Chapter 21

Audit of the Inventory and Warehousing Cycle

■ Concept Checks

P. 694

1. Inventory is often the most difficult and time consuming part of many audit engagements because:
    1. Inventory is generally a major item on the balance sheet and often the largest item making up the accounts included in working capital.
    2. The need for organizations to have the inventory in diverse locations makes the physical control and counting of the inventory difficult.
    3. Inventory takes many different forms that are difficult for the auditor to fully understand.
    4. The consistent application of different valuation methods can be fairly complicated.
    5. The valuation of inventory is difficult due to such factors as the large number of different items involved, the need to allocate the manufacturing costs to inventory, and obsolescence.

2. Cost accounting records are those which are concerned with the processing and storage of raw materials, work in process, and finished goods, insofar as these activities constitute internal transfers within the inventory and warehousing cycle. These records generally include electronic files, ledgers, worksheets, and reports, which accumulate material, labor, and overhead costs by job or process as the costs are incurred.

    Cost accounting records are important in conducting an audit because they indicate the relative profitability of the various products for management planning and control, and determine the valuation of inventories for financial statement purposes.

P. 701

1. A proper cutoff of purchases and sales is heavily dependent on the physical inventory observation because a proper cutoff of sales requires that finished goods inventory included in the physical count be excluded from sales and all inventory received be included in purchases.

    To make sure the cutoff for sales is accurate, the following information should be obtained during the taking of the physical inventory:

    1. The last shipping document number should be recorded in the working papers for subsequent follow-up to sales records.

Concept Check, P. 701 (continued)

2. A review should be made of shipping to test for the possibility of shipments set aside for shipping and not counted, or other potential cutoff problems.
3. When prenumbered shipping documents are not used, a careful review of the client's method of getting a proper sales cutoff is the first step in testing the cutoff.
4. A list of the most recent shipments should be included in the working papers for subsequent follow-up to sales records.

For the purchase cutoff, the following information should be noted:

1. The last receiving report number should be noted in the working papers for subsequent follow-up to purchase records.
2. A review should be made of the receiving department to make sure all inventory has been properly included in the physical inventory.

2. The auditor documents used, unused, and voided tag numbers at the end of the physical inventory observation to partially satisfy the existence and occurrence balance-related audit objectives during follow-up testing. To test existence, the auditor will examine an inventory listing by tag number to verify that inventory included in the final listing consists of only those items which were counted and tagged during the physical inventory and that no tags originally voided or unused were added to the final inventory listing. To test completeness, the auditor will examine an inventory listing by tag number to trace used tags to the final inventory listing. The primary reason for tag control is to ensure that no inventory items are added to the final listing that were not counted at the date of the physical observation.

3. The direct labor hours for an individual inventory item would be verified by examining engineering specifications or similar information to determine whether the number of hours to complete a unit of finished goods was correctly computed. Ordinarily it is difficult to test the number of hours to an independent source.

   The manufacturing overhead rate is calculated by dividing the total annual number of labor hours into total manufacturing overhead. These two totals are verified as a part of the payroll and personnel and acquisition and payment cycles.

   Once these two numbers are verified (overhead rate per direct labor hour and the number of direct labor hours per unit of each type of inventory), it is not difficult to verify the overhead cost in inventory.

■ Review Questions

21-1 The acquisition and payment cycle includes the system for purchasing all goods and services, including raw materials and purchased parts for producing finished goods. Purchase requisitions are used to notify the purchasing department to place orders for inventory items. When inventory reaches a predetermined level or automatic reorder point, requisitions may be initiated by stockroom personnel or by computer. In other systems, orders may be placed for the materials required to produce a customer order, or orders may be initiated upon periodic evaluation of the situation in light of the prior experience of inventory activity. After receiving the materials ordered, as part of the acquisition and payment cycle, the materials are inspected with a copy of the receiving document used to book perpetual inventory. In a standard cost inventory system, the acquisition and payment cycle computes any inventory purchase variances, which then enter the inventory system.

The following audit procedures in the acquisition and payment cycle illustrate the relationship between that cycle and the inventory and warehousing cycle.

1. Compare the inventory cost entered into the inventory system to the supporting invoice to determine that it was properly recorded and the purchase variance (standard cost system), if any, was properly reflected.
2. Test the purchase cutoff at the physical inventory date and year-end to determine whether or not the physical inventory and year-end inventory cutoffs are proper from a purchase standpoint.

21-2 The most important tests of the perpetual records the auditor must make before assessed control risk can be reduced, which may permit a reduction in other audit tests, are:

1. Tests of the purchases of raw materials and pricing thereof.
2. Tests of the cost accounting documents and records by verifying the reduction of the raw material inventory for use in production and the increase in the quantity of finished goods inventory when goods have been manufactured.
3. Tests of the reduction in the finished goods inventory through the sale of goods to customers.

Assuming the perpetual records are determined to be effective, physical inventory tests may be reduced, as well as tests of inventory cutoff. In addition, an effective perpetual inventory system will allow the company to test the physical inventory prior to the balance sheet date.

21-3

SUBSTANTIVE ANALYTICAL PROCEDURE	TYPE OF POTENTIAL MISSTATEMENT
1. Compare gross margin percentage with previous years.	Overstatement or understatement of inventory amounts (prices and/or quantities).
2. Compare inventory turnover with previous years.	Obsolete inventory.
3. Compare unit costs with previous years.	Overstatement or understatement of unit costs.
4. Compare extended inventory value with previous years.	Errors in compilation, unit costs, or extensions.
5. Compare current year manufacturing costs with previous years.	Misstatement of unit costs of inventory, especially direct labor and manufacturing overhead.

21-4 Auditing procedures to determine whether slow-moving or obsolete items have been included in inventory are:

1. Obtain a sufficient understanding of the client's business to aid in recognizing inventory that is no longer useful in the client's business.
2. Review the perpetual records for slow-moving items.
3. Discuss the quality of the inventory with management.
4. Ask questions of production personnel during physical inventory observation about the extent of the use or nonuse of inventory items.
5. Make observations during the physical inventory for rust, damaged inventory, inventory in unusual locations, and unusual amounts of dust on the inventory.
6. Be aware of inventory that is tagged obsolete, spoiled, or damaged, or is set aside because it is obsolete or damaged.
7. Examine obsolescence reports, scrap sales, and other records in subsequent periods that may indicate the existence of inventory that should have been excluded from the physical inventory or included at a reduced cost.
8. Calculate inventory ratios, by type of inventory if possible, and compare them to previous years or industry standards.

21-5 The continuation of shipping operations during the physical inventory will require the auditor to perform additional procedures to ensure that a proper cutoff is achieved. The auditor must conclude that merchandise shipped is either included in the physical count or recorded as a sale, but not both.

Since no second count is taken, the auditor must increase the number of test counts to determine that the counts recorded are accurate.

21-6 The auditor could have uncovered the misstatement if there were adequate controls over the use of inventory tags. More specifically, the auditor should have assured himself or herself that the client had accounted for all used and unused tag numbers by examining all tags, if necessary. In addition, the auditor should have selected certain tags (especially larger items) and had the client show him or her where the goods were stored. The tag numbers used and unused should have been recorded in the auditor's working papers for subsequent follow-up. As part of substantive procedures, the auditor could have performed analytical tests on the inventory and cost of sales. A comparison of ratios such as gross margin percentage and inventory turnover could have indicated that a problem was present.

21-7 The auditor must not give the controller a copy of his or her test counts. The auditor's test counts are the only means of controlling the original counts recorded by the company. If the controller knows which items were test counted, he or she will be able to adjust other uncounted items without detection by the auditor.

21-8 The most important audit procedures to test for the ownership of inventory during the observation of the physical counts and as a part of subsequent valuation tests are:

1. Discuss ownership issues, such as inventory held on consignment, with the client.
2. Obtain an understanding of the client's operations.
3. Be alert for inventory set aside or specially marked.
4. Review contracts with suppliers and customers to test for the possibility of consigned inventory or inventory owned by others that is in the client's facilities for repair or some other purpose.
5. Examine vendor invoices indicating that merchandise on hand was sold to the company.
6. Test recorded sales just before and just after the physical inventory to determine that the items were or were not on hand at the physical inventory date and that a proper cutoff was achieved.

21-9 Assuming the auditor properly documents receiving report numbers as a part of the physical inventory observation procedures, the auditor should verify the proper cutoff of purchases as a part of subsequent tests by examining each invoice to see if a receiving report is attached. If the receiving report is dated on or before the inventory date and the last recorded number, the received inventory must have been included in the physical inventory; therefore, the invoice should be included in accounts payable. Those invoices that are received after the balance sheet date but shipped F.O.B. shipping point on or before the close of the year would indicate merchandise in transit.

21-10 Compilation tests are the tests of the summarization of physical counts, the extension of price times quantity, footing the inventory summary, and tracing the totals to the general ledger.

Several examples of audit procedures to verify compilation are:

1. Trace the tag numbers used to the final inventory summary to make sure they were properly included and trace the numbers not used to the final inventory summary to make sure no tag numbers have been added.
2. Trace the test counts recorded in the working papers to the final inventory summary to make sure they are correctly included.
3. Trace inventory items on the final inventory list to the tags as a test of the existence of recorded inventory.
4. Test the extensions and footings of the physical inventory summary.

21-11

DATE	PURCHASE QUANTITY	PRICE	TO BE INCLUDED IN 12-31-16 INVENTORY	EXTENSION
11-26-16	2,400	$2.07	700 @ $2.07	$1,449.00
12-06-16	1,900	$2.28	1,900 @ $2.28	4,332.00
				$5,781.00

Assuming FIFO inventory valuation, the 12-31-16 inventory should be valued at $5,781, and is thus currently overstated by $121.

If the 1-26-17 purchase was for 2,300 binders at $2.12 each, the 12-31-16 inventory should be valued at $5,477.00 (1,900 @ $2.12 + 700 @ $2.07) and is thus currently overstated by $425. The reason is the lower of cost or market rule, with the $2.12 being the replacement cost.

21-12 With a job cost system, labor charged to a specific job is accumulated on a job cost sheet. The direct labor dollars included on the job cost sheet can be traced to the employee "job time sheet" to make sure the hours are correctly included on the job cost sheet. The labor rate can be verified by comparing it to the amount on the employee's earnings record.

■ Multiple Choice Questions From CPA Examinations

21-13 a. (2) b. (4) c. (2)

21-14 a. (3) b. (4) c. (3)

■ Multiple Choice Questions From Becker CPA Exam Review

21-15 a. (4) b. (3) c. (1)

■ Discussion Questions and Problems

21-16

a. PURPOSE OF INTERNAL CONTROL	b. TEST OF CONTROL	c. POTENTIAL FINANCIAL MISSTATEMENT	d. SUBSTANTIVE AUDIT PROCEDURE
1. To ensure inventory shipments are recorded as sales. (Completeness)	Account for a numerical sequence of shipping orders.	Understatement of sales.	Trace quantity and description on bills of lading to recorded sales.
2. To assure reasonable costs are used for inventory and cost of goods sold. (Accuracy)	Review procedures for determining standard costs.	Misstatement of inventory.	Trace costs from supporting documents to development of standards.
3. To make sure obsolete goods are identified and properly valued. (Realizable Value)	Read policy and discuss procedures with client.	Misstatement of inventory.	Substantive analytical procedures for inventory.
4. For a proper valuation of inventory. (Accuracy)	Examine receiving and requisition documents, trace to perpetual records.	Misstatement of inventory.	Compare physical count to perpetual inventory record.

21-16 (continued)

a. PURPOSE OF INTERNAL CONTROL	b. TEST OF CONTROL	c. POTENTIAL FINANCIAL MISSTATEMENT	d. SUBSTANTIVE AUDIT PROCEDURE
5. To make sure physical inventory counts are accurate. (Accuracy, existence, and completeness)	Observe counting personnel and discuss with client.	Misstatement of inventory.	Compare physical count to perpetual inventory record.
6. To make sure inventory compilation is accurate. (Accuracy)	Observe who compiles the inventory and discuss with client.	Misstatement of inventory.	Reperform clerical tests of inventory compilation.
7. To ensure inventory is recorded when received, payments made are for goods received, and quantities and descriptions are accurate. (Completeness, existence, and accuracy)	Account for a numerical sequence of receiving reports and observe matching invoices received from vendors.	Understatement of inventory or payment for goods not received.	Trace quantity and description on vendor's invoice to receiving report.
8. To minimize theft or unrecorded shipments of inventory. (Existence)	Discuss with client and observe whether personnel prepare shipping documents.	Overstatement of inventory.	Compare physical count to perpetual records.

21-17

a. TRANSACTION-RELATED AUDIT OBJECTIVE	b. RELATED RISK	c. TEST OF CONTROL
1. Inventory recorded in the perpetual records physically exists (Occurrence).	Non-inventory warehouse individuals may remove inventory without authorization.	Observe client personnel in the inventory warehouse and determine if each person is authorized to be in the warehouse.
2. Inventory transactions are properly classified (Classification).	Equipment or supplies may be inaccurately classified as inventory if they are not physically separated from the inventory.	Observe whether equipment or supplies are stored in the same physical space as inventory.
3. Recording of inventory in the client's records is valid (Occurrence).	Inventory held on consignment may be recorded as the client's inventory.	Observe whether inventory held on consignment is stored in the same physical space as inventory.
4. Recorded transactions represent valid, approved purchases (Occurrence).	If purchasing agents can make purchases from any vendor, there is a risk that purchasing agents may make unauthorized purchases of items not approved (for personal use).	Enter non-valid vendor numbers into the purchasing system to see if the related transaction is rejected.
5. Recorded inventory may not be recorded at appropriate amounts, due to obsolescence (Accuracy).	Without information about the amount of time inventory is in the warehouse, management is less likely to identify slow moving items that should be recorded at the lower of cost or market.	Select a sample of inventory items from the perpetual inventory system and recalculate the number of days each item has been present in the warehouse.
6. Actual shipments of inventory are recorded in the perpetual inventory records (Completeness).	Shipments of inventory may occur but not be recorded.	Select a sample of items in the warehouse and physically move them to the shipping areas to see if the microchip correctly removes those items from the perpetual inventory records.

21-17 (continued)

a. TRANSACTION-RELATED AUDIT OBJECTIVE	b. RELATED RISK	c. TEST OF CONTROL
7. Recorded inventory items are physically present (Occurrence) and recorded at correct amounts (Accuracy).	If periodic reconciliations of inventory records to physical counts are not performed, there is a risk that items may be removed from the warehouse without knowledge, which would result in overstated inventory amounts.	Inspect the client's test samples for accuracy and reasonableness. Inquire about the nature of discrepancies identified.
8. Actual inventory on hand may not be recorded in the perpetual inventory listing (Completeness).	There is a risk that inventory on hand is not included in the inventory records.	Inspect the client's test samples for accuracy and reasonableness. Inquire about the nature of discrepancies identified.
9. The perpetual inventory records are accurately summarized and posted to the general ledger accounts (Posting and Summarization).	There could be errors in the mathematical formulas of the inventory records.	Recalculate the inventory amounts and determine that the totals agree to the general ledger balances.
10. Recording inventory transactions represent actual receipts of inventory items (Occurrence).	Inventory could be added to the inventory account balance before actual goods are received.	Enter an addition to the perpetual inventory system without a valid receiving report number to determine if the system rejects the transaction.

21-18 a. It is important to review the cost accounting records and test their accuracy for the following reasons:

1. The cost accounting records determine unit costs that are applied to derive inventory values. Since inventory is usually material, unit costs must be verified.
2. In many companies, there are many types of inventory items with complex cost structures. The potential for misstatement is great in determining costs. The auditor would need to go to an extreme effort to verify such costs without being able

21-18 (continued)

to rely on the cost accounting records which provide the costs (i.e., it is far more efficient to test the cost accounting records than the costs themselves).

3. The cost accounting records also deal with transferring inventories through the production cycle and then from finished goods to sales. These transfers must be handled accurately for inventory to be properly stated.

b. 1. Examine engineering specifications for expected (standard) labor hours. Examine time records for hours worked on the part during measured period. Divide by units produced to test reasonableness of standard.
2. Review specifications for types of labor required to produce parts, or observe production. Review union contracts or earnings records to develop reasonable rate for this labor mix.
3. Identify appropriate overhead accounts, paying careful attention to consistent application. Determine amounts for these accounts for a measured period. Determine direct labor hours from payroll records from the same period. Compute the overhead rate per direct labor hour.
4. Review engineering specifications. Review material usage variance.
5. Trace to vendor's invoices. Review material price variance.
6. Sum individual components.

21-19

AUDIT PROCEDURE	a. TYPE OF TEST	b. PURPOSE
1	Test of Control	To make sure that proper controls exist and are being followed in the taking of the physical inventory. (Existence, completeness, accuracy, and classification)
2	Substantive Test	To identify slow-moving inventory that may need to be written down. (Realizable value)
3	Substantive Test	To ensure that all inventory represented by an inventory tag actually exists. (Existence)
4	Substantive Test	To test the accuracy of the client's perpetual inventory records. (Existence, completeness, and accuracy)
5	Substantive Test	To test client's final inventory compilation. (Existence, completeness, accuracy, and classification)

21-19 (continued)

AUDIT PROCEDURE	a. TYPE OF TEST	b. PURPOSE
6	Substantive Test	To test that the final inventory was valued at its proper cost. (Accuracy)
7	Test of Control	To ensure that no raw material was issued without proper approval. (Existence)
8	Test of Control or Substantive Test	To ensure that additions recorded on the finished goods perpetual records were recorded on the books as completed production. (Accuracy and classification)

21-20

MIS-STATEMENT	a. CONTROL THAT SHOULD HAVE PREVENTED THE MISSTATEMENT FROM OCCURRING	b. SUBSTANTIVE AUDIT PROCEDURE THAT COULD BE USED TO UNCOVER THE MISSTATEMENT
1	Perform independent second counts on all merchandise. All persons responsible for inventory tags and compilation of physical inventory should be independent of custody of perpetual inventory records.	Record test counts and trace to compiled inventory.
2	Use of prenumbered tags and accounting for numerical sequence.	Account for all prenumbered tags during the physical examination and during compilation tests.
3	Internal verification of perpetual inventory prices.	Compare vendor invoice prices to perpetual inventory prices.
4	Segregation of obsolete inventory.	Perform net realizable value and lower of cost or market tests of inventory, including tests of the perpetual inventory.
5	Periodic review of reasonableness of manufacturing overhead rate.	Test reasonableness of manufacturing overhead rate.

21-20 (continued)

MIS-STATEMENT	a. CONTROL THAT SHOULD HAVE PREVENTED THE MISSTATEMENT FROM OCCURRING	b. SUBSTANTIVE AUDIT PROCEDURE THAT COULD BE USED TO UNCOVER THE MISSTATEMENT
6	Internal verification by another person.	Examine vendors' invoices in support of prices used.
7	Keep a record of the last shipping report number shipped before the inventory count.	Examine bills of lading for first shipments recorded after the physical inventory to determine that they were shipped after year-end.

21-21 Note: The PCAOB reorganized their auditing standards effective December 31, 2016. PCAOB AU Section 336 is identified in the reorganized standards as AS 1210.

a. There are many types of inventory items for which auditors may need to use a specialist for testing existence or valuation including oil and gas reserves, rare gems, pharmaceutical product inventory, or high-dollar-value specialized equipment components. For oil and gas reserves as well as rare gems, a geologist or other specialist would be needed to verify inventory quantities as well as quality and valuation. For high-dollar-value items in which the auditor has no expertise in distinguishing inventory items or in valuing the items, e.g. pharmaceutical products or specialized components, an auditor would use a specialist to verify the type of product and appropriate valuation.

b. According to AS 1210.08, the auditor should consider the following characteristics to ensure a specialist is qualified:
   (1) The certification, license, or other evidence of competence of the specialist in their field
   (2) The reputation and standing of the specialist
   (3) The specialist's experience in the type of work they will be performing

c. According to AS 1210.09, the auditor should gain an understanding of the following:
   (1) The objective and scope of the work performed
   (2) The relationship of the specialist to the client
   (3) The methods and assumptions used by the specialist

21-21 (continued)

(4) A comparison of the methods and assumptions to those used in prior periods, if relevant
(5) The appropriateness of using the specialist's work in the particular context used
(6) The form and content of the specialist's work

d. According to AS 1210.10-1210.11, an auditor may rely on work performed by a specialist hired by the client; however, in all cases the auditor should ensure that the specialist can be objective in their work. A specialist can be considered objective if the client cannot exert undue influence or pressure on the specialist. An auditor may also use their own specialist rather than using a specialist hired by the client.

21-22 a.

	INTERNAL CONTROLS	TESTS OF CONTROLS
1.	Inventory purchases are used to update the perpetual Atlanta inventory records.	Trace inventory quantities for a sample of purchase transactions to the perpetual inventory records as a part of tests of controls and substantive tests of acquisition transactions.
2.	Transfers of inventory are used to update the Atlanta and local distribution center perpetual inventory records.	Trace inventory quantities for a sample of shipments from Atlanta to local distribution centers to the perpetual inventory records.
3.	Inventory sales are used to update the local distribution center perpetual inventory records.	Trace inventory quantities for a sample of sales transactions to the perpetual inventory records as a part of tests of controls and substantive tests of sales transactions.
4.	Local distribution centers access to perpetual records is restricted to processing sales transactions.	Test the effectiveness of the perpetual records access restrictions using the CPA firm's computer audit specialists.
5.	Quarterly physical inventory is taken for comparison to and adjustment of perpetual records.	Examine local distribution center physical inventory count records and adjustments to the perpetual records.

21-22 (continued)

	INTERNAL CONTROLS	TESTS OF CONTROLS
6.	Internal auditors test the perpetual records continuously.	Examine internal auditor audit programs and working papers for their tests of the perpetual records and the findings.
7.	Internal auditors sample inventory counts and test inventory adjustments.	Examine internal auditor audit programs and working papers for their tests of the physical observation of inventory and the findings.

b. There are four ways to reduce physical observation of inventory. Auditors will use their judgment to decide which combination of these to use.

1. Reduce the number of local warehouses to observe inventory counting and do test counts of inventory.
2. Reduce the number of auditors who observe the inventory counting at each location.
3. Reduce the sample sizes for test counts inventory.
4. Perform the physical observation of inventory at an interim date.

21-23 a.

INVENTORY DESCRIPTION	UNITS ON HAND	DOLLARS	NUMBER OF UNITS REQUIRING FLOOR SPACE	PER UNIT REQUIRED SQ. FOOTAGE	TOTAL SQ. FOOTAGE REQUIRED TO STORE INVENTORY (Units x Sq ft)
AC Unit – Model 635	1240	$806,000	413.333[a]	16	6613.33
AC Unit – Model 770	1733	$1,940,960	577.667[a]	16	9242.67
Furnace – Model 223	1992	$2,589,600	996[b]	16	15936.00
Furnace – Model 225	2008	$2,761,000	1004[b]	16	16064.00
Air Handling Ducts	11883	$1,485,400	2970.75[c]	25	74,268.75
		$9,582,960			122,124.75

[a] 2 pallets of AC units sit on top of 1 pallet that rests on the floor (1240/3 = 413.333; 1733/3 = 577.667).

[b] 1 furnace can sit on top of the unit that rests on the floor (1992/2 = 996; 2008/2 = 1004).

[c] 3 boxes can be stored on top of the box that rests on the floor (11883/4 = 2971).

21-23 (continued)

b. The above substantive analytical procedure suggests that inventory may be significantly overstated. The amount of square footage that would be needed (122,124.75 square feet) to store the stated amount of inventory is 22.1% greater than the amount of square footage (100,000 square feet) available in the warehouse facility. The auditor would need to design further substantive tests to examine the existence of inventory at year end.

21-24 a. The auditor in this situation should observe the recording of the shipments on the day of occurrence and record these details in the working papers so a determination can be made as to whether the shipments affected the physical inventory count.

b. 1. There is no clear-cut answer to sample size for inventory counts. The answer to the question depends on additional factors, such as the randomness of your test counts and whether the values of the merchandise are relatively stratified. It also depends on inherent risk for inventory physical counts and the materiality of inventory compared to total assets.

2. Request a recount by the client or greatly expand your tests to determine whether a material misstatement exists.

c. The auditor should determine how this inventory is valued and after discussion with the client it may be determined to classify it as obsolete. In all cases, the auditor must specifically identify the merchandise in the working papers for subsequent evaluation. The auditor should also be aware that this could be an indication of widespread obsolescence problems in other parts of the inventory.

d. One of the important tasks the auditor undertakes during the observation is to determine that inventory tags are physically controlled. This assures that the inventory is not understated because tags are lost, or overstated because falsified tags are added. In this situation, the auditor should recover the discarded tags and request that the practice be stopped, and that control of tags be established under the auditor's direct observation.

21-25

CLIENT	a. ISSUES TO CONSIDER	b. LOCATIONS TO VISIT	c. POTENTIAL RISKS OF MATERIAL MISSTATEMENT	d. AUDITOR RESPONSES TO RISKS
1. Colburn Pharmacy	A majority of the inventory amount on the balance sheet is located at the two distribution centers. High dollar value inventory is stored in secure areas at the stores and distribution centers. Inventory consists of a large number of products, with wide variations in unit costs, which could lead to inaccurate amounts.	Given the significance of the value of inventory located in the distribution centers, the auditor would most likely want to test controls and observe the physical inventory counting at the two distribution centers. The auditor would likely test controls related to inventory at the store level and select a sample from among the 77 stores to visit. While at the distribution centers and stores, the auditor is likely to focus on testing inventory in the secure areas.	Due to the high cost and demand for medicines, there is a risk of theft of inventory both at the distribution centers and stores. Additionally, because some medicines have expiration dates, there is a risk of obsolete inventory. It will be difficult for auditors to identify specific types of medicines since their differences are not visually noticeable but rather dependent on differences in compounds and chemicals. Furthermore, the large number of products, with wide variations in unit costs, could lead to inaccurate amounts.	The auditor will likely focus extensively on inventory management controls to determine the effectiveness of those controls in the prevention of theft. The auditor may also engage a pharmaceutical specialist to assist with the identification and evaluation of various medicines as part of the inventory observation process.

21-25 (continued)

CLIENT	a. ISSUES TO CONSIDER	b. LOCATIONS TO VISIT	c. POTENTIAL RISKS OF MATERIAL MISSTATEMENT	d. AUDITOR RESPONSES TO RISKS
2. Zenith, Inc.	Material amounts of inventory are most likely on site at all four manufacturing locations. Each motorcycle is of high dollar value.	Most likely the auditor would want to inspect inventory at each of the four manufacturing facilities, assuming similar amounts of inventory are located at each facility.	Because of the manufacturing process of converting raw materials into a finished motorcycle product, there are a number of risks associated with assigning costs to the raw materials, work-in-process, and finished goods inventory. Each motorcycle may have unique features, which would mean each motorcycle has a unique inventory value. Thus, there are opportunities for inaccurate inventory amounts to be included in the financial statements. Additionally, the product is highly desirable and thus would be subject to the risk of theft, which could result in recorded inventory not existing on the balance sheet date.	The auditor would want to extensively test inventory costing systems to evaluate the operating effectiveness of internal controls over raw materials, work-in-process, and finished goods inventory. The auditor would likely test perpetual inventory records to determine that recorded raw materials, work-in-process, and finished goods inventory are on hand at the balance sheet date.

21-25 (continued)

CLIENT	a. ISSUES TO CONSIDER	b. LOCATIONS TO VISIT	c. POTENTIAL RISKS OF MATERIAL MISSTATEMENT	d. AUDITOR RESPONSES TO RISKS
3. Texide Electronics	Inventory items are unique, given that they are dependent on customer specifications. Thus, inventory valuations may be especially difficult to determine. Additionally, it will be difficult for the auditor to inspect inventory given the auditor's lack of knowledge and expertise related to the products on hand.	All inventory is located at one manufacturing facility.	Because the client's inventory is customized to their customers' product specifications, there is risk that inventory valuations may be misstated due to inaccurate pricing information. Additionally, there is a high risk of inventory obsolescence, if there is excess inventory for a particular customer's product. Because the individual parts are quite small, there is also a risk of inventory loss or theft, which may result in inventory recorded in the financial statements that does not exist at the balance sheet date.	Because the interior components of the product are not visible to the human eye, the auditor cannot directly observe whether the inventory on hand is legitimate electronic parts. The auditor will likely need to involve electronics specialists to assist in the inspection and valuation of inventory.

21-25 (continued)

CLIENT	a. ISSUES TO CONSIDER	b. LOCATIONS TO VISIT	c. POTENTIAL RISKS OF MATERIAL MISSTATEMENT	d. AUDITOR RESPONSES TO RISKS
4. Food Giant	Three-fourths of the inventory balance is located at the five independent storage warehouses. There is a very high volume of different inventory products that have different unit prices. Grocery inventory is highly perishable and is of great demand by employees and customers. Customers have direct access to the inventory on the shelves in the stores.	The auditor will most likely visit the five distribution centers to inspect the inventory on hand at those locations. The auditor might be able to obtain confirmation from the independent storage warehouse management, if the amount at one of the storage warehouses is less material. The auditor will also likely select a sample of the 42 stores to visit for inventory observations.	There is a risk of theft given grocery inventory is of high demand and customers have direct access to it in the stores. Additionally, given the large volume of inventory items, there is a risk of loss, which would result in inventory being recorded that is nonexistent. Furthermore, the volume of products also creates a risk of inventory pricing errors, which would lead to inaccurate amounts recorded. Obsolescence is a high risk, given the perishable nature of food items.	The auditor would examine inventory on hand at the storage warehouses and conduct pricing tests of the inventory records. The auditor would also examine controls over the movement of inventory from the storage warehouses to the stores. The auditor would also likely perform a number of substantive analytical procedures regarding inventory at the store locations to determine if recorded inventory amounts appear reasonable and whether there is a risk of inventory obsolescence.

21-26 (see text Web site for Excel solution.- Filename **P2126.xls**)

a.

	2016	2015	2014	2013
Gross margin %	26.3%	22.6%	22.4%	22.4%
Inventory turnover	6.6	7.6	7.6	7.9

b. Logical causes of the changes in the gross margin as a percent of sales include:

1. Selling prices were raised without a corresponding increase in cost of sales.
2. The method of accounting for inventory was changed, causing a higher ending inventory (more expenses absorbed into inventory) and lower cost of sales.
3. Inventory cutoff was improper, causing sales to be recorded without the corresponding entry to cost of sales.
4. The product mix of the company changed. More high markup items were sold than in previous years.
5. An improper journal entry was recorded, which adjusted the gross margin upward.

Logical causes of the changes in the inventory turnover include:

1. The increased selling prices, which caused the gross margin percent to increase, reduced demand for the product, and decreased the inventory turnover.
2. The company is building its inventory supply in anticipation of increased sales in the future.
3. The company's inventory contains obsolete or unsalable merchandise, which is affecting the turnover rate.

c. 26.3% – 22.6% = 3.7% increase in gross margin %

3.7% x sales of $92.8 million =
$3,433,600 potential misstatement
(change in gross margin x sales)

$68.4 million (2016 COGS) / 7.6 inventory turnover =
$9.0 million (current year COGS/prior year turnover =
expected inventory)

$11.6 million - 9.0 million =
$2,600,000 potential misstatement

Both calculations indicate a potential misstatement exceeding $2,000,000.

21-26 (continued)

d. The auditor should discuss the two changes with the client and obtain a reasonable explanation for them. He or she should then perform appropriate procedures to verify the validity of the explanation. Ultimately, the auditor must be confident the change does not result from a misstatement in the financial statements.

21-27 a.
1. Exclude
2. Include
3. Include
4. Exclude
5. Exclude

b.
1. Goods held “on consignment” do not belong to the consignee, and should not be included in inventory.
2. Normally title to a stock item does not pass to the customer until shipment, even though it has been set aside. Therefore, it should be included in inventory.
3. Title to goods shipped F.O.B. shipping point normally passes to the buyer on delivery to the transportation agency, and in this instance the goods belong to your client at December 31, 2016. There is an error in recording the acquisition.
4. This merchandise would be excluded because title does not pass to buyer on an F.O.B. destination shipment until delivery to the buyer. Since it was not received until January 2017, there is no basis for including it in inventory.
5. Since this machine is fabricated to the customer’s order, title to customer made-merchandise passes to the buyer as materials and labor are appropriated to the job. When the job is completed and ready for shipment as in this case, it may be considered as a completed sale.

21-28 a. 1. Extension errors are as follows:

DESCRIPTION	EXTENSION AS RECORDED	ACTUAL EXTENSION	OVER (UNDER) STATEMENT
Wood	$ 11.04	$ 110.40	$ (99.36)
Metal cutting tool	1,740.00	1,470.00	270.00
Cutting fluid	240.00	1,040.00	(800.00)
Sandpaper	579.00	5.70	573.30
			$ (56.06)

21-28 (continued)

2. The differences in the previous year's and this year's cost indicate a problem. The auditor should attempt to obtain support for the current year's cost if the effect of the differences noted seems significant (considering that the test only covered 20% of the dollar items). A review for reasonableness indicates the following:

   a) Precision cutting torches are expensive. Maybe $800 each is a reasonable price. Examine a vendor's invoice or a price list.
   b) Aluminum scrap values may fluctuate significantly. The two prices may be reasonable. Look at sales invoices for the two years.
   c) Lubricating oil cost appears unreasonable for this year and for the previous year. The auditor should examine invoices for both years. If the previous year's costs were incorrect, determination of the effect of the misstatements on the prior year's and this year's financial statements must be completed to determine the need for disclosure of the misstatements.

3. Investigate the reasons for the omission of these tags from final inventory compilation. If it is determined that the omission of two tags is significant based on the number of tags used and tested, the auditor should account for all tags to determine the total extent of omissions.

4. Page total footing errors are as follows:

PAGE NO.	CLIENT TOTAL	CORRECT TOTAL	OVER- (UNDER-) STATEMENT
14	$2,375.36	$2,375.30	$ 0.06
82	6,721.18	6,421.18	300.00
			$300.06

b. First, the auditor should keep in mind that only 20% of the inventory was tested. If sampling were random, a direct extrapolation would magnify projected misstatements by five. In addition, the auditor must consider sampling error.

The net effect of the misstatements for which we were able to compute the actual misstatement was an overstatement of inventory by $244.00, which is a small amount (see items 1 and 4).

21-28 (continued)

However, the exceptions resulted from various causes including incorrect decimal placement, mathematical errors, and unit of measure errors. The auditor should determine that the net effect of the misstatements is not significant; in addition, to insure against other individual misstatements that might be significant, the auditor should review the extensions and other computations for reasonableness and obvious misstatements.

For the items for which the amount of the misstatement could not be determined, the auditor should follow up as described in 2 and 3 above. From the results of the follow-up, the effect of the misstatements noted should be assessed and determination made as to the need for expansion of scope for the tests considered.

c. Prior to compiling the inventory next year, Martin Manufacturing should implement the following internal controls:

1. Review formulas in schedule for inventory compilation. Accuracy of spreadsheet should be independently reviewed.
2. Someone familiar with the inventory should review the compilation schedules for reasonableness of quantities, prices, and extensions.
3. All inventory tags should be accounted for prior to posting to the compilation schedules and a control total compared to the total on the compilation sheets after the compilation is complete.

21-29 a. Necessary adjustments to client's physical inventory:

Material in Car #AR38162 — received in warehouse on January 2, 2017	$ 8,120
Materials stranded en route (Sales price $19,270 / 125%)	15,416
Total	23,536
Less unsalable inventory	1,250*
Total adjustment	$22,286

* If freight charges have been included in the client's inventory, the amount would be $1,600 and the amount of the total adjustment would be $21,936. Journal entry 6 probably would have a credit to purchases of $1,600 in this case.

21-29 (continued)

b. Auditor's worksheet adjusting entries:

1.	Purchases	$ 2,183	
	Accounts Payable		$ 2,183
	To record goods in warehouse but not invoiced–received on RR 1060.		
2.	No entry required. Title to goods had passed.		
3.	Accounts receivable	12,700	
	Sales		12,700
	To record goods as sold which were loaded on December 31 and not inventories-SI 968.		
4.	Sales	19,270	
	Accounts receivable		19,270
	To reverse out of sales material included in both sales (SI 966) and in physical inventory (after adjustment).		
5.	No adjustment required.		
6.	Claims receivable	1,600	
	Purchases		1,250
	Freight In		350
	To record claim against carrier for merchandise damaged in transit.		
7.	Inventory	22,286	
	Cost of goods sold		22,286
	To adjust accounts for changes in physical inventory quantities.		
8.	Sales	15,773	
	Accounts receivable		15,773
	To reverse out of sales invoices #969, 970, 97l. The sales book was held open too long. This merchandise was in warehouse at time of physical count and so included therein.		

■ **Case**

21-30 (see text Web site for Excel solution.- Filename **P2130.xls**)

Descriptions of the potential inventory misstatements for the seven items in question are provided below:

A. A price of $8 is proper for pricing L37 spars at 12-31-16 since the next shipment of spars was not received until 1-06-17. However, the next invoice shows a lower cost, which indicates a decline in the value of this product. If the net realizable value (selling price less cost to sell) is less than the $8 per meter cost, the spars should be revalued to net realizable value at 12-31-16.

B. The total is 10,000 inches/12 = 833.33 feet times $1.20 per foot = $1,000. In addition, the freight of $200 should have been as follows:

$$\frac{\$200}{(12{,}800 \text{ inches} / 12 \text{ inches per foot})} = \$0.1875 \text{ per ft.}$$

Total inventory cost should be ($1.20 + 0.1875 per foot) times 833 feet (10,000/12) = $1,155.79 or an overstatement of inventory by $10,844.21.

C. FIFO value would be:

Voucher 12-61	1,000 yards at $10.00 per yard	=	$10,000
Voucher 11-81	500 yards at $ 9.50 per yard	=	4,750
	Inventory is overstated by $250		$14,750

Voucher number 12-81 is not used because the receiving date is after year-end.

D. FIFO value would be:

Voucher 12-61	800 feet at $8.00 per foot	=	$6,400
Voucher 11-81	200 feet at $8.20 per foot	=	1,640
			$8,040

Inventory is understated by $40. However, if the reduction in cost on voucher #12-61 indicates that the net realizable value of the struts is below the cost on voucher #11-81, then the net realizable value of the struts should be used as the cost.

E. Pricing is correct if the item is for inventory. It is possible that this item should be capitalized.

F. Proper FIFO cost is 40 pair x 2 = 80 springs x $69.00 each = $5,520. Inventory is understated by $5,244.

G. Pricing is correct. However, the fasteners were purchased in 2012 four years ago, and only eleven or 14% have been used. Consideration should be given as to whether net realizable value is less than cost.

21-30 (continued)

b.

SEA GULL AIRFRAMES, INC.
SUMMARY OF INVENTORY MISSTATEMENTS

Item No. and Description	Quantity			Price					
	Per Inventory	Correct	Difference	Per Inventory	Correct	Difference	Recorded Amount	Correct Amount	Amount of Misstatement
A. L37 Spars	3,000	3,000	0	8.00	8.00	0.00	24,000.00	24,000.00	0.00
B. B68 Metal Formers	10,000	833	9,167	1.20	1.3875	– 0.1875	12,000.00	1,155.79	– 10,844.21
C. R01 Metal Ribs	1,500	1,500	0	10.00	10/9.50	.50	15,000.00	14,750.00	– 250.00
D. St26 Struts	1,000	1,000	0	8.00	8/8.20	– .20	8,000.00	8,040.00	40.00
E. Industrial hand drills	45	45	0	20.00	20.00	0.00	900.00	900.00	0.00
F. L803 Steel Leaf Springs	40	80	– 40	69.00	69.00	0.00	276.00	5,520.00	5,244.00
G. V16 Fasteners	5.50	5.50	0	10.00	10.00	0.00	55.00	55.00	0.00
Total misstatement									– 5,810.21
Items over $5,000									– 11,054.21
Items under $5,000									5,244.00
									– 5,810.21

CONCLUSION: (see next page for calculations)

There is a material potential misstatement due to the number and size of misstatements found relative to the sample chosen. In order to determine a more accurate estimate of the actual misstatement, additional tests are necessary.

REMARKS:

A. NRV [assumed] exceeds cost.
B. Quantity based on inches, not feet; freight not included.
C. 500 yards overpriced.
D. 200 feet underpriced. NRV [assumed] O.K.
E. [Assumed] not capitalizable.
F. Includes extension error in inventory.
G. Consider separately for obsolescence.

21-30 (continued)

PROJECTED MISSTATEMENTS

	Dollars tested	
Sample items	Over 5,000	Under $5,000
No exceptions	360,000	2,600
A	24,000	
B	12,000	
C	15,000	
D	8,000	
E		900
F		276
G		55
Dollars tested	419,000	3,831

*PROJECTED MISSTATEMENT IGNORING SAMPLING RISK**

More than $5,000 $\frac{4,150,000}{419,000}$ X –11,054.21 = – $109,486

Less than $5,000 $\frac{4,125,000}{3,831}$ X 5,244 = $5,646,436

* Used ratio estimation for projected misstatement. Difference estimation results are equally unacceptable.