

GAO

Report to the Chairman, Subcommittee  
on Defense, Committee on  
Appropriations, House of  
Representatives

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June 2005

# ARMY DEPOT MAINTENANCE

## Ineffective Oversight of Depot Maintenance Operations and System Implementation Efforts



G A O

Accountability \* Integrity \* Reliability

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Highlights of [GAO-05-441](#), a report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

## Why GAO Did This Study

The Army depot maintenance activity group received about \$2.6 billion of orders in fiscal year 2004 to repair helicopters, combat vehicles, and air defense systems. To perform this work, the group operates under the working capital fund concept, where customers are to be charged the anticipated costs of providing goods and services to them. GAO was asked to determine (1) if prices charged by the group have increased and, if so, why; (2) how the group allocates gains or losses incurred at the individual depot level; and (3) if the group exceeded its allowable carryover ceilings and the reasons for exceeding the ceilings. GAO was also asked to determine if the Army encountered problems implementing a new system, the Logistics Modernization Program (LMP), at the Tobyhanna Army Depot.

## What GAO Recommends

GAO is making recommendations to DOD to (1) analyze material cost increases and take steps to reduce them, (2) allocate gains or losses to the individual depot incurring them, and (3) comply with the carryover policy. Further, GAO is recommending improvements in the implementation of LMP as well as delaying implementation at the remaining four depots until problems encountered have been resolved. DOD concurred with all the recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-05-441](http://www.gao.gov/cgi-bin/getrpt?GAO-05-441).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Gregory D. Kutz at (202) 512-9505 or [kutzg@gao.gov](mailto:kutzg@gao.gov).

# ARMY DEPOT MAINTENANCE

## Ineffective Oversight of Depot Maintenance Operations and System Implementation Efforts

### What GAO Found

GAO identified four management weaknesses that are impairing the efficiency and effectiveness of Army depot maintenance operations. The activity group's average sales price increased from \$111.87 per hour for fiscal year 2000 to \$147.07 per hour for fiscal year 2005—a 31 percent increase (21 percent if adjusted for inflation). An increase in material costs was the major driver of the sales price increase. The Army has identified some causes of the higher material costs such as increased material usage to rebuild certain weapon systems under the Army's recapitalization program and higher prices that it pays suppliers for parts, but it has not completed a comprehensive analysis of material cost increases. As a result, the Army has not been able to take proactive steps to control rising material costs.

GAO analysis showed that in setting future prices, the Army spread depot maintenance reported gains and losses across all depots rather than allocating them to the individual depot that incurred the gains or losses. While DOD policy does not specify how to allocate gains and losses at the depot level, this practice does not provide the right incentives to the depots to set prices correctly in the budget. If one depot consistently incurred losses, the Army would increase the prices at other depots to help recoup its losses. As a result, the depot incurring the losses is not held accountable for operating on a break-even basis. The end result of this practice is that customers of depots with consistent losses are, in effect, subsidized by customers of depots with consistent gains.

GAO analysis also showed that the reported carryover (work not completed at fiscal year end) exceeded DOD's carryover ceilings from fiscal year 1996 through fiscal year 2003. Too much carryover could result in an activity group receiving funds from customers in one fiscal year but not performing the work until subsequent fiscal years. Factors contributing to carryover exceeding the ceilings include depots receiving new orders at fiscal year-end and not being able to obtain parts needed in a timely manner.

Finally, the Army continued to encounter problems implementing a new system intended to improve depot operations. GAO previously reported on these problems in May 2004, and noted that the Army's inadequate requirements management and system testing were primary contributing factors to the problems. These problems are preventing the Tobyhanna Army Depot from accurately reporting on its financial operations, which, in turn, adversely impacts the depot's ability to accurately set prices. GAO's current review found that the Army has not put into place an effective management process to help ensure that the problems with the system are resolved. While the Army developed a process that identified the specific steps that should be followed in addressing the problems identified, the process was not followed. Until the underlying causes of the problems are corrected, other depots implementing LMP will encounter similar problems.

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United States Government Accountability Office  
Washington, D.C. 20548

June 30, 2005

The Honorable C. W. Young  
Chairman, Subcommittee on Defense  
Committee on Appropriations  
House of Representatives

Dear Mr. Chairman:

The Army depot maintenance activity group supports combat readiness by providing services necessary to keep Army units operating worldwide. From fiscal year 2000 through fiscal year 2004, the group employed between 10,000 and 13,000 people and received approximately \$1.4 billion to \$2.6 billion in new orders each year to repair and overhaul a wide range of assets, including helicopters such as the Apache and Blackhawk; combat vehicles such as the Abrams tank; air defense systems such as the Patriot missile; electronics; and inventory items for the Army, other military services, and foreign governments. Many of these weapons systems are used to support the Army's current effort in Iraq and Afghanistan. According to Army officials, to perform the work needed in support of the global war on terrorism, the number of direct labor hours of work increased from 11.6 million in fiscal year 2002 to an estimated 19.3 million for fiscal year 2005—a 66 percent increase. The group operates under the working capital fund concept, where customers are to be charged for the anticipated full cost of goods and services. The group performs its operations primarily at five depots—the Tobyhanna Army Depot, Tobyhanna, Pennsylvania; the Letterkenny Army Depot, Chambersburg, Pennsylvania; the Corpus Christi Army Depot, Corpus Christi, Texas; the Anniston Army Depot, Anniston, Alabama; and the Red River Army Depot, Texarkana, Texas.

Over the past several years, we have performed work on specific activity groups within the Navy and Air Force working capital funds for your subcommittee. These reports have discussed several issues including (1) the prices charged customers; (2) whether the activity groups realized gains or incurred losses; (3) work not completed by the end of the fiscal year, generally referred to as carryover; and (4) system initiatives. The congressional defense committees have used our Defense Working Capital Fund work in reviewing Department of Defense (DOD) budgets.

As requested and agreed to with your office, our objectives of this assignment were to determine (1) if the prices charged by the Army depot

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maintenance activity group have increased and, if so, why; (2) how the Army depot maintenance activity group allocates reported gains or losses incurred at the individual depot level; (3) if the Army depot maintenance activity group exceeded its allowable carryover ceilings<sup>1</sup> and, if so, the reasons for exceeding the ceilings; and (4) if the Army encountered problems with the implementation of a new system, called the Logistics Modernization Program (LMP), at the Tobyhanna Army Depot. Our review was performed from June 2004 through April 2005 in accordance with U.S. generally accepted government auditing standards. Most of the financial information in this report is budget data obtained from official Army budget documents. The accounting data used in this report were obtained from official Army accounting reports. To assess the reliability of the data, we (1) reviewed and analyzed the factors used in determining the prices and (2) interviewed Army officials knowledgeable about the data. We determined that the data were sufficiently reliable for the purposes in this report. Further details on our scope and methodology can be found in appendix I. We requested comments on a draft of this report from the Secretary of Defense or his designee. Written comments from the Deputy Comptroller for Program Budget are reprinted in appendix II.

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## Results in Brief

We identified four management weaknesses that are impairing the efficiency and effectiveness of Army depot maintenance operations. These weaknesses include (1) ineffective actions to control increasing material costs, (2) not allocating reported gains or losses incurred by a specific depot to that depot, (3) exceeding ceilings on work carried over at fiscal year end, and (4) problems fielding a new system that is intended to provide timely and accurate logistical and financial information.

Despite rising prices over the past several years, Army depot maintenance officials have not taken effective actions to control material costs—the primary cost factor driving up the prices during the time frame covered by our work. Our work showed that the Army depot maintenance activity group’s average sales price for work increased 31 percent (21 percent if

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<sup>1</sup>DOD policy establishes a ceiling for the amount of work that can be carried over from one fiscal year to the next.

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adjusted for inflation) between fiscal years 2000 and 2005<sup>2</sup> primarily due to increasing material costs. According to the activity group's budget documents, the average price per direct labor hour of work accomplished (composite sales price)<sup>3</sup> increased from \$111.87 per hour for fiscal year 2000 to \$147.07 per hour for fiscal year 2005. Because of the price increase, the activity group's customers will pay about \$400 million more for work in fiscal year 2005 than they would have paid in fiscal year 2000. Material costs accounted for the majority of the sales price increase from fiscal year 2000 to fiscal year 2005, accounting for over 100 percent<sup>4</sup> of the activity group's sales price increase. Army depot maintenance officials provided evidence showing increasing material costs were caused, in part, by increased (1) material usage to rebuild selected weapon systems to like-new condition under the Army's recapitalization program and (2) prices that the activity group pays its suppliers for repair parts. However, Army depot maintenance officials have not completed a comprehensive analysis to determine (1) how much of the increase was due to increased material usage under the recapitalization program versus price increases and (2) whether they have identified all of the reasons for the material increases. As a result, the Army has not been able to take proactive steps to control rising material costs.

In setting future prices to break even, the Army spread depot maintenance reported gains and losses across all depots, rather than allocating reported losses or gains incurred by a specific depot to that depot. While DOD policy does not specify how to allocate gains and losses at the depot level, this practice does not provide the right incentives to the depots to set prices correctly in the budget. In the past, if one depot consistently incurred losses, the Army would increase the prices at other depots to help recoup its losses. As a result, the depot incurring the losses is not held accountable for operating on a break even basis. For example, the Red River Army

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<sup>2</sup> Using the Gross Domestic Product price index updated in January 2004, if the fiscal year 2000 composite sales price is converted to fiscal year 2005 dollars, the composite sales price would be \$121.15 and the increase would be 21 percent.

<sup>3</sup> The composite sales price is the average price that customers must pay for a direct labor hour of work and is used for budgeting purposes. The average price includes labor, material, and overhead costs. For actual work performed, the activity group develops individual sales prices, such as the price per hour to perform work on the Apache helicopter, and bills customers based on those individual prices.

<sup>4</sup> Other cost factors included in developing the sales price decreased resulting in material costs accounting for over 100 percent of the sales price increase.

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Depot reported an accumulated loss for 4 of the past 5 fiscal years, including fiscal years 2002, 2003, and 2004. For these 3 fiscal years, the reported accumulated losses ranged from \$18 million to about \$48 million, indicating that Red River's customers were not charged enough for the goods and services provided to them. On the other hand, the Tobyhanna Army Depot—which had a reported revenue that ranged from \$259 million to \$406 million from fiscal years 2000 to 2004—reported an accumulated gain for each fiscal year from fiscal year 2000 through fiscal year 2004, ranging from \$31 million to \$169 million, indicating that their customers have been charged too much for goods and services. The end result of this practice is that customers of depots with consistent losses are in effect subsidized by customers of depots with consistent gains.

We also found that the Army depot maintenance activity group's actual reported carryover exceeded DOD's carryover ceilings from fiscal year 1996 through fiscal year 2003. The activity group's reported actual carryover did not exceed the allowable amount for fiscal year 2004. We reviewed the Army's fiscal year 2004 carryover calculation and validated that the Army's calculation was done in accordance with DOD's new carryover policy. Too much carryover could cause an activity group to receive funds from customers in one fiscal year but not perform the work until well into the next fiscal year or subsequent fiscal years. In the past, the Congress has reduced the services' budgets because of excessive carryover, including a reduction in the Army's fiscal year 2003 Operation and Maintenance appropriation by \$48 million. Factors contributing to the four depots that exceeded their carryover ceilings included depots receiving new orders at fiscal year-end and depots being unable to obtain material needed to perform repair work in a timely manner. Furthermore, even though the Army's reported carryover amount exceeded the ceilings, we found that the Army understated its reported actual carryover for fiscal years 2002 and 2003. As a result, fiscal year 2003 carryover was understated by \$95 million. According to Army officials, the understatement occurred because DOD provided verbal guidance that was unclear when DOD revised its carryover policy. Based on its interpretation of this guidance, the Army only included actual carryover on orders received in the current year but did not include carryover related to orders received in prior years in calculating its reported actual carryover for fiscal years 2002 and 2003.

Finally, management oversight weaknesses are evident in the Army's efforts to implement its new LMP system, which is intended to improve the efficiency and effectiveness of depot operations. We previously reported on LMP implementation problems in May 2004 and noted that the Army's

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inadequate requirements management and system testing were primary contributing factors to the problems occurring. These problems continue to prevent the Tobyhanna Army Depot from accurately reporting on its financial operations, including gains and losses, which, in turn, adversely affected the depot's ability to accurately set customer sales prices. For example, Army officials believe their fiscal year-end 2003 and 2004 annual operating result is overstated by about \$125 million due to, among other things, miscellaneous gains being reported in LMP when no such gains occurred. On our current review, we found that the Army has not put into place an effective management process to help ensure that the problems identified with LMP are resolved. While the Army and Computer Sciences Corporation (CSC), the contractor responsible for developing and implementing LMP, developed a process that identified the specific steps that should be followed to address known problems, the process was not followed. Until the Army institutes a process that ensures the underlying causes of problems are identified and corrected, other depots implementing LMP will encounter similar problems.

We are making recommendations to the Department of Defense to (1) develop a systematic methodology for analyzing material cost increases and take action to reduce costs, (2) allocate depot gains and/or losses to the individual depots if a trend shows that an individual depot consistently realizes gains or incurs losses, (3) continue to comply with the carryover policy by not exceeding the ceiling, and (4) improve the management and reporting of carryover to decision makers by clarifying guidance for calculating carryover. We are also making recommendations to implement existing management procedures to resolve identified problems resulting from the implementation of LMP and to delay system implementation at the four remaining depots until the problems encountered by the Tobyhanna Army Depot are resolved.

In its comments on a draft of this report, DOD concurred with all nine of the recommendations. Specifically, the Army has added guidance stating that gains and losses should be allocated to the individual industrial installations if a several year trend shows that an installation has consistently realized gains or losses. Further, the Under Secretary of Defense (Comptroller) will issue guidance clarifying the present carryover policy concerning the calculation of actual carryover as well as the allowable amount of carryover. Finally, the Army concurred with our recommendations on LMP and recognizes that it can not move forward with future deployments to other depots until critical problems identified at the Tobyhanna Army Depot are corrected.

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## Background

The Army depot maintenance activity group is part of the Army Working Capital Fund, a revolving fund that relies on sales revenue rather than direct appropriations to finance its operations. DOD policy requires working capital fund activity groups to (1) establish sales prices that allow them to recover their anticipated costs from their customers and (2) operate on a break even basis over time—that is, to not make a gain nor incur a loss, which is referred to as a zero accumulated operating result (AOR). DOD policy also requires the activity groups to establish their sales prices prior to the start of each fiscal year and to apply these predetermined or “stabilized” prices to most orders received during the year—regardless of when the work is actually accomplished or what costs are actually incurred. For depot maintenance activity groups, DOD policy also requires that as long as adequate cash balances are maintained, unbudgeted operating losses or gains of \$10 million or more per activity group will be recouped or returned, as appropriate. This will occur in the current fiscal year or, in the case of fourth quarter losses or gains, in the first quarter of the next fiscal year.

Developing accurate sales prices is challenging since the process to determine the prices begins about 2 years in advance of when the work is actually ordered and performed. In essence, the activity group’s budget development has to coincide with the development of its customers’ budgets so that they both use the same set of assumptions. To develop prices, the activity group estimates (1) labor, material, overhead, and other costs based on anticipated demand for work as projected by customers; (2) total direct labor hours for each type of work performed, such as helicopters, tanks, and repairable inventory items; (3) the workforce’s productivity; and (4) savings due to productivity and other cost-avoidance initiatives. In order for an activity group to operate on a break even basis, it is extremely important that the activity group accurately estimate the work it will perform and the costs of performing the work. Higher-than-expected costs or lower-than-expected customer demand for goods and services can cause the activity group to incur losses. Conversely, lower-than-expected costs or higher-than-expected customer demand for goods and services can result in gains. With sales prices based on assumptions that are made as long as 2 years before the prices go into effect, some variances between expected and actual costs are inevitable.

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## New Depot Maintenance System Expected to Improve Financial Data

We have previously reported that DOD has had long-standing problems in preparing accurate working capital fund financial reports. For example, in its fiscal years 2003 and 2004 Principal Financial Statements, the Army acknowledged that its financial management and feeder systems that DOD relied on to provide evidence supporting the Army Working Capital Fund financial statements did not comply with federal financial management system requirements, generally accepted accounting principles, and the U.S. Government Standard General Ledger at the transaction level. As a result of such deficiencies, the DOD Inspector General (who is required by 31 U.S.C. sec. 3521(e)(1) to conduct an audit of said financial statements) was unable to express an opinion on the reliability of the Army Working Capital Fund's financial statements for fiscal years 1993 through 2004.

To help improve the Army depot maintenance activity group's operations, including financial management, in February 1998, the Army Materiel Command began an effort to replace systems that are at least 30 years old that manage inventory and depot maintenance operations with LMP. According to the Army, LMP is intended to transform the Army Materiel Command's logistics operations in six core processes, one being financial management. LMP is to, among other things, improve accounting and reporting on billions of dollars worth of Army weapons systems through fully integrated single-source transaction entry, online/real-time data, and U.S. Standard General Ledger compliance. Further, LMP is intended to bring the logistics community to the point of achieving favorable audit opinions on financial statements. LMP became operational at the U.S. Army Communications and Electronics Command and Tobyhanna Army Depot in July 2003. The Army plans to implement LMP at the other four depots. In May 2004,<sup>5</sup> we reported on the Army's lack of adequate management oversight over LMP implementation and the problems being encountered after it became operational in July 2003. As discussed later in this report, the Army continued to experience significant LMP implementation problems at the Tobyhanna Army Depot that inhibited the depot from accurately reporting on its financial results of operations, which adversely affected the depot's ability to accurately set customer sales prices.

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<sup>5</sup> GAO, *DOD Business Systems Modernization: Billions Continue to Be Invested with Inadequate Management Oversight and Accountability*, [GAO-04-615](#) (Washington, D.C.: May 27, 2004).

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## Army Merged Its Depot Maintenance and Ordnance Activity Groups

Beginning with fiscal year 2005 (October 2004), the Army established a new Army Working Capital Fund activity group by merging its depot maintenance and ordnance activity groups. The new activity group—the Industrial Operations activity group—consolidated the existing five Army depots and the Army ordnance activities. These two activity groups perform different types of work. The depots repair and overhaul a wide range of assets such as helicopters and tanks, whereas the ordnance activities, among other things, manufacture and sell munitions and large caliber weapons critical to the Army’s execution of its warfighting mission. The ordnance activity group also provides ammunition stockpile management for all services within DOD as well as for foreign military customers. Among the benefits of consolidation cited by the Army is that the merger of the two activity groups will (1) create a more integrated business perspective that encourages cooperation and partnership, (2) eliminate duplication of effort associated with preparing and defending two separate budget submissions for essentially the same type of service, and (3) focus capital investments on the good of the business entity rather than on the good of the individual installations.

We reviewed the Army Working Capital Fund fiscal year 2006/2007 budget document submitted to the Congress in February 2005. The budget document does not provide information on the Army depot maintenance activity group. Instead, the budget document consolidates the information on the depot maintenance and ordnance activity groups. This consolidation of information is discussed later in this report.

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## Depot Maintenance Prices Increased Due to Increasing Material Costs

Our work showed that the Army depot maintenance activity group’s average sales price for work increased 31 percent (21 percent if adjusted for inflation) between fiscal years 2000 and 2005.<sup>6</sup> The activity group’s budget documents showed that the average price per direct labor hour of

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<sup>6</sup> Using the Gross Domestic Product price index updated in January 2004, if the fiscal year 2000 composite sales price is converted to fiscal year 2005 dollars, the composite sales price would be \$121.15 and the increase would be 21 percent.

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work accomplished (composite sales price)<sup>7</sup> increased from \$111.87 per hour for fiscal year 2000 to \$147.07 for fiscal year 2005. We found that material costs accounted for the majority of the sales price increase from fiscal year 2000 to fiscal year 2005, accounting for over 100 percent of the group's sales price increase. Army depot maintenance officials provided evidence showing increasing material costs were caused, in part, by increased (1) material usage to rebuild selected weapon systems to like-new condition under the Army's recapitalization program and (2) prices that the activity group pays its suppliers for repair parts. However, Army depot maintenance officials have not completed a comprehensive analysis to determine (1) how much of the increase was due to the recapitalization program versus price increases and (2) whether they have identified all of the reasons for the material cost increases. As a result, the Army has not been able to take proactive steps to control rising material costs.

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### Factors Causing Army Depot Maintenance Prices to Increase

The composite sales price that the Army depot maintenance activity group charged its customers increased from \$111.87 per direct labor hour in fiscal year 2000 to \$147.07 per direct labor hour in fiscal year 2005 – a \$35.20 difference or 31 percent increase. As shown in table 1, our analysis of the factors that make up the activity group's composite price showed that direct material, overhead, and direct labor account for all of the costs making up the composite price increase charged customers. Table 1 also shows that

- Budgeted material costs were by far the most significant of the factors (\$65.23 per direct labor hour) making up the composite sales price in fiscal year 2005 (44 percent of the fiscal year 2005 composite sales price). Additionally, material costs increased by \$36.14 and accounted for over 100 percent of the increase in the group's sales prices between fiscal year 2000 and fiscal year 2005 because other cost factors decreased.
- Budgeted overhead costs were the second largest cost factor (\$49.47 per direct labor hour) making up the composite sales price for fiscal year

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<sup>7</sup> The composite sales price is the average price that customers must pay for a direct labor hour of work and is used for budgeting purposes. The average price includes labor, material, and overhead costs. For actual work performed, the activity group develops individual sales prices, such as the price per hour to perform work on the Apache helicopter, and bills customers based on those individual prices.

2005 (34 percent of the fiscal year 2005 composite sales price). However, the overhead rate increased by only \$3.98 during this time period. A large portion of the budgeted overhead costs is associated with operating and maintaining the installations.

- Budgeted labor costs were the third largest cost factor (\$30.84 per direct labor hour) making up the composite sales price for fiscal year 2005 (21 percent of the fiscal year 2005 composite sales price). The labor costs were less than half the material costs' portion of the composite price for fiscal year 2005. Depot officials noted that the labor cost increases were primarily due to factors beyond the activity group's control, such as mandated cost-of-living annual salary increases for federal employees. As a result, we did not perform an in-depth review of the labor costs increases between fiscal year 2000 and fiscal year 2005.
- Budgeted direct other costs (costs for contracts and travel) were the fourth largest cost factor (down \$1.84 to \$4.99 per direct labor hour) making up the composite sales price for fiscal year 2005. We did not perform an in-depth review of these costs since they decreased between fiscal year 2000 and fiscal year 2005.
- All other budgeted cost factors included in developing the composite sales price decreased from \$3.91 in fiscal year 2000 to a negative \$3.46 in fiscal year 2005. The negative amount is due to the return of prior gains in setting the prices.

**Table 1: Factors Responsible for the Increases in the Army Depot Maintenance Activity Group's Composite Sales Price between Fiscal Years 2000 and 2005**

<b>Factor</b>	<b>Fiscal year 2000 rate per hour</b>	<b>Fiscal year 2005 rate per hour</b>	<b>Dollar difference</b>
Direct material costs	\$29.09	\$65.23	\$36.14
Overhead costs	45.49	49.47	3.98
Direct labor costs	26.55	30.84	4.29
Direct other costs	6.83	4.99	(1.84)
All other costs	3.91	(3.46)	(7.37)
<b>Total composite sales price</b>	<b>\$111.87</b>	<b>\$147.07</b>	<b>\$35.20</b>

Source: GAO analysis of Army Materiel Command and depot data on stabilized rates.

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## Spiraling Material Costs Are Primary Cause of Price Increases, but Further Analysis Is Needed

Although table 1 shows that several factors contributed to the increase that occurred in the composite hourly sales price for fiscal years 2000 through 2005, higher budgeted material costs was by far the most significant factor. Material costs increased 124 percent, from \$29.09 per direct labor hour in fiscal year 2000 to \$65.23 per direct labor hour in fiscal year 2005. While Army depot maintenance officials provided evidence on why the activity group's overall material costs have increased, they have not performed a comprehensive analysis of material costs to determine (1) how much of the increase was due to the recapitalization program versus price increases and (2) whether they have identified all of the reasons for the material cost increases.

## The Army Has Identified Some Causes of Material Cost Increases

Army depot maintenance officials stated that the activity group's higher material costs can be attributed, to a large extent, to (1) increased material usage to rebuild certain weapon systems to like-new condition, as required by the Army's recapitalization program;<sup>8</sup> and (2) price growth—what the activity group pays various suppliers for material and component parts it uses to repair weapon systems and other items. For example:

- Due primarily to the recapitalization program, the depot maintenance activity group raised the sales price for the repair of the Patriot missile air defense system antenna mast group from \$398,612 in fiscal year 2002 to \$744,784 in fiscal year 2004, an increase of \$346,172 or 87 percent. Under this program, the depots automatically replaced more parts than they did previously under a traditional weapon system overhaul. This resulted in an increase in material costs. For example, under the fiscal year 2002 recapitalization pilot program, the Letterkenny Army Depot automatically replaced 142 parts on an individual antenna mast group. By fiscal year 2004, the number of parts automatically replaced by Letterkenny increased to 1,938 or 1,264 percent.
- Due to increased prices paid to suppliers for component parts used in repairs, the cost to repair radar sets used for the Patriot missile has increased significantly. Depot maintenance officials estimated that for

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<sup>8</sup> Recapitalization is the rebuild and selected upgrade of currently fielded weapons systems to ensure operational readiness and rebuild to like-new condition. The objectives of this program are to (1) extend the service life of selected weapon systems; (2) reduce the rate of growth of operation and support costs for recapitalized weapon systems; (3) improve the reliability, maintainability, safety, and efficiency of the weapon systems; and (4) enhance the warfighting capabilities of recapitalized weapon systems where needed.

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one Patriot missile radar set, they replace approximately 1,500 of the 5,463 active radar antenna elements when they repair it. In January 2003, depot maintenance was purchasing the antenna elements for \$724 apiece from the supplier. About 15 months later, the purchase price for a single element increased about 43 percent to \$1,038. As a result, the stabilized sales price for repairing the radar set increased from \$6,450,330 in fiscal year 2003 to \$7,284,751 in fiscal year 2004, an increase of \$834,421 or 13 percent in 1 year.

- Due to the recapitalization program, the depot maintenance activity group raised its sales price for the repair of the Chinook helicopter from \$4,431,953 in fiscal year 2003 to \$6,754,808 in fiscal year 2005, an increase of \$2,322,855 or 52 percent. The material component of the sales price increased from \$2,661,481 in fiscal year 2003 to \$4,060,000 in fiscal year 2005—an increase of \$1,398,519 or 60 percent of the total sales price increase. Corpus Christi Army Depot officials stated that material costs increased because under the recapitalization program the depot is required to (1) replace more parts 100 percent of the time during maintenance and (2) follow tighter inspection criteria, which results in parts being repaired or replaced more frequently. For example, the depot increased the number of helicopter parts required to be replaced during maintenance by 217 when it implemented the recapitalization program.
- Due primarily to the recapitalization program, the depot maintenance activity group raised the sales price for the repair of the engine used in the Armored Vehicle Launch Bridge, a folding portable bridge that is transported on the top of a tank chassis, and the M88 Hercules Recovery Vehicle, used to recover tanks. More specifically, the Anniston Army Depot increased the price for the engine from \$58,559 in fiscal year 2003 to \$95,451 in fiscal year 2005, an increase of \$36,892 or 63 percent. During this same time period, the materials costs increased by \$38,749 or 120 percent from \$32,183 to \$70,932. Since they anticipate repairing about 336 of these engines in fiscal year 2005, the impact of the increased material costs is about \$13 million.
- Due primarily to increased prices paid to suppliers for component parts, the cost to overhaul one type of Bradley Fighting Vehicle increased from \$409,964 in fiscal year 2003 to \$549,291 in fiscal year 2005, an increase of \$139,327 per vehicle or 34 percent. A major cause of this increase was the material cost growth of \$30,280 per vehicle. One example of a part contributing to the higher material costs is the price of a gyroscope used

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on the vehicle increasing from \$11,486 in fiscal year 2003 to \$19,381 in fiscal year 2005. Further, the price of two transmission parts increased from about \$1,300 each to \$10,092 each over the same time period.

### Army Has Not Performed a Comprehensive Analysis of Material Cost Increases

One of the primary goals of the working capital fund is to focus the attention of all levels of management on the total costs of carrying out DOD business operations such as depot maintenance. That is, working capital fund operations are intended to operate like a business by developing and using effective methods to control operating costs. We found that the Army depot maintenance activity group has not achieved that goal nor attempted to, at least in part, as it pertains to controlling material costs. Specifically, the activity group has not performed a comprehensive analysis to determine (1) how much of the increase was due to the recapitalization program versus supplier price increases and (2) whether they have identified all of the reasons for material cost increases. Such an analysis is frequently used for manufacturing processes, for example, to determine if material usage has increased and, if so, to determine the impact on material costs.

We believe that a comprehensive analysis of material costs is warranted because the activity group's material costs account for over 44 percent of the group's fiscal year 2005 composite sales price and have increased by 124 percent between fiscal year 2000 and fiscal year 2005. Depot maintenance officials at the five Army depots and the Army Materiel Command told us that they did not perform such analyses. In fact, officials at one depot told us it was not necessary for them to perform analyses on material cost increases because they believe they know what their primary material cost drivers are: the recapitalization program previously discussed and increased prices being paid to one of their parts suppliers. We agree with these two reasons. However, without performing a comprehensive analysis, the depot cannot quantify the extent to which the causes contribute to the higher material costs and does not know if all major causes have been identified. Perhaps most important, absent these data, DOD does not have the necessary information to try to mitigate costs related to usage rates, unit prices, or other causes.

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### Army Depot Maintenance Overhead Represents the Second Largest Cost Factor Affecting Prices

As illustrated in table 1, our analysis showed that budgeted overhead costs were the second largest factor making up the fiscal year 2005 composite sales price. Overhead costs consist of two broad cost categories: base operations and maintenance mission. Base operations overhead includes costs necessary to maintain the installations that support the Army depots

and other base tenants and include security, fire protection, building maintenance, resource management, and personnel and community activities. Maintenance mission overhead includes indirect costs that can be directly attributed to supporting the depots' maintenance mission, such as supervision, indirect material, general engineering, and mid-level management and administrative expenses, but cannot be tied to a specific cost center. Tables 2 and 3 illustrate the breakout of the depots' base operations and maintenance mission overhead rates per direct labor hour as a percentage of the depots' total overhead rates for fiscal years 2001 and 2005.<sup>9</sup>

**Table 2: Depot Base Operations and Maintenance Mission Rates Per Direct Labor Hour for Fiscal Year 2001**

Army depot	Fiscal year 2001 base operations		Fiscal year 2001 maintenance mission		Total overhead rates
	Rates	Percent of overhead total	Rates	Percent of overhead total	
Letterkenny	\$32.73	39	\$51.70	61	\$84.43
Red River	30.86	50	31.04	50	61.90
Corpus Christi	25.39	41	36.34	59	61.73
Anniston	17.27	42	23.92	58	41.19
Tobyhanna	17.69	54	14.90	46	32.59

Source: Individual Army depots and GAO analysis.

As illustrated in tables 2 and 3, base operations overhead costs represented a significant portion of the depots' total overhead rate per direct labor hour for fiscal years 2001 and 2005. In fiscal year 2001, base operations overhead as a percentage of the total overhead rate ranged from 39 percent at the Letterkenny Army Depot to 54 percent at the Tobyhanna Army Depot. In fiscal year 2005, base operations still made up a significant portion of the individual depots' total overhead rates: a range of 28 percent at the Anniston Army Depot to 52 percent at the Red River Army Depot.

<sup>9</sup> Fiscal year 2000 base operations and maintenance mission overhead data were not available for all depots.

**Table 3: Depot Base Operations and Maintenance Mission Rates Per Direct Labor Hour for Fiscal Year 2005**

Army depot	Fiscal year 2005 base operations		Fiscal year 2005 maintenance mission		Total overhead rates
	Rates	Percent of overhead total	Rates	Percent of overhead total	
Letterkenny	\$24.78	47	\$28.08	53	\$52.86
Red River	28.80	52	26.86	48	55.66
Corpus Christi	14.35	31	31.32	69	45.67
Anniston	14.73	28	37.22	72	51.95
Tobyhanna	18.71	41	26.51	59	45.22

Source: Individual Army depots and GAO analysis.

Tables 2 and 3 show that maintenance mission overhead was also a significant cost factor making up the individual depots' total overhead rate per direct labor hour for fiscal years 2001 and 2005. In fiscal year 2001, maintenance mission overhead as a percentage of the total overhead rate ranged from 46 percent at the Tobyhanna Army Depot to 61 percent at the Letterkenny Army Depot. By fiscal year 2005, these percentages ranged from 48 percent at the Red River Army Depot to 72 percent at the Anniston Army Depot. Some maintenance mission overhead costs involve payments to organizations external to the depots, such as payments to the Defense Finance and Accounting Service for accounting and financial services. We also found that from fiscal year 2001 to fiscal year 2005, the maintenance mission overhead rate increased at only two of the depots—those that had the lowest rates in fiscal year 2001. An official at Anniston Army Depot stated that increased quality assurance operations that required hiring additional engineers and higher subordinate command management fees primarily caused the maintenance mission rate increase. An official at Tobyhanna Army Depot stated that increased LMP, Defense Logistics Agency, and Defense Finance and Accounting Service fees caused part of the increase in its maintenance mission rate. Further, in fiscal year 2002, the Army Materiel Command directed the depots to reclassify certain base operations costs as maintenance mission to properly allocate overhead costs to maintenance mission.

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## Method of Allocating Gains and Losses Does Not Provide Incentive For Depots to Set Prices Correctly

In setting future prices to break even, the Army spread depot maintenance reported gains and losses across all depots, rather than allocating reported losses or gains incurred by a specific depot to that depot. While DOD policy does not specify how to allocate gains and losses at the depot level, this practice does not provide the right incentives to the depots to set prices correctly in the budget. If one depot consistently incurred losses, the Army would increase the prices at other depots to help recoup the losses. As a result, the depot incurring the losses is not held accountable for operating on a break even basis. For example, the Red River Army Depot reported an accumulated loss for 4 of the past 5 years, including fiscal years 2002, 2003, and 2004. For these 3 fiscal years, the reported accumulated losses ranged from \$18 million to about \$48 million, indicating that Red River's customers were not charged enough for the goods and services provided to them. Because of the continual reported losses, the Tank-automotive and Armaments Command—the major subordinate command that directs Red River—sent a team to Red River to determine why the depot reported \$29 million of losses during fiscal year 2003. The team found that Red River did not develop accurate budget estimates and underestimated various costs that it incurred including salaries, material, and overhead.

On the other hand, the Tobyhanna Army Depot—which had a reported revenue that ranged from \$259 million to \$406 million from fiscal years 2000 to 2004—reported an accumulated gain for each fiscal year from fiscal year 2000 through fiscal year 2004, ranging from \$31 million to \$169 million.<sup>10</sup> Likewise, the Anniston Army Depot reported an accumulated gain for fiscal years 2002 through 2004 ranging from \$30 million to \$123 million, indicating that it has been charging its customers too much for goods and services. Tobyhanna officials stated that over the last few years, they wanted to reduce their prices more than was allowed by the Army Materiel Command to return these gains to customers. Tobyhanna officials said that their sales prices were inflated to offset losses at other depots.

Due to its recent business merger of depot maintenance and ordnance activity groups beginning in fiscal year 2005, it is even more important for the Army to allocate gains and losses incurred by a specific activity to that activity. This new activity group is called the industrial operations activity group. In the past, the depot maintenance activity group did a much larger

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<sup>10</sup> LMP implementation problems at the Tobyhanna Army Depot affected its fiscal year 2003 and 2004 AOR. LMP problems are discussed later in this report.

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business than the ordnance activity group. The Army depot maintenance activity group received \$2.6 billion in new orders in fiscal year 2003, while the ordnance activity group received \$832 million of new orders. These orders were financed with appropriations in different proportions. For example, in fiscal year 2003, 41 percent and 7 percent of the depot maintenance orders were financed with operation and maintenance appropriations and procurement appropriations, respectively. On the other hand, 58 percent and 15 percent of the ordnance orders were financed with operation and maintenance and procurement appropriations, respectively. If the Army continues its current practice of allocating gains and losses across all activities, customers of activities that make a gain will continue to subsidize customers of activities that incur a loss. Further, because ordnance activities are financed with several appropriations in different proportions than depot maintenance activities, spreading gains and losses across all activities could result in an inequitable allocation of the gains and losses to and from these appropriations.

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## Army Has Consistently Exceeded Carryover Threshold

In addition, the Army did not comply with DOD's carryover policy. We found that the Army depot maintenance activity group's actual reported carryover (1) consistently exceeded DOD's 3-month carryover standard from fiscal year 1996 through fiscal year 2001 and (2) continued to exceed the allowable amount of carryover as calculated under DOD's revised carryover policy for fiscal years 2002 and 2003. The activity group's reported actual carryover did not exceed the allowable amount for fiscal year 2004. We reviewed the Army's fiscal year 2004 carryover calculation and validated that the Army's calculation was done in accordance with DOD's new carryover policy. Too much carryover could result in an activity group receiving funds from customers in one fiscal year but not performing the work until well into the next fiscal year or subsequent fiscal years. In the past, the Congress has reduced the services' budgets because of excessive carryover, including a \$48 million reduction in the Army's fiscal year 2003 Operation and Maintenance appropriation. Factors contributing to carryover exceeding the ceilings included depots receiving new orders at fiscal year-end and depots not being able to obtain material needed to perform repair work in a timely manner. Furthermore, although the Army's reported carryover amount exceeded the ceilings, we found that the Army understated its reported actual carryover for fiscal years 2002 and 2003. For example, fiscal year 2003 carryover was understated by \$95 million. According to Army officials, the understatement occurred because DOD's verbal guidance was unclear. Based on its interpretation of this guidance, the Army only included actual carryover on orders received in the current

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year but did not include carryover related to orders received in prior years in calculating its reported actual carryover for fiscal years 2002 and 2003.

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## What Is Carryover and Why Is It Important

Carryover is the dollar value of work that has been ordered and funded (obligated) by customers but not completed by working capital fund activities at the end of the fiscal year. Carryover consists of both the unfinished portion of work started but not completed, as well as requested work that has not yet commenced. Some carryover is necessary at fiscal year-end if working capital funds are to operate efficiently and effectively. For example, if customers do not receive new appropriations at the beginning of the fiscal year, carryover is necessary to ensure that the working capital fund activities have enough work to ensure a smooth transition between fiscal years. Too little carryover could result in some personnel not having work to perform at the beginning of the fiscal year. On the other hand, too much carryover could result in an activity group receiving funds from customers in one fiscal year but not performing the work until well into the next fiscal year or subsequent years. By minimizing the amount of carryover, DOD can use its resources in the most effective manner and minimize the “banking” of funds for work and programs to be performed in subsequent years.

In 1996, DOD established a 3-month carryover standard for all working capital fund activities except for the contract portion of the Air Force depot maintenance activity group.<sup>11</sup> In May 2001, we reported<sup>12</sup> that DOD did not have a basis for its carryover standard and recommended that DOD determine the appropriate carryover standard for the depot maintenance, ordnance, and research and development activity groups. According to the Office of the Under Secretary of Defense (Comptroller) and Army officials, based on our recommendation, in December 2002, DOD provided verbal guidance concerning its new carryover policy for working capital fund activities. Subsequently, DOD included its revised carryover policy in its

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<sup>11</sup> The Air Force is the only military service that included its contract depot maintenance operation in its working capital fund. To reflect this difference, DOD established a 4.5-month carryover standard to account for the additional administrative functions associated with awarding contracts. The Air Force is currently taking its contract depot maintenance operation out of the working capital fund and plans to complete this action by the end of fiscal year 2007.

<sup>12</sup> GAO, *Defense Working Capital Fund: Improvements Needed for Managing the Backlog of Funded Work*, [GAO-01-559](#) (Washington, D.C.: May 30, 2001).

DOD Financial Management Regulation 7000.14-R, Volume 2B, Chapter 9, dated June 2004, which eliminated the 3-month standard for allowable carryover. Under the new policy, the allowable amount of carryover is to be based on the outlay rate<sup>13</sup> of the customers' appropriations financing the work. This meant that in determining allowable carryover, the first year outlay rate would be used for new orders received in the current year (first year of the work order). According to the DOD regulation, this new metric allows for an analytical-based approach that holds working capital fund activities to the same standard as general fund execution and allows for more meaningful budget execution analysis.

**Army Reports Showed That the Depot Maintenance Activity Group Consistently Exceeded Carryover Ceiling**

Tables 4 and 5 show that the Army depot maintenance activity group's actual reported carryover (1) consistently exceeded DOD's 3-month carryover standard from fiscal year 1996 through fiscal year 2001 and (2) continued to exceed the allowable amount of carryover as calculated under DOD's revised carryover policy for fiscal years 2002 and 2003.

**Table 4: Fiscal Year-End Actual Reported Carryover from Fiscal Year 1996 through 2001 Consistently Exceeded DOD's 3-month Standard**

Fiscal year	Reported actual months of carryover
1996	3.6
1997	3.2
1998	3.4
1999	4.4
2000	4.2
2001	3.4

Source: GAO-01-559 and fiscal year 2003 Army Working Capital Fund budget estimate dated February 2002.

<sup>13</sup> The amount of allowable carryover using the outlay rate follows. For example, customers order \$100 of work, which is financed with a specific appropriation. If the outlay rate for this appropriation at the appropriation level is 60 percent, then this would result in the depot maintenance activity group being allowed to carry over \$40 (\$100 - \$60 [\$100 x 60 percent] = \$40).

**Table 5: Dollar Amount of Reported Actual Carryover for Fiscal Years 2002 and 2003 That Exceeded Allowable Amounts**

Dollars in millions		
	FY 2002	FY 2003
Allowable carryover	\$548.2	\$854.4
Reported actual carryover	584.3	981.5
<b>Carryover above allowable amount</b>	<b>\$36.1</b>	<b>\$127.1</b>

Source: Fiscal years 2004 and 2005 Army Working Capital Fund budget estimates dated February 2003 and February 2004, respectively.

Officials at the four depots that exceeded their carryover ceilings informed us that reported actual year-end carryover exceeded the allowable amount because some depots received and accepted work late in the fiscal year and some depots could not obtain the material needed in a timely manner, so that less work was performed than planned. While other work can be substituted for items awaiting parts, this shifting of the repair work does have a negative effect on the amount of work accomplished. The following examples illustrate these two reasons regarding why work was not performed by fiscal year-end.

- On September 26, 2003—the last week of the fiscal year—the Red River Army Depot accepted a customer work order for \$17.9 million to overhaul 41 Bradley Fighting Vehicles. Because the depot did not begin work on this order until October 2003, the entire \$17.9 million had to be carried over into fiscal year 2004 and was included in the depot’s fiscal year-end 2003 reported actual carryover amount. According to Red River Army Depot officials, their command told them to accept this order to enable the obligation of operation and maintenance funds before they expired at year-end.
- In January 2002, the Red River Army Depot accepted a customer work order financed with about \$3.1 million of operation and maintenance funds to overhaul 25 25-ton cranes. Upon starting the work, depot officials said they discovered that many of the parts needed for the overhaul were no longer readily available, thus requiring the depot to research where the parts could be obtained. This delayed the overhaul work, which caused about \$3.1 million to be included in the depot’s fiscal year-end 2002 reported actual carryover and was carried over into fiscal year 2003. At the end of fiscal year 2003, almost \$1.4 million of the work was still not completed and was carried over into fiscal year 2004.

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In fact, at the start of fiscal year 2004, none of the 25 cranes had been completed. In November 2003, the first 2 cranes were completed, with 16 more being completed by the end of fiscal year 2004. The remaining 9 cranes, with about \$470,000 of work, were carried over into fiscal year 2005 and finally completed by November 2004. Thus, due to the unavailability of repair parts, uncompleted work on this order was included in the depot's carryover balance at the end of fiscal years 2002, 2003, and 2004.

- On September 26, 2003, the Tobyhanna Army Depot accepted an order for about \$2.7 million that was financed by operation and maintenance funds to repair a ground mobile navigation radar. Since the depot accepted the order late in the fiscal year, the depot was unable to schedule and begin the repair work until November 2003. As a result, this \$2.7 million order was carried over into fiscal year 2004. In addition, because of delays in completing a modification upgrade to a component on the radar, not all repair work on the radar was completed in fiscal year 2004, resulting in about \$1.2 million of the order, or 44 percent, being carried over into fiscal year 2005.
- In May 2003, the Tobyhanna Army Depot accepted a \$3.6 million order that was financed by operation and maintenance funds to repair three Firefinder radar antennas. The depot received the radar antennas in June 2003 but was unable to complete the repair work by the end of the fiscal year because it did not receive the other necessary repair parts. For example, the depot did not receive completed sets of sentinel components and beam steering units from the parts supplier until June 2004. As a result, the depot reported over \$3 million in fiscal year 2003 carryover and about \$2.3 million in fiscal year 2004 carryover.
- On August 24, 2004, the Corpus Christi Army Depot accepted an order totaling about \$3.1 million that was financed by operation and maintenance funds to repair a Black Hawk helicopter. Even though the depot did not have the material needed to repair the helicopter, it accepted the work order late in the fiscal year. In September 2004, the depot ordered the material to make the repairs. Although the depot accepted the order and ordered the material in fiscal year 2004, it did not begin the repair work until November 2004, when it received the material. As a result, the depot reported almost the entire \$3.1 million as carryover at the end of fiscal year 2004.

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- On September 5, 2003, the Letterkenny Army Depot accepted a \$5 million order that was financed by operation and maintenance funds for the repair of the Patriot Missile Air Defense System launching stations in support of the war in Iraq and Afghanistan. During the week of September 19, 2003, the depot began repairing the stations. Since the launching stations were received during the last month of the fiscal year, the depot was unable to complete repairs on the stations by the end of fiscal year 2003. This resulted in the depot reporting about \$3.7 million as carryover at the end of fiscal year 2003. The depot completed its repair on the launching stations in September 2004.

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### Reported Actual Carryover Was Understated in Fiscal Years 2002 and 2003 Because Prior Year Orders Were Not Included

The Army understated its reported actual carryover for fiscal years 2002 and 2003 because it interpreted DOD's new carryover guidance as requiring only the inclusion of customer orders received in the current year when calculating carryover. As a result, the Army did not include customer orders received in prior years. For example, the dollar amount of reported actual carryover was understated by \$95 million at the end of fiscal year 2003 because carryover related to orders received in fiscal year 2002 and prior years was not included. Army officials at headquarters, the Army Materiel Command, and the depots acknowledged that the actual carryover figures did not include carryover related to prior year orders. As a result, the Army reported to the Congress that its actual carryover exceeded the allowable amount by \$127 million in fiscal year 2003 as shown in table 5, when it actually exceeded the allowable amount by \$222 million.

DOD changed its carryover policy in December 2002 and stated that the revised carryover methodology would be adopted for the first time in the fiscal year 2004 budget, which affected the way the fiscal year 2002 reported actual carryover amount, as well as the fiscal years 2003, 2004, and 2005 budgeted amounts, were to be calculated. However, DOD did not issue detailed written procedures for calculating actual carryover until June 2004. Army headquarters officials stated that prior to the issuance of the written guidance in June 2004, the new carryover calculation was based on verbal instructions that the Army received from the Office of the Under Secretary of Defense (Comptroller). The Army interpreted the new guidance to include only actual carryover on orders received in the current year and instructed the Army Materiel Command to calculate carryover accordingly. The Army Materiel Command then provided this guidance to the depots. For example, on March 4, 2003, the Army Materiel Command provided carryover guidance for the development of the fiscal year 2005 budget and specified that the amount of actual carryover was to be based

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on new orders only and not to include actual carryover related to prior year orders. When DOD issued the revised DOD regulation in June 2004, Army officials realized that they were not calculating reported actual carryover correctly and changed their methodology in developing the fiscal year 2006 depot maintenance budget so that the actual carryover calculation would include prior year orders and be in accordance with DOD's written guidance.

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### Current DOD Policy on Calculating Allowable Carryover Unclear

In addition to the problem of not including work related to prior year orders when reporting actual carryover, problems also existed with determining the amount of allowable carryover. As previously stated, in June 2004, DOD revised the DOD Financial Management Regulation 7000.14-R, Volume 2B, Chapter 9 to formalize the December 2002 carryover policy. However, this regulation did not contain specific instructions for determining allowable carryover for work not completed on prior year orders. To clarify its June 2004 written guidance, DOD again provided the Army verbal guidance on calculating the allowable carryover amount for work not completed on prior year orders. Based on the verbal guidance, the Army used the first year outlay rate for both (1) current year orders and (2) work not completed on prior year orders. We questioned this methodology for calculating allowable carryover with officials from the Army and the Office of the Under Secretary of Defense (Comptroller), and why they were applying the first year outlay rates to prior year orders instead of the applicable second or third year outlay rates. By using only the first year rates, the Army was allowed more carryover. After discussing our concerns with Office of the Under Secretary of Defense (Comptroller) and Army depot maintenance officials, they changed the way they were calculating allowable carryover. Specifically, the Army calculated the allowable amount of carryover that was included in the Army Working Capital Fund fiscal year 2006 budget by applying the first year outlay rate of the appropriation financing the order for current year orders only. For illustrative purposes, if the Army depot maintenance activity group received \$100 of new orders in fiscal year 2006 and the outlay rate was 60 percent, then the allowable amount of carryover would be \$40.

In discussing this matter with officials from the Office of the Under Secretary of Defense (Comptroller), they acknowledged that the current written guidance on calculating allowable carryover was unclear. They stated that they have since provided verbal guidance to the Army on how to calculate the allowable amount. Specifically, the allowable amount of carryover is to be calculated by applying the first year outlay rate of the

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appropriation financing the current year orders. The officials also stated that work not completed in the first year of the order is not to be included in the calculation because it is expected to be completed by the end of the second year of the order for the Army depot maintenance activity group. The officials informed us that they plan to issue written guidance on this matter.

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## Tobyhanna Army Depot Continues to Experience Difficulty With LMP

Since its implementation in July 2003, LMP has not been able to provide timely and accurate information needed for the economical and efficient operations of the Tobyhanna Army Depot. As we reported in May 2004,<sup>14</sup> the Army's inadequate management of its requirements and system testing activities before LMP was fielded were the primary contributing factors to the problems experienced at Tobyhanna since fiscal year 2003. These problems are continuing to prevent the Tobyhanna Army Depot from accurately reporting on its financial operations, which, in turn, adversely impacts the depot's ability to accurately set customer sales prices. While the Army developed a reasonable approach that was to be followed in addressing system problems that must be resolved for LMP to provide the intended capabilities, the Army has not been able to effectively implement those processes. As a result, the Army was unable to provide evidence to show that the corrective actions adequately address the problems experienced during LMP implementation. Until the Army effectively implements its stated management processes to address the numerous problems impeding the efficient and effective operation of LMP at the Tobyhanna Army Depot, future deployments can expect to experience similar, significant disruptions in their depot maintenance operations.

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## Prior GAO Report Identified LMP Problems

In our May 2004 report, we pointed out that the Army had not effectively managed its implementation of LMP. This report noted that after LMP was deployed in July 2003, operational difficulties at the Tobyhanna Army Depot resulted in inaccurate financial management information. More specifically, the depot was not (1) producing accurate workload planning information, (2) generating accurate customer bills, and (3) capturing all repair costs, which impeded the Army's ability to calculate accurate future

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<sup>14</sup> GAO, *DOD Business Systems Modernization: Billions Continue to Be Invested with Inadequate Management Oversight and Accountability*, [GAO-04-615](#) (Washington, D.C.: May 27, 2004).

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repair prices. As noted in the report, Army program officials acknowledged that requirements and testing defects were factors contributing to the operational problems.

Requirements represent the blueprint that system developers and program managers use to design, develop, and acquire a system. Improperly defined or incomplete requirements have been commonly identified as a cause of system failure, resulting in systems not meeting their costs, schedules, or performance goals. Further, because requirements provide the foundation for system testing, requirement defects, such as those noted during our review relating to specificity and the ability to determine the relationship between requirements (commonly referred to as traceability), preclude an entity from implementing a disciplined testing process. That is, requirements must be complete, clear, and well documented to design and implement an effective testing program. Absent this, an organization is taking a significant risk that its testing efforts will not detect significant defects until after the system is placed into production. Industry experience indicates that the sooner a defect is recognized and corrected, the cheaper it is to fix.

In our May 2004 report, we noted that LMP's requirements (1) lacked the specific information necessary to understand the required functionality that was to be provided and (2) did not describe how to determine quantitatively, through testing or other analysis, whether the systems would meet the Army's needs. We continue to believe that one reason that users have not been provided with the intended systems capabilities is because of the breakdown in the requirements management process. As a consequence, the Army has implemented error-prone, time-consuming manual workarounds as a means to minimize disruption to critical operations. As discussed in the next section, our current work demonstrated that Tobyhanna's financial management operations continued to be affected by LMP system problems.

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## LMP Adversely Affected Tobyhanna Army Depot's Financial Management Operations

Since the Army has not corrected LMP's system problems, the Tobyhanna Army Depot continues to experience financial management challenges. These system problems include the depot's inability to (1) report net operating results that are reliable, (2) properly recognize revenue and bill customers, (3) reconcile balances that were converted from the depot's legacy finance and accounting system, the Standard Depot System (SDS), to LMP, and (4) produce reliable cost information because LMP contains incorrect unit prices and unit of issue data. These problems adversely

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affected Tobyhanna's ability to accurately set customer sales prices and develop reliable budgets for its depot maintenance operations.

### Net Operating Results Reported by LMP Were Not Reliable

According to an Army headquarters budget official, the fiscal year-end 2003 and 2004 net operating results were overstated by \$74.7 million and \$50 million, respectively, due to problems with the implementation of LMP. Research performed by Tobyhanna finance and accounting personnel showed that the fiscal year 2003 net operating result was overstated for a number of reasons including (1) the recording of \$35.2 million of miscellaneous gains in LMP that did not occur and (2) an overstatement of \$39.5 million of revenue in LMP. For example, the \$35.2 million of gains recorded in LMP should have been reversed because LMP did not correctly (1) account for material charged to jobs (\$10.4 million), (2) process transactions related to the movement of assets and material at the depot (\$11.8 million), (3) account for inventory variance account balances (\$12 million), and (4) account for material returned for credit (\$1 million). In the Army Working Capital Fund budget for fiscal year 2006/2007, the Army plans to revise the accumulated operating results for fiscal year 2005 by adjusting it downward by the \$124.7 million overstatement. Since the accumulated operating result is one factor used in developing prices, this adjustment will affect future prices.

### LMP Did Not Always Properly Recognize Revenue and Bill Customers

Shortly after LMP was implemented in July 2003, Tobyhanna officials began identifying problems related to the system's ability to accurately recognize revenue and bill customers for goods and services provided. As of January 2005, the Army had not corrected the problems associated with revenue recognition and billing of customers. For example, Tobyhanna officials identified 837 work orders with accumulated costs for work performed totaling over \$44.8 million in September 2004. However, no revenue was recognized for the work performed and, as a result, customers were not billed for the corresponding amount. For one of the 837 work orders, our analysis showed that the depot began incurring costs in May 2004 and had total accumulated costs of \$2.6 million as of September 2004. Tobyhanna officials informed the contractor of this problem in September 2004. In December 2004, the contractor told depot officials that it had corrected the problem. However, the contractor corrected the problem for the one order but did not correct the problems with the remaining 836 orders. Further, the contractor did not determine the root cause of the problem, and the depot continued to find the same problem with other orders. Once a problem is identified, it is critical that it be investigated, the root cause identified in order for a systematic solution to be developed, and that the

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solutions be effectively tested to ensure that they address the fundamental problem and do not introduce additional problems.

Another problem related to billing customers involves the Defense Finance and Accounting Service (DFAS) and the process used to close customer work orders. As part of this process, Tobyhanna sends completed work orders to DFAS to be closed out so DFAS can bill customers for any authorized funds (customer's orders) that remain unbilled. DFAS uses LMP data to perform this final billing. On September 16, 2004, Tobyhanna identified 38 orders where the work was completed and sent this information to DFAS for final billing and to close out the orders. However, DFAS was not able to perform the final billings and close out these orders because no sales order data (commonly referred to as a customer order) were recorded in LMP for these 38 orders. In September 2004, the Army told the contractor and DFAS about the problem of closing out orders. Rather than fixing the root cause of the problem, DFAS agreed to manually bill the customers and close the orders. According to Tobyhanna officials, the problem will continue since the root cause of the problem was not identified and fixed.

#### Account Balances Were Not Reconciled When Tobyhanna Converted to LMP

Tobyhanna Army Depot encountered problems in converting data from the legacy system to LMP. Specifically, when Tobyhanna converted from its legacy finance and accounting system, SDS, to LMP in July 2003, the June 30, 2003, ending account balances in SDS did not reconcile to the beginning account balances in LMP. According to Tobyhanna officials, the account balances should have been the same. However, the officials did not perform a detailed analysis to determine why the account balances did not reconcile because they (1) were too busy identifying other problems with the implementation of LMP and (2) lacked the detailed information to do the analysis. Tobyhanna officials informed the contractor that the balances were not reconciling in September 2003. However, as of January 2005—about 18 months after the implementation of the system—the account balances in the two systems still could not be reconciled. Table 6 provides the account balances shown in SDS and LMP for five selected accounts that should have been the same but were different as of June 30, 2003.

**Table 6: Differences in Selected Account Balances Reported in SDS and LMP as of June 30, 2003**

Dollars in millions

Account title	SDS	LMP	Difference
Accounts receivable – government	\$15.6	\$(4.6)	\$20.2
Operating material and supplies, net	3.8	69.6	(65.8)
Accounts payable – public	(9.9)	(24.9)	15.0
Obligations – funds received	716.9	804.9	(88.0)
Reimbursements earned (revenue)	218.7	206.8	11.9

Source: SDS and LMP general ledger balances as of June 30, 2003.

Accurate account balances are important because the amounts are used to produce official financial reports such as the income statement—which include revenues, expenses, and annual and accumulated operating results—that are used to prepare future budgets. For example, the fiscal year 2004 operating result is one factor used in developing the fiscal year 2006 prices. If the information on revenue, costs, and net operating results is unreliable, this could adversely affect the reliability of Tobyhanna’s customer sales prices. Tobyhanna officials told us that in the past, they were able to reconcile the information contained in SDS to the DFAS official financial reports, including the income statement. This provided them some assurance that the financial reports were correct. However, since the implementation of LMP, they have not been able to reconcile the data in LMP to the DFAS official reports.

DFAS officials acknowledged that there should not be differences between ending account balances in SDS and beginning account balances in LMP. However, because of unreconciled differences between the two systems, DFAS included a footnote in the depot maintenance activity group’s fiscal years 2003 and 2004 year-end financial reports and stated that LMP conversion problems affected revenue earned, orders received from customers, and billings. As of the end of fiscal year 2004—over 1 year after conversion—DFAS was still unable to quantify the effect on revenue.

**LMP Contained Erroneous Unit Prices and Unit of Issue**

LMP did not always contain the correct unit price or unit of issue<sup>15</sup> for certain materials, resulting in excess material being ordered and incorrect prices being charged to jobs. Since LMP contained the wrong values for the quantity of issue and price, Tobyhanna received quantities of parts and supplies for use in repairing military assets that were far greater than intended. Further, these parts and supplies were charged to jobs at higher prices than the depot officials thought were being charged. Tobyhanna officials informed us that they have experienced unit-price and unit-of-issue problems with LMP since its implementation in July 2003 and that these problems continued as of January 2005, causing erroneous cost information that distorts the depot’s financial reports, including net operating results. The following are two examples illustrating problems that Tobyhanna experienced while using LMP to place orders for parts and supplies.

- LMP did not contain the correct price for screws, wing nuts, and locking washers. According to the officials, if depot maintenance personnel had not identified these errors, the customer requesting this work would have been charged over \$2.8 million for the wing nuts, screws, and locking washers, which were actually worth about \$400. In fiscal year 2002, Tobyhanna received a work order from the Army to repair High Mobility Multipurpose Wheeled Vehicles. In reviewing the work on this order in May 2004, Tobyhanna officials determined that the job had been assessed with costs totaling \$2,846,686 for plain wing nuts, screws, and locking washers instead of costs totaling \$411.04 as shown in table 7.

**Table 7: Example of Incorrect Unit Costs in New System**

Item description	Quantity	Costs assessed to job		Actual costs	
		Unit costs	Total	Unit costs	Total
Wing nuts	449	\$4,214	<b>\$1,892,086</b>	\$0.42	<b>\$188.58</b>
Screws	5,000	138	<b>690,000</b>	0.0392	<b>196.00</b>
Locking washers	900	294	<b>264,600</b>	0.0294	<b>26.46</b>
<b>Total</b>			<b>\$2,846,686</b>		<b>\$411.04</b>

Source: Tobyhanna Army Depot.

<sup>15</sup> DOD defines unit of issue as the quantity of an item, such as each number, dozen, gallon, pair, pound, ream, set, or yard.

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These officials informed us that they identified the problem with this order because they knew that the wing nuts, screws, and locking washers could not possibly cost \$2.8 million. The officials stated that they were aware of only two possible reasons for these errors: (1) the contractor who developed LMP input incorrect unit-of-issue and/or price data into the system or (2) the unit-of-issue and/or price data did not transfer correctly from the SDS legacy system to LMP.

- In another case, Tobyhanna officials stated that they did not realize until June 2004—almost 1 year after LMP was implemented—that LMP contained the wrong unit of issue for washers, which resulted in the system multiplying each order for washers placed with DLA by a factor of 100. This occurred because when the data were converted, the lowest unit of issue for the item was 100, while the shop floor employees requisitioned the items by individual item. For example, when a requisition for 800 washers was processed by the system, the system converted the 800 to 80,000 by multiplying the number ordered (800) times the unit of issue applicable for that order (100). Tobyhanna officials informed us that they had so many flat washers in inventory that it took about three truckloads to return the excess to the Defense Logistics Agency.

The Army and the contractor acknowledged that there is a unit-of-issue and unit-price problem. In January 2005, they identified over 7,600 items in LMP whose base unit of measure was incorrect. According to the officials, correcting this problem is not simple in all cases. For example, once the inventory item has been used in the system, those transactions for the item need to be reversed before the change can be made in the system that shows the correct base unit-of-issue value. The officials also noted that some of these items have literally thousands of transactions against them, since these problems have been present since the system was deployed in July 2003.

To avoid the unit-of-issue and unit-price problem that occurred at Tobyhanna Army Depot, Army and contractor officials stated that it is critical to clean up the base unit-of-issue problems before the system is deployed at other sites. Accordingly, they have undertaken a program for the second deployment sites to help ensure that the items they will be adding to LMP that are not presently in the system have the proper base unit-of-issue values. Based on reports provided by the project office, a great deal of progress has been made on this initiative. For example, between August and November 2004, the number of items at Corpus Christi Army

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Depot with base unit-of-issue problems had dropped by 67 percent from 180 items to 60 items. It will be critical for Army to ensure that this activity is completed prior to converting the legacy data into LMP.

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### Army's Efforts to Resolve LMP Problems Have Been Ineffective

We found that the significant flaws in requirements and testing management that adversely affected the initial development and implementation of LMP also hampered efforts to correct the operational difficulties experienced at Tobyhanna. To address these recurring problems, the Army and its contractor, Computer Sciences Corporation (CSC), developed a reasonable approach that was to be followed in addressing 722 stabilization items—system problems identified by the Army that must be resolved for LMP to provide the intended capabilities. The ability to effectively implement the necessary project management processes (commonly referred to as disciplined processes)<sup>16</sup> is a key factor in reducing the project risks to acceptable levels<sup>17</sup> and is the best indicator of a project's ability to meet its cost, schedule, and performance objectives. However, the Army has not been able to effectively implement those processes. Accordingly, the Army lacks reasonable assurance that (1) system problems experienced during the initial deployment and causing the delay of future deployments have been corrected and (2) LMP is capable of providing the promised system functionality.

The Army and its contractor developed specific steps that were to be followed in addressing the stabilization items. From an overall perspective, the Army's described approach is aligned with steps one would anticipate to see in a project such as LMP. For the most part, each corrective action was to include the following steps:

- Developing and documenting the requirements that were needed to resolve the problem being corrected and the test steps that should be followed to validate that a corrective action had been properly implemented, where appropriate.

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<sup>16</sup> Disciplined processes include a wide range of activities including project planning and management, requirements management, risk management, quality assurance, and testing.

<sup>17</sup> Acceptable levels refer to the fact that any systems acquisition effort will have risks and will suffer the adverse consequences associated with defects in the processes. However, effective implementation of disciplined processes reduces the possibility of the potential risks actually occurring and prevents significant defects from materially affecting the cost, timeliness, and performance of the project.

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- Requiring an Army and CSC official to sign off on each corrective action. This sign off was used to help provide assurance that (1) the corrective action adequately addressed the problem identified in the stabilization item and was defined in the requirements document and (2) adequate testing had been performed.
  - Establishing an oversight board to review the corrective actions and ensure the stated processes had been followed, such as ensuring (1) proper documentation had been developed and (2) adequate testing had been conducted to provide reasonable assurance that the corrective action addressed the problem. Based on a review of the actions taken to address the problem, the oversight board would make a decision on whether the corrective action should be loaded into the production system. The oversight board included Army and CSC personnel.

To ascertain if the Army's stated corrective action processes were being adhered to, we selected 80 of the 276 stabilization items for review that were shown as completed as of May 2004. Of the 80 items, we found that 32 items had been either merged with another corrective action or cancelled—meaning they should not have been included in the stabilization item inventory. For the remaining items,<sup>18</sup> our analysis identified numerous instances in which the stated processes were not being followed. As a result, the Army was unable to provide evidence to show us that the stabilization items had been corrected. Our analysis disclosed the following:

- The requirements documentation was inadequate or nonexistent for 24 items. As previously noted, the lack of adequately defined requirements was one of the primary reasons LMP experienced problems when it was initially deployed in July 2003. Further, since requirements represent the blueprint that system developers and program managers use, it is unclear how the individuals assigned to correct a given problem would know exactly what needed to be fixed, e.g., the detailed business rules that needed to be implemented.
- Testing documentation was insufficient for 33 items. In some cases, while there was documentation related to testing, the requirement had

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<sup>18</sup> Five of the remaining 48 items related to training, documentation, and data issues and, therefore, there were no requirements or testing related to these items. Our analysis is based on a review of 43 stabilization items.

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not been properly defined. Therefore, one could not ascertain if testing was properly conducted. For example, without documentation defining the business rules that should be used, a tester cannot develop the types of tests to ensure those business rules are implemented. As discussed previously, we found numerous problems with the implementation of the business rules that should be used for recognizing revenue and billing.

Documentation is one means available to indicate that the stated processes are being followed. Without the appropriate documentation, the Army does not have reasonable assurance that all of the required steps are being followed and cannot validate that a stabilization item has been corrected. Further, if a planned corrective action does not resolve a stated problem, the documentation, particularly for requirements and testing, can be used to ascertain if the requirement was properly defined. In terms of testing, the documentation would help indicate if the test was properly designed based upon the stated requirement and if all of the attributes were tested as required.

The following are specific examples of cases in which the problem resolution process was not followed and, therefore, the Army did not have reasonable assurance and could not demonstrate to us that these stabilization items were resolved:

- One corrective action related to labor charges was shown as completed in July 2004. However, the Army could not provide documentation to substantiate that (1) requirements were developed, (2) government approval was received, and (3) oversight board approval was obtained. Although a testing document was provided, it was impossible to determine its adequacy since a corresponding requirements document was not available for review.
- Another corrective action designed to resolve inaccurate entries in the general ledger was shown as completed on July 30, 2004. However, the Army could not provide documentation that indicated that the requirements were developed, testing was performed, and government approval was received. In addition, we found a note that indicated approval by the oversight board was not necessary, but no one could explain why the board's approval was not needed.

In discussing these issues with Army officials, they acknowledged that although the problem resolution process was documented in May 2004, it

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was not until October 2004 that all items that were submitted to the oversight board were required to contain the requisite documentation. To ascertain if the project had effectively implemented the disciplined processes over other corrective actions subsequent to this later time frame, we reviewed 14 “trouble tickets”—specific LMP output problems identified by Tobyhanna users—that were reported as completed from October 2004 through January 2005. These trouble tickets were resolved with essentially the same process used for stabilization items discussed previously. For example, the problems identified by Tobyhanna were expected to be reviewed to determine the causes and, if the problems were caused by the system, the following steps should be taken and documented: (1) identify the cause of the problem and the corrective action that needed to be taken (requirements), (2) perform adequate testing to ensure that the problem was fixed and did not adversely affect other LMP functionality, and (3) obtain approval by the contractor and LMP staff. In each case, we found that documentation was not available to validate that the process had been followed and the problem resolved. Examples are discussed below.

- In October 2004, a program was developed and placed into operation to address billing problems reported by Tobyhanna. However, it did not fix the problem and generated so many errors that the resulting bills could not be released to the customers. In fact, because of the number of errors produced by this “fix,” a stabilization item to clean up the erroneous data was generated. LMP officials stated they were unsure why this happened. Because of the large number of errors generated, it was clear that adequate testing had not been performed on this program before it was placed into production.
- As noted previously, one of the major problems with LMP is its inability to properly recognize revenue and bill customers. One cause of this problem is that, in some cases, the system did not include an estimated value for the planned costs of customer orders that were being processed by Tobyhanna. When this condition occurred, improper amounts of revenue were being recognized and improper bills prepared. The Army recognized this problem early in the LMP deployment and developed a “fix” in September 2003. However, we found the problem was still continuing as late as January 2005, and the Army did not know why the September 2003 corrective action was not working as planned. If the Army had implemented the necessary disciplined processes, it would have likely been able to (1) identify the cause of the initial problem and (2) determine why the September 2003 corrective action

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was not working. In one case, this problem generated revenue of over \$2.8 million that should not have been recognized, and in another case a customer was improperly billed for over \$1 million.

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## Conclusions

The Army depot maintenance group has not always achieved the goals envisioned under the working capital fund concept—that is, to operate like a business by developing and using effective methods to control operating costs, charging customers prices that result in break-even status at year-end, and ensuring that accurate and timely information is available to manage and report on financial management operations. Specific examples of management weaknesses in this area include the lack of proactive steps to control rising material costs, overcharging certain depot maintenance customers, and excessive amounts of year-end carryover, which could result in an activity group receiving funds from customers in one fiscal year but not performing the work until well into subsequent fiscal years, thus tying up funds for lengthy periods that could otherwise be put to more beneficial near-term use. Finally, DOD’s inability to develop and implement systems solutions on time and with the promised capability appears to be a critical impediment in the planned transformation of depot operations. Flaws in the early stages of system development, including inadequate requirements management and system testing, are now manifested in significant LMP implementation problems at Tobyhanna. The failure to resolve these problems will continue to impede operations at Tobyhanna, and future deployment locations can expect to experience similar significant disruptions in their operations.

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## Recommendations for Executive Action

To improve the business operations of the Army Working Capital Fund, we are making the following nine recommendations—two recommendations to the Secretary of Defense and seven recommendations to the Secretary of the Army:

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### Analyzing Cost Increases

We recommend that the Secretary of the Army direct the Commander, Army Materiel Command, to develop and implement a systematic process for analyzing the depot maintenance activity group’s material cost increases due to the price paid for material and material usage that would enable the Army to specifically identify and quantify all material cost drivers and take proactive steps to control these rapidly increasing material costs.

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## Allocating Gains or Losses

We recommend that the Secretary of the Army direct the Commander, Army Materiel Command, to allocate depot gains and/or losses to the individual depots if a several-year trend shows that an individual depot consistently realizes gains or incurs losses.

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## Reducing Excessive Carryover

We recommend that the Secretary of Defense take the following actions:

- Direct the Under Secretary of Defense (Comptroller) to clarify DOD's written guidance for calculating carryover so that the actual amount of carryover associated with current and prior year orders is required to be included in the reported amount provided to the Congress and DOD.
- Direct the Under Secretary of Defense (Comptroller) to issue written guidance that specifies that only current year orders are used in calculating the allowable amount of carryover for the Army depot maintenance activity group.

We recommend that the Secretary of the Army direct the Commander, Army Materiel Command, to continue to comply with DOD's policy on not exceeding the year-end ceilings on the amount of year-end carryover ceilings.

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## Improving LMP Implementation

We recommend that the Secretary of the Army direct the Commander, Army Materiel Command to take the following actions:

- Delay implementation of LMP at the four remaining depots until the problems encountered by the Tobyhanna Army Depot with the system are resolved.
- Implement the existing management procedures for ensuring the complete resolution of identified problems resulting from the implementation of LMP.
- Reconcile all general ledger account balances between the legacy systems and LMP as of the date the Army deploys the system at the four depots that have not yet implemented the system.
- Correct unit of issue and material pricing errors in LMP.

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## Agency Comments and Our Evaluation

DOD provided written comments on a draft of this report. While DOD concurred with all the recommendations, it noted that our report did not fully address the effects of the Global War on Terrorism and the impact it had on maintenance workload at the Army depots. According to DOD, support for the war more than doubled the depot workload driving up personnel and material costs. As stated in our report, we agree that the war on terrorism has affected the depots' workload and impacted material and personnel costs. However, the war on terrorism does not affect the Army's (1) practice of spreading gains and losses across all depots, (2) calculation of reported actual carryover and the allowable amount of carryover, and (3) development of LMP. Regarding increasing material costs, we agree that the war does affect overall material costs. However, material costs per direct labor hour more than doubled from \$29.09 in fiscal year 2000 to \$65.23 in fiscal year 2005 and accounted for over 100 percent of the sales price increase that occurred during this same time period. Because of this significant increase, we still believe that the Army needs to identify all material cost drivers and take proactive steps to control them.

In its comments, DOD concurred with the nine recommendations in the draft report. For most of the recommendations, DOD identified specific actions it will take to implement them. For example, DOD believes the Army should make every effort to control the growth of material costs. While DOD believes the increase in material costs are, in part, related to wartime demand increases, the Army will determine the factors affecting pricing. Also, the Army indicated that it has updated its budget formulation guidance stating that gains and losses should be allocated to the individual industrial installations if a several year trend shows that an installation has consistently realized gains or losses. Further, the Under Secretary of Defense (Comptroller) will issue guidance clarifying the present carryover policy concerning the calculation of actual carryover as well as the allowable amount of carryover. Finally, the Army concurred with our recommendations on LMP and recognized that it cannot move forward with future deployments to other depots until critical problems identified at the Tobyhanna Army Depot are corrected.

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We are sending copies of this report to the Chairmen and Ranking Minority Members of the Senate Committee on Armed Services; the Subcommittee on Readiness and Management Support, Senate Committee on Armed Services; the Subcommittee on Defense, Senate Committee on Appropriations; the House Committee on Armed Services; the

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Subcommittee on Readiness, House Committee on Armed Services; and the Ranking Minority Member, Subcommittee on Defense, House Committee on Appropriations. We are also sending copies to the Secretary of Defense, Secretary of the Army, and other interested parties. Copies will be made available to others upon request. Should you or your staff have any questions concerning this report, please contact Gregory D. Kutz, Managing Director, at (202) 512-9505 or [kutzg@gao.gov](mailto:kutzg@gao.gov), or William M. Solis, Director, at (202) 512-8365 or [solisw@gao.gov](mailto:solisw@gao.gov), or Keith Rhodes, Director, at (202) 512-6412 or [rhodesk@gao.gov](mailto:rhodesk@gao.gov). Key contributors to this report are listed in appendix III.

Sincerely yours,



Gregory D. Kutz  
Managing Director, Forensic Audits and Special Investigations



William M. Solis  
Director, Defense Capabilities and Management



Keith A. Rhodes  
Chief Technologist, Applied Research and Methodology Center  
for Engineering and Technology

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# Scope and Methodology

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To determine if the prices charged by the Army depot maintenance activity group have increased and, if so, why, we obtained and analyzed budget documents that provided information on cost factors such as material costs, overhead costs, and labor costs used in developing the prices from fiscal year 2000 to fiscal year 2005. We determined the reasonableness of the figures by reviewing and analyzing the cost factor data at each depot and the Army Materiel Command. We determined which factors caused the prices to increase the most and discussed the reasons for the price increases with officials at the Army Materiel Command and the five Army depots. In addition, we met with Army Materiel Command and depot officials to determine what actions they were taking to identify the causes for increasing material costs—a significant factor causing the majority of the prices to increase from fiscal year 2000 to fiscal year 2005. We also obtained information on the impact of increasing material costs on repairing certain weapon systems such as the Patriot missile, Chinook helicopter, and Bradley fighting vehicle. To assess the reliability of the data, we (1) reviewed and analyzed the factors used in determining the prices and (2) interviewed Army officials knowledgeable about the data. We determined that the data were sufficiently reliable for the purposes in this report.

To determine how the Army depot maintenance activity group allocated reported gains or losses from fiscal year 2000 through fiscal year 2004, we obtained and analyzed budget documents and accounting reports that provided information on prices, revenue, costs, annual operating results, and accumulated operating results for the depot maintenance activity group as well as the individual depots. When the activity group or depots reported gains or losses, we met with officials to determine (1) why the prices charged customers resulted in a reported gain or a loss and (2) whether the activity group allocated reported gains or losses incurred by a specific depot to that depot. When reported gains or losses were not allocated to the specific depot incurring them, we met with Army officials to determine why not.

To determine if the Army depot maintenance activity group exceeded its carryover ceilings in the past and the reasons for exceeding the ceiling, we obtained and analyzed (1) the allowable amount of carryover for fiscal years 1996 through 2004 and (2) reported actual year-end carryover data for fiscal years 1996 through 2004. We also reviewed our prior report ([GAO-01-559](#)) on carryover, which provided information on the allowable amount of carryover as well as reported actual year-end carryover data. When the reported actual carryover exceeded the carryover ceiling, we met with

responsible budgeting and/or accounting officials at the Army depots and the Army Materiel Command to ascertain why. We also reviewed customer orders to determine why the work was not completed on these orders by the end of the fiscal year. Further, through a review of documentation and discussions with officials at Army headquarters, the Army Materiel Command, the depots, and the Office of the Under Secretary of Defense (Comptroller), we determined (1) whether the Army was implementing DOD's new carryover policy and (2) how allowable carryover and actual reported carryover were being calculated under the new carryover policy.

To determine if the Army encountered problems with the implementation of LMP at the Tobyhanna Army Depot, we (1) identified problems reported by system users at the Tobyhanna Army Depot to the system developers and implementers (Army Materiel Command and CSC), (2) analyzed actions taken by the Army and its contractor to resolve reported system problems, (3) analyzed system stabilization plan to determine whether system problems were sufficiently identified and understood to allow proper problem resolution, (4) analyzed Army's project management processes to determine whether underlying root causes of system problems were identified and appropriate system solutions were developed to resolve reported system problems, and (5) analyzed Tobyhanna's financial reports produced by the legacy system and LMP at the time of conversion to LMP to determine whether differences in account balances were identified and reconciled. We also met with officials from Tobyhanna Army Depot, Defense Finance and Accounting Service, CSC, and Army Materiel Command to discuss LMP problems we found with the implementation of LMP. We also reviewed our prior report ([GAO-04-615](#)), which provided information on problems found with LMP's development and implementation at Tobyhanna and at the Communications and Electronics Command.

We performed our work at the headquarters, Office of the Under Secretary of Defense (Comptroller) and the Office of the Secretary of the Army, Washington, D.C.; Army Materiel Command, Virginia; the Tobyhanna Army Depot, Tobyhanna, Pennsylvania; the Letterkenny Army Depot, Chambersburg, Pennsylvania; the Corpus Christi Army Depot, Corpus Christi, Texas; the Anniston Army Depot, Anniston, Alabama; and the Red River Army Depot, Texarkana, Texas. We also visited Computer Sciences Corporation, Moorestown, New Jersey, the contractor responsible for developing and implementing LMP, to discuss with company officials the problems being experienced with the implementation of LMP at the Tobyhanna Army Depot. Most of the financial information in this report is

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**Appendix I**  
**Scope and Methodology**

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budget data obtained from official Army budget documents. The accounting data used in this report were obtained from official Army accounting reports. We conducted our work from June 2004 through April 2005 in accordance with U.S. generally accepted government auditing standards. We requested comments on a draft of this report from the Secretary of Defense or his designee. DOD provided written comments, and these comments are presented in the Agency Comments and Our Evaluation section of this report and are printed in appendix II.

# Comments from the Department of Defense



OFFICE OF THE UNDER SECRETARY OF DEFENSE  
1100 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1100

JUN 13 2005

COMPTROLLER  
(Program/Budget)

Mr. Gregory Kutz, Director, Financial Management and Assurance  
Mr. William Solis, Director, Defense Capabilities and Management  
U.S. General Accounting Office  
Washington DC 20548

Dear Mr. Kutz and Mr. Solis:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) report, "ARMY DEPOT MAINTENANCE: INEFFECTIVE OVERSIGHT OF DEPOT MAINTENANCE OPERATIONS AND SYSTEM IMPLEMENTATION EFFORTS," dated, May 11, 2005 (GAO Code 05-441). The Department concurs with comment regarding the recommendations identified in the report and is taking action to comply with them. Additional comments are provided in the enclosure.

While the Department concurs with the recommendations, we note in our comments that the report does not fully address the effects of the Global War on Terrorism and the significant impact it has had on maintenance workload at the Army depots. Support for the war has more than doubled depot workload driving significant cost increases in personnel and direct material. The Department has identified these war-related factors and realizes that these unusual circumstances generate abnormal conditions that must be considered during budget formulation, budget execution or any performance evaluation. The Department recognizes the challenges the Army is confronting during this time of war. Consideration of these realities is included when our management decisions are made.

Sincerely,

A handwritten signature in black ink, appearing to read "John P. Roth".

John P. Roth  
Deputy Comptroller

Enclosure:  
As stated

GAO DRAFT REPORT DATED MAY 11, 2005  
GAO-05-441 (GAO CODE 192134)

"ARMY DEPOT MAINTENANCE: INEFFECTIVE OVERSIGHT  
OF DEPOT MAINTENANCE OPERATIONS AND SYSTEM  
IMPLEMENTATION EFFORTS"

DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to develop and implement a systematic process for analyzing the depot maintenance activity group's material cost increases due to the price paid for material and material usage that would enable the Army to specifically identify and quantify all material cost drivers and take proactive steps to control these rapidly increasing material costs. (p. 48/Draft Report)

DOD RESPONSE: Concur with comment. The Department believes the Army should make every effort to control the growth of materiel costs. However, the Department believes the increases in materiel costs in depot repair are in part related to wartime demand increases. Hence, increased workload, degraded condition of the components that are being repaired, and accelerated delivery schedules required under wartime operations are the main factors for increased materiel costs. The Army will determine the factors affecting pricing.

RECOMMENDATION 2: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to allocate depot gains and/or losses to the individual depots if a several year trend shows that an individual depot consistently realizes gains or incurs losses. (p. 49/Draft Report)

DOD RESPONSE: Concur. The Army has added guidance to the FY 2007 Budget Estimate Submission Resource Formulation Guidance for use by the U.S. Army Materiel Command stating that gains and losses should be allocated to the individual industrial installation incurring the gains and losses if a several year trend shows that an installation has consistently realized gains or losses. OUSD(C) will review gain and loss allocation during the upcoming budget review.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) to clarify DoD's written guidance for calculating carryover so that the actual amount of carryover associated with current and prior year orders is required to be included in the reported amount provided to the Congress and DoD. (p. 49/Draft Report)

DOD RESPONSE: Concur. The Under Secretary of Defense (Comptroller) will issue revised guidance that will clarify the present carryover policy stating that both current and prior year orders should be included in the reported carryover amount.

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) to issue written guidance that specifies that only current year orders are used in calculating the allowable amount of carryover for the Army depot maintenance activity group. (p. 49/Draft Report)

DOD RESPONSE: Concur. The Under Secretary of Defense (Comptroller) will include clarification of the present carryover policy stating that only current orders should be included when calculating the allowable amount of carryover for each business area in its written guidance related to recommendations 3 and 4.

RECOMMENDATION 5: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to continue to comply with DoD's policy on not exceeding the year-end ceilings on the amount of year-end carryover ceilings. (p. 49/Draft Report)

DOD RESPONSE: Concur with comment. It is Department policy to not exceed the year-end carryover target. Excessive carryover can indicate a production limitation, or that the work may be funded ahead of need. However, because the Department is waging a War on Terrorism, circumstances not normally experienced at the Army depots have transpired and must be considered when analyzing carryover.

The Department closely monitors the Army depot maintenance carryover. The Army did not exceed their carryover ceiling in FY 2004 and is projected to be under the carryover ceiling in FY 2005. It is important to note that strict application of carryover constraints, particularly during wartime, can be disruptive to operations at industrial facilities and can ultimately impact equipment readiness.

RECOMMENDATION 6: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command (AMC) to delay implementation of the Logistics Modernization Program at the four remaining depots until the problems encountered by the Tobyhanna Army Depot with the system are resolved. (p. 50/Draft Report)

DOD RESPONSE: Concur. Army recognizes that it can not move forward with future deployment to other depots until critical problems identified at Tobyhanna Army Depot (TYAD) are corrected. Logistics Modernization Program (LMP) is currently in pilot deployment phase and is undergoing stabilization and transition. As part of the stabilization process, exit criteria for the pilot deployment are being developed and will be approved by Commanding General, AMC. AMC will not deploy LMP beyond the pilot phase until exit criteria are met and LMP is certified by the Army Audit Agency as Federal Financial Management Improvement Act (FFMIA) compliant.

RECOMMENDATION 7: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to implement the existing management procedures for ensuring the complete resolution of identified problems resulting from the implementation of its Logistics Modernization Program. (p. 50/Draft Report)

DOD RESPONSE: Concur. Army agrees with GAO's findings and acknowledges that process compliance is crucial. In October 2004, the LMP program management office initiated actions to ensure that acceptable management controls were in place and processes are adhered to.

RECOMMENDATION 8: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to reconcile all general ledger account balances between the legacy systems and its Logistics Modernization Program as of the date the Army deploys the system at the four depots that have not yet implemented the system. (p. 50/Draft Report)

DOD RESPONSE: Concur. The Army agrees that all general ledger account balances will be reconciled between the legacy systems and the LMP solution as of the date LMP is deployed to the remaining Army depots.

RECOMMENDATION 9: The GAO recommended that the Secretary of the Army direct the Commander, Army Materiel Command, to correct unit of issue and material pricing errors in the Logistics Modernization Program. (p. 50/Draft Report)

DOD RESPONSE: Concur. Actions are underway to resolve/fix existing errors.

# GAO Contacts and Staff Acknowledgments

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