

Volume No. 1—Policies and Procedures	TOPIC NO	30515
Function No. 30000—Capital Asset Accounting	TOPIC	Supplies and Materials Inventory
Section No. 30500—Asset Control and Management	DATE	May 2009

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Overview

Introduction The purpose of this topic is to provide guidance in the administration of a supplies and materials inventory. Each agency is vested with the responsibility for the control, care, and security of all inventories within the organization regardless of the dollar value. Inventory control systems usually vary between agencies and may vary within an agency depending on the agency's size, complexity of operations, the number and variety of items to be controlled, etc.

For these reasons, the Department of Accounts (DOA) does not prescribe a single inventory management system for use by all agencies. However, DOA does prescribe basic inventory management control objectives and standards. These objectives and standards represent minimum requirements that must be met by any inventory management system (computerized or manual) for controlling supplies and materials inventories. Agencies are responsible for establishing additional controls as circumstances warrant depending on the specific type of inventory items to be controlled.

Objectives and Standards

The **objectives** of an inventory control system are to ensure

- sufficient quantities of goods are on hand to meet anticipated needs;
- funds are not needlessly tied up in excessive inventory stockpiles;
- inventories are safeguarded from loss due to deterioration, obsolescence, and pilferage; and
- supplies and materials are acquired in economic lots and maintained at the lowest cost commensurate with the risks of loss.

Each inventory control system should incorporate the following **standards**:

- All supplies and materials received by an agency must be counted and inspected upon receipt, with any discrepancies promptly reported;
- Issuances from inventory must be supported by signed requisitions;
- A periodic physical count must be taken of all items in inventory;
- Perpetual inventory records should be maintained; and
- Storage areas should be properly secured to restrict unauthorized access.

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Effective management system

An effective inventory management system requires

- posting of receipts and issues to individual ledger accounts;
- taking of periodic physical inventories;
- reconciliation of book balances with physical counts; and
- performance of accounting and storehouse functions.

Maintenance versus value

The maintenance of such controls could be costly compared to the value of the inventory. For example, the cost of maintaining an inventory system for the sole purpose of controlling the receipt and issuance of a single commodity, such as office supplies, could approach or exceed the value of the asset being inventoried. Therefore, perform a cost benefit analysis before determining which items need to be maintained in an inventory control system.

Cost reduction

An inventory control system can serve to reduce the costs of procurement and the cost of carrying inventory. An agency's ability to locate and accurately identify supplies and materials on hand as needed reduces overall inventory costs.

The inability to locate or identify supplies and materials could cause unnecessary purchases. Savings may accrue through reduction of pilferage and loss by obsolescence. The decision as to how much control needs to be instituted should be arrived at only after a careful evaluation of the increased costs versus the potential savings.

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Policy

Inventory records

The annual Comptroller’s Directive *Compliance Guidelines for State Agencies* requires that all state agencies having supplies and materials exceeding \$1,000,000 must report these inventories to the Department of Accounts either via the “Schedule of Inventory on Hand at June 30 Attachment” or in the financial statement template.

Whenever an agency’s inventory level is unlikely to approach the required threshold, the agency must determine whether maintaining inventory records is cost beneficial.

First, consider whether it is cost beneficial to maintain inventory records. Here are ways to look at the cost benefit relationship:

- Is the benefit of keeping the inventory worth the cost? This depends on the atmosphere in which the item is used. For example, in a normal maintenance shop environment, inventorying low cost tools such as screwdrivers and hammers is not necessary. However, in a prison environment, keeping track of these items is a security issue as prisoners can use them as weapons. In this situation, the cost is irrelevant as the benefit will always outweigh the cost.
- Compare the cost to inventory the item to the cost of the individual item. Cost to inventory an item includes
 - staff time to continuously track the item,
 - personnel costs to perform the periodic inventory counts,
 - the inventory system acquisition costs, and
 - system maintenance charges.

If the cost to inventory an item is greater than the cost of the item, it is usually not beneficial to maintain an inventory of that item unless there is some other reason like the one discussed above. For example, there is little or no cost benefit to maintaining an inventory of office supplies such as paper, pencils, and paper clips unless the agency maintains a very high volume of these items.

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- Consider the risk surrounding inappropriate use of an item. Items such as weapons or prescription drugs need adequate controls, including inventories, and physical safeguards must be in place to mitigate the risks of inappropriate use or distribution. For items such as cell phones, pagers, and credit cards, there is a risk of increased expenses if the item is used by the wrong individual or in an inappropriate manner. Knowing who has custody and responsibility for these items is critical.

Always track items purchased for resale or manufacturing using an inventory management system. Inventory management of these items helps

- ensure sufficient quantities are on hand as needed, and
- determine appropriate sales price for a retail item.

There are many instances where keeping inventory records for supplies and materials may not be necessary or cost beneficial. Agencies should analyze the factors shown above including the Comptroller’s Directive requirement that all agencies having supplies and materials inventory exceeding \$1,000,000 at June 30 must report these balances to the Department of Accounts.

If an agency determines that an inventory is not necessary due to the cost benefit analysis it performed, the agency may expense its supplies and materials at the time of purchase. The agency will not need to report to DOA any inventory balances on hand at year end that are below the required Comptroller’s Directive threshold.

If inventory records for specific supplies and materials are determined to be necessary, two inventory methods may be used to record the inventory: perpetual or periodic.

- The **perpetual inventory method** controls stock by keeping track of all additions and deletions to the inventory as they happen throughout the year, typically using an automated information system. This method allows the agency to know the value and the quantity of the inventory on hand at any given time, but usually has significant costs associated with maintaining the necessary inventory records.
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A perpetual inventory record should be maintained for each item of supplies and materials that needs to be sufficiently controlled. When perpetual inventory records are required, maintain written procedures (manual or computerized) and communicate these throughout the agency to facilitate uniform implementation. Retain a copy of these inventory procedures on file for audit purposes.

Perpetual inventory records should consist of the

- (a) description of items;
 - (b) storage location;
 - (c) minimum and maximum quantities to be kept in inventory;
 - (d) reorder quantity;
 - (e) date and quantity of additions to inventory;
 - (f) date and number of inventory requisition;
 - (g) quantity deleted from inventory, and
 - (h) inventory balance
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Considerations for agencies with large inventories

Where the number of items being received and issued is voluminous, it may be expedient to summarize requisitions before posting the quantities issued to the inventory records.

Classification

Develop a systematic classification of titles of inventory items to ensure inventory ledger records are properly arranged. Use of a number code in arranging inventory records is extremely beneficial. There should be a master ledger record containing a summary description of all specific items in a group that is carried in inventory.

Individual ledger records for each item in a group show receipts, issuances and balance on hand for the item. For example, a general grouping titled "Batteries" would consist of a master ledger record showing each kind and size of battery carried in inventory along with the corresponding code number. Each individual ledger record would show the number of batteries on hand in each specific category.

Accuracy

The accuracy of perpetual inventory records is tested by periodic physical inventories as determined by the actual count, weight or some other measurement. This control discloses the possibility of theft or loss and reveals other weaknesses in the system as discovered through reconciliations of the actual counts to the system's records. All items may be inventoried at the same time or different segments of the inventory may be counted at stated intervals. A physical count of the more critical items (e.g., drugs, chemicals, explosives, etc.) should be performed frequently.

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Procedures

Principles of inventory control

The extent to which inventory controls should be established depends, in part, upon the cost and sensitivity of the individual inventory items to be controlled. At a minimum, all supplies and materials received by any agency must be

- counted,
- inspected, and
- stored appropriately.

All **storage areas** should be secured to restrict admittance to authorized personnel. Supplies and materials should be issued for use by the operating departments only upon the receipt of a properly authorized, signed requisition.

Group different **classes of inventories** so that different control techniques are applied to items with different usage values based upon

- item costs,
- item usage,
- theft appeal, and
- sensitivity of the item.

This type of inventory control is frequently referred to as the ABC method. Under the ABC method, items having the greatest usage values are categorized as Class A. More stringent controls should be placed on Class A items. For example, there should be a higher frequency of reporting, careful analysis of lead time, precautions taken to ensure record accuracy, and more frequent physical inventories. Items in Class C are considered of such low value that controls here could be minimized. Class B items would fall in between the two extremes. Each agency should analyze its inventories to decide which items will be placed into a particular class.

Agencies should **maintain strict control** over higher risk items such as chemicals, drugs, etc. Classify these items in special categories so that maximum security may be easily identified. The more valuable or sensitive items should be set apart from the rest of the supplies in a locked location. Access to this location should be restricted only to authorized persons. Physical inventories of sensitive supplies and materials should be taken often in order to disclose on a timely basis any irregularities in the inventory.

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Standard order quantities and order points

A major objective of an inventory management system is to assure that materials are on hand when they are needed. To maintain adequate control over the level of stock, standard order quantities and order points must be established.

Whenever stock on hand falls to a minimum stock level, an order should automatically be placed for a predetermined quantity based on the time lag between order placement and the delivery of the item. The minimum stock level is defined as the fewest number of units remaining on hand before an order must be placed for additional items to prevent a future stock outage.

The order quantity should be set at a point which will cause the stock level to approach but never quite reach the maximum stock level. The maximum stock level is defined as the greatest number of units on hand that can be effectively maintained in inventory without incurring unnecessary storage or handling charges and with a minimal risk of the inventory becoming obsolete.

Order and stock level factors

Consider these factors to determine proper order size and stock levels:

- **Inventory Turnover** – Agency ordering controls should produce an overall inventory turnover rate of at least three or more times per year. In practice, this can be achieved by not ordering or receiving more than one to four months supply of higher turnover items, or more than 6 to 12 months supply of lower turnover items at any one time. Review the historical usage of each inventory item to determine an appropriate turnover rate. Inventory turnover is calculated with the following formula:

$$\frac{\text{COST OF GOODS SOLD OR ISSUED DURING THE PAST 12 MONTHS}}{\text{AVERAGE INVENTORY INVESTMENT DURING THE YEAR.}}$$

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- **Establishment of Lead Time** - Lead time is an estimate of the interval between the time that a determination is made that a material is needed and the time such material is delivered.

The calculation has two aspects—

Administrative lead time: the time lapse between the requisitioning of material and the preparation of a purchase order.

Supplier lead time: the additional time lapse before the material is actually delivered.

To prevent a stock-outage, have an inventory level that is at least adequate for usage during the lead time. If the lead time is six weeks for an item with a usage of 20 units each week, there must be an inventory of at least 120 units (6 x 20) when the order is placed to prevent a stock-outage.

If usages and lead times could be predicted exactly, it would be possible to limit the maximum inventory of an item to the order quantity and a new shipment would arrive just as the last unit of existing stock was used. In practice, this cannot be accomplished.

Suppliers may not always keep delivery promises and usage forecasts may be inaccurate. Extra inventory is needed to protect against these contingencies and is termed “*safety stock*.”

The amount of safety stock required is determined by the consideration of:

- lead time and the expected lead time variance;
- rate of usage during the lead time and expected usage variance; and
- reorder frequency.

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- **Reorder Point** - Establishment of a proper reorder point for inventory items is essential to an effective inventory control system.

This tells the purchasing agency when to replenish a particular item. The reorder point is the expected usage during the procurement lead time plus a safety stock provision. The provision for the safety stock is necessary in case the actual amount of usage exceeds the estimated usage during the period of lead time.

- **Available Storage Accommodation** - Arrangements should be made to see that deliveries of inventory quantities are not too great to be accepted into the available storage accommodation. If this point is not considered carefully, goods requiring covered storage may have to be kept in the open air, or rent may have to be paid for warehousing facilities.

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Supply officer role The following general guidelines ensure an agency’s inventory of supplies and materials will be effectively implemented throughout the agency. Agencies should designate an individual as the "Supply Officer" to ensure effective management of the supplies and materials control responsibilities whenever it has been determined that the maintenance of inventory records is necessary.

Supply officer duties Duties of the Supply Officer should include items listed in the table below.

Step	Action
1	Initiate and implement internal inventory control procedures and make recommendations for improvements. Procedures should be written and disseminated to all concerned parties. A copy of the procedures should be maintained on file for reference and audit purposes.
2	Maintain inventory records for supplies and materials.
3	Coordinate and initiate action to take necessary physical inventories.
4	Reconcile physical inventories to inventory records.
5	Reconcile inventory records to control accounts.
6	Ensure accurate inventories by test counting a reasonable number of items.
7	Verify the reconciliation of individual inventory records with physical counts by selecting a reasonable number of records and comparing them with the physical inventory.
8	Certify the completeness and accuracy of the agency’s supply and materials inventories.
9	Report missing, stolen and damaged inventory to upper management.

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Staffing for inventory activities

The agency's Supply Officer should appoint the individuals to count the actual stock on hand. The items would then be counted and recorded on serially numbered and controlled stock sheets. These sheets would contain information such as

- (a) date
- (b) location
- (c) description
- (d) unit of issue
- (e) quantity of stock found
- (f) stock counters signatures, and
- (g) a remarks column for comments about the condition of stock, etc.

After the items have been counted, the stock sheets should be

- collected,
- accounted for and,
- arranged in classification order.

Next, forward the stock sheets to the accounting office for comparison of the totals for each item inventoried to the inventory ledger balances. If there are discrepancies between the actual count and the inventory record, then the physical stocktaking figure becomes the actual value and the book balance on the ledger card must be amended accordingly.

Major discrepancies require additional investigation. Remedial action should be taken to correct the cause of the discrepancies as disclosed through the investigation. After the necessary review and investigation, the book balances should be brought into agreement with the actual count. Any adjustments made to the inventory ledger cards should be done through the use of an adjustment requisition approved by management. Such changes should be highlighted on the inventory records by use of a red ink posting or in some other manner to easily identify the adjustments.

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Timing of inventory activities

Whenever an inventory is required to be performed as determined by the agency's cost benefit analysis, a physical inventory of all items should be taken at least annually within the last 90 days of each fiscal year.

More frequent checks (cycle counts) of high dollar or high risk items should be made throughout the year for control purposes. Physical inventories should be taken in a timely manner to accurately report inventory balances at June 30, as required for the Comptroller's Directive

Statistical sampling

The use of statistical sampling is recognized as an acceptable technique in conducting physical inventories of supplies and materials.

For an in-depth review of the objectives, plans, and design criteria used to develop a valid statistical sampling, refer to CAPP Topic No. 30505. CAPP Topic No. 30505 refers to Physical Inventories of Capital Assets, but the techniques and procedures illustrated, including statistical sampling, are also applicable to supplies and materials inventory.

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Internal Control

General Each agency should implement cost beneficial internal control measures as follows:

Warehouse, Storerooms, and Office Areas

1. Access to warehouses and storerooms should be controlled and limited to assigned personnel only.
2. Unauthorized persons should be denied access to storage areas.
3. Warehouses, storerooms and office areas should be locked during non-working hours and during working hours when unattended.
4. Keys to storage areas should be restricted to personnel responsible for these areas.

Good Housekeeping Practices

1. Supplies and materials should be stored in an orderly fashion to facilitate accurate commodity identification and counting.
2. Storage areas must be kept neat, safe and clean to protect inventories against losses from damage and deterioration.

Segregate Store Keeping, Record Keeping and Inventory Taking Functions

The duties of inventory record keeping, inventory custody and physical inventory taking shall be segregated whenever practical or economically feasible.

Records Retention

General Destruction of records must be in accordance with policies and procedures of the Records Management Section, The Library of Virginia.

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Subject Cross References

References CAPP Topic No. 30505—*Physical Inventory*
