

The Inventory-As-Assets Concept Implementation for Depot-Level Repairables

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Implementation for Depot-Level Reparables

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Executive Summary

Since 1998, the Logistics Management Institute (LMI) has been working with the Assistant Secretary of the Air Force for Financial Management (SAF/FM) to identify ways to simplify the financial accounting for depot-level reparables (DLRs). In the first phase of our research, LMI compared the commercial accounting practices for DLR components, used by 6 of the top 10 commercial air carriers in the United States, with the accounting practices used by the Air Force Working Capital Fund. In contrast to the Air Force's system, commercial accounting practices for DLRs (1) are simpler, (2) meet the standards required by generally accepted accounting principles (GAAP), and (3) provide the financial information needed to run a commercial enterprise in a competitive market.

In the second phase of our research, we identify the changes needed to implement more "commercial-like" accounting practices that account for the holdings of DLR components not as *inventory*—a *current* asset, but as *noncurrent* assets. This concept is often referred to within DoD as the "inventory-as-assets" concept.

AIR FORCE AND COMMERCIAL ACCOUNTING

The working capital fund's accounting vision for DLRs focuses on selling *inventories* of DLRs to customers. In the private sector, commercial enterprises supporting both the airline industry and the military have a different vision for DLRs: the accounting vision is built around a business model where the enterprise sells an *inventory service* that involves DLRs (much like a car rental agency sells a service—i.e., temporary access to a serviceable car—that involves cars).

Commercial enterprises selling this inventory service provide serviceable DLRs to airlines and to the military on a like-item exchange basis (i.e., one is issued and the same or a like-item is returned). These like-item exchanges in effect give the customers the use of a serviceable DLR while a broken one is being repaired or replaced. Depending on the specific contractual arrangements, the customer pays a service fee that covers the provider's costs of managing, acquiring, holding, distributing, and repairing DLRs. Even though legal ownership changes with these like-item exchanges, this industry usually accounts for DLRs as noncurrent

operating assets. With this accounting approach, once a DLR is recorded in the accounting system as a noncurrent operating asset, typically no further accounting postings are made to that account until new items are purchased or old items are sold or scrapped.

The working capital fund also provides that same inventory service to Air Force operational units by providing them with serviceable DLRs on a like-item exchange basis while broken DLRs are being repaired or replaced. Customers pay the working capital fund the exchange price that covers the same basic costs incurred by the commercial enterprise in providing this service. However, the working capital fund accounts for DLRs as inventory and that accounting requires millions of accounting postings each year.

THE INVENTORY-AS-ASSETS CONCEPT

Implicit in the inventory-as-assets concept is that like-item exchanges of DLRs are accounted for as noncurrent assets used by the working capital fund in the process of providing a service to customers, not as inventory—as is the current practice. By aligning the accounting treatment for DLRs with the real core business of the working capital fund, the concept

- ◆ simplifies the accounting by eliminating each year more than 100 million postings to general ledger accounts (the most troubling inventory-related postings—those associated with issues, returns, shipments, and repairs of DLRs—are totally eliminated);
- ◆ improves the auditability of financial data by linking the differences between any two accounting periods to a manageable number of transactions having a distinct and auditable paper trail;
- ◆ eliminates the troubling adjusting entries that currently plague the cost-of-goods-sold computation for DLRs; and
- ◆ helps the working capital fund become more compliant with the Chief Financial Officers Act by adopting widely used commercial accounting practices that already meet GAAP criteria.

NEEDED CHANGES

The concept does not change any of the basic supply transactions (e.g., issues, returns, and purchases) or the associated management process. All of the data needed either are already available from existing data systems or will be available when approved data system changes are implemented (e.g., the weighted-average valuation methodology). As a result, few costly or time-consuming changes are needed for implementation.

The most significant changes needed to implement the concept are of two types:

Policy and regulation changes—to Federal Accounting Standards Advisory Board (FASAB) accounting standards, DoD accounting regulations, and mission statements. Those changes are needed to recognize DLRs as noncurrent operating assets. Although not a technical challenge, the change process is time-consuming and involves many participants.

Data system changes—to the logic tables within the accounting system and to the item management systems that provide transaction data to the accounting system.

- ◆ The logic tables determine which general ledger accounts are posted (and with what value) for each supply transaction. These must be changed to accept revised general ledger accounts and to block unneeded postings. There are two separate translation tables, one for the retail system and one for the wholesale system—both require change. These logic tables are complex and any changes will require review and validation from the audit community.
- ◆ The changes to the item management systems eliminate problems associated with DLR price changes. This change maintains the exchange price in effect when DLRs are issued so the correct refund is made later when a serviceable DLR is returned for credit. Although this change is needed for the concept, it also corrects a current problem where the working capital fund refunds at least \$1M more each year than it should by using DLR prices in effect when the refund is made instead of using the prices in effect when the item was issued.

We also suggest another optional data system change that modifies the interface with the D035 system to provide the accounting system with worldwide DLR asset information. Having a valid, centralized source of this information simplifies the implementation of the weighted-average valuation methodology by centrally computing and updating the value of DLRs and provides a common database for computing DLR buy requirements, reporting DLR asset holdings, and preparing financial reports.¹

RECOMMENDATIONS

In view of the relatively few changes required and the significant reduction in accounting transactions, we recommend the following:

- ◆ SAF/FM and the Air Force Deputy Chief of Staff for Installations and Logistics should prepare a proposal for testing the inventory-as-assets con-

¹ There are many ongoing changes to improve the accuracy and auditability of DLR data in the D035. Despite those problems, D035 data are being used today in DLR accounting and the enhancements to that data system are not unique to the new concept.

cept. The test should demonstrate the feasibility of producing meaningful financial data from basic supply transactions having a distinct audit trail.

- ◆ SAF/FM should take steps to modify FASAB Standards to recognize DLRs as a special category of noncurrent operating assets. We see three possible changes: modify Standard #3, modify Standard #6, or create a unique FASAB Standard for DLRs. The Air Force must carefully consider the advantages and disadvantages of each for the specific accounting requirements the Air Force wants to implement for DLRs.
- ◆ SAF/FM should seek support from the Office of the Undersecretary of Defense (OUSD) (Comptroller), the Defense Finance and Accounting Service, and the audit community (Air Force Audit Agency, the DoD Inspector General, and the General Accounting Office) for the inventory-as-assets concept.

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Chapter 1

Introduction

BACKGROUND

In compliance with Defense Management Review Decision (DMRD) 904, the Air Force placed the overall management of depot-level reparable (DLR) components into a working capital fund that is now managed within the Supply Management Activity Group (SMAG) of the Air Force Working Capital Fund.¹ With this change, the working capital fund began collecting fees from customers each time a DLR component was issued to a maintenance organization and then, using the revenue obtained from those fees, paid the operating costs (e.g., salaries, repair and purchase of DLRs) of the fund.

The Air Force rapidly developed new or modified existing financial accounting systems to account for the revenues collected and the expenses incurred in operating the new working capital fund, and to report on the SMAG's financial health.² Although this accounting system was revised, the underlying inventory tracking and management systems were not. Those systems remained oriented around the same core business processes in effect before DMRD 904 was implemented (e.g., the single stock fund concept and the selling of consumable materials to customers). As a result, the accounting system was designed around an accretion of policies and changes made to a collection of legacy data processing systems that are now doing things well beyond, and of a different type, than they were originally designed to do. Needless to say, there were problems.

Senior Air Force financial managers have had difficulty (1) getting timely, credible information and (2) meeting statutory requirements for producing Chief Financial Officers (CFO) Act compliant and auditable financial statements from the financial accounting system established for managing the fund's operation. They

¹ Today, the Materiel Support Division of SMAG manages the working capital fund originally established for DLRs. This working capital fund, which now includes both DLRs and Air Force-managed consumable items, is one of several working capital funds operated under the aegis of the Air Force Working Capital Fund. In this report, any reference to SMAG or to the working capital fund means the Materiel Support Division of SMAG of the Air Force Working Capital Fund.

² The Financial Inventory Accounting and Billing System (FIABS) was created to accomplish the detailed general ledger accounting for the wholesale level of the Air Force supply system (i.e., that which takes place at the individual Air Logistics Centers operated by the Air Force Air Materiel Command). The Standard Materiel Accounting System (SMAS) was created to accomplish the detailed general ledger accounting for the retail level of the Air Force supply system (i.e., the supply transactions that take place at Air Force operating units serviced by the Standard Base Supply System). Another system, the Departmental On-line Accounting and Reporting System (DOLARS), was modified to combine summary trial balance data from the SMAS and FIABS into a consolidated financial position of the working capital fund.

perceive the accounting system as unnecessarily complex, difficult to use, and nearly impossible to understand. In addition, even basic information, such as the revenue it received is not readily obtainable from the financial accounting data provided. These problems motivated the Air Force to seek alternatives for DLR accounting.

SUMMARY OF PREVIOUS RESEARCH

Since 1998, the Logistics Management Institute (LMI) has been working with the Assistant Secretary of the Air Force for Financial Management to identify ways of simplifying the accounting for DLRs. In the first phase of our research, LMI compared the commercial accounting practices for DLR components, used by 6 of the top 10 commercial air carriers in the United States, with the accounting practices used by the Air Force Working Capital Fund.³

In contrast to the Air Force system, which results in massive numbers of general ledger postings and very little usable or auditable financial information for DLRs, the commercial practice

- ◆ is simpler,
- ◆ meets the standards required by generally accepted accounting principles (GAAP), and
- ◆ provides the financial information needed to run a commercial enterprise in a competitive market.

We attribute the difference between Air Force and commercial accounting practices for DLRs to two factors:

1. Commercial air carriers value DLRs at historical cost (commonly using the weighted-average method). The Air Force values its DLRs at the latest acquisition cost (LAC). The Air Force approach requires sophisticated and complex accounting transactions to establish the allowance accounts needed to comply with requirements to report inventory at historical cost.⁴ Those allowance accounts, *totally absent* in the commercial accounting practice, are both a major source of uncertainty and error in financial reports for SMAG.
2. Commercial air carriers account for DLRs as assets held for the economic good of the enterprise (i.e., non-current assets that are neither sold nor

³ Logistics Management Institute, *A Comparison of Air Force and Commercial Wholesale Inventory Accounting Practices*, Report AF804T1, David Glass, John Dukovich, and John Wallace, October 1998.

⁴ Allowance accounts are used for (1) recording the unrealized gains or losses incurred when LAC changes and the entire inventory is revalued and (2) recording the differences between LAC and the actual cost of DLR purchases made throughout the year.

consumed during the “current” accounting period). The Air Force accounts for DLRs as inventory held for sale (i.e., a current asset). The asset versus inventory distinction is more than just a difference in terminology. It results in different accounting approaches for DLRs. In the commercial world, once a DLR is acquired, there are no further financial transactions (except for depreciation transactions associated with some “DLR-like” assets) made until the item is either repaired, scrapped, or ownership is transferred to a third party (outside the enterprise).⁵ In contrast, the Air Force treats each issue of a DLR to a mechanic on the flight line as a “sale.”⁶ This requires numerous general ledger postings for each issue of a DLR, each return of a DLR, each change in location (e.g., shipments to and from the item manager), each change in condition (i.e., when it breaks and when it is repaired), and each time the LAC value changes.

RESEARCH OBJECTIVE

In this report, the result of our second phase of research, we explore impediments to implementing more commercial-like accounting practices within the context of a working capital fund. Because the Air Force has decided to implement the weighted-average method for valuing inventory, we focus on identifying the changes needed to implement what has become known as the “inventory-as-assets” concept.

RESEARCH APPROACH

Methodology

We first developed a strawman inventory-as-assets concept—complete with specific general ledger postings for the most common supply transactions (e.g., issues, returns, purchases, condemnations) and prototype financial statements. Then, by comparing this “to-be” model with the current “as-is” situation for DLR accounting, we identified the changes needed to move DLR accounting from an *inventory* orientation to an *asset* orientation that is consistent with both GAAP criteria and accounting practices used in the commercial world.

⁵ In some situations, commercial practice does depreciate some categories of DLRs. However, the most common practice is not to depreciate noncurrent operating assets used in like-item exchanges.

⁶ This point of sale decision was probably the result of implementing DMRD 904 within the single stock fund concept the Air Force still operates. With that concept, all materials held in base supply belong to the wholesale logistics system. In other Services, those materials are owned by the operating units or separate retail funds and the point of sale is between the base supply function and the wholesale logistics system.

Assumptions

Concurrent with our research, DoD and the Air Force were considering major revisions to the working capital fund and to primary information systems that provide information used in DLR accounting. This concurrency issue forced us to make three basic assumptions for our analysis:

1. DLRs will continue to be managed in some form of a working capital fund.
2. The working capital fund will continue to receive at least some of its funding directly from individual customers.
3. The Air Force will implement a weighted-average methodology for valuing DLRs.

The first two assumptions were needed to develop our strawman inventory-as-assets concept. The third is in fact no longer an assumption. The Air Force has decided to implement a weighted-average valuation methodology for both DLRs and Air Force-managed consumables. This decision is important from our perspective because having a historical cost-based method of valuing DLRs is essential to implementing the inventory-as-assets concept. Because of this decision, we do not specifically address the implementation details of that change. However, we must note that if the weighted-average methodology is not implemented, the Air Force will either have to adopt another acceptable form of historical cost-based valuation methodology or seek relief from Federal Accounting Standards Advisory Board (FASAB) Standard 6 before the inventory-as-assets concept could be implemented under the aegis of that standard.

Definitions

We use the following definitions throughout this report.

- ◆ Depot-level repairable (DLR). This term includes all repairable components managed by the SMAG and funded for in Air Force elements of expense 644 and 645. This definition excludes all DLRs not managed or funded within the working capital fund.
- ◆ Supply Management Activity Group (SMAG). Today, the Materiel Support Division of SMAG manages the working capital fund originally established for DLRs. This working capital fund, which now includes both DLRs and Air Force-managed consumable items, is one of several working capital funds operated under the aegis of the Air Force Working Capital Fund. In this report, any reference to SMAG means the Materiel Support Division of SMAG of the Air Force Working Capital Fund.

- ◆ Working capital fund. Working capital funds collect fees for providing goods or services to customers and then use the revenue obtained from those fees, to pay the operating costs (e.g., salaries, repair and purchase of DLRs) of the fund. The Air Force Working Capital Fund is actually comprised of several separate funds. Unless otherwise noted, the term working capital fund refers only to the specific division of the Air Force working capital fund that manages DLRs.

REPORT ORGANIZATION

This report is organized in the following chapters and appendixes:

- ◆ Chapter 1 Introduction
- ◆ Chapter 2 The Rationale for Change
- ◆ Chapter 3 The Inventory-As-Assets Concept
- ◆ Chapter 4 Benefits
- ◆ Chapter 5 Changes Needed for Implementation
- ◆ Chapter 6 Other Issues Unrelated to the Concept
- ◆ Appendix A Supply Transactions: Current and Inventory-As-Assets Concept
- ◆ Appendix B Airline Highlights
- ◆ Appendix C Holding Gains and Losses
- ◆ Appendix D Recommended Changes to FASAB Standards
- ◆ Appendix E Recommended Changes to DoD Financial Management Regulations
- ◆ Appendix F Systems Flowchart
- ◆ Appendix G Private-Sector Accounting Practices for Like-Item Exchanges
- ◆ Appendix H Abbreviations.

Chapter 2

The Rationale for Change

In this chapter, we discuss why the inventory-based accounting model currently used for DLR accounting is inappropriate. Essentially there are two arguments for not using the inventory-based accounting model: (1) exchange price sales are not really sales, and therefore DLR holdings should be classified as noncurrent assets; and (2) SMAG, like many commercial enterprises, sells an inventory service involving like-item exchanges of DLRs, and therefore DLRs can be classified as noncurrent assets.

For accounting purposes, SMAG classifies its holdings of DLR components as an inventory held for sale. Within that inventory-oriented accounting model, basically two types of sales occur: (1) exchange price sales, where a DLR is issued to a customer with the expectation that either the same or a like-item DLR will be returned to SMAG, and (2) standard price sales, where the issue of a DLR is made without any expectation that a DLR will be returned to replace the one issued.¹ Of the two, the exchange price sales are clearly the predominant type (see Table 2-1).²

Table 2-1. DLR Transaction Statistics

Type of DLR transaction	Quantity (percentage)	Gross dollar value (percentage)
Exchange price sales	98.3	96.2
Standard price sales	1.7	3.8
Total	100.0	100.0

Note: Percentages were calculated using Keystone data for fiscal quarters 4/98, 1/99, 2/99, and 3/99 and FY99 DLR prices.

The overarching rationale for this accounting treatment is that SMAG sells DLR components *every time* a DLR is issued to a maintenance organization to fix a broken weapon system (e.g., an aircraft) or another DLR. The fundamental question is: Why does the Air Force compute a cost of goods sold (COGS) for DLRs when the DoD Inspector General (DoD IG) questions the validity of classifying exchange price transactions—over 98 percent of DLR transactions—as sales?

¹ Sometimes, unserviceable DLRs are sold to customers; however, the volume of those transactions is so small in comparison with the other types of sales that they can be ignored for this discussion.

² In addition to DLRs, Air Force-managed consumable items are also sold. The consumables only account for 4 percent of the total revenue and are not discussed to simplify our presentation.

OWNERSHIP OF DLRs

The DoD IG has examined the sales issue from the perspective of the consolidation process for the DoD financials. In a recent audit report, the DoD IG found that DLRs held as inventory by the individual DoD components “no longer meet the definition of inventory at the consolidated level because they are not being held for sale to outside DoD.”³

The DoD IG opinion is clearly based on legal and GAAP criteria for defining a sale.

- ◆ According to the Uniform Commercial Codes, Article 2, Sales, a sale, “consists in the passing of title from the seller to the buyer for a price.”⁴ This legal definition of a sale requires the transfer of title, or a change in ownership, in return for a price (e.g., money, other goods, or the performance of services).
- ◆ The GAAP accounting criteria for a sale, provided in the Financial Accounting Standards Board’s (FASB’s) Accounting Research Bulletin (ARB) 43, clarifies the legal definition, “ownership is determined by possession of title, rather than mere physical possession of the goods.”⁵

Using these guidelines, the mere change of possession of an item is not sufficient to classify a transaction as a sale. For a transaction to rise to the GAAP standard for a sale, it must involve the legal change of ownership. Since ownership still resides within DoD, most DLR transactions are not sales and therefore the holdings of DLRs should not be classified as inventory.

The logic that the DoD IG uses to argue against classifying DLRs as inventory in the consolidated financial statements of the working capital fund also applies to the financial statements prepared for SMAG (the activity group of the Air Force Working Capital Fund that manages DLRs). If there is no transfer of title outside

³ DoD, *Reporting of DoD Inventory and Operating Materials and Supplies on the FY 1997 DoD Consolidated Financial Statements*, DoD IG Report 99-032, November 5, 1998.

⁴ The law of sales of goods is codified in Article 2 of the Uniform Commercial Codes, which are a comprehensive set of laws for every major type of business transaction.

⁵ ARBs are official pronouncements issued by the American Institute of Certified Public Accountants (AICPA), the FASB, and their predecessors. Collectively, these statements constitute what is commonly referred to as GAAP.

the Air Force, and therefore no sale, SMAG should not classify its holdings of DLR components as an inventory asset held for sale.⁶

This is a very legalistic and technical argument for not classifying DLRs as inventory—an argument that hinges on whether or not a legal change in ownership occurs for exchange price transactions. Fortunately, there is another justification for not treating DLRs as inventory held for sale that is independent of the ownership issue.

LIKE-ITEM EXCHANGES

Commercial enterprises providing logistics support to the airline industry (and the military) have a different accounting vision for DLRs. They have an accounting vision built around a business model where the enterprise sells an *inventory service* that involves DLRs (much like a car rental agency sells a service—i.e., temporary access to a serviceable car—that involves cars). The firms selling this inventory service provide serviceable DLRs on a like-item exchange basis (i.e., one is issued and the same or a like-item is returned) to airlines and to the military. These like-item exchanges in effect give the customers the use of a serviceable DLR while a broken one is being repaired or replaced. Depending on the specific contractual arrangements, the customer pays a service fee that covers provider's costs of managing, acquiring, holding, distributing, and repairing DLRs.

Because the product being sold is a service, commercial accounting practice for like-item exchanges allows either a noncurrent operating asset approach or an inventory approach for DLRs. The approach selected depends on what is sensible for a type of DLR and what is supportable and auditable with the information systems in place. The inventory approach is used; however, it is used primarily in situations where the enterprise has very sophisticated and reliable (and thus auditable) item management systems—a situation not applicable to the Air Force.

Even though legal ownership changes with these like-item exchanges, this industry usually chooses to account for DLRs as noncurrent operating assets (see Appendix G). With this accounting approach, once a DLR is recorded in the accounting system as a noncurrent operating asset, typically no further accounting postings are made to that account until new items are purchased or old items are sold or scrapped.

⁶ As will be discussed next, SMAG includes the items sold to maintenance (i.e., DIFM recorded in GLAC 131.01) as part of the beginning and ending inventory reported on its financial statements. This fact presents another difficulty with classifying DLRs as inventory: if these DLRs have been sold, they should not be reported on the financial statement since by definition SMAG does not own them. However, if SMAG retains ownership (and the DLRs have not been sold) the DLRs can be reported on the financial statement; but, should not be classified as inventory.

One rationale for using this accounting approach is that like-item exchanges do not affect the number of DLRs in the accounting records. Implicit in selling products is that when the product is sold, the accounting system recognizes the material costs of the items sold as an expense. With inventory accounting, that expense, or COGS, *must* be calculated by subtracting the ending inventory from the beginning inventory (plus purchases and other adjustments unrelated to sales). Thus, if the starting inventory is 50 items and 50 items are sold during the accounting period, the COGS is calculated for the value of 50 items. However, for like-item exchanges, if the beginning inventory is 50 items and 50 are sold, the ending inventory is 50 items because for every DLR sold one DLR is returned.⁷

The items at the end of the accounting period will not be necessarily the same 50 items as in the beginning, but there will be 50— unless more are purchased or some are scrapped (or sold to another third party). Because commercial practice does not depreciate or revalue these like-item exchanges when the noncurrent asset approach is used, the COGS computation would yield the number zero.

The working capital fund provides a similar inventory service to Air Force operational units by providing them with serviceable DLRs on a like-item exchange basis while broken DLRs are being repaired or replaced. Customers pay the working capital fund a fee (known as the exchange price) that covers the same basic costs incurred by the commercial enterprise in providing this service. Not only does SMAG provide a similar inventory service, it also accounts for exchange price transactions as like-item exchanges because exchange price transactions do not change the total number of DLRs reflected on the SMAG's accounting records.

For exchange price transactions, SMAG makes the following inventory-related general ledger postings when the DLR is issued:⁸

- ◆ The serviceable inventory, general ledger account code (GLAC) 130, is reduced by the LAC of the serviceable DLR (sometimes referred to as a ready-for-issue DLR, or an RFI DLR) issued to the customer.
- ◆ The inventory of DLR items due-in-from-maintenance (DIFM), GLAC 131.01, is increased by the carcass value (defined as the LAC minus the latest repair cost of the item) of the DLR issued.

⁷ This is not the same as the auto parts store, frequently mentioned, but incorrectly, as the appropriate business model for SMAG. With a purchase from the auto parts store, the customer may or may not return the unserviceable carcass. With the like-item exchange business model, the purchaser is contractually obligated to return the carcass.

⁸ Here we ignore the revenue-related general ledger postings and some offsetting postings. For a complete description of the general ledger postings associated with the issue and return of a DLR, see Appendix A of Glass, et al.

When the maintenance organization returns the DLR (or a like-item) to SMAG, the following inventory-related general ledger postings are made:

- ◆ The inventory of DIFM items, GLAC 131.01, is decreased by the carcass price of the DLR item being returned.⁹
- ◆ Depending on the condition of the item returned, one of the two following general ledger accounts is increased:
 - If the DLR is serviceable or RFI, the serviceable inventory account, GLAC 130, is increased by the LAC of the item returned.
 - If the DLR is unserviceable (i.e., broken), the unserviceable inventory, GLAC 137, is increased by the carcass price of the item returned.

These SMAG transactions are important because all three of these inventory accounts—the serviceable inventory, GLAC 130; the unserviceable inventory, GLAC 137; and the DIFM inventory, GLAC 131.01—are used to calculate the beginning and ending inventory balances reported on the SMAG's financial statements. The DLR is reclassified (from a serviceable item to a DIFM item) and revalued (from LAC to carcass), but it is never removed from the SMAG's financial accounting records. Thus, if SMAG starts with 50 DLRs, with those postings it ends up with 50 DLRs.

Unlike commercial practice, SMAG revalues unserviceable DLRs at the carcass value of the item. Thus, the net effect of these general ledger transactions on the COGS computation is that the average repair cost of all unserviceable returns are expensed for exchange price transactions through the COGS.¹⁰ By classifying DLR holdings as inventory, the working capital fund accounting requires millions of accounting postings each year and places accuracy demands on its inventory management information system far in excess of what that system can provide.¹¹

⁹ The reduction in value (carcass compared with LAC) is intended to comply with FASAB Standard #3, which requires that the value of unserviceable DLRs be reduced by the estimated cost of repair.

¹⁰ This assumes the repair is not completed at the end of the accounting period. If the repair is complete and the item is serviceable at the end of the accounting period, the repair expense is simply a period expense. Ultimately, after the DLR is repaired in a subsequent accounting period, the accounting postings reduce the COGS by the repair price and in effect then "rerecognize" the repair expense as a period expense.

¹¹ To make the COGS calculation accurately requires perfect knowledge of the exact numbers of each of over 200,000 types of DLRs (currently having an estimated value of over \$28 billion) held at numerous locations scattered throughout the world, and that each of 60 million supply transactions and the associated inventory-related general ledger postings are made perfectly. In the commercial world, where DLRs are noncurrent assets, the repair expense is simply what was paid for DLR repairs—an easily audited number.

Implicit in the inventory-as-assets concept, discussed in the next chapter, is that like-item exchanges of DLRs are accounted for as noncurrent assets used by the working capital fund in the process of providing a service to customers, not as inventory—as is the current practice. Patterned after commercial accounting practices for DLRs, this concept is GAAP compliant and reflects the predominant and de facto business of SMAG.

Chapter 3

The Inventory-As-Assets Concept

In Chapter 2, we discussed why the inventory-based accounting model currently used for DLR accounting is inappropriate. In this chapter, we present an alternative way of accounting for DLRs patterned after commercial practice found in commercial enterprises providing inventory support on a like-item exchange basis to aircraft operated by the airlines and the military (see Appendix G for details). With this inventory-as-assets approach, DLR components are classified not as inventory, a current asset, but as noncurrent operating assets.

OVERVIEW

The concept is simple: DLRs are treated, for financial reporting purposes, as a noncurrent operating asset—not as inventory held for sale. These noncurrent operating assets are not depreciated, nor are they revalued when they become unserviceable or are repaired. This is basically how the commercial air carriers account for most DLRs today, except for one thing. To make the concept work in a working capital fund environment, we have to retain some form of transfer pricing. For that purpose, we retain the transfer price terminology for DLRs (exchange prices and standard prices) currently used by the Air Force. Using these terms has two advantages: their meaning is widely understood within the Air Force, and their use illustrates that this accounting change can be implemented independently of the DLR pricing policy.

Transparency to the Customer

The changes and benefits of this concept will be transparent to SMAG's customers. They will still have to plan and budget the same amount of resources for DLRs each year, pay the same prices for DLRs they pay today, and fill out the same paperwork for requesting and returning DLRs. The major benefits of this concept will be realized within SMAG: reducing and simplifying the basic accounting transactions, helping produce more verifiable and auditable financial statements, and moving SMAG into better compliance with congressional mandates, such as the CFO Act.

Accounting Changes

In this subsection, we summarize the accounting changes associated with this new concept and the impact they will have on the way the Air Force does business. For a more complete understanding of the specific debits and credits for the most

common supply transactions (e.g., issues, returns, purchases, and condemnations), see Appendix A.

DLR PRICES

The concept does not require any change to the way DLR prices are computed. In fact, the concept itself is independent of how the working capital fund receives its funding. The Air Force is considering many options for DLR pricing (e.g., marginal pricing and changing the refund policy for customers returning a serviceable DLR). While some of these approaches may change the specific transactions described in Appendix A, each can be accommodated within the inventory-as-assets concept.

REVENUES

The concept does not change the total amount of revenue the working capital fund will collect each year. However, the inventory-as-assets concept changes when that revenue is recognized and where it is reported on the 1307 report.

Revenue Recognition

Today revenue is recognized when the DLR is issued to the maintenance organization—the sale—and the customer pays either the exchange or standard price. While this approach certainly helps minimize cash flow problems, two problems arise when a serviceable DLR is returned for credit:

- ◆ It overstates revenues by the amount of the credit that will be refunded to the customer.
- ◆ It requires 10 million general ledger postings to reverse the 12 million accounting postings made when the item was issued.¹

One straightforward solution would be not to recognize revenue or collect the customer's funds until an unserviceable DLR is returned. Although it would fix the overstatement of revenue and eliminate unnecessary accounting postings, the solution has several drawbacks, including

- ◆ causing Anti-Deficiency Act problems by reducing SMAG's cash balances,
- ◆ creating funds control problems for the customer if they have to turn in a broken DLR and have no money to pay the bill, or
- ◆ motivating customers not to return broken parts.

¹ This is calculated from the same Keystone data used to prepare Table 2-1. The difference in the number of original and reversing postings is because 14 general ledger postings are made when a DLR is issued, but only 12 when a serviceable DLR is returned. See Appendix A of Glass et al. for details.

The approach we used for recognizing revenue in our inventory-as-assets concept strawman was adapted from the rental car industry. Instead of collecting the exchange price and recognizing the same amount of revenue when the DLR is issued, with the new concept, the customer pays a deposit equal to the exchange price. If a serviceable DLR is returned, the deposit is refunded to the customer and there are no further postings to unrecognize revenue or to revalue or reclassify DLRs. If an unserviceable DLR is returned, the customer forfeits the deposit, the deposit is reclassified as a revenue, and only then is that revenue recognized.

Since SMAG collects the same amount of funds and at the same time, there is no effect on its cash balances. Furthermore, revenue is recognized more correctly, and the total number of offsetting entries is reduced (see the discussion in Chapter 4 for the details).

Revenue Reporting

The 1307 report already has three categories for reporting revenue: (1) appropriated capital used, (2) revenue from the sale of goods and services, and (3) other revenue and financing sources. Technically, all revenue from DLRs sales could be reported under the second category even with the inventory-as-assets concept; however, that is not the practice today. Revenue from exchange price sales is reported as "other revenue and financing sources" and revenue from standard price sales (both DLRs and consumables) is reported as revenue from the sale of goods and services.

If the visibility is needed, the revenue from exchange price DLR sales might be better reported as revenue from the sale of goods and services since those transactions are the predominant source of revenue. Revenue from standard price transactions (both consumables and DLRs) would be reported as other income since that revenue is very small.

NO COGS FOR DLRs

Since DLRs will be used in the process of selling a service, the expenses currently recognized in the calculation of the COGS must be reported elsewhere in the 1307 report.

- ◆ *Exchange price transactions.* With the current system, the cost of repairing a DLR is first expensed on the 1307 report through the COGS computation. Later, when the DLR is repaired, the COGS is adjusted to reverse out the repair expense, and the average actual cost of repairing that type of DLR is recorded as a period expense in GLAC 550 (actual repair expense).² Under the inventory-as-assets concept, the repair expense is reported only once as a period expense when the repair is made, consistent with commercial

² The actual cost used here is an average repair cost for this type of DLR. The actual cost of a specific repair may be more or less. We use the same average repair cost approach with the inventory-as-assets concept.

practice. There may be timing issues since today the repair expense is recognized when the DLR is issued, but with inventory-as-assets the repair expense is recognized when the repair is accomplished.³

- ◆ *Standard price transactions.* The reduction in operating assets due to a sale (i.e., an issue of a DLR with no like item return) that results in an expense equal to the weighted-average cost of the DLR is categorized as other expenses.

STATEMENT OF FINANCIAL POSITION

Under the concept, DLR items are no longer reported on this portion of the 1307 report (i.e., the balance sheet) as a current asset, but reported as a noncurrent asset. While that re-categorization affects its position on the asset section of the balance sheet, the dollar amount of total assets remains unchanged.

BUDGET PREPARATION

There is no impact on the budget. Price and rate setting is not affected by the concept. The budget is created using a calculated net sales figure, from which a calculated COGS is derived by backing out any related surcharges. While it may be appropriate to rename that calculated COGS used to prepare the budget, the cost elements included in that calculation will not change. None of the GLACs from the financial system used to prepare the budget are affected by the concept.

NET OPERATING RESULT

Basically, the concept does not affect the net operating result (NOR) reported in the 1307's report of operations. The changes are to the classifications of assets, income and expense, but not to the overall dollar amounts being reported. However, there is a possible timing impact on revenue related to recognition of repair revenue.

SPECIAL ISSUES

The inventory-as-assets concept differs significantly from current Air Force accounting practice in two ways: it does not depreciate DLRs and it does not revalue DLRs when they break or are repaired. Although both of these aspects were adapted from widely used commercial accounting practices used for DLRs (practices that are generally accepted as GAAP compliant), we summarize the rationale for each.

³ For some transactions the timing effect will extend over many periods until the item is actually repaired.

No Depreciation

Perhaps the more controversial of the two is not depreciating DLRs, particularly because the noncurrent asset category might likely fall under the general property, plant, and equipment (PP&E) asset class in FASAB Standard 6, and that standard clearly states that “depreciation expense *shall* be recognized on all General PP&E.”^{4,5}

Typically, the value (or service potential) of a noncurrent asset is expected to decrease over time due to age and wear. To approximate that decline in value on the financial statements, accountants depreciate the asset. Both FASAB and GAAP recognize depreciation as the process for adjusting, in a systematic and rational manner, the historical cost of assets to best approximate their current economic value (or income producing potential).⁶ During each accounting period, the decline in the assets’ ability to generate income (i.e., the amount of depreciation) is expensed against the revenue produced during that period, thus matching the revenue produced with the expenses incurred in producing that revenue.⁷

The argument for not depreciating DLRs stems from the position that DLRs do not lose their value over time, and therefore the appropriate depreciation is zero:

- ◆ DLRs are routinely maintained or repaired, with the intent of bringing the asset back to its original ready-for-issue state in a relatively short period of time. As such, an older DLR will have the same functional ability as a newer DLR of the same type.
- ◆ There is no distinction made in DLR exchange price transactions for issuing an older or newer DLR; an older DLR will have exactly the same utility as the newer DLR.⁸
- ◆ Since the objective of depreciation is to show the decrease in value of an asset over time (either due to its decreasing functional ability or ability to generate revenue), it makes no sense to depreciate DLRs because the value of the DLR has been maintained through a systematic process of repair

⁴ FASAB Standard #6, *Accounting for Property, Plant, and Equipment (PP&E)*.

⁵ See Chapter 5 for our recommendations as to how this standard should be changed to accommodate DLRs.

⁶ Another argument for depreciation is its impact on reducing tax liability. Since SMAG is not subject to tax regulations, that argument does not apply to SMAG.

⁷ This argument is the basis for the requirement for depreciation in FASAB Concept #1, *Objectives of Federal Financial Reporting*. It views recognizing the depreciation cost for general PP&E as essential to the process of assessing an entity’s operating performance. The operating performance objective requires that “the federal financial reporting assist report users in evaluating the service efforts, costs, and accomplishments of the reporting entity; the manner in which these efforts and accomplishments have been financed; and the management of the entity’s assets and liabilities.”

⁸ In many situations, even standard price transactions (those meeting the GAAP criteria for a sale) are satisfied with any serviceable DLR in the inventory regardless of age.

and refurbishment. Furthermore, SMAG does not differentiate between new and used DLRs in its pricing scheme and thus does not need information on the cost of used and new DLRs.

Of course, maintaining that asset value is not free. There is a measurable cost of repairing and refurbishing DLRs back to their original ready-for-issue state. Under the inventory-as-assets concept, the cost incurred in maintaining the value of DLRs (i.e., the repair cost) is expensed (as a period expense) against the revenue realized in the same accounting period. Also when DLRs cannot be repaired, or become obsolete or excess to the Air Force's needs, the weighted-average historical acquisition cost of the DLR will be written off. In essence, these costs are a substitute for depreciation.⁹

In effect, this is exactly what occurs today: the inventory of DLRs is not depreciated but the repair cost of returning DLRs to a ready-for-issue condition is ultimately expensed as a period expense in GLAC 550 (repair expense) and the cost of replacing DLRs is expensed through the COGS computation. Although seemingly controversial, not depreciating DLRs is an acceptable and widely used commercial accounting practice within the airline industry (see Appendixes B and G for details); it does not violate GAAP guidelines and de facto is exactly what is being done today for DLRs.

No Revaluation

If not controversial, the idea of not revaluing DLRs is at least very different from current Air Force practice. Although DoD financial regulations do not specifically require the revaluation or reclassification of DLR holdings when they become unserviceable or when they are repaired, the Air Force currently revalues or reclassifies DLRs every time SMAG "sells" one to maintenance and every time maintenance (either base or depot level) returns one to SMAG—between 12 and 17 million times each year.^{10,11} For more detail, please refer to Table 4-1. These transactions require 66.8 million general ledger postings to revalue and reclassify DLRs in the accounting records.¹²

We interviewed commercial air carriers and contractors providing logistics support to the air carriers or the military. The commercial sector makes extensive use of their inventory management systems to know the quantity, location, and condition of items; however, industry *does not* revalue or reclassify DLRs based on the

⁹ Since all relevant costs will be recognized, the inventory-as-assets concept will not violate the FASAB's operating performance objectives.

¹⁰ The DoD financial regulations do require the use of a contra asset account for recording the expected repair cost of unserviceable DLRs.

¹¹ Calculated from the Keystone data used to prepare Table 2-1. For the top end of the range, we assume that depot-level maintenance either repairs or condemns all DLRs returned from base level.

¹² In Chapter 6 we discuss alternatives for simplifying the accounting for these unserviceable DLRs if the inventory-as-assets concept is not implemented.

condition of the item. The rationale for this commercial practice is that DLRs are routinely maintained or repaired, and the intent is to bring the asset back to its ready-for-issue state in a relatively short period of time. From their perspective, it makes little economic sense to temporarily restate the value of assets. (Also, they do not normally revalue excess or obsolete DLRs until the item is actually disposed of by their disposal department.)

Not revaluing noncurrent operating assets is consistent with commercial accounting practice for DLR and if the inventory-as-assets concept were implemented under FASAB Standard 6, the practice is also consistent with FASAB guidelines.

Chapter 4

Benefits of Implementation

When financial reports reflect a true picture of the business entity, upper management can use the financial information in the decision-making process as well as in analyzing how well the business is meeting its financial operating goals. Today, however, the SMAG financial data are of little use to managers.

Implementing the inventory-as-assets concept will help change that situation. By aligning the accounting system with SMAG's true core business purposes, the accounting system can be simplified; thereby eliminating millions of general ledger postings each year. The final result should be useable, more auditable, and much more believable financial information.

ALIGNMENT OF ACCOUNTING PROCESSES

The accounting system was structured to provide managers with financial information about selling inventories to customers. As a result of that sales orientation, the accounting system is so complex that managers receive little useable or auditable financial information from the accounting system.

As discussed in Chapter 2, SMAG's core business is very similar to commercial enterprises that sell inventory services to airlines and to the military.¹ Knowing the exact business is not nearly as important as is realizing that DLRs are used in that business to provide a service from which revenue is derived. Had the designers of the accounting system recognized that fact, the system could have been designed differently:

- ◆ It might have required many fewer transactions for DLR accounting.²
- ◆ Many design decisions (e.g., decentralized valuing of DLR holdings at the point of sale) might have been made differently.

As Air Force management is already aware, forcing DLR accounting into an inventory orientation has resulted in a complex accounting system. Aligning DLR accounting with the real core business of SMAG creates opportunities for simplifying the accounting by eliminating millions of general ledger postings, improving the auditability of financial data by linking the differences between any two

¹ SMAG's mission is to provide customers with access to a supply of serviceable DLRs and to manage the purchase, repair, and distribution of DLR components within the Air Force.

² If FASAB standards had existed when the accounting system was developed, the system could have been designed around simpler accounting standards (FASAB Standard 6 instead of Standard 3).

accounting periods to transactions having a distinct and auditable paper trail, eliminating troubling adjusting entries, and moving SMAG accounting toward the GAAP criteria used in the commercial world.

ELIMINATION OF POSTINGS

To illustrate the reduction in postings that can be achieved with the inventory-as-assets concept, we prepared Table 4-1 by updating and expanding the data we used in our 1998 report. In 1998, we estimated there were approximately 140 million general ledger postings related to just the issue, return, and repair of DLRs. After our estimate is updated with the latest transaction data, that number is nearly 200 million postings as shown in Table 4-1. Overall, the table shows that the number of general ledger postings can be reduced from 197.1 million to 42.3 million—a 78.6 percent reduction. We structured the table to focus attention on three issues: non-value-added postings and two very different categories of general ledger postings: the revenue-related and the inventory-related postings. We discuss each in turn.

Table 4-1. Reduction in General Ledger Postings

Type of exchange price DLR transaction ^a	General ledger postings			Total (millions)
	Revenue postings (millions)	Inventory postings (millions)		
		Condition	Location	
DLRs as inventory (as-is)				
Issue and return of RFI DLR	13.4	8.4	0.0	21.8
Other DLR transactions	58.5	58.4	58.4	175.3
Total	71.9	66.8	58.4	197.1
Inventory-as-assets concept (without revenue sub-ledgers)				
Issue and return of RFI DLR	3.4	0.0	0.0	3.4
Other DLR transactions	38.9	0.0	0.0	38.9
Total	42.3	0.0	0.0	42.3

Source: Number of DLR transactions from Keystone data used to prepare Table 2-1. Postings per DLR transaction from LMI Report AF804T1 Appendix A (see Note 3, Chapter 1).

^a Typical supply transactions associated with the issue, return, repair, and shipment of DLRs (excludes purchases, condemnations, and interbase transfers).

The inventory-as-assets concept does not change the basic supply transactions (e.g., purchases, issues, condemnations, and transfers to maintenance or between bases) that are performed each day. However, the concept significantly reduces the number and complexity of general ledger postings associated with those basic supply transactions. We provide the details of the postings in Appendix A, both how they are made today and how they would change with the inventory-as-assets concept.

Non-Value Added Postings

One often-quoted statistic from our 1998 report is the number of non-value added general ledger postings. This is defined as the number of general ledger postings made when a serviceable DLR is issued to maintenance and when maintenance returns a serviceable DLR to base supply. In this situation, maintenance receives a credit equal to the exchange price originally paid and, as a result, those two sets of general ledger posting should net to zero. What caught managers' attention in our previous report was that it took 9 million posting to accomplish, in their words, *nothing*. After updating our numbers with the latest Keystone data, the number of those non-valued-added postings is now estimated at nearly 22 million.

The inventory-as-assets concept strawman we evaluated (see Chapter 3) only requires 3.4 million general ledger postings—an 84 percent reduction in these non-value-added postings. This should be the absolute minimum number of postings needed, if the Air Force requires SMAG to collect some monetary deposit before issuing a DLR to an exchange price customer.

Revenue-Related Postings

We separated the general ledger postings into two groups to emphasize how the inventory-as-assets concept affects revenue-related postings and inventory-related postings. In our 1998 report, we indicated that many revenue-related postings were being made to individual sub-ledger accounts in the general ledger so Air Force managers could separately track the five components of the exchange price. We still believe those management data could be calculated from data residing within Keystone's detailed transaction database, thereby reducing general ledger postings from 71.9 million to 42.3 million if the sub-ledger details were eliminated.³

However, the level of detail in the revenue postings and the associated number of general ledger postings is not a problem. If revenue sub-ledger detail were retained, 56.9 million general ledger postings would be required—still a reduction of 15 million postings. The inventory-related postings, however, are a serious problem.

Inventory-Related Postings

The very serious problems LMI has observed in the periodic accounting statements produced by SMAG mostly relate to the computation of the COGS expense (see discussion in Chapter 6 for details). The 125 million inventory-related general ledger postings collectively determine many of the values used in that COGS computation. With the inventory-as-assets concept, none of those inventory-related posting will be made because DLRs will not be revalued with condition

³ If the sub-ledger detail were retained but with revised postings, approximately 56.9 million revenue-related postings would be needed.

changes, nor will there be general ledger changes when DLRs are shipped from one location to the next. Those changes will be reflected in the item management systems but not posted to the general ledger.

Having 125 million fewer transactions to review should make the functional manager's and the auditor's jobs much easier.

IMPROVED AUDITABILITY

For a number of years, the Air Force, along with the other services, has been quite concerned with the accuracy and auditability of its financial statements. The CFO Act of 1990 made achieving auditable financial reports an imperative for all government agencies. The Air Force and the other Services have found it very difficult to get a clean audit of their financial reports due to many factors (e.g., out-of-date systems, weak internal controls, missing or out-of-date policies). A high-risk area of concern for auditors has been inventory management, in which difficulties with valuing and reconciling physical inventories to financial account balances has been cited.⁴

Contributing to the auditing problem are the 197 million general ledger postings made each year to account for inventory movements, changes in condition, issues, and returns. The velocity and volume of these transactions—coupled with relatively slow, batch-oriented legacy data systems—have produced severe timing problems for anyone attempting to audit the accounting information. The numerous reclassifications of inventory, the recording of sales for exchange transactions (and later the return credits), and price adjustments create so much detail to sift through that it is basically impossible to reconcile or audit these accounts.

The reduction in general ledger postings discussed previously should greatly enhance the auditability of the financial statements. Under the inventory-as-assets concept, the value of DLR holdings is not computed from millions of transactions each month (many of which due to timing problems are not processed during the period in which they actually occur or are corrections to data from prior months). Under this concept, once the value of DLRs is established, it remains stable from one accounting period to the next, except for truly meaningful financial transactions (such as changes in title not involving like-item exchanges, purchases, and write-offs) that leave an auditable paper trail.⁵

⁴ General Accounting Office, *High-Risk Series: Defense Inventory Management*, GAO/HR-97-5, February 1, 1997.

⁵ Of course, establishing that initial value of DLRs will not be easy because the Air Force does not have a CFO-compliant system for determining how many DLRs it owns. However, that is a problem implicit with today's DLR accounting system as well. As information system improvements are made, e.g., under the Stock Control System (SCS) project and Total Asset Visibility, the total numbers may become auditable as well. But for now, all inventory-as-assets can do is improve the auditability of changes from one financial period to the next.

In discussions with the Air Force Audit Agency (AFAA), the inventory-as-assets concept has been very well received. The auditors felt the methodology and the theory were sound, and the procedures much simpler to implement and audit than those currently in practice. They generally agreed that the concept appeared to establish a cleaner and more auditable approach to inventory, and they tended to agree with the principle that SMAG is not in the business of sales and that ownership was the key to defining a sale. No auditor we interviewed had a problem with DLRs being carried as nondepreciable assets.

REDUCTION OF ADJUSTING ENTRIES

Adopting the inventory-as-assets concept would eliminate or significantly reduce the need for two types of adjusting entries: end-of-period allowance account adjustments and end-of-period consolidation entries.

End-of-Period Allowance Account Adjustments

Using the inventory-as-assets concept would force the Air Force to value DLRs using historical cost if DLRs were classified as noncurrent operating assets using FASAB Standard 6 for PP&E. This standard does not allow for the current practice of valuing DLRs at LAC and reporting them at historical cost; it only allows the use of historical cost for valuing and reporting DLRs. The Air Force has already mandated a move to valuing DLRs at the weighted-average value, a method of historical cost valuation accepted by both FASAB and GAAP.

Currently, end-of-period adjusting entries are prepared to adjust Holding Gains and Losses allowance accounts for the portion that must be attributed (i.e., realized) to inventory reductions. This adjustment is the result of a complex calculation that has proven difficult to derive, and at times has been inaccurately calculated or even inaccurately defined.⁶ These problems contribute to large, “unexplainable” swings that managers observe in the net operating result from one month to the next.

If implemented properly, the weighted-average valuation method would obviate the need for the allowance account and thus the necessity for the end-of-period adjustments. As we prepare this report, the Air Force is just beginning to develop the details for implementing and using the weighted-average method. The commercial airlines we interviewed update weighted average as new DLRs are purchased (perpetual update), and they have no allowance accounts. To eliminate the need for allowance accounts, LMI suggests that the weighted-average be updated, at a minimum, every month.

⁶ For a more detailed discussion of this topic, see Chapter 6.

End-of-Period Consolidating Entries

Adopting this concept will also eliminate adjusting entries to reclassify DLRs from inventory to operating supplies and materials on the DoD consolidated financials. As mentioned previously, the DoD IG reported that “inventory” was erroneously reported on the DoD consolidated financial statements because these assets were not being held for sale to outside DoD. As a remedy, the DoD IG suggests that an adjusting entry be made on the consolidated financial statement to reclassify a portion of DLR holdings from “inventory held for sale” to “operating assets.”⁷

With the inventory-as-assets concept, DLRs are not classified as inventory, but as noncurrent assets used by the DoD entity. Thus, DLRs will be consistently reported at the DoD component level and at the DoD consolidated level, and this end-of-period adjustment will not be necessary.

MOVEMENT TO BEST PRACTICES

All the ideas we incorporated into our strawman inventory-as-assets concept are being used in the commercial world. Commercial air carriers use similar asset treatment for their DLR-like items and are able to achieve “clean” audits of their financial reports (meaning the methodology must be GAAP compliant and therefore auditable).

GAO has strongly recommended that DoD adopt commercial best practices. GAO reported that DoD needs to set “aggressive milestones for substantially expanding the use of modern commercial practices.”⁸ In a report specifically related to DLRs, GAO was mandated by Congress to report on the feasibility of adding “reparable parts” to section 395, which requires the development and submission of a schedule to implement best practices among the military services. GAO reported that “it is feasible for the list of items covered by section 395 to be expanded to include reparable parts.”⁹ The GAO is a strong proponent of implementing commercial and GAAP practices.

⁷ The nature of the DoD IG’s adjustment assumes that the holding of DLRs is proportional to the ratio of revenue generated by standard price sales to the revenue generated by exchange price sales. This assumption is invalid because a dollar of exchange revenue requires significantly more “inventory” because of pipeline, safety stock, and mobility/readiness requirements than do standard price sales.

⁸ GAO, *High Risk Series: Defense Inventory Management*, GAO/HR-97-5, February 1, 1997.

⁹ GAO, *Inventory Management: DoD Can Build on Progress by Using Best Practices for Repairable Parts*, GAO/NSIAD-98-97, February 27, 1998.

Chapter 5

Changes Needed for Implementation

Inventory-as-assets concept is a simplified accounting concept that should be relatively easy to implement. As a result, the benefits of implementing inventory-as-assets far outweigh the surprisingly few changes that are needed. There are two types of changes required for implementation:

- ◆ *Policy changes.* Policy and regulation changes are needed to recognize a new category of non-current operating asset. These include changes to FASAB standards and DoD financial management regulations.
- ◆ *Data system changes.* Data system changes are needed to modify the way in which the financial and inventory systems interpret basic supply transactions and to collect worldwide DLR quantities from a single source.

We discuss the changes in the following sections of this chapter. Also, we provide supplemental information in the appendixes. Appendix A shows the recommended transactions and GLACs under the new concept. Appendixes D and E provide recommendations for rewriting the FASAB standards and the DoD regulations.

Although “auditor approval” is not a change, it is one of the most important aspects to consider before the adoption of any new concept—especially because the Air Force needs to be CFO compliant. This chapter includes discussion of the need for the auditors to peruse the concept, benefits, and changes required.

POLICY AND REGULATION CHANGES

FASAB Standards

The Statement of Federal Financial Accounting Standards (SFFAS) are recommendations adopted by FASAB to provide accounting standards to be followed by federal agencies. These standards are the guidelines by which federal agencies account for assets, liabilities, income, expenses, and other mandated financial information. In order to make any accounting practice changes without going through FASAB, the SFFAS, or the “standards,” would have to be generally worded, which would allow for user interpretation of their applicability. Unfortunately, to implement the inventory-as-assets concept would require FASAB to either modify an existing standard or issue a new one. It is a much simpler process to request a modification to an existing standard.

There are two possible standards that accommodate the inventory-as-assets concept: FASAB Standard #3, *Accounting for Inventory and Related Property*, or FASAB Standard #6, *Accounting For Property, Plant, and Equipment (PP&E)*

- ◆ *FASAB Standard #3*. This standard would require substantial rewriting to adapt it for the inventory-as-assets concept. A whole new asset category or subcategory would be required because none of the categories listed in this standard apply to noncurrent operating assets—which are assets that are not for sale, are not consumed in normal operations, and retain their value.¹ Also, Standard #3 would need to emphasize that the ownership recognition criteria for inventory is when title passes to the purchasing entity, not when title passes *or* when the goods are delivered. On the other hand, the lack-of-depreciation issue would be more easily addressed within this standard. Appendix D, Section A, contains a rewrite (or rewording) of the applicable sections of FASAB Standard #3.
- ◆ *FASAB Standard #6*. A change to the depreciation requirement would be needed to allow this standard to serve as the accounting guideline for the inventory-as-assets concept. Of the four PP&E asset categories listed, only the general PP&E category would apply.² General PP&E are items that are not intended for sale, are used to produce goods or services, or are used to support the mission of the entity. Similarly, DLRs under this concept are no longer assets available for sale or consumed in normal operations, but instead are noncurrent operating assets to be used by the business entity over time, which fall within the definition of general PP&E.

Another strong reason for using general PP&E is that it does not require assets to be reclassified and revalued into subcategories as specified in FASAB Standard #3.³ It is clear that there is little economic sense in temporarily restating the value of a DLR if there is a stated intent to bring the asset back to its ready-for-issue state in a relatively short period of time (Chapter 3). Also, the rationale for no depreciation for the inventory-as-assets concept would have to be incorporated in the standard as an exception to the depreciation requirement. Most importantly, Standard #6 would need to emphasize that the ownership recognition criteria for PP&E is

¹ FASAB Standard #3 asset categories include inventory, operating materials and supplies, stockpile materials, seized and forfeited property, foreclosed property, and goods held under price support and stabilization programs.

² FASAB Standard #6 asset categories include general PP&E, federal mission PP&E, heritage PP&E, and stewardship land. For entities operating as business-type activities, all PP&E are categorized as general PP&E, whether or not they meet the definition of any other PP&E category.

³ FASAB Standard #3 requires that inventory and operating materials and supplies be subcategorized as follows:

- ◆ *Inventory*—held for sale; held in reserve; excess, obsolete, and unserviceable; or held for repair.
- ◆ *Operating materials and supplies*—held for use; held in reserve; excess, obsolete, and unserviceable.

when title passes to the purchasing entity, not when title passes or when the goods are delivered. Appendix D, Section B, contains a rewrite (or rewording) of the applicable sections of FASAB Standard #6.

With appropriate modifications made to the existing standard, either Standard #3 or Standard #6, the inventory-as-assets concept could be adaptable. However, LMI strongly favors the modification to FASAB Standard #6 to incorporate the concept. This standard refers to noncurrent assets. The only change would be in creating a special category under the general PP&E to recognize a special type of noncurrent operating asset that is not depreciated.

DoD Regulations

DoD 7000.14-R, the DoD Financial Management Regulation, expands on FASAB guidance and gives specific directions for preparing the DoD financial statements. Any material changes to DoD regulations cannot violate or contradict the guidelines issued by FASAB, unless an exception to the rule is granted by FASAB. There are two changes that would have to be made to the DoD financial regulations to incorporate the inventory-as-assets concept:

- ◆ *Redefine the business of SMAG.* The business of SMAG must be refocused from one of “selling DLRs” to one oriented toward “providing a service.” As written, the financial regulations only authorize the use of SMAG resources to purchase and repair items held for sale and for commissary items. Appendix E contains a rewrite (or rewording) of the applicable sections of the DoD regulation.
- ◆ *Modify DLR transaction examples.* Contingent upon the preceding, the examples given in the DoD regulation would have to be modified to reflect the exchange and standard-sales transactions under the new concept. Appendix A contains accounting transactions for the current and new inventory-as-assets concept.

DATA SYSTEM CHANGES

GLACs

The inventory-as-assets concept recommends changing the DLR asset category from inventory (current assets) to operating assets (noncurrent assets). This change would have to be incorporated into the preparation of the financial statements (the 1307 report), specifically the statement of financial position and the report on operations. By necessity, a different group of general ledger accounts would be needed to report these changes.

SEPARATE CONSUMABLES AND DLRs

Because SMAG manages both consumables and DLRs, either different GLACS or sub-ledger accounts will be needed to keep these two commodities separate in the accounting records. Consumables will continue to be accounted for as inventory under FASAB Standard #3 and DLRs will be accounted for as noncurrent assets under FASAB Standard #6.

ASSETS

An operating asset account would need to be established to report non-current assets on the statement of financial position of the 1307 report. All DLRs would be carried at their weighted-average value. The following accounts would change:

From: To:

Line 5 *Inventory Held for Sale* Line 9b *Property and Equipment*

REVENUE

The reporting of “revenue generated by issuing DLRs” is significantly different under the new concept. The amount of revenue reported is unchanged. The concept changes only the timing of when that revenue is *recognized*. This change eliminates the need for the multiple recording of a sale and the related reversal postings when a serviceable DLR is returned. For an exchange price transaction, the following revenue accounting changes would occur:

1. *Issue of the DLR.*

From: To:

GLAC	Debit/credit	GLAC name	Value posted	GLAC	Debit/credit	GLAC name	Value posted
Sale Posting:				Issue Posting:			
400.99	D	Sales Clearing A/C	LRC	400.99	D	Sales Clearing A/C	EXCH
400.99	D	Sales Clearing A/C	DACR	xxx.xx	C	Service Fee	EXCH
400.99	D	Sales Clearing A/C	BOCR				
400.99	D	Sales Clearing A/C	MCR				
401.21	C	Exchange Sales @ LRC	LRC				
401.22	C	Exchange Sales @ DACR	DACR				
401.23	C	Exchange Sales @ BOCR	BOCR				
401.24	C	Exchange Sales @ MCR	MCR				

2. Return of a serviceable DLR.

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Return of serviceable:							
555.21	D	Exchange Return @ LRC	LRC	xxx.xx	D	Service Fee	EXCH
555.22	D	Exchange Return @ DACR	DACR	400.99	C	Sales Clearing A/C	EXCH
555.23	D	Exchange Return @ BOCR	BOCR				
555.24	D	Exchange Return @ MCR	MCR				
400.99	C	Sales Clearing A/C	LRC				
400.99	C	Sales Clearing A/C	DACR				
400.99	C	Sales Clearing A/C	BOCR				
400.99	C	Sales Clearing A/C	MCR				

3. Return of an unserviceable DLR.

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Return of Unserviceable:							
				xxx.xx	D	Service Fee (~deposit)	EXCH
				401.21	C	Revenue @ DACR	DACR
				401.22	C	Revenue @ BOCR	BOCR
				401.23	C	Revenue @ MCR	MCR
				401.23	C	Revenue @ LRC	LRC

For standard price sales, the following revenue changes would take place:

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Sales Posting:							
400.99	D	Sales Clearing A/C	LAC	400.99	D	Sales Clearing A/C	Standard
400.99	D	Sales Clearing A/C	DACR	xxx.xx	C	Service Fee	DACR
400.99	D	Sales Clearing A/C	BOCR	xxx.xx	C	Service Fee	BOCR
400.11	C	Standard Sales	LAC	xxx.xx	C	Other Income	Wgt Ave
400.12	C	Standard Sales	DACR				
400.13	C	Standard Sales	BOCR				

EXPENSE

The expenses resulting from standard price sales would need to be recategorized as well. Under the inventory-as-asset concept DLRs holding will not be classified as "inventory held for sale;" there will no longer be a "cost of goods sold" for exchange price transactions. In order to match expense with its income, decreases to operating assets currently found in COGS (such as standard price "sales" to outside parties and write-offs for condemnations) would be reported as "other expense" in the 1307 report. For an exchange price transaction, the changes to expense accounts would be as follows:

1. Issue of the DLR.

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:							
505	D	Cost of Goods Sold	LAC	NO FINANCIAL POSTING			
451	D	Assembly/ Disassembly Gain	LRC				
131.01	D	DIFM Inventory	LAC				
130	C	Serviceable Inventory	LAC				
131.01	C	DIFM Inventory	LRC				
451	C	Assembly/ Disassembly Gain	LAC				

2. Upon Return of a Serviceable DLR.

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:							
130	D	Serviceable Inventory	LAC	NO FINANCIAL POSTING			
451	D	Assembly/Disassembly Gains	Carcass				
425.01	C	Serviceable Returns from Customer	LAC				
131.01	C	DIFM Inventory	Carcass				

3. Return of an Unserviceable DLR.

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Return of Unserviceable:							
137	D	Unserviceable Inventory	Carcass	NO FINANCIAL POSTING			
451	D	Assembly/Disassembly Gain	Carcass				
425.02	C	Unserviceable Return	Carcass				
131.01	C	DIFM Inventory	Carcass				

For standard price sales, the related expense account changes would be as follows:

From:

To:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:							
505	D	Cost of Goods Sold	LAC	xxx.xx	D	Other Expenses	Wgt Ave
130	C	Serviceable Inventory	LAC	xxx.xx	C	Non-current Operating Asset	Wgt Ave

The net effect of all these GLAC changes is that the revenue and expenses would be more accurately recorded in the financials with many fewer accounting postings. The changes would result in meaningful financial reports that management can use to measure their own or others' performance.

Logic Tables/Postings

General ledger account postings are created using coding found within logic tables, which are incorporated into the inventory and accounting systems. Within these tables are the links for translating a transaction into an accounting posting. It identifies the GLAC "pairs" to which debits and credits will be posted for a particular type transaction.

When a supply transaction is initiated (for example, when maintenance requests a DLR and enters that request into the system), the accounting system (1) determines which pair of GLACs will be posted from the transaction code data provided by the item management system for each supply transaction, (2) creates the posting, and (3) automatically records the transaction within the general ledger.⁴

The logic tables would need to be updated for different GLAC pairs and different posting values needed for the inventory-as-assets concept and to block postings no longer needed. It should be relatively easy to identify the necessary changes needed to modify the account postings, but the tables are complex and will require auditors to verify that the changes made are correct. Appendix A lists each supply transaction (with brief descriptions) and the related general ledger account postings for both the current methodology and the inventory-as-assets concept.

DIFM Records

When items are issued to exchange price customers, DIFM records are established to track items due in from maintenance. The DIFM record is used in two ways. First, if the item is not returned within 60 days, an additional charge (called the mark-up price) is levied on the customer. Secondly, the DIFM record determines which item the customer will receive credit for when a serviceable DLR is returned. Under the inventory-as-assets concept, the DIFM record has a third purpose: determining how much revenue will be recognized when a customer returns an unserviceable DLR.

In Chapter 6, we discuss problems with customer refunds when DLR prices change. These same problems also affect the recording of revenue when DLR prices change between the time of issue and the time when the customer returns an unserviceable DLR. Here, the deposit is recorded at the old price and the revenue is recorded at the new price.

⁴ Actually, the timing is not quite that straightforward, but this is the final outcome for a transaction.

Adding to the DIFM record, the price data in effect when DLRs are issued will fix both of these problems. With this change, the price data in the DIFM record can be used either to refund the customer's deposit when a serviceable DLR is returned or to reclassify that deposit as revenue when an unserviceable DLR is returned.

Interface with the D035 System

Currently there are two types of inventory systems within the Air Force: wholesale and retail. These two systems capture the Air Force's entire DLR inventory. Although available, that retail-level data from the D035 are not used in financial accounting for DLRs. Instead the accounting system gets the retail-level data directly from the individual Standard Base Supply System (SBSS) accounts for each Air Force base.

With the inventory-as-assets concept, we want to obtain DLR information from one source to facilitate frequent updates of the weighted-average valuation of DLRs. After discussing various systems with Air Force and DFAS personnel, we decided the best central source for obtaining information on the worldwide holdings of DLR operating assets is the "wholesale" inventory system, known as the D035 suite of inventory systems. There was consensus among the Air Force, the AFAA, and DFAS that the following suite of inventory systems (the D035 actually includes many more systems than these four, but the necessary information could be captured by these four) has the ability to keep and report the information required for tracking the operating assets, such as the asset identifier [e.g., national stock number (NSN)], the asset quantity, the location code, and the condition code:

- ◆ D035A (Item Manager's Wholesale Requisition System)
- ◆ D035C (Recoverable Assembly Management Process)
- ◆ D035J (Financial Inventory Accounting and Billing System)
- ◆ D035K (Depot Supply System).

Since all of the data needed for the inventory-as-assets concept already reside in that suite of systems, we do not anticipate that any changes will be needed, except to redesign the current interface between the D035 and the accounting system. That change will involve providing the accounting system with D035 information on the DLR holdings at both the retail and wholesaling levels. LMI did not do an in-depth analysis of either the SBSS or D035 system (the data, the calculations performed on the data within these systems, the ways these data are used, and the flow of information between systems). Therefore, we highly recommend that before implementation of any new concept that current systems and processes be analyzed for impacts.

Appendix F contains a flowchart (created from interviews with Air Force and DFAS personnel) that displays the current flow of inventory information.

SYSTEM CONCERNS

Although we have stated that the D035 suite of systems already has information about DLR worldwide operating assets, this in *no way means that this system is good or reliable or that the numbers will be better than what is currently reported.*

The Air Force, AFAA, and DFAS community feels that the data from the D035 are not reliable. No one we interviewed, could say specifically what is causing the problems with the D035, but the quantities currently being reported are not correct.

SCS PROJECT

The SCS project, currently underway, is intended to upgrade multiple systems, including the D035 suite of inventory systems (there is no impact to the retail system—the SBSS-SMAS). One of the main purposes of the project is to create a data warehouse that would house inventory data separately from the software applications. An Air Force system auditor mentioned that one of the reasons why it is extremely difficult to audit the inventory systems is because as data are being moved from one software application to another, the original information is lost. Under the SCS project, each application would only pull data from this warehouse to perform its calculations, the original data would stay intact in the warehouse. This would greatly increase the reliability of the data within the suite of systems and allow the systems and accounting personnel to test the systems for accurate performance.

The Air Force systems auditors we interviewed, stated that SCS should improve the auditability and reliability of inventory data in the D035. The SCS project has an ambitious schedule, with several phases already completed. Most of the phases impacting inventory should be completed by FY00.

Weighted-Average Implementation

There is still the question of weighted-average valuation. Currently, a team of Air Force personnel is developing this reporting capability within the inventory system. The assumption, as stated previously, is that this inventory valuation methodology would be in place prior to implementation of the inventory-as-assets concept. Concerns remain as to how the weighted-average will work, how often the value of the inventory will be updated, which value will actually be used for pricing, etc. (We discuss this topic in more detail in Chapter 6.)

Auditor Approval

Any change to an existing accounting practice or procedure—or, as in this case, an accounting concept—should be discussed with the auditors. One of the Air Force's chief concerns is preparing CFO compliant financial statements, which includes having the auditor's issue a "clean opinion" on the financial statements. The audit community has identified inventory management as a high-risk area that results in material misstatements to financial reports. Any concept that attempts to address the auditors' concerns, especially a documented commercial practice, should be well received by the audit community.

In preliminary discussions with the AFAA, the inventory-as-assets concept has been very well received. The auditors feel that the methodology and the theory are sound, and the procedures much simpler to implement and audit than those currently in practice. They generally agree that the concept establishes a "cleaner" and more auditable approach to inventory, and they tend to agree with the principle that SMAG is not in the business of sales and that ownership is the key to defining a sale. With this early interest from the AFAA, the Air Force should also brief the rest of the audit community (the GAO and DoD IG) on this commercial practice of treating DLRs as noncurrent operating assets with no need for depreciation.

Chapter 6

Other Issues

During our research, we found many information systems and accounting practices that the inventory-as-assets concept could potentially affect. Few changes were needed to accommodate the new concept, but some issues deserve comment.

WEIGHTED-AVERAGE METHODOLOGY

At the time of this report, the Air Force is considering in detail the way it will use the weighted-average information in the accounting system. Considerable benefits could be lost to the Air Force if the implementation of the weighted-average methodology is not carefully considered. The following subsections describe issues pertaining to the weighted-average methodology.

Update Frequency

Some staff members with whom we spoke at Air Force Air Materiel Command Headquarters indicated the preliminary thinking was to update the weighted-average annually. Using this approach, they visualize reducing the size of—but not eliminating—the allowance accounts, which have plagued the LAC-based valuation methodology. This thinking is far from that in commercial industry, where the weighted average is updated in near real-time as DLRs are added and removed from the accounting records. As a result of this perpetual update, there are no allowance accounts. While the Air Force information systems probably could not support a perpetual update, striving for a monthly update would obviate the need for allowance accounts.

Centralized DLR Valuation

Currently, DLR valuation is decentralized. The value of DLR holdings is calculated for each base or air logistics center, then those individual holdings are combined centrally at the Defense Finance and Accounting Service Denver Center (DFAS-DE). There are two primary reasons for this decentralized approach:

- ◆ Making the inventory calculation near the point of sale seems reasonable, if SMAG were primarily in the business of selling DLRs. However, the data show that 98 percent of the DLR transactions do not result in the sale of a DLR.
- ◆ There is not a single system that provides creditable worldwide inventory counts. However, Air Force auditors with whom we talked indicated that

changes being made to the D035 system, known as the SCS, have the potential of providing reliable data for inventory valuation.

There are significant advantages to having a valid centralized source of world-wide asset information:

- ◆ The centralized data are needed to compute valid buy requirements for setting DLR prices; the same data could be used to centrally compute the value of DLRs owned by the working capital fund. That valuation must be accomplished regardless of whether DLRs are classified as noncurrent operating assets or inventory.
- ◆ Centralized asset data would allow for frequent updates to the value of DLR holdings without having to “push” price data out to every Air Force unit throughout the world. Frequent updates of the weighted-average value of DLR holdings have the potential of virtually eliminating the need for any allowance accounts.

Calculation Level

Another issue is whether or not the weighted-average should be calculated for each unique DLR component or for pools of like-item DLRs (the so-called interchangeable and substitutable items). Developing an approach for implementing the weighted average for the like-item pools could reduce or eliminate the churn effect on the value of DLRs that results from not receiving exactly the same DLR back as was issued to maintenance.

Other Issues

Air Force auditors also identified other implementation details, including how to address modifications for DLRs and how to address the gain or loss of some assets as the result of disassembling one DLR into many subcomponents or assembling one DLR from many subcomponents.

1307 REPORT PREPARATION

We studied how DFAS-DE prepares the 1307 report to determine how the new concept would effect the net operating result. We found many problems and notified the pertinent agencies of the most significant ones.

Logic Problems

One problem that was overshadowed by other, more serious ones was the persistent logic errors found in some of the COGS calculations. As mentioned earlier, the Air Force maintains several holding gains and loss allowance accounts to account for the unrealized gains or losses that occur, for example, when LAC

changes. The process for making adjustments to these accounts involves the calculation of an inventory adjustment factor (IAF). This factor is defined as the ratio of the allowance accounts divided by the ending inventory before sales.

DFAS-DE calculates the IAF as follows (Appendix C contains details of how the calculation was made as of May 31, 1999):

1. The calculation starts with the ending inventory expressed in LAC.
2. DFAS-DE determines the inventory before sales by adding the sales included in GLACs 400 and 402 to the ending inventory found in step 1.
3. The IAF is obtained by dividing the balance in the allowance accounts by the result obtained from step 2.
4. Finally, after the IAF is calculated, DFAS-DE calculates the adjustment to COGS by multiplying the IAF (from step 3) by the sales used in step 2.

There are two logic errors in the DFAS-DE approach:

- ◆ *Revenues are added to LAC.* If the ending inventory in step 1 is expressed in units of LAC, to obtain the inventory value before sales transactions also expressed in LAC, mathematics requires that the LAC value of the items sold be added to the ending value in step 1. However, GLACs 400 and 402 are revenue accounts, and, as such, include the surcharge as well as the LAC.
- ◆ *Gross revenues are used instead of net revenues.* Because the ending inventory includes items that have been returned, it would also be logical to only add net sales (i.e., gross issues minus returns). Unfortunately, DFAS-DE makes no such adjustment to GLACs 400 or 402 the GLACs used to accumulate gross revenues. Returns for credit are posted to GLAC 555, material returns for credit.

The impact of using the wrong sales number in step 2 is twofold: the IAF is calculated incorrectly in step 3, then the incorrect IAF is multiplied (in step 4) by the wrong sales number used in step 2. DFAS-DE made the same logic errors in IAF calculation in 1997, 1998, and 1999.¹ This problem is easily corrected.

With the current GLACs there are accounts for both inventory cost of DLRs issued and returned (both for credit and non-credit). A reasonably correct method to determine the value of goods available for sale is found in the spreadsheet that OUSD Comptroller personnel developed for preparing the 1307 report. In that spreadsheet four adjustments are made to the ending inventory to calculate the value of the inventory before sales: (1) the value of inventory sold (GLAC 505)

¹ The errors in 1997 and 1998 were worst than those in FY99, but changes to the spreadsheet in FY99 fixed other problems.

is added, (2) the value reported for inventory returns (GLAC 425) from customers are subtracted as are values reported for (3) inventory disposals and losses, and (4) the net value of transfers into and out of inventory are added.

We suggest one modification to that approach. The DIFM inventory (part of the ending inventory in step 1.) accounts for DLRs that have not yet been returned to the working capital fund. When DLRs are issued the DIFM account (GLAC 131.01) is debited and an allowance account GLAC 451 is credited with the carcass value of the item. Because the DIFM account (GLAC 131.01) is part of the ending inventory used in the first step of the IAF calculation, GLAC 451 also should be subtracted from GLAC 505 to obtain the correct COGS adjustment for these DIFM items.² One difficulty with this approach is that DFAS also uses GLAC 451 for other purposes. DFAS could work around this difficulty by reducing (i.e., crediting) GLAC 505 (and thereby debiting GLAC 451) only by the amount posted in GLAC 131.01.

This additional step when combined with the OUSD Comptroller spreadsheet methodology produces the correct adjustment for calculating the IAF adjustment. When we calculate the IAF correctly, the net operating result as of May 31, 1999, is approximately \$250M more than reported (even after correcting for the posting problems discussed next).

Posting Problems

During our effort to understand how the 1307 report is prepared, we observed that the DFAS-DE Center had not posted adjustments to the holding gains and losses (allowance) accounts for inventory sales and incorrectly posted adjustments for inventory disposals. As a result of those errors, the inventory values, cumulative results of operations, and net operating results reported on the 1307 report were misstated significantly. In addition to the corrective action DFAS-DE is taking, we also suggest that DFAS accomplish the following actions to more accurately report the inventory values and operating results before the Air Force implements the weighted-average inventory valuation method:

- ◆ Use, for the current and past two fiscal years, the inventory valuation method suggested by OUSD Comptroller.
- ◆ Determine the difference in values obtained from using the OUSD Comptroller inventory valuation method and the values reported on SMAG financial reports.
- ◆ Prepare prior period and current period adjustments as necessary.

² Before the DIFM item was issued it was valued at LAC, after it is issued it is valued at carcass. Therefore, to find the value of the DIFM inventory before it was issued, one must add the latest repair cost (LRC) to the carcass value. By definition LAC minus Carcass = LRC.

- ◆ Request an evaluation of those adjustments from the audit community.
- ◆ Post the adjustments to the financial records and prepare 1307 reports using the adjusted financial data.

GENERAL LEDGER DOCUMENTATION

A significant obstacle we encountered in understanding the general ledger systems and the financial reports prepared by DFAS-DE is the lack of updated documentation. For example, in 1998 the Air Force stopped valuing its inventory at standard price, and started using LAC; however, the old GLAC titles, indicating the contents are expressed at standard prices, are still being used. Also, the exact nature of many allowance accounts suffers the same fate; in some cases the current use of GLAC is not even vaguely related to the documented use of the GLAC. For example, GLAC 149.30 is documented as an allowance account to reflect the “surcharge and inflation” associated with serviceable inventory. Its actual use, however, is as an allowance account for “excess, obsolete, and beyond repair” items.

This out-of-date documentation, coupled with the limited number of people who know how the system really operates, presents a significant risk that the retirement or death of a key person could seriously disrupt the accounting function at DFAS-DE.

COLLECTIONS AND REFUNDS

Currently, when customers return a serviceable DLR, they receive a credit equal to the exchange price for that item. However, this credit is based on the price in the computer when the item is returned. If there have been intervening price changes between when the item is issued and when it is returned, the credit given will not be the same price the customer originally paid. Since prices tend to rise on average over time, we estimate that SMAG loses approximately \$1M each year by giving back more money than it received.

These estimates do not assume deliberate acts of arbitrage. DLR prices are usually updated at the beginning of each new fiscal year. Because the new prices are known before the end of the current fiscal year, customers can easily identify DLRs having the biggest price increase, buy some at the low current price, return them next fiscal year after the new higher price is in the computer, and get a refund at the higher price. Representatives of one Air Force major command said that they believe one of their bases used this loophole to create \$2 million in FY98—a real benefit to that base but a real loss of revenue to SMAG.

That arbitrage loophole could be closed by establishing a separate field in the DIFM detail record within the Standard Base Supply System for recording the

DLR price paid when this DIFM detail was established. That way, refunds would be limited to the amount the customer initially paid.

CREATING AND REVERSING ACCOUNTING ENTRIES

The logic tables that determine the GLAC pairs should be restructured so that the same data are used to create and reverse entries in the general ledger system. Currently, the same data are not always used to create and reverse (or offset) accounting transactions. For example, a DIFM entry is established by first debiting GLAC 131.01 with the LAC, then crediting the same account by the latest repair cost of the DLR that was issued. This two-step process results in a debit balance equal to the carcass price of the DLR. Later, when the DLR is returned, crediting the carcass price of that DLR clears this DIFM entry. While this should not make any difference, in practice, DLR prices are not always the sum of their individual components.

CFO COMPLIANCE HURDLES

We asked AFAA personnel why the auditors could not review for “CFO compliance.”

First, they stated that there is no mandate for them to perform such reviews, and that within the scope of their regular audits “CFO compliance” is not a goal.

Second, and of far more interest to this study, is that even if they were allowed to specifically address CFO compliance, they could not say that a system was CFO compliant because the system applications “hang on Defense Information Systems Agency (DISA)” operated computers. This means that the operating systems are outside the purview of the AFAA (i.e., it cannot audit the DISA operating systems). The AFAA requested a list of people with password access to the operating systems that ran the Air Force programs and found them to be neither current nor complete. Furthermore, GAO has reported that the DoD is highly sensitive to unauthorized accesses to its computer systems.³ The AFAA indicated that GAO finding was at least in part because DISA personnel have the capability of changing data within an application that is being run on their operating system, without leaving an audit trail. Based on these findings, the AFAA could never say the system was totally reliable.

INVENTORY-RELATED ACCOUNTING

As discussed previously, millions of general ledger postings are made to revalue a serviceable DLR (from LAC to carcass) and reclassifying it (serviceable inventory to DIFM) when the DLR is issued and then a few days later reversing those

³ GAO/AIMD-96-84, *Information Security: Computer Attacks at Department of Defense Pose Increasing Risks*, May 22, 1996.

entries when maintenance returns a serviceable DLR.⁴ If the Air Force continues using inventory-related accounting for DLRs, that approach can be simplified and streamlined. First, many general ledger postings follow the item management transactions. For example, shipments to and from bases, to and from depot maintenance all generate inventory-related general ledger postings. That level of detail is not needed in the general ledger accounting system.

Another change the Air Force could consider is requesting a change in FASAB Standard #3 to recognize a simpler method of accounting for unserviceable DLRs. FASAB Standard #3, provides the accounting standards for inventory. Paragraphs 32 and 33 of that Standard allows two methods to account for Inventory Held for Repair (i.e., unserviceable DLRs)—(1) the allowance method or (2) the direct method. The two allowed methods are not dependent upon whether the LAC method or the weighted-average method of inventory valuation are in use.

Of the two methods, the allowance method is used within DoD.⁵ The allowance method requires establishment of an allowance for repairs contra-asset account (i.e., repair allowance). A requirement for a repair allowance account unnecessarily complicates accounting for Inventory Held for Repair without adding any benefit since the information is not reported on the financial statements.⁶

If the FASAB did not require the repair cost allowance, inventory held for repair could be accounted for either at (1) the carcass (i.e., unrepaired) value of Inventory Held for Repair or (2) the same value of a serviceable item. Then repair costs would be capitalized under the first option, and expensed under the second.

INCONSISTENT DATA DEFINITIONS

Ideally, the accounting system should provide data that can be used by managers to prepare budgets and to assess their performance in executing approved budget plans. However, the budget and accounting communities do not appear to have coordinated with each other on basic definitions of terms. For example, budgeteers are very concerned with determining the expected revenue (i.e., sales); therefore, they need to know the net revenue (gross less credit returns). However, only the gross revenue is readily available from accounting reports because the accountants show some credit returns as an offset to the COGS, not as a reduction to

⁴ If an unserviceable DLR is returned, the original DIFM entries must be reclassified as unserviceable.

⁵ The second method, the direct method, currently allowed by FASAB Standard #3, cannot be used within the DoD because it requires the actual cost of repairs to be identified directly to an item in repair. Due to the large volume of DoD DLRs, direct identification of repair costs to specific items is unreasonable and becomes even more difficult under the FASAB Standard #3 requirement that repair costs may only be capitalized up to the value of estimated repair costs. Any difference between the actual repair costs and estimated repair costs are required to be debited or credited to the repair expense account.

⁶ Only the net of the accounts (i.e., full value of a serviceable item less repair allowance) is reported.

gross revenue. Recent changes have fixed this problem for exchange price sales; however, it still exists for standard price sales.

INITIAL SPARES

LMI does not fully understand all the detailed initial spares transactions for recording the purchase of initial spares (items being newly added to the working capital fund as the result of fielding new weapon systems or modifications to fielded weapon systems). The funding for the initial purchase of those spares comes from the appropriated accounts and is in effect given to the working capital fund to purchase the required spare DLRs and consumable materials. In a rather obtuse series of general ledger postings, the capitalization of those new items is treated as a sale. Thus, the sales revenue data are distorted by the amount of initial spares the Air Force purchases each year.

Perhaps those transactions will make sense when we fully understand the postings; however, at this point, we question the underlying wisdom of treating those capitalizations as sales.

Conceptually, the posting should be straightforward:⁷

- ◆ *Debit—cash.* To record the amount of initial spares funding received.
- ◆ *Credit—cash gain to equity.* To reflect the increased equity received from the appropriated funds to purchase the parts—in effect this would be the LAC portion of the standard price.
- ◆ *Credit—revenue accounts.* To reflect the receipt of cash to pay any surcharge tacked onto the purchase price—in effect this would be the business overhead cost recovery (BOCR) and direct allocable cost recovery (DACR) used in standard price sales.⁸

After these postings, the purchase of the initial spares would be accounted for just like any other purchase using SMAG funds, and there is no adverse effect on any of the financial statements.

⁷ With the exception for the credit entry to the revenue account, this is how cash gifts would be accounted for in commercial accounting.

⁸ The revenue entry is to recognize that SMAG may charge the program manager a fee for acting as the purchasing agent in some initial spares transactions—a fee that should be recognized as revenue.

Appendix A

Supply Transactions: Current and Inventory-As-Assets Concept

- ◆ Initial DLR Spares—The Supply Management Business Area will acquire initial spares and repair parts to support newly fielded weapons systems during the initial period of operation.

DFAS-DE did not provide the transactions for initial spares accounting in time to be included in this report.

- ◆ DLR Purchases—The Supply Management Business Area will periodically need to replenish its DLRs pool through purchases from outside vendors. The financial transactions under the two concepts are similar.

1. Purchase of DLR:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Purchase of DLR:				No Change			
500	D	Purchase	Cost	500	D	Purchases	Cost
613	C	Disbursements- Transfer Out	Cost	613	C	Disbursements- Transfer Out	Cost

2. Receipt of DLR:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Receipt of DLR purchase:							
130	D	Inventory-Stock on hand	LAC	xxx.xx	D	Non-current Oper Asset	Cost
510	C	Purchases at Standard	LAC	510	C	Purchases	Cost

- ◆ Exchange Price Transactions—The issue of a reparable item in which the requisitioner indicates a carcass will be returned, the customer will be charged the exchange price (i.e., the established repair cost plus the appropriate cost recovery elements). Common Exchange Price Transactions include the *issue* of the DLR, the *return* of a serviceable or an unserviceable DLR, and the *maintenance* (repair) of an unserviceable DLR.

1. *Issue of the DLR*: Under the current concept, upon an issue of a DLR, sales and revenue are immediately recognized, even with the expectation that a DLR will be returned. The Inventory-As-Assets concept, delays the recognition of revenue until it is “earned”; but it still collects a service fee up-front similar to the current concept. This fee acts as a customer deposit for any “non-exchanged” DLR or any necessary repairs that may be needed to bring the DLR back to a ready-to-issue state.

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Sale Posting:				Issue Posting:			
400.99	D	Sales Clearing A/C	LRC	400.99	D	Sales Clearing A/C	EXCH
400.99	D	Sales Clearing A/C	DACR	xxx.xx	C	Service Fee (~deposit)	EXCH
400.99	D	Sales Clearing A/C	BOCR				
400.99	D	Sales Clearing A/C	MCR				
401.21	C	Exchange Sales @ LRC	LRC				
401.22	C	Exchange Sales @ DACR	DACR				
401.23	C	Exchange Sales @ BOCR	BOCR				
401.24	C	Exchange Sales @ MCR	MCR				

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:				NO FINANCIAL POSTING			
505	D	Cost of Goods Sold	LAC				
451	D	Assembly/Disassembly Gain	LRC				
131.01	D	DIFM Inventory	LAC				
130	C	Serviceable Inventory	LAC				
131.01	C	DIFM Inventory	LRC				
451	C	Assembly/Disassembly Gain	LAC				

Supply Transactions: Current and Inventory-As-Assets Concept

2. *Return of a Serviceable DLR*: Under the current concept, in essence all the postings related to the *Issue of a DLR* are reversed because the customer returned a ready-for-issue DLR. Under the Inventory-as-Assets concept there is also a reversal to credit the Service Fee back to the customer; but more importantly the Revenue (which is unearned up to this point) is not affected by “temporarily” recognizing revenue and then having to credit out as is done under the current concept.

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Return of Serviceable:							
555.21	D	Exchange Return @ LRC	LRC	xxx.xx	D	Service Fee (~deposit)	EXCH
555.22	D	Exchange Return @ DACR	DACR	400.99	C	Sales Clearing A/C	EXCH
555.23	D	Exchange Return @ BOCR	BOCR				
555.24	D	Exchange Return @ MCR	MCR				
400.99	C	Sales Clearing A/C	LRC				
400.99	C	Sales Clearing A/C	DACR				
400.99	C	Sales Clearing A/C	BOCR				
400.99	C	Sales Clearing A/C	MCR				

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:							
130	D	Serviceable Inven- tory	LAC	NO FINANCIAL POSTING			
451	D	Assem- bly/Disassembly Gains	Car- cass				
425.01	C	Serviceable Returns from Customer	LAC				
131.01	C	DIFM Inventory	Car- cass				

3. *Return of an Unserviceable DLR*: Under the current concept when an “un-serviceable” DLR is returned, no credit is given and the DIFM gets re-classified to Unserviceable Inventory (revenue has already been recognized in *Issue of a DLR* transaction, see above). Under the Inventory-As-Assets concept, revenue is recognized when earned. The Service Fee

(~deposit) that was previously collected is recognized as Revenue only upon the return of an unserviceable DLR (or a non-return DLR beyond 60 days).

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/credit	GLAC name	Value posted	GLAC	Debit/credit	GLAC name	Value posted
Return of Unserviceable:							
137	D	Unserviceable Inventory	Carcass	xxx.xx	D	Service Fee (~deposit)	EXCH
451	D	Assembly/Disassembly Gain	Carcass	401.21	C	Revenue @ DACR	DACR
425.02	C	Unserviceable Return	Carcass	401.22	C	Revenue @ BOCR	BOCR
131.01	C	DIFM Inventory	Carcass	401.23	C	Revenue @ MCR	MCR
				401.23	C	Revenue @ LRC	LRC

4. *Maintenance of Unserviceable DLRs:* Under the current concept, as the “unserviceable” DLR is sent to maintenance for repair, there are a series of 12 GLAC postings to track its movements. Under the Inventory-As-Assets concept, there are only 2 GLAC postings needed—to recognize the payment of repair expenses incurred (this transaction will be similar to the current concept as shown under *4e Purchase of Maintenance Repair*, see below). Tracking changes in condition codes (i.e., from needing repairs to being repaired) and location codes (i.e., to and from depot maintenance) should be handled within the Inventory Systems, not the Financial Systems.

4a. Ship to Maintenance:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/credit	GLAC name	Value posted	GLAC	Debit/credit	GLAC name	Value posted
Ship to Maintenance							
616	D	Material-Transfer Out	Carcass	NO FINANCIAL POSTING; Condition & Location Code changes in Inventory System			
137	C	Unserviceable inventory	Carcass				

Supply Transactions: Current and Inventory-As-Assets Concept

4b. Receipt by Maintenance:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Receipt by Maintenance							
137	D	Unserviceable inventory	Car- cass	NO FINANCIAL POSTING; Condition & Lo- cation Code changes in Inventory System			
629	C	Material-Transfer In	Car- cass				

4c. Induction into Maintenance:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Induction into Maintenance							
138	D	Inventory Being Repaired	Car- cass	NO FINANCIAL POSTING; Condition & Lo- cation Code changes in Inventory System			
522	C	Assembly/ Disassembly Loss	Car- cass				

4d. Return from Maintenance:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Return from Maintenance							
522	D	Assembly/ disassembly loss	Car- cass	NO FINANCIAL POSTING; Condition & Location Code changes in Inventory System			
130	D	Inventory Stock on hand	Car- cass				
451	C	Assembly/ disassembly gain	Car- cass				
138	C	Inventory being repaired	Car- cass				

4e. Purchase of Maintenance Repair:

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Purchase of Maintenance Repair							
550	D	Actual Repair Cost	Cost	550	D	Actual Repair Cost	Cost
200	C	Accounts Payable	Cost	200	C	Accounts Payable	Cost

- ◆ Standard Price Transactions—The issue of a reparable item without any expectation that a DLR will be returned, the customer will be charged the standard price (i.e., the latest acquisition cost plus the appropriate cost recovery elements).

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Sales Posting:							
400.99	D	Sales Clearing A/C	LAC	400.99	D	Sales Clearing A/C	Standard
400.99	D	Sales Clearing A/C	DACR	xxx.xx	C	Service Fee	DACR
400.99	D	Sales Clearing A/C	BOCR	xxx.xx	C	Service Fee	BOCR
400.11	C	Standard Sales	LAC	xxx.xx	C	Other Income	Wgt Ave
400.12	C	Standard Sales	DACR				
400.13	C	Standard Sales	BOCR				

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Inventory Posting:							
505	D	Cost of Goods Sold	LAC	xxx.xx	D	Other Expenses	Wgt Ave
130	C	Serviceable Inventory	LAC	xxx.xx	C	Non-current Operating Asset	Wgt Ave

- ◆ Excess, Obsolete, or Beyond Repair (EOBR) DLRs—Under the current concept, DLRs are revalued to their net realizable value when (1) there is potential excess; (2) they carry a condition code of “H–condemned,” “P–Reclamation,” or “S–Scrapped,” or (3) they are beyond repair. The revaluation process uses a set calculation of 2 percent of the standard price. Under the Inventory-As-Assets concept, the same condition re-classified would apply; but no financial transaction is necessary under the assumed

Supply Transactions: Current and Inventory-As-Assets Concept

“weighted average” methodology, except for the actual disposal of the DLR. DLRs would be re-classified based on condition codes in the Inventory System.

Note: Air Force (DFAS-Denver) is currently undergoing a revision to their DLR revaluation process. LMI has verified that the current concept transaction we show is how it should be properly done.

1. *Excess DLRs:*

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Excess DLR				NO FINANCIAL POSTING			
130.xx	D	Inventory-EOBR					
xxx.xx	D	Realize of Holding Gain/Loss					
xxx.xx	D	EOBR Loss					
130	C	Inventory Stock on Hand					

2. *DLR Disposal:*

Current Concept:

Inventory-As-Assets Concept:

GLAC	Debit/ credit	GLAC name	Value posted	GLAC	Debit/ credit	GLAC name	Value posted
Disposal of DLR							
530	D	Material Transfer to Disposal	Car- cass	530	D	Material Transfer to Disposal	Wgt Ave
130, 137, 138	C	Inventory (Service- able, Unserviceable, Repair, or EOBR)	Car- cass	xxx.xx	C	Non-current Operating Asset	Wgt Ave

Appendix B

Airline Highlights

The following are the highlights of interviews with the commercial airlines about their inventory accounting practices as they relate to depot level reparable (DLR)-like items:

- ◆ There are several classes of assets, but DLRs are carried as *noncurrent operating assets*.
- ◆ The only DLR transactions recorded that affect the financials are purchases, write-offs/scrapped items (including physical count adjustments), and reclasses of items to “surplus.”
- ◆ All DLRs are carried at the same weighted-average value (whether they are serviceable, unserviceable, or surplus).
- ◆ Weighted-average valuation is calculated perpetually (i.e., there is no recording of holding gains or losses).
- ◆ DLRs are recorded in the supply management system using a combination of location and condition codes and changes are tracked the same way.
- ◆ Not all costs are directly allocated to aircraft; in fact, rudimentary cost accounting systems are used.

These practices appear to be standard throughout the industry. They have proven acceptable to the audit community, which means they are auditable and comply with standards using GAAP.

DLRS AS NONCURRENT OPERATING ASSETS

DLRs are carried as noncurrent operating assets. The commercial airlines have several classes of assets related to the repair of the fleets:

- ◆ Expendables are the equivalent of consumables within the Air Force. They are current assets, specifically inventory, and are expected to be consumed in one or more cycles in the process of conducting business.
- ◆ Rotables are fixed assets. These equate to engines and hydraulics and are depreciated through a period expense—operating or maintenance. They are expected to rotate from stock to equipment to repair shop and back to stock without losing identity.

-
- ◆ Key reparables are the equivalent of the Air Force's DLRs. They are items that can be reworked and reissued one or more times. They are carried as noncurrent operating assets that are *not depreciated*.
 - ◆ Surplus can be any of these categories. The inventory or asset is reclassified to surplus only if the airline expects it will no longer use the item and will put it up for sale. The items are carried at their original value when they were inventory, a fixed asset, or an operating asset. Items in this category are also frequently written off instead of sold after an analysis of condition or marketability is done.

DLR TRANSACTIONS

The commercial airlines do not use their accounting system to track DLRs. Instead, they use their inventory management systems. As a result, they do very few financial transactions to record their DLRs, and *none* for exchange type transactions.

Basically, the only general ledger account postings that have a dollar impact on the financial statement are those created when an item is added to or reduced from the pool of DLRs:

- ◆ To record the purchase of a new asset
- ◆ When an item is written off (either scrapped or due to a physical count adjustment)
- ◆ When an item is sold to an outside customer.

Another type of general ledger accounting posting is for reclassing DLRs from the regular operating assets (those essentially ready for issue) to "surplus" assets. The purpose for differentiating this group of assets is to indicate that they are no longer to be used on the current fleet of aircraft, but are available for sale to outside customers. (There is a very large secondary market within the airlines industry for DLRs for aircraft being discontinued or replaced.) In any case, this transaction has no financial impact—the asset is carried at the same value as the operating asset DLR.

DLRs CARRIED AT THE SAME VALUE

All DLRs are carried at the same value regardless of condition. The airlines do not carry their DLRs at different values whether they are unserviceable or serviceable. The temporary condition of an unserviceable DLR is considered unimportant for financial reporting purposes. The intent is to bring the DLR back to its ready-for-issue state in a short period of time. In other words, the asset is carried at its real value to the company.

Surplus assets, which comprise the other classes of assets (inventory, fixed assets, and noncurrent operating assets), also do not change in value.

DLRs are carried in weighted-average pools. These pools include interchangeable items.

WEIGHTED-AVERAGE VALUATION

Weighted-average is calculated perpetually. Each time a new purchase is made, the value for each item in that pool of assets is adjusted accordingly. As a result, the airlines do not record any holding gains and losses related to their DLR values. This weighted-average is considered by GAAP to be a fair representation of historical value.

CONDITION AND LOCATION CODES

The airlines track their DLRs through their supply management systems. All DLRs are identified in these systems, from which the airlines can tell the quantity of a particular DLR that are serviceable or unserviceable at a given time, the location, the quantity in maintenance, etc.

The systems use a combination of location and condition codes to record whether an item is at or in-transit from one location to another or is unserviceable. For example, a DLR on its way to maintenance would have an "unserviceable" condition code, with a maintenance location as its destination and an "in-transit" code to indicate that it had not yet arrived. The supply management system generates a report that the parts manager uses. This report indicates the situation of this asset, but the financial statements do not indicate where the item is, its condition, or any change in the dollar value of the inventory.

Because the items are all carried at the same value and in the same account regardless of condition, these changes do not result in financial transactions. Unlike the Air Force (which also uses condition and location codes, but in which a change to these codes results in a general ledger account posting) there is no impact on the general ledger for these type transactions.

COST ACCOUNTING/ALLOCATION

During the interviews, one of the most surprising and interesting discoveries was that the airlines do not typically allocate all costs to the aircraft. While there is some required cost reporting for the Federal Aviation Administration (FAA), such as operating expenses by aircraft, it is almost totally calculated (i.e., an allocation, not directly charged or traceable to the aircraft).

The main reason for this is that the airlines do not have extensive or massive cost accounting systems that are capable of tracking all operating expenses, direct or

otherwise, by aircraft or even by fleet. Certain expenses are relatively easily identifiable by fleet, but not usually by particular aircraft. Some maintenance or repair processes are tracked through a job cost system, but typically for a special job or for an outside customer, not as a regular part of doing business.

The lack of adequate or detailed cost accounting systems was a common concern of the inventory managers. Right now, if a cost analysis needs to be performed, much of it is manual—in that the manager must collect information from various sources and compile it, making some assumptions and allocations, a time-consuming process.

Several of the airlines have older accounting systems that they are in the process of upgrading. However, these systems are extraordinarily expensive, and the commercial airlines industry is very low margin. They are unlikely to upgrade these systems radically to encompass a massive cost accounting effort. Currently, the inventory managers' efforts, while frustrating for them from a management information perspective, are adequate for their auditors.

SUMMARY

This is a simplified process for inventory accounting, management, and reporting. Yet it succeeds more than adequately as far as the businesses and its auditors are concerned. Implementation of this simpler system could drastically mitigate the Air Force's reporting problems (and satisfy its auditors).

Appendix C

Adjustments for Holding Gains and Losses

The Air Force values its inventory of depot-level reparables at the latest acquisition cost (LAC). When the LAC changes, the entire inventory is revalued at the new (and usually) higher cost. As a result of this revaluation, an unearned gain accrues to the working capital. The Air Force has established several allowance accounts to capture these gains (or losses, if the LAC decreases) so that historical costs can be reported on the working capital fund's financial statements.

Typically, during an accounting period some portion of the DLR inventory is sold, condemned, or otherwise removed from the inventory of DLRs. As items are removed from the inventory, some portion of the holding gains (losses) allowance accounts has to be removed from the accounting records as well. DFAS-DE uses the attached spreadsheet to calculate the adjustment to the holding gains (losses) allowance accounts.

The logic errors in using this spreadsheet are discussed in Chapter 6 of this report.

AIR FORCE SUPPLY MANAGEMENT				
MATERIEL SUPPORT DIVISION				
STATEMENT OF FINANCIAL POSITION				
ADDITIONAL INVENTORY INFORMATION				
AS OF APRIL 30, 1999				
LN 5	INVENTORY HELD FOR SALE			
LN 5A	INVENTORY ITEMS			
LN 5B	ALLOW FOR (GAIN) OR LOSS			
1.	INVENTORY, STANDARD PRICE (Debit Column)			
	GLA	DEBIT	CREDIT	GLA
	140	\$171,159,993.01	\$34,421,373.44	14940
	141	\$6,275,793,692.12	\$914,758,999.10	14941
	130	\$13,930,420,082.85	\$1,955,070,325.11	14930
	135	\$176,633,767.78	\$28,457,831.43	14935
	136	\$0.00	\$0.00	14936
	137	\$10,353,925,834.91	\$1,740,565,383.26	14937
	131	\$803,795,948.44	\$142,697,578.96	14931
	143	\$0.00	\$0.00	14943
	132	\$0.00	\$0.00	14932
	138	\$1,909,405,456.41	\$320,984,049.24	14938
	134	\$172,618,616.41	\$0.00	14934
	148	\$127,403,433.08		
		\$33,921,156,825.01	\$5,136,955,540.54	\$28,784,201,284.47
2.	LESS: EXCESS, OBSOLETE & BEYOND REPAIR ADJUSTMENT			
	CREDIT AMOUNTS IN LINE 1			\$5,136,955,540.54
3.	INVENTORY (LINE 5A)			
4.	ADD: SALES			
	400		\$749,482,381.25	
	402		\$9,489,004.06	
	403		\$0.00	
	411		\$0.00	
5.	INVENTORY, PLUS SALES (LINE 1 & LINE 4)			
6.	INVENTORY ALLOWANCE BEFORE COGS			
	DoD GLA 1525 Summary			\$ (5,985,647,642.32)
	- Cum	510	(\$2,316,528,837.08)	
	+Cum	500	\$801,891,586.37	
	+Cum	555 All Other FC's	\$0.00	
		55501-16 FC 64 Only	\$75,283,693.58	
	+YTD	15401	(\$1,199,860,045.25)	
	+YTD	15421	\$0.00	
	- Cum	460	(\$4,214,840,015.96)	
	- Cum	462	(\$2,102,590,447.02)	
	- Cum	454	(\$14,259,767,228.98)	
	- Cum	451	\$1,226,164,118.17	
	- Cum	453	(\$620,898,892.96)	
	- Cum	473	(\$41,728,435.09)	
	- Cum	455	\$0.00	
	- Cum	462	(\$10,995,920.33)	
	- Cum	470	(\$287,197,467.45)	
	- Cum	48012	\$0.00	
	- Cum	48040	\$106,799,796.07	
	+/-Cum	467	\$0.00	
	+Cum	567	\$0.00	
	+Cum	520	\$2,641,538,881.30	
	+Cum	518	\$13,882,889,011.91	
	+Cum	522	(\$468,468,614.79)	
	+Cum	519	\$735,766,510.98	
	+Cum	583	\$51,050,188.82	
	+Cum	59075	\$429,572.00	
	+Cum	521	\$1,291.68	
	+Cum	572	\$15,413,611.71	
	+Cum	59012	\$0.00	
	YTD (Credit)	320		(\$358,223,632.44)
	YTD (Debit)	323		\$178,937,788.06
	Sep 30, 1998, Line	5B (Hard Coded)		(\$9,312,816,728.18)
7.	RATIO INV TO UNREAL HOLD (LINE 5 / LINE 6)			
8.	COST OF GOODS (LINE 7 X LINE 6)			
9.	INVENTORY ALLOWANCE BEFORE COGS ADJ., MINUS COST OF GOODS SOLD ADJUST (LINE 6 - COST OF GOODS SOLD)			
	ALLOW FOR GAIN OR LOSS (LINE 9)			
	COST OF GOODS SOLD			
	Sales at Cost less Credit Allowed		\$729,063,995.83	GLA 505-GLA 425
	Add: COGS Adj		\$0.00	
	Add Rtn to Venders Pending Credit		\$501,165.78	YTD 17021
	Adjustment Line (Identify Adj)		\$0.00	
	Cost of Goods Sold Total		729,565,161.61	

Appendix D

Recommended Changes to FASAB Standards

SECTION A. FASAB STANDARD #3, ACCOUNTING FOR INVENTORY AND RELATED PROPERTY

LMI recommends the following rewrites (or rewording) to Standard #3, assuming that FASAB chooses not to modify Standard #6, Accounting for PP&E:

CURRENT:

RECOMMENDED:

<p>Standard #3 par17 defined: Tangible personal property that is 1) held for sale, 2) in the process of production for sale, or 3) to be consumed in the production of goods for sale or <i>in the provision of services for a fee.</i></p> <p>par18 Inventory categories: 1) Held for sale; 2) Held for future sale; 3) Excess, Obsolete, and Unserviceable; and 4) Held for repair.</p> <p>par19 recognition criteria: Inventory shall be recognized when title passes to the purchasing entity or when the goods are delivered to the purchasing entity.</p> <p>par19 accounting process: Upon sale (when the title passes or the goods are delivered) or upon use in the provision of a service, the related expense shall be recognized and the cost of those goods shall be removed from inventory.</p> <p>Valuation: Inventory shall be valued at either 1) historical cost or 2) LAC.</p>	<p>defined: No change.</p> <p>Inventory categories: Add new category: "Spares & Repairables Held Ready-For-Issue," which are tangible personal property that is issued <i>in the provision of services for a fee</i>, with an expectation that there will be an exchange transaction.</p> <p>recognition (ownership) criteria: Ownership is determined by possession of title, rather than physical possession of the goods. Recommend using Standard 3 (par 38) Operating Material & Supply criteria: a "Purchase" is defined as <i>when title passes to the purchasing entity</i>. If the contract is silent regarding passage of title, title is assumed to pass upon delivery of the good.</p> <p>accounting process: <i>Upon a sale</i> (when recognition criteria has been met), the related expense shall be recognized and the cost of those goods shall be removed. <i>Upon an issue</i> (when recognition criteria has not been met), the related service charges shall be requested from purchaser and return for a serviceable exchange or expensed for an unserviceable exchange.</p> <p>Valuation: The primary basis is cost.</p>
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SECTION B. FASAB STANDARD #6, ACCOUNTING FOR PROPERTY, PLANT, & EQUIPMENT (PP&E)

LMI recommends the following rewrites (or rewording) to Standard #6, assuming that FASAB chooses not to modify Standard #3, Accounting for Inventory and Related Property:

CURRENT:

RECOMMENDED:

<p>SSFAS #6, par17</p> <p>defined: Tangible assets that 1) have an estimated useful life of 2 years or more, 2) not intended for sale in ordinary course of business, and 3) intended to be used or available for use by the entity.</p> <p>Categories of PP&E:</p> <p>par 23 & 24</p> <p>1) General PP&E: provide general government services or goods; could be used for alternative purposes and used by the Federal entity to produce goods or services, or to support the mission; used in business-type activities; costs can be compared to other entities. <i>For entities operating as business-type activities, all PP&E shall be categorized as General PP&E whether or not it meets the definition of any other PP&E category</i></p> <p>2) Federal Mission PP&E: exhibiting specific characteristics set by the Board</p> <p>3) Heritage Asset</p> <p>4) Stewardship Land (not include in General PP&E)</p> <p>par13 Capitalization Thresholds: The Board believes that the capitalization thresholds should be established by Federal entities, rather than centrally.</p> <p>par34 recognition criteria: PP&E shall be recognized when title passes to the acquiring entity or when the PP&E is delivered to the entity or to an agent of the entity.</p> <p>par35 accounting process: Depreciation Expense is calculated through the systematic and rational allocation of cost of General PP&E, less its estimated salvage value, over the estimated useful life. Depreciation Expense shall be accumulated in a contra asset account. <i>Depreciation Expense shall be recognized on all General PP&E.</i></p>	<p>defined: No change.</p> <p>Categories of PP&E: No change.</p> <p>Capitalization Thresholds: No change.</p> <p>recognition (ownership) criteria: Ownership is determined by possession of title, rather than physical possession of the goods. Recommend using Standard #3 (par 38) Operating Material & Supply criteria: a "Purchase" is defined as when title passes to the purchasing entity. If the contract is silent regarding passage of title, title is assumed to pass upon delivery of the good.</p> <p>accounting process: Depreciation Expense is calculated through the <i>systematic and rational</i> allocation of cost of General PP&E, less its estimated salvage value, over the estimated useful life. Depreciation accounting must recognize both physical and functional causes of declining service potential, using systematic and rational methodologies. Depreciation Expense shall be accumulated in a contra asset account.</p>
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Appendix E

Recommended Changes to DoD Financial Management Regulation

LMI recommended the following rewrites (or rewording) to the applicable sections of the DoD Financial Management Regulation. These changes are made with the assumption that FASAB has either:

1. modified FASAB Standard #3, Accounting for Inventory and Related Property, or Standard #6, Accounting for Property, Plant, and Equipment (PP&E) to allow for the reclassification of DLRs (reparables) from the current “inventory held for sale” to the inventory-as-assets concept’s “non-current operating asset,” or
2. has given “exception to the rule” to DLRs.

Current DoD Regulation	If Modified Standard #3 “Inventory”	If Modified Standard #6 “PP&E”
<p>v4, ch4, p 63 & v11b, ch5 5, p8G1</p> <p>“Inventory” defined: tangible personal property, <i>titled to the government</i>, that is on hand, or in-transit and is held for sale, future sale, repair, or pending transfer to disposal.</p> <p>***Guidance relating to inventory held for sale in the course of normal operations will be included within Volume 11b: Reimbursable Operations, Policy and Procedures—Working Capital Funds (WCF).</p> <p>v11b, ch5 5, p9G3</p> <p>Inventory classification: 1) Held for Sale; 2) Held for Future Sale; 3) Excess, Obsolete, and Beyond Repair; and 4) Held for Repair.</p> <p><i>Beyond repair</i> inventory excludes un-serviceable items but instead, consists of items that are not expected to survive repair.</p>	<p>Use Standard #3 definition for “Inventory”:</p> <p>defined: Tangible personal property that is 1) held for sale, 2) in the process of production for sale, or 3) to be consumed in the production of goods for sale or <i>in the provision of services for a fee</i>.</p> <p>Add new category: “<i>Spares & Reparables Held Ready-For-Issue</i>,” which are tangible personal property that is issued <i>in the provision of services for a fee</i>, with an expectation that there will be an <i>exchange transaction</i>.</p>	<p>Use Standard #3 definition for “Inventory”:</p> <p>defined: Tangible personal property that is 1) held for sale, 2) in the process of production for sale, or 3) to be consumed in the production of goods for sale or <i>in the provision of services for a fee</i>.</p> <p>Add: Equipment classification: Equipment in Use (GLAC 1762) for SMAG: “<i>Spares & Reparables Held Ready-For-Issue</i>,” which are tangible personal property that is issued <i>in the provision of services for a fee</i>, with an expectation that there will be an <i>exchange transaction</i>.</p>

Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
<p>v11b, ch5 5-8G1</p> <p>Generally Supply Mgmt business area and Defense Commissary Agency are only DBOF that hold inventory.</p> <p>specifically lists "Spares (incl: reparable)" as supplies held for the purpose of "sale" to other DoD components.</p> <p>Reparable classified as "inventory held for repair"(acct 1523) until relieved and classified to "inventory held for sale" (acct 1521)</p>	<p>"Spares (incl: reparable)" as supplies held for the purpose of "issue" to other DoD components in the provision of services for a fee, with an expectation that there will be an exchange transaction.</p> <p>Reparable classified as "Spares & Reparables Held Ready-for-Issue"(acct xxx.xx). No reclassification or revaluation is necessary because the <i>mission intent</i> is to bring the reparable asset back to its "ready-for-issue" state in a relatively short period of time.</p>	<p>"Spares (incl: reparable)" as non-current operating assets (Equipment in Use—GLAC 1762) held for the purpose of "issue" to other DoD components in the provision of services for a fee, with an expectation that there will be an exchange transaction.</p> <p>Reparable classified as "Spares & Reparables Held Ready-for-Issue"(acct xxx.xx). No reclassification or revaluation is necessary because the <i>mission intent</i> is to bring the reparable asset back to its "ready-for-issue" state in a relatively short period of time.</p>
<p>v11b, ch5 5,p8G2</p> <p>recognition criteria: Inventory shall be recognized when title passes to the purchasing entity or when the goods are delivered to the purchasing entity, whichever occurs first.</p>	<p>recognition (ownership) criteria: Ownership is determined by possession of title, rather than physical possession of the goods. Recommend using Standard #3 (par 38) Operating Material & Supply criteria: a "Purchase" is defined as when title passes to the purchasing entity. If the contract is silent regarding passage of title, title is assumed to pass upon delivery of the good.</p>	<p>recognition (ownership) criteria: Ownership is determined by possession of title, rather than physical possession of the goods. Recommend using Standard #3 (par 38) Operating Material & Supply criteria: a "Purchase" is defined as when title passes to the purchasing entity. If the contract is silent regarding passage of title, title is assumed to pass upon delivery of the good.</p>
<p>v11b, ch5 5,p8G2</p> <p>accounting process: Inventory expense shall be recognized upon sale and the value of those goods shall be removed from inventory.</p>	<p>accounting process:</p> <p><i>Upon a sale</i> (when recognition criteria has been met), the related expense shall be recognized and the cost of those goods shall be removed.</p> <p><i>Upon an issue</i> (when recognition criteria has not been met), the related service charges shall be requested from purchaser; and shall be returned for a serviceable exchange or shall be expensed for an unserviceable exchange.</p>	<p>accounting process:</p> <p><i>Upon a sale</i> (when recognition criteria has been met), the related expense shall be recognized and the cost of those goods shall be removed.</p> <p><i>Upon an issue</i> (when recognition criteria has not been met), the related service charges shall be requested from purchaser; and shall be returned for a serviceable exchange or shall be expensed for an unserviceable exchange.</p>
<p>v11b, ch5 5,p11H1</p> <p>Valuation: Inventory is reported on financial statement at LAC, with an allowance amount for unrealized gains and losses, so that the net of the inventory will yield an approximation of historical (actual) cost.</p>	<p>Valuation: The primary basis is cost.</p>	<p>Valuation: The primary basis is cost.</p>

Recommended Changes to DoD Financial Management Regulation

Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
v11b,ch5 5,p1D1 Supplies held for the purpose of sale to others....may be included in the SMAG.	Supplies held for the purpose of sale or issue to others....may be included in the SMAG.	Supplies held for the purpose of sale or issue to others....may be included in the SMAG.
p2D7 Spares— Initial spares are spare and repair parts supporting newly fielded weapons systems during initial periods of operation until the supply system can support the demand generated by the systems. Replenishment spares are those spare and repair parts.	No Change.	No Change.
p2D7a Reparables is an item of supply subject to economical repair and for which the repair is considered in satisfying computed requirements at any inventory level.	Reparables is an item of supply subject to economical repair and for which the repair is considered in satisfying computed requirements at any supply level.	Reparables is an item of supply subject to economical repair and for which the repair is considered in satisfying computed requirements at any supply level.
v11b,c55 .p27N --section on Reparables		
v11b,c55 .p27N Standard Price: Sales of reparable items made without a return shall be priced at the standard price. p27N1	Standard Price: Issues of <i>ready-for-issue</i> items that meet the criteria of a "sales" (where ownership criteria have been met and title has passed to the purchaser, or no exchange transaction will occur) shall be priced at the standard price.	Standard Price: Issues of <i>ready-for-issue</i> items that meet the criteria of a "sales" (where ownership criteria have been met and title has passed to the purchaser, or no exchange transaction will occur) shall be priced at the standard price.
p28N2 Exchange Price: For the issue of a reparable item in which the requisitioner indicates a carcass will be returned, the customer will be charged the exchange price (i.e., the repair cost plus the cost recovery elements).	No Change.	No Change.
p27N4 Most items held for repair are obtained as the result of an exchange transaction.	Most "Spares and Repairable Held Ready-for-Issue" items are obtained as the result of an exchange transaction: 1) serviceable exchange; or 2) unserviceable exchange.	Most "Spares and Repairable Held Ready-for-Issue" items are obtained as the result of an exchange transaction: 1) serviceable exchange; or 2) unserviceable exchange.
p27N4 The process consists of the sale of a serviceable item in exchange for an item that needs repair plus a promise to pay (A/R) or the actual payment (cash) for the difference in value between the two items.	<i>Upon an issue</i> (when the recognition criteria has not been met), the related "service charges" shall be requested from purchaser; and shall be returned for a serviceable exchange or shall be expensed for an unserviceable exchange.	<i>Upon an issue</i> (when the recognition criteria has not been met), the related "service charges" shall be requested from purchaser; and shall be returned for a serviceable exchange or shall be expensed for an unserviceable exchange.

Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
<p>p27N4 Upon the return of the repaired item, it becomes available for sale and is placed into the inventory for sale account.</p> <p>v11b,ch5 5,p28N1- 4 The accounting entries to accomplish this process:</p> <p><i>Exchange Serviceable Item for Repairable Item:</i> inventory items requiring repair are generally obtained from customers as a partial exchange for a serviceable inventory item.</p> <p>*Inventory Held for Repair shall be valued at the same value as a serviceable item. (However, contra-asset accounts established for the estimated repair & exchange costs.)</p> <p><i>record a sale: a reparable item is exchanged for ready for issue:</i></p> <p>D Exchg Inv. In Transit (~DIFM) @ LAC A/R @ LRC</p> <p>C Revenue from Goods @ LAC Est. Repair Costs @ est. repair cost Est. Exchg Costs @ est. exchg cost</p>	<p>For an unserviceable exchange, the reparable item is sent in for maintenance and upon its return shall be in a ready-for-issue state. No financial transaction is needed to track the reparable item while it is being maintained. The inventory management system will track its location and condition code changes. The SMAG will be billed its "service costs".</p> <p><i>Unserviceable Exchanges:</i> Repairable items requiring "maintenance" are generally obtained from customers in an exchange for a ready-for-issue item.</p> <p>Reparable items are never revalued or re-classed differently from "Ready-for-Issue" items because the mission intent is to bring the unserviceable item back to its ready-for-issue state in a relatively short period of time.</p> <p><i>Issue a "Ready-for-Issue" item:</i></p> <p>D Sales Clearing A/C @ Exch C Service Fee @ Exch</p> <p><i>record an Unserviceable Exchange Transaction: a reparable item is exchanged for Ready-For-Issue:</i></p> <p>D Service Fee @ Exch C Other Income @ Exch</p>	<p>For an unserviceable exchange, the reparable item is sent in for maintenance and upon its return shall be in a ready-for-issue state. No financial transaction is needed to track the reparable item while it is being maintained. The inventory management system will track its location and condition code changes. The SMAG will be billed its "service costs".</p> <p><i>Unserviceable Exchanges:</i> Repairable items requiring "maintenance" are generally obtained from customers in an exchange for a ready-for-issue item.</p> <p>Reparable items are never revalued or re-classed differently from "Ready-for-Issue" items because the mission intent is to bring the unserviceable item back to its ready-for-issue state in a relatively short period of time.</p> <p><i>Issue a "Ready-for-Issue" item:</i></p> <p>D Sales Clearing A/C @ Exch C Service Fee @ Exch</p> <p><i>record an Unserviceable Exchange Transaction: a reparable item is exchanged for Ready-For-Issue:</i></p> <p>D Service Fee @ Exch C Other Income @ Exch</p>

Recommended Changes to DoD Financial Management Regulation

Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
<i>Receipt of Repairable Item:</i>	<i>Receipt of Repairable Item:</i>	<i>Receipt of Repairable Item:</i>
D Inventory Held for Repair @ LAC	No Financial Transaction	No Financial Transaction
C Exchg Inv. In Transit (-DIFM) @ LAC		
 <i>Repairable Item Sent to Repair Facility:</i>	 <i>Repairable Item Sent to Repair Facility:</i>	 <i>Repairable Item Sent to Repair Facility:</i>
No Transaction, DLR kept in "Held for Repair"	No Financial Transaction	No Financial Transaction
 <i>Receipt of Repaired Item from Repair Facility:</i>	 <i>Receipt of Repaired Item from Repair Facility:</i>	 <i>Receipt of Repaired Item from Repair Facility:</i>
D Inventory Held for Sale @ LAC	No Financial Transaction	No Financial Transaction
C Inventory Held for Repair @ LAC		
 D Actual Repair Costs @ Actual		
C A/P @ Actual		
 D Est. Repair Costs @ est. repair cost		
Est. Exchg Costs @ est. exchg cost		
 C Completed Inventory Repair		
	 <i>Receive repair bill from Repair Facility:</i>	 <i>Receive repair bill from Repair Facility:</i>
	D Repair Expense @ Actual	D Repair Expense @ Actual
	C A/P @ Actual	C A/P @ Actual

Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
<p>v4, ch6, p 100+ "PP&E" defined: tangible assets that 1) have an estimated useful life of 2 years or more, 2) not intended for sale in ordinary course of business, and 3) intended to be used or available for use by the entity.</p>	No change.	No Change.
<p>v4, ch1, p 4c1b Fixed Assets have two major classes:</p> <p>1) Real Property</p> <p>2) Personal Property (weapons systems and other military equipment).</p>		
<p>v4, ch6, p111, par60502 & ch1, p4 All personal property owned by the DoD shall be classified as Military Equipment (Acct 1760—summary account). This includes weapons systems and all equipment to support the DoD mission. "Equipment in Use (Acct 1762)" used to record acquisition cost of Mil Equip in use by DoD.</p>	No change.	No change.
<p>V4, ch6, par60207 Capitalization Criteria—Fixed Assets: 1) an acquisition cost is equal to or exceed the investment funding threshold used by Congress for appropriating DoD operating and procurement appropriations, and 2) an estimated useful life to the DoD of two or more years.</p>	No change.	No change.
<p>V1, ch3, p 29. All property and equipment...with an initial acquisition cost of \$15,000 and an estimated useful life or more than 2 years must be capitalized and reported at cost....</p>		
<p>v4, ch1, p 4-e Valuation: Acquisition cost</p>	No change.	No change.

Recommended Changes to DoD Financial Management Regulation

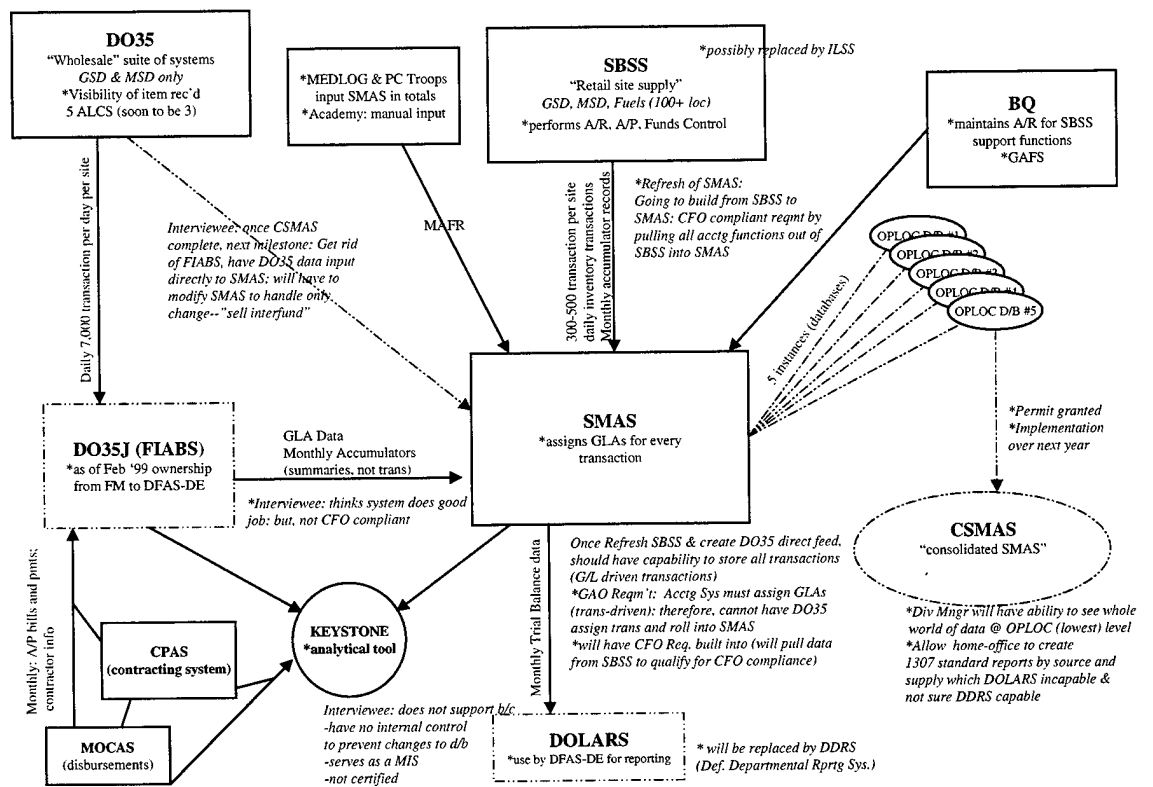
Current DoD Regulation	If Modified Standard #3 "Inventory"	If Modified Standard #6 "PP&E"
<p>v4,ch1,p8,par10505B accounting process: Assets recorded in the accounts titled...Equipment in Use (GLAC 1762)...are subject to depreciation.</p> <p>Depreciation recognizes the allocation of cost of depreciable physical PP&E as an operating expense over the periods in which the assets are expected to provide benefits.</p> <p>v4,ch6,p101,par60208&11</p>	<p>No change.</p>	<p>accounting process: Assets recorded in the accounts titled...Equipment in Use (GLAC 1762)...shall be depreciated using systematic and rational methodologies.</p> <p>Depreciation Expense is calculated through the <i>systematic and rational</i> allocation of cost of General PP&E, less its estimated salvage value, over the estimated useful life. Depreciation accounting must recognize both physical and functional causes of declining service potential, using systematic and rational methodologies. Depreciation Expense shall be accumulated in a contra-asset account.</p> <p>Example given: "Spares and Reparables: Held Ready-For-Issue" are assets that fall with in General PP&E guidelines as Equipment In Use (GLAC 1762).</p> <p>"Ready-For-Issue" assets are not depreciable because they do not loose their economic value (functional ability or ability to generate income) due to:</p> <ol style="list-style-type: none"> 1) Reparables are routinely maintained or repaired, with the intent of bringing the asset back to its original ready-for-issue state. As such, an older asset will have the same functional ability as a newer asset. 2) There is no distinction made within SMAG for Exchange Transactions for issuing an older or newer asset. An older asset will have exactly the same utility as the newer asset.
<p>P55-2-1 Accounting Illustration 2, guideline for Military Services.</p>	<p>See Appendix A</p> <p>Supply Transactions: Current and Inventory-As-Assets Concept</p>	<p>See Appendix A</p> <p>Supply Transactions: Current and Inventory-As-Assets Concept</p>

Appendix F

Inventory System Flowchart

LMI constructed this inventory system flowchart from information received during interviews with Air Force personnel and DFAS. It displays the flow of inventory information as it currently occurs. Where applicable, we note pending or future "inventory related" modifications to the current systems.

FLOW OF DATA INTO SMAS
(Use with Global DMRD904 Data Flow...chart from WCF Mini-system Summit)



Appendix G

Private-Sector Accounting Practices for Like-Item Exchanges

Many private-sector firms that serve private and regional air carriers with repair parts operate activities that have striking similarities to the activities of the working capital funded depot-level reparable organization in the U.S. Air Force. Their accounting practices, however, differ markedly from those currently used in the Air Force. This document summarizes practices in actual use in the private sector.

MAJOR EQUIPMENT ITEMS

“Major” items tend to be items of aircraft equipment that are reparable, are fairly expensive, and have specified time or usage intervals that mandate replacement for overhaul. Examples are aircraft engines, propellers, and landing gear. Each of these items must be removed for overhaul after a defined number of flight hours or cycles of use even if, at the time, the equipment is operating properly and within specification limits. Firms that provide replacement items offer these items under an exchange arrangement whereby the customer trades the item (which it owns) in need of overhaul for one that has already had the specified overhaul performed, is flight rated for airworthiness, and has an expected useful life equal to the stated mandatory overhaul interval.

In the case of aircraft engines, these are referred to as “zero time engines,” meaning that the engine has a remaining expected performance interval equal to the time-between-overhaul interval specified by the original equipment manufacturer (OEM). When an aircraft owner’s engine reaches its mandatory overhaul interval usage, the owner makes arrangements with the provider for a replacement engine owned by the service provider. The two firms exchange title to the engines, with the service provider taking ownership of the removed engine and the aircraft owner taking title to the replacement engine at the time the engine switch is actually performed. The air carrier pays the service provider both a fixed stated fee for the exchange as well as a later reimbursement to the service provider for the “on condition” parts needed during the overhaul.

Most such service providers account for their “pool” of replacement equipment items as noncurrent assets, keeping them on the balance sheet at their original acquisition cost and not making any adjustments to the asset carrying values when those individual items are exchanged with customers. At any point in time, therefore, although the actual items held in this investment pool will be different, the total number of such items that it owns will be constant. The fact that some of

those items are in transit to or from an exchange or are undergoing overhaul is not reflected in the asset valuation on the balance sheet.

The costs of shipping the items to and from customers, the financing or carrying costs of the asset pool, and the costs of overhauling the items received in the exchange with the customer are recorded as period expenses in the income statement. Usually, these major items have an active and readily accessible after market, and the prices at which additional items could be acquired is easily determinable through market research.

Such service providers are really in the business of selling item availability and repair turnaround. The fact that accomplishing this most effectively utilizes actual hardware is incidental to the real service being sold to customers, and that is why the accounting treatment of the asset pools is done as it is. The asset pool is merely one of the means used to provide customers with the services for which they are charged. Aircraft owners are thereby able to “outsource” both the asset investment as well as the logistics and repair functions associated with those items. Firms that provide this type of service are typically not the OEMs for the items being managed. The keys to their financial success are

- ◆ the ability to predict and manage repair costs,
- ◆ the ability to minimize the asset pool investment required to provide acceptable levels of turnaround for customers (i.e., achieving high turnover performance), and
- ◆ the ability to effectively manage the logistics of item movements to and from customers.

OTHER REPARABLE EQUIPMENT ITEMS

Equipment that is reparable but which does not have the “permanency” of major items discussed above is typically given another type of treatment. These items are normally carried by the service provider as inventory. The essence of the transactions between service providers and customers is, however, quite similar to that used for major items—they are like-item exchange transactions. Examples of the types of equipment usually found in this category include avionics, mechanical items, and electromechanical items.

Service providers offer replacement items to customers for a flat fee and a reparable carcass in exchange. This flat fee covers not only the expected repair costs, but also the financing or capital cost and expenses associated with carrying an exchange complement of equipment, as well as the management of the logistics associated with the service. A customer receives a replacement unit in exchange for returning a reparable unit to the provider. The parties exchange ownership of the items involved. Contractually, a customer has a defined period (e.g., 60 days) in which it must return a reparable carcass to the service provider or it will be

charged an additional fee that effectively repays the service provider for the cost of a new item. Also, if the returned carcass is determined to be nonreparable or beyond economical repair (BER), the customer will be charged a similar replacement fee.

The service providers typically adjust the carrying value of their inventory of such hardware on each transaction or "turn," and there are several different ways service providers do this. Most charge a portion (varying in amount but usually between 20 and 40 percent) of the carrying value of the item to COGS on each transaction. The balance (between 60 and 80 percent) is retained in the inventory valuation on the balance sheet and is assigned to the returned reparable carcass. The costs to repair the carcass are either added to the inventory carrying value or are expensed in the period through the COGS. This has the effect of lowering the carrying value of the inventory on the balance sheet, but, unlike a depreciation charge, the valuation reduction is imposed on each transaction rather than on a period or cycles of use basis.

Service providers will also engage in direct, nonexchange sales of such items, but it is usually more economical for a customer to acquire replacement items in an exchange rather than through an outright purchase. This method of accounting for its inventory can be thought of as a transactional adjusted valuation, and it reflects the fact that these types of items usually have a finite number of "turns" and there is an active after market for such items. This is not unlike the type of arrangement one can often find at auto parts stores, where the prices for "rebuilt" parts are often much lower than those for brand new parts of the same form, fit, function, and even brand name. Once again, the firms that typically engage in this type of business are not OEMs, but firms that do exchanges as a standard means of business.

The treatment of the costs of repair varies—some add it to the inventory carrying costs (thus adding to the "basis" that is subsequently "written down" on the next turn of that item), while others merely run such expenses through the period expenses in the income statement. For those using the former practice, the carcass values that have been "retained" in the inventory account when a part is issued to a customer are typically "assigned" to returned items using either a first-out-first-in (FOFI) or last-out-first-in (LOFI) convention. (See Attachment A for a numerical example of such an accounting treatment.) In order to accomplish this type of treatment and "revaluation" on a regular basis requires very robust integrated asset management and accounting systems. The essence of what is being "sold" is once again a quick repair turnaround service that only incidentally involves the underlying hardware items. Customers are really buying convenience, asset management, and the freedom from having to make the underlying asset investments.

As with major items, the service providers financial success is driven by the ability to:

- ◆ predict and manage repair costs,
- ◆ achieve high levels of turnover (i.e., minimizing the required size of the asset investment to achieve a given level of service to customers), and
- ◆ effectively manage the logistics aspects of the transactions.

ATTACHMENT A

**EXAMPLE OF INVENTORY VALUATION USING
TRANSACTIONAL ADJUSTMENTS**

TURN #	OPEN	COGS	CARCASS	REPAIR	CLOSE
0	\$100.00	N/A	N/A	N/A	\$100.00
1	\$100.00	\$30.00	\$70.00	\$10.00	\$80.00
2	\$80.00	\$24.00	\$56.00	\$10.00	\$66.00
3	\$66.00	\$19.80	\$46.20	\$10.00	\$56.20
.
.
10	\$36.20	\$10.81	\$25.21	\$10.00	\$35.21

Appendix H

Abbreviations

AFAA	Air Force Audit Agency
AICPA	American Institute of Certified Public Accountants
ARB	Accounting Research Bulletin
BER	beyond economical repair
BOCR	business overhead cost recovery
CFO	Chief Financial Officer
COGS	cost of goods sold
DACR	direct allocable cost recovery
DFAS	Defense Finance and Accounting Service
DFAS-DE	Defense Finance and Accounting Service Denver Center
DIFM	due in from maintenance
DISA	Defense Information Systems Agency
DLR	depot-level reparables
DMRD	Defense Management Review Decision
DoD	Department of Defense
DoD IG	Department of Defense Inspector General
DOLARS	Departmental On-line Accounting and Reporting System
EOBR	excess, obsolete, or beyond repair
FAA	Federal Aviation Administration
FASAB	Federal Accounting Standards Advisory Board
FASB	Financial Accounting Standards Board
FIABS	Financial Inventory Accounting and Billing System

FOFI	first out first in
GAAP	general accepted accounting principles
GAO	General Accounting Office
GLAC	General Ledger Accounting Code
IAF	inventory adjustment factor
LAC	latest acquisition cost
LMI	Logistics Management Institute
LOFI	last out first in
LRC	latest repair cost
NOR	net operating result
NSN	national stock number
OEM	original equipment manufacturer
OUSD	Office of the Undersecretary of Defense
PP&E	general property, plant, and equipment
RFI DLR	Ready-for-issue depot-level reparable
SAF/FM	Secretary of the Air Force for Financial Management
SBSS	Standard Base Supply System
SCS	Stock Control System
SFFAS	Statement of Federal Financial Accounting Standards
SMAG	Supply Management Activity Group
SMAS	Standard Materiel Accounting System

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