



Standard Practice for Establishing the Full Valuation of the Loss/Overage Population Identified During the Inventory of Moveable, Durable Property¹

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1. Scope

1.1 This practice covers the assignment of a value to categories and complete populations of lost or destroyed property assets for the purpose of determining the composite cost of all such losses on a periodic basis. This practice does not address the valuation of individual property assets.

1.2 The reason for assigning a loss or destruction value is to establish an economic basis for the allocation of resources to manage property efficiently and in a cost effective manner.

1.3 The direct cost of lost, damaged or destroyed (LDD) property has little to do with the acquisition, book or market value of such assets. While in many organizations, the value of LDD property is reflected at acquisition cost in the General Ledger accounts this approach is only appropriate for the financial reporting of property assets.

1.4 The calculation of the cost of loss or destruction of property for the purposes of computing a necessary factor to be used in the equation applied under Practice E 2219 is to be based upon the consideration of both the risk of an inventory shortage as well as the benefits of inventory control and overage management.

1.5 The valuation of property for the purposes of management and control is to be based upon the consideration of both the risk of an inventory shortage and benefits of inventory management as contained in this standard.

2. Referenced Documents

2.1 ASTM Standards:

E 2219 Practice for the Valuation and Management of Moveable, Durable Property²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

¹ This practice is under the jurisdiction of ASTM Committee E53 on Property Management Systems and is the direct responsibility of Subcommittee E53.03 on Financial Management.

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² *Annual Book of ASTM Standards*, Vol 04.12.

3.1.1 *acquisition cost*—the purchase price paid for property and any subsequent improvements to it.

3.1.2 *agency*—government organization, regardless of level (federal, state, or local).

3.1.3 *company*—a for-profit organization.

3.1.4 *institution*—a not-for-profit, non-governmental organization.

3.1.5 *loss*—the consequence of failing to account for property on-hand when compared with the applicable historical records.

3.1.6 *organization*—an agency, company, or institution.

3.1.7 *overage*—the accumulation and maintenance of unneeded property assets as a consequence of ineffective utilization/reutilization practices, inadequate acquisition planning, record keeping, or other management system inadequacies.

3.1.8 *profit equivalent*—indicia of success in lieu of profit for an agency or institution.

3.1.9 *property*—moveable, durable assets as opposed to realty.

3.1.10 *risk-based management*—applying the underlying principles of risk, recognizing where the instances of risk are overstated and acting to balance the likelihood of the risk of non-availability against the costs of control.

3.1.11 *shortage*—property that is unavailable for use.

4. Significance and Use

4.1 The calculated cost of property loss and destruction in combination with the cost of overages presents a logical foundation for the development of alternative models which can be used to evaluate the effectiveness of property management systems and provide relevant information to management useful for the distribution of resources to the task of property utilization and control.

4.2 The understanding of an organization's loss, destruction and overage cost of inventory is a necessary prerequisite to the development of cost effective systems for the management of movable, durable assets.

4.3 The costing model used in this standard assumes that individual categories of property represent a range of realized costs to an organization and that these loss or destruction costs can range from significant to minimal.

4.4 The use of overage is a necessary corollary to the model since there can be significant costs associated with the inventory and control of unneeded assets.

5. Procedure

5.1 To establish the loss, damage and overage valuation of property assets, it is necessary to determine the direct financial impact that missing or unnecessarily retained assets had on the organization.

6. Determination of Historical Risk

6.1 An analysis must be made of the historical inventory records to determine the historical loss liability actually suffered by an agency, company or institution. This is to be done by netting inventory shortages with inventory overages.

6.1.1 Inventory shortages are calculated by determining what percentage of the shortage items would have been replaced at an estimated cost. In order to accomplish this task the organization must calculate an estimated percentage for each category of items that would be replaced and an estimated percentage to represent the replacement costs of those same items. Accordingly, for each loss category identified in this section (6.1.1) an estimated value for both shortage items and replacement dollars is to be calculated and used to relate the historical loss to an actual inventory loss economic value to an organization. Items that must be considered in developing the percentage of the shortage that would have been replaced include:

6.1.1.1 Determine the categories of property represented within the inventory shortage population;

6.1.1.2 Determine what percentage of the shortage items would have been replaced, if the shortage had been noted; and

6.1.1.3 Determine what percentage of the remaining shortage inventory items would typically be found within 12 months of a typical inventory.

6.1.2 Additional items that may be considered are:

6.1.2.1 What percentage of the shortage categories were replaced but were subsequently “found”?

6.1.2.2 What percentage of the shortage would have been sold with a return to the agency, company or institution? (modular furniture and laboratory equipment are examples)

6.1.2.3 What percentage of the shortage would have been disposed of without any return to the agency, company or institution? (computers that would have been donated to schools or charitable institutions, for example)

6.1.2.4 What percentage of the shortage should have been replaced?

6.2 To each shortage category identified in 6.1.1 and, if applicable, 6.1.2, a value must be assigned to represent the cost of unneeded replacements, a neutral value for items missing but not needed, a neutral value for items missing but typically with no value at disposal, a cost not earned for items missing but could have been sold and a cost for the items which were missing and should have been or were replaced. In addition to

the cost of shortage inventory items, historical inventory records need to be reviewed to determine inventory overages. For each inventory overage category identified in this section (6.2) a value is to be determined both in estimated item count and estimated dollar terms and these figures are to be used to demonstrate the actual economic impact of the inventory overage on the organization.

6.2.1 What percentage of the property has a value to the organization?

6.2.2 What percentage of the overage property has a value as scrap? At this point overage goes from value to expense cost to scrap minus the cost recovery from base materials sale.

6.2.3 What percentage of the overage property has no value?

6.2.4 What percentage of the total inventory is represented by the overage inventory?

6.3 To each overage category identified in 6.2.1-6.2.4, a cost value must be assigned to represent the cost of acquiring and maintaining an overage asset, a neutral value for overage items found with alternative uses, a value for items which can be sold or have current value to other organizations, a minimal value for items to be sold as scrap and a value for the cost of maintaining the percentage of the inventory identified as overage.

7. Calculation of the Historical Loss or Preservation Liability Factor

7.1 The cost values assigned to each shortage or overage category should then be multiplied by the percentage that each category represents of the total shortage or overage inventory. For example, if 10 % of the shortage inventory should have been replaced and the replacement cost of new equipment is 110 % of acquisition value that the “category cost would be 11 %.” When this process is followed for each shortage and overage category and the results are summed, a figure is generated which represents the historical loss or preservation liability.

7.2 The resulting historical loss or overage liability number should be annualized and used in the consideration of the acceptable property management control ratios under Practice E 2219.

8. Summary

8.1 This standard concerns the calculation of a composite cost valuation for all lost or destroyed property assets and the costs of overage inventories. These cost valuations are a necessary consideration under Practice E 2219 for the allocation of property management and control resources.

8.2 The values to be assigned under 6.2.1-6.2.4 are not standard and therefore may vary by industry and organization; however, the values, once determined, should remain constant and set the base line for performance measurement and trend analysis.

9. Keywords

9.1 category; control ratios; destruction; historical risk; inventory; loss; overage; profit; property; risk management; shortage; threshold ratios; valuation

Bibliography

- (1) The NPMA Standard Property Book, Second Edition, August 2001, available from www.npma.org.
- (2) GAO Manual for Guidance of Federal Agencies, Title 2, Accounting, available from www.firstgov.gov.
- (3) Federal Property and Administrative Services Act of 1949, available from www.firstgov.gov.
- (4) Federal Property Management Regulations, available from www.firstgov.gov.
- (5) Federal Management Regulations, available from www.firstgov.gov.
- (6) The Budget and Accounting Procedures Act of 1950, available from www.firstgov.gov.

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