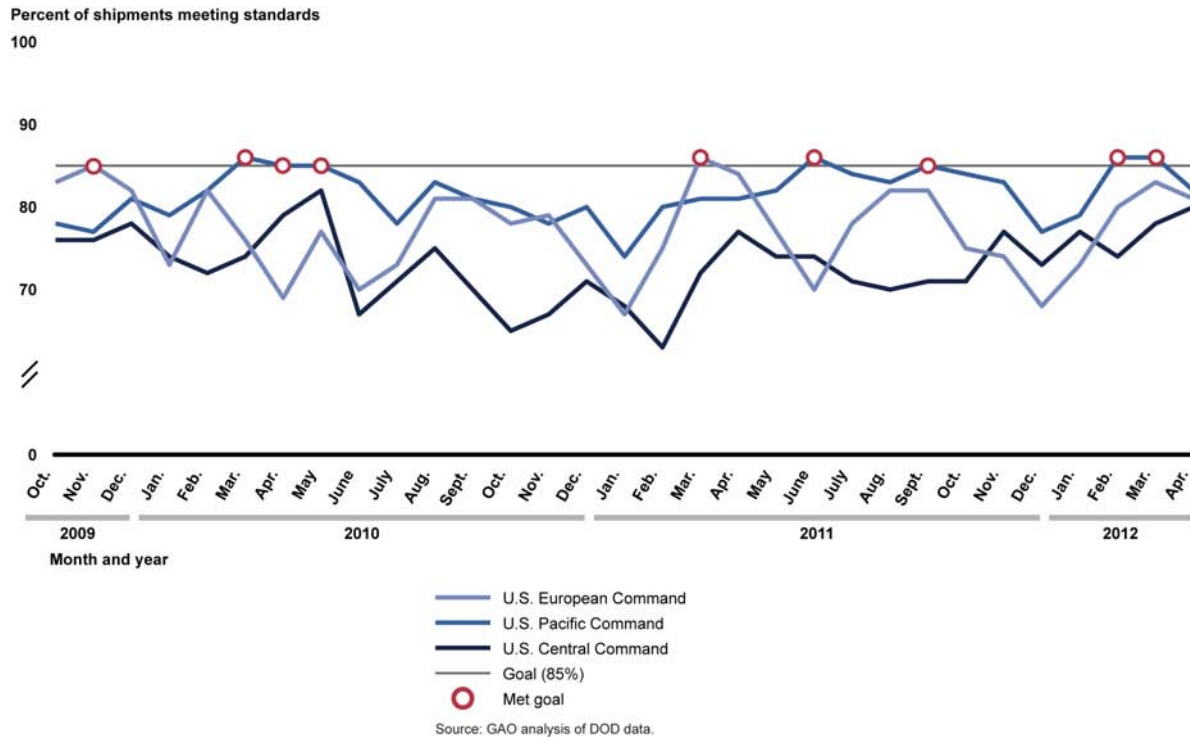
<sup>20</sup>According to TRANSCOM officials, the DSO team tracks the delivery-time improvements resulting from DSO initiatives for a period of 6 to 10 months following implementation of a process change to confirm that the improvements are enduring. Because the last major initiative to improve shipment delivery times was concluded in the summer of 2011, the DSO team is no longer tracking the delivery time effects of DSO initiatives.

<sup>21</sup>[GAO-12-138](#).

<sup>22</sup>According to TRANSCOM, delivery times are tracked for wholesale requisitioned items, primarily supply classes II (e.g., clothing), IX (e.g., repair parts), III (e.g., packaged petroleum), and IV (e.g., construction materials), with unplanned direct vendor deliveries removed from the data.

time-definite delivery standards (see fig. 2). Specifically, on a monthly basis, DOD met the 85-percent goal twice for the U.S. European Command and seven times for the U.S. Pacific Command, but did not meet its 85 percent goal for the U.S. Central Command.<sup>23</sup> According to TRANSCOM officials, several factors affect DOD’s delivery time, including which mode of transportation is used. For example, surface delivery, while cheaper, is generally much slower than air delivery. Therefore, shipping more cargo by surface could lead to lower costs but also longer delivery times.

**Figure 2: Percent of Shipments Meeting Time-Definite Delivery Standards**



DSO has contributed to improvements in the first three segments of distribution (intracontinental movement, strategic movement, and theater movement), but was not designed to optimize the entire distribution system. DSO was specifically designed by TRANSCOM, as the Distribution Process Owner, to improve the efficiency and effectiveness of the first three distribution segments, but its scope does not include efforts or initiatives specifically targeting the fourth segment of distribution—tactical movement. In our report on distribution challenges in Afghanistan, we found that DOD’s oversight of the distribution of supplies and equipment to the warfighter across all four distribution legs is fragmented.<sup>24</sup> TRANSCOM officials acknowledged that because DSO focuses on the first three segments, the ability of DSO to optimize DOD’s entire distribution system is limited.

<sup>23</sup>According to TRANSCOM officials, while DOD has often not met its overarching 85-percent goal for this time period, some specific shipping lanes are meeting the goal. For example, according to documents provided by TRANSCOM, specific shipping lanes to U.S. Central Command—such as commercial air shipments to Afghanistan and Qatar—met the 85-percent goal in March and April 2012.

<sup>24</sup>GAO-12-138.

## Agency Comments and Our Evaluation

In oral comments on a draft of this report, officials from the Office of the Assistant Secretary of Defense for Logistics and Materiel Readiness acknowledged that the DSO initiatives do not address distribution or transportation tracking beyond TRANSCOM's responsibilities. The officials also stated that the TRANSCOM-led Joint Deployment and Distribution Enterprise<sup>25</sup> governance structure conducts quarterly performance metric reviews with the combatant commands and military services to review distribution performance data to the point of use. According to the officials, these meetings are used to investigate and correct abnormalities that occur in the tactical segment of the distribution process, which result in the combatant commands and military services resolving distribution issues affecting multiple components and providing result-oriented management practices in the tactical distribution segment.

Our review focused on the implementation of DSO and the results achieved, and we did not assess the activities of the Joint Deployment and Distribution Enterprise governance structure as part of this review. According to DOD joint doctrine, the department uses the Joint Deployment and Distribution Enterprise to deliver joint end-to-end movement of forces and sustainment from point of origin to the designated point of need—the first three legs of distribution. In our prior report on distribution problems in Afghanistan, we found that TRANSCOM, which leads the Joint Deployment and Distribution Enterprise, did not have full oversight of the distribution of supplies and equipment to the warfighter, and only monitored performance metrics for distribution along the first three legs of the distribution system.<sup>26</sup> Accordingly, we made recommendations in our prior report aimed at providing more comprehensive oversight of the materiel distribution system, but DOD disagreed. Specifically:

- We recommended that the department revise the instructions for the Distribution Process Owner to provide clear guidance on how TRANSCOM is to oversee the overall effectiveness, efficiency, and alignment of DOD-wide distribution activities, to include the fourth leg of distribution. The department disagreed, stating that distribution from the theater to tactical level (point of need to point of employment) is not the responsibility of TRANSCOM.
- We recommended that the Secretary of Defense direct the U.S. Central Command to direct U.S. Forces-Afghanistan to provide regular reports to TRANSCOM on delivery performance for shipments within Afghanistan. The department disagreed with the need for U.S. Central Command to provide TRANSCOM metrics relating to the fourth leg of distribution for the reasons stated above.
- We recommended that the Secretary of Defense direct the Commander of TRANSCOM to incorporate the delivery performance reports from U.S. Forces-Afghanistan into the command's review of distribution metrics, in order for TRANSCOM to measure the performance of DOD's entire distribution system. The department disagreed with the need for U.S. Central Command to provide TRANSCOM metrics because it said TRANSCOM already tracks time definite delivery standard metrics that include logistics response time.

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<sup>25</sup>According to DOD joint doctrine, the Joint Deployment and Distribution Enterprise is the complex of equipment, procedures, doctrine, leaders, technical connectivity, information, shared knowledge, organizations, facilities, training, and materiel necessary to conduct joint distribution operations. The Joint Logistics (Distribution) Joint Integrating Concept states that TRANSCOM, as Distribution Process Owner, has responsibility to coordinate and synchronize the Joint Deployment and Distribution Enterprise.

<sup>26</sup>[GAO-12-138](#).

As we previously reported, for TRANSCOM to more effectively coordinate and synchronize the enterprise to meet joint force commander requirements, it would benefit from having an awareness of distribution requirements and processes in the fourth leg, from the point of need to the point of employment. Accordingly, we are encouraged that the department has acknowledged the need for some level of oversight across all four legs of the materiel distribution system.

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We are sending a copy of this report to appropriate congressional committees and the Secretary of Defense. The report will also be available at no charge on our website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-5431 or [russellc@gao.gov](mailto:russellc@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in enclosure III.

A handwritten signature in black ink, reading "Cary Russell". The signature is written in a cursive, flowing style.

Cary B. Russell  
Acting Director, Defense Capabilities  
and Management

Enclosures – 3

## Scope and Methodology

To assess the extent to which the Department of Defense (DOD) has developed and implemented Distribution Process Owner Strategic Opportunities (DSO) consistent with results-oriented management practices, we reviewed planning documents and other information for the four implemented DSO efforts—process improvement, strategic surface optimization, strategic air optimization, and supply alignment. We assessed to what extent these documents incorporated the six characteristics of results-oriented management practices as identified in previous GAO reports. Three GAO analysts evaluated and individually assessed each characteristic for each improvement effort as “addressed,” “partially addressed,” or “not addressed.” These categories were defined as follows:

- **Addressed:** All parts of the characteristic are generally addressed.
- **Partially addressed:** One or more parts of the characteristic, but not all parts of the characteristic, are generally addressed.
- **Not addressed:** No part of the characteristic is addressed.

Upon completion of the individual evaluations, the analysts discussed their assessments, identified any differences, and reached a consensus in areas where their individual assessments differed. Once consensus was achieved, assessments for each improvement effort were rolled up into one comprehensive assessment for each characteristic. For example, if the assessments for all four improvement efforts were “addressed” for the mission statement characteristic, then the assessment table (see table 2) would reflect this with the assessment “addressed” for the mission statement characteristic. Preliminary observations for the strategic network optimization improvement effort are illustrative examples of planning efforts provided through interviews with Defense Logistics Agency (DLA) officials and strategic network optimization planning briefing slides. We did not conduct a formal assessment of the strategic network optimization improvement effort because this effort is still in the planning stages. Implementation of the strategic network optimization improvement effort is scheduled for October 2013.

To assess the extent to which DSO has made improvements to DOD’s materiel distribution system and has addressed issues identified in our past work, we obtained and analyzed data and reports from U.S. Transportation Command (TRANSCOM) and DLA on cost avoidance and shipment delivery times since DSO implementation began in fiscal year 2009, and interviewed TRANSCOM, DLA, and military service officials to obtain additional information on DSO improvements. We analyzed TRANSCOM’s monthly DSO cost-avoidance reports that document cost avoidances resulting from the strategic surface and air optimization efforts; TRANSCOM briefings and other documents on improvements to shipment delivery times for a limited number of shipping lanes resulting from the process improvement effort; and DLA’s monthly reports that document cost avoidances and shipment delivery-time improvements resulting from the supply alignment effort. We assessed the reliability of the cost avoidance and shipment delivery-time data by reviewing related data documentation, analyzing the methodology used to determine DSO improvements, and interviewing and obtaining written comments from knowledgeable TRANSCOM and DLA officials. We found that TRANSCOM and DLA calculate cost avoidance and shipment delivery times by using data from multiple sources. These sources are often operated by DOD organizations outside of TRANSCOM and DLA control, and those organizations are responsible for maintaining quality control over the data. Officials stated that the data sources fulfill their need to calculate cost avoidance and shipment delivery-time improvements, and that any identified data discrepancies are addressed in

## Enclosure I

consultation with distribution stakeholders. Thus, we determined that the data were sufficiently reliable for our purposes to assess the extent to which DSO has made improvements to DOD materiel distribution. Finally, we obtained and reviewed DSO planning and implementation documents and interviewed Office of the Secretary of Defense, Joint Staff, TRANSCOM, DLA, and military service officials to determine the scope of DSO improvement efforts across DOD's materiel distribution system.

In conducting our work, we contacted and obtained information from the following organizations:

- Office of the Deputy Assistant Secretary of Defense for Supply Chain Integration
- Joint Staff, Logistics
- TRANSCOM, Strategy, Policy, Programs, and Logistics
- DLA, Logistics Operations
- Office of the Deputy Chief of Staff of the Army, Logistics
- Office of the Chief of Naval Operations, Logistics
- Office of the Deputy Chief of Staff of the Air Force, Logistics, Installations, and Mission Support
- Office of the Deputy Commandant of the Marine Corps, Installations and Logistics

We conducted this performance audit from November 2011 to August 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

### Strategic Network Optimization

The strategic network optimization effort is designed to improve logistics efficiencies in the Department of Defense distribution network and reduce transportation costs by storing materiel at strategically located Defense Logistics Agency (DLA) supply centers. The current plan for this effort is to designate five major source nodes across the continental United States, which will distribute materiel to 12 regional storage and distribution centers. These nodes and centers will be located at existing installations (see fig. 3). In addition, nine source nodes have been identified outside the continental United States that DLA expects will allow it to more-efficiently move materiel forward and backward across the global distribution network (see fig. 4).

Figure 3: Planned Locations of Strategic Network Optimization Sites in the Continental United States



Source: DOD.

## Enclosure II

Figure 4: Planned Locations of Strategic Network Optimization Sites outside the Continental United States



Source: DOD.

## Enclosure III

### GAO Contact and Staff Acknowledgments

#### GAO Contact

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#### Staff Acknowledgments

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