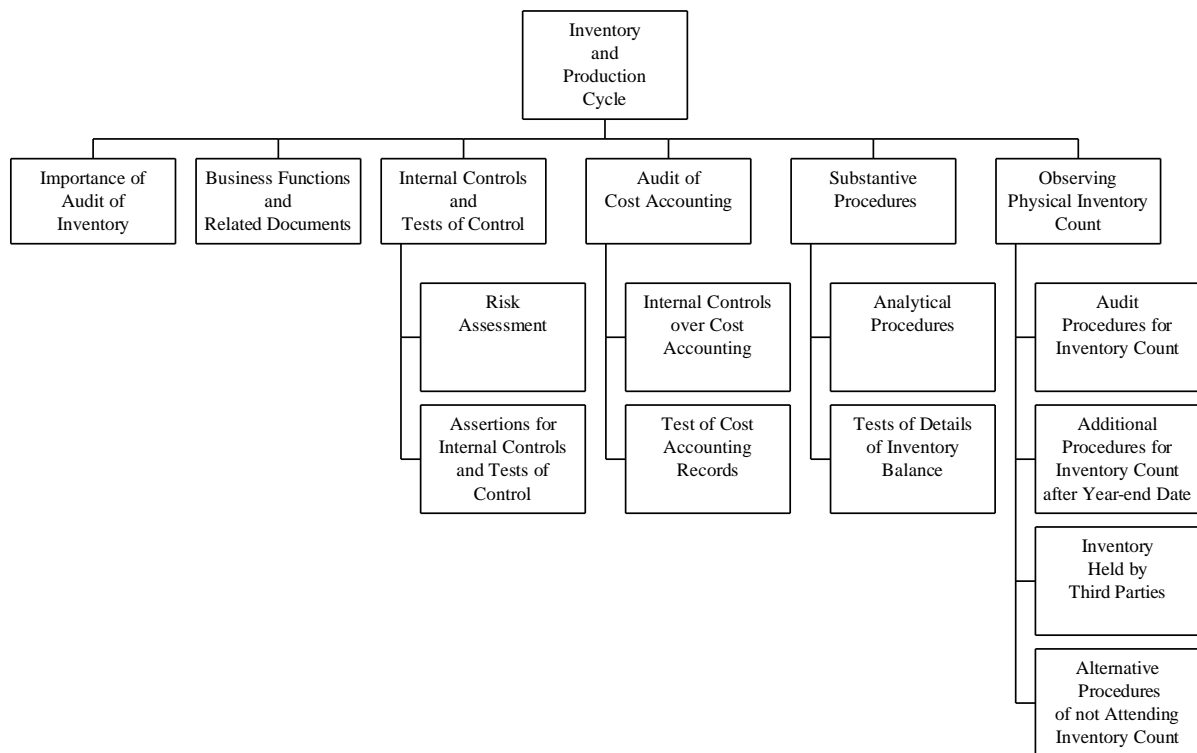


## Chapter 12 Inventory and Production Cycle

### LEARNING OBJECTIVES

1. Describe the functions and related documents in the inventory and production cycle.
2. Explain the significance of the inventory and production cycle.
3. Know about the audit objectives of collecting evidence in inventory and production cycle.
4. Determine and apply the internal controls over the inventory and production cycle.
5. Design and perform audit tests on cost accounting.
6. Design analytical procedures on accounts in the inventory and production cycle.
7. Design and perform physical observation audit tests for inventory.



## 1. Importance of the Audit of Inventory

(Jun 10, Dec 12, Jun 13)

- 1.1 The audit of inventories is usually regarded as **one of the high risk areas** of the audit:
- (a) It is usually **crucial to assure about an entity's profit**.
  - (b) Inventory is generally a **major item on counting the working capital** in the statement of financial position.
  - (c) It may be **complex and creates significant auditing problems**. For example, the inventory is in different locations and this leads to problems in performing physical controls and physical counting.
  - (d) It is usually **subject to a degree of estimation** since **inventory valuation is subject to factors such as obsolescence** and the allocation of manufacturing costs to inventory.
  - (e) The **nature of inventory can also be very varied**, e.g. jewellery, the costs of developing a computer game, cars, chemicals, petrol, etc.

### Question 1

Why is the audit of inventories important?

(3 marks)

(HKIAAT PBE Paper III Auditing and Information System June 2010 Q1(e))

(HKIAAT PBE Paper III Auditing and Information System December 2012 Q3(a))

## 2. Business Functions and Related Documents

- 2.1 Procedures flow in inventory cycle
- (a) Requisition and ordering of goods or raw materials
  - (b) Receipts of goods or raw materials
  - (c) Recording receipts and issues of goods or raw materials
  - (d) Issuing of raw materials/finished goods from inventory
  - (e) Storekeeping procedures of raw materials/finished goods

## 2.2 Functions and documentations in the inventory cycle

Functions	Documents	Departments
Issue request for raw materials or goods	Purchase requisition	Storekeeping
↓		
Process purchase orders	Purchase order	Purchasing
↓		
Receive raw materials or goods	Goods received report	Storekeeping
↓		
Receive suppliers' invoice	Suppliers' invoice	Accounting (Purchasing in some cases for checking)
↓		
Record in accounting records	Purchase journal	Accounting
↓		
Store raw materials or goods and recorded in inventory records	Raw materials/Goods perpetual records	Storekeeping
↓		
Issue raw materials to production (Note 1)	Raw materials requisition	Storekeeping
	Cost accounting records	Cost accounting
OR	OR	
Despatch goods	Goods delivery report	Storekeeping
↓		
Record the quantity of finished goods dispatched in inventory record (note 2)	Finished goods perpetual records	Storekeeping
	Cost accounting records	Cost accounting

Note 1: This function occurs in a manufacturing environment only.

Note 2: This function occurs in a manufacturing environment and also occurs in a trading environment.

### 3. Internal Controls and Tests of Control for Inventory and Production Cycle

#### 3.1 Assessment of risk of material misstatement of inventory

(Jun 09, Dec 09, Jun 11, Dec 13, Jun 14, Dec 14, Jun 15)

##### 3.1.1 Assessment of (inherent) risk of material misstatement of inventory at assertion level for valuation

- (a) Inventories should be **stated as lower of cost and NRV**. When the inventories' NRV is lower than the cost, the company has to write down the value of inventory.
- (b) The amount to be written down is **subject to management's estimation**.
- (c) The **risk of material misstatement** of the inventory **at assertion level for valuation should be high**, for example, **if a company has many inventories piled up and the economy was under recession**, making the saleable value hard to be determined.
- (d) However, **it should be low if a company maintains an appropriate level of inventories and the saleable value is easy to be determined**.

#### 3.2 Internal controls and tests of control

3.2.1 Examples of internal control procedures and test of control for inventory and production cycle are as follows:

Assertions	Internal Control Procedures	Test of control
1. Existence	<ul style="list-style-type: none"><li>● <b>Proper segregation of duties and physical safeguards</b> of inventory to <b>prevent fictitious inventory</b>.</li><li>● Use <b>prenumbered</b> and/or <b>properly approved receiving reports and materials requisitions</b> for inventory transfers</li></ul>	<ul style="list-style-type: none"><li>● <b>Observe and evaluate proper segregation of duties and test procedures</b> for transfer and issuing inventory.</li><li>● <b>Review authorized production schedules and test procedures</b> for establishing inventory levels and inventory control.</li></ul>

2. Rights and obligations	<ul style="list-style-type: none"> <li>Recorded inventory is <b>supported by suppliers' invoices and goods received notes.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Check</b> recorded inventory <b>against suppliers invoices and goods received notes.</b></li> </ul>
3. Completeness	<ul style="list-style-type: none"> <li>Purchase requisition, purchase order, receiving report and vouchers are <b>prenumbered</b> and accounted for</li> <li><b>Procedures</b> to include goods out <b>on consignment</b> and exclude goods led on consignment.</li> </ul>	<ul style="list-style-type: none"> <li><b>Check sequential controls</b> over purchase requisition, purchase order, receiving report and vouchers.</li> <li>Test the <b>control procedures</b> for the consignment goods.</li> </ul>
4. Cut-off	<ul style="list-style-type: none"> <li><b>All receiving reports and delivery notes</b> should be <b>processed daily.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Check</b> dates of receiving reports and delivery notes to dates to record the <b>inventory movements in perpetual inventory records.</b></li> </ul>
5. Accuracy	<ul style="list-style-type: none"> <li><b>Review of cost</b> accumulation, standard costs, and variance reports by person of appropriate level.</li> </ul>	<ul style="list-style-type: none"> <li><b>Examine and test procedures</b> for taking <b>physical inventory, accumulating costs,</b> and developing standard cost.</li> </ul>
6. Valuation and allocation	<ul style="list-style-type: none"> <li>Inventory management personnel <b>review inventory for obsolete, slow-moving, or excess quantities.</b></li> <li><b>Periodic or annual comparison</b> of goods on hand with perpetual inventory record.</li> </ul>	<ul style="list-style-type: none"> <li><b>Discuss with management</b> and test procedures <b>for identifying obsolete and slow-moving items.</b></li> </ul>
7. Classification	<ul style="list-style-type: none"> <li><b>Material requisitions and production data used to classify</b> inventory into raw materials, WIP, and finished goods.</li> </ul>	<ul style="list-style-type: none"> <li><b>Check</b> that the <b>classification</b> of inventory is in <b>compliance with accounting standard and company accounting policies.</b></li> </ul>
8. Presentation and disclosure	<ul style="list-style-type: none"> <li>Inventory is <b>properly classified, disclosed and presented at fair value.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Review</b> inventory items are properly classified, disclosed and <b>presented at fair value</b> in</li> </ul>

		the financial statements.
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### 3.3 Internal control affects the level of substantive tests for inventory

(Dec 13)

#### 3.3.1 How internal control affects the level of substantive tests for inventory

- (a) If the auditor assesses the level of **control risk** to be at the **maximum**, the auditor may **carry out the substantive approach** and **rely on substantive tests only**.
- (b) On the other hand, if the auditor **can rely on internal controls**, he or she will **carry out tests of controls** and **consider the effects** of the **results on further substantive procedures**.
- (c) If the **results of the tests of controls support the assessed level of control risk**, the auditor can **conduct substantive tests** of inventory accounts at the **planned level**.
- (d) However, if the auditor judges the **control risk to be higher than expected**, then he or she will **set the detection risk at a lower level** and **extend the substantive tests**.

## 4. Audit of Cost Accounting

4.1 The existence of adequate cost records assists management in pricing, controlling and costing of inventory.

### 4.2 Internal controls over cost accounting

4.2.1 Cost accounting controls vary for different companies because of the wide variety of items of inventory and the level of controls expected by management.

Internal controls	Descriptions
1. Physical controls over inventory	<ul style="list-style-type: none"> <li>● <b>Limited access storage areas</b> for raw material, WIP, and finished goods is one major control to prevent loss from misuse of theft.</li> <li>● The <b>assignment of custodian to responsible person</b> together with <b>approved prenumbered documents</b> for authorizing movement of inventory also protects assets from improper use.</li> <li>● <b>Copies of inventory issuing document</b> are <b>sent directly to the accounting department</b>.</li> </ul>

2. Perpetual inventory records	<ul style="list-style-type: none"> <li>● Perpetual inventory record to be <b>maintained by persons who do not have access to physical assets.</b></li> <li>● Perpetual inventory record is <b>used for investigating differences</b> between physical counts and the amount shown on the record.</li> <li>● <b>Adequate controls</b> over the <b>integration of production and accounting records</b> so as to <b>obtain accurate costs</b> for all products.</li> </ul>
3. Unit cost records and standard costs	<ul style="list-style-type: none"> <li>● <b>Cost accounting records</b> must be <b>properly maintained and integrated with production</b> and related accounting records.</li> </ul>

### 4.3 Tests of cost accounting records

4.3.1 In testing the cost accounting system, the auditor is concerned with three aspects as follows:

Internal controls	Tests of controls
1. Physical controls over inventory	<ul style="list-style-type: none"> <li>● <b>Auditor's test</b> of the <b>adequacy of the physical controls</b> over inventory <b>must be restricted to observation and inquiry.</b> For example, the auditor can examine the raw materials storage areas to determine whether the inventory is protected from theft and misuse of the existence of locked storeroom.</li> <li>● To <b>test the existence and accuracy</b> of the <b>transfer of goods</b> from the raw material storeroom to the manufacturing assembly line is to <b>account for a sequence of raw material requisition, examine the requisitions for proper approval, and compare the quantity, description, and date</b> with the information on the raw material perpetual inventory record.</li> <li>● <b>Completed production records</b> can be <b>compared with perpetual inventory record</b> to <b>ensure that all manufactured goods were physically delivered</b> to the finished goods storeroom.</li> </ul>
2. Perpetual inventory records	<ul style="list-style-type: none"> <li>● <b>Documents supporting the use of raw materials for production</b> and the increase in the quantity of finished goods inventory when goods have been manufactured are <b>examined as part of the tests</b> of the cost accounting records.</li> <li>● <b>Support for the reduction in the finished goods</b> inventory through the sale of goods to customers is ordinarily <b>tested as</b></li> </ul>

	<b>part of the sales and collection cycle.</b>
3. Unit cost records and standard costs	<ul style="list-style-type: none"> <li>● <b>Adequate cost accounting records</b> must be <b>integrated with production</b> and other accounting records in order to produce accurate costs of all products.</li> <li>● The <b>tests on their accuracy</b> should be <b>designed as a part of the purchase, payroll and sales cycles to avoid the records being tested more than once</b>. The examples on the testing unit cost are: <ul style="list-style-type: none"> <li>■ When <b>payroll cost data</b> are maintained for different jobs, it is desirable to <b>trace from the payroll summary directly to the job cost record</b> as a part of testing the payroll and personnel cycle.</li> <li>■ The <b>test on the reasonableness of cost allocations</b> is <b>carried out by evaluating the basis of overhead allocations</b> as the formula used directly affects the unit cost of each product.</li> <li>■ <b>Determine the basis of all cost allocation. Manufacturing overhead</b> should be <b>consistent with previous years</b>, and if not, <b>obtain reasons for deviation and consider their reasonableness</b>.</li> </ul> </li> </ul>



## 5. Substantive Procedures for Inventory and Production Cycle

### 5.1 Analytical procedures

#### 5.1.1 Examples of the analytical procedures for inventory and production cycle

Since the inventory and production cycle is closely related with other business cycle, it is not surprising that some of the analytical procedures listed below are the same as those of other business cycles.

- (a) **Compare gross margin percentage with previous years** to highlight the possible misstatement in inventory and cost of sales.
- (b) **Compare inventory turnover with previous years** to highlight the misstatement of inventory or effects of obsolete inventory.
- (c) **Compare unit costs/standard cost of inventory with previous years** to identify misstatement of unit costs.
- (d) **Compare extended inventory value with previous years** to identify misstatements in compilation, unit costs and extensions which affect inventory and cost of sales.
- (e) **Compare manufacturing costs with previous years** and with budget to highlight the misstatement of unit costs of inventory.

### 5.2 Tests of details of inventory balance

5.2.1 Examples of tests of details of inventory balance are as follows:

Assertions	Substantive procedures
1. Existence	● <b>Observe physical inventory count.</b>
2. Rights and obligations	● Examine the consignment agreement for inventory held on <b>consignment for others is not included in inventory.</b>
3. Completeness	● <b>Trace test count and tag control information</b> to the inventory compilation.
4. Cut-off	● <b>Examine a sample of receiving reports and delivery notes</b> for a few days before and after year-end for recording of inventory shipments in the <b>proper period.</b>
5. Accuracy	● <b>Check the calculation of inventory compilation</b> and <b>agree total to general ledger.</b>

6. Valuation and allocation <b>(Jun 09)</b>	<ul style="list-style-type: none"> <li>● <b>Trace costs used</b> to price goods in the inventory compilation <b>to standard costs or suppliers' invoices.</b></li> <li>● <b>Inquire of management</b> regarding <b>obsolete, slow-moving, or excess inventory.</b></li> <li>● <b>Perform a lower of cost and NRV test</b> on large inventory items or product lines.</li> </ul>
7. Classification	<ul style="list-style-type: none"> <li>● <b>Review inventory compilation for proper classification</b> among raw materials, WIP, and finished goods.</li> </ul>
8. Presentation and disclosure	<ul style="list-style-type: none"> <li>● <b>Inquire of management and review loan agreements</b> or board minutes for <b>any inventory that are pledged or assigned.</b></li> </ul>

## 6. Observing Physical Inventory Count

### 6.1 Audit procedures in relation to audit objectives for physical inventory count

Assertions	Substantive procedures
1. Existence (Dec 09)	<ul style="list-style-type: none"><li>● <b>Check from the client's inventory records to your test data to ensure that you record sufficient details of the location and the items</b> to be able to trace them later.</li><li>● <b>Select a sample of tag number and identify the tag with that number attached</b> to the actual inventory.</li><li>● <b>Observe whether movement of inventory takes place</b> during the count.</li></ul>
2. Rights and obligations	<ul style="list-style-type: none"><li>● Inquire as to <b>consignment</b> or customer inventory included on client's premises.</li><li>● Be <b>alert for inventory that is set aside</b> or specially marked as indications of non-ownership.</li></ul>
3. Completeness (Dec 09)	<ul style="list-style-type: none"><li>● <b>Trace the items from your counts, into the client's inventory records</b> and record sufficient details to enable you to do this.</li><li>● <b>Observe whether movement of inventory takes place</b> during the count.</li><li>● <b>Inquire as to inventory in other locations.</b></li><li>● <b>Account for all tags to make sure none are lost</b> or intentionally omitted.</li></ul>
4. Cut-off	<ul style="list-style-type: none"><li>● <b>Record in the working papers for subsequent follow-up the last shipping document number</b> used at year-end.</li><li>● <b>Select a sample of goods received note</b> from immediately prior to the year end and included in year-end payables, and ensure that the goods are included in year-end inventories.</li><li>● <b>Select a sample of goods delivery notes</b> from immediately prior to the year end and included in year-end receivables, and ensure that the goods are not included in year-end inventories and that the invoice was raised in the correct period.</li><li>● During the inventory counting, the auditor also</li></ul>

	considers <b>cut-off procedures</b> including details of the movement of inventory just prior to, during and after the count so that the accounting for such movements can be checked at a later date.
5. Accuracy	<ul style="list-style-type: none"> <li>● <b>Recount client's count to make sure the recorded counts are accurate</b> on the tags.</li> <li>● <b>Compare physical counts with</b> perpetual inventory records.</li> <li>● Record client's counts for subsequent testing.</li> </ul>
6. Valuation and allocation	<ul style="list-style-type: none"> <li>● <b>Trace some items of inventory in the inventory sheets back to original purchase invoices</b> to agree the cost.</li> <li>● <b>Trace the same items of inventory to post-year-end sales to determine the NRV</b> of inventory.</li> <li>● <b>For items that have not yet been sold trace to the provision for slow-moving inventory</b> or discuss with management why these have not been provided for.</li> <li>● <b>Ensure that inventory is stated</b> in the accounts <b>at the lower of cost and NRV</b>.</li> <li>● <b>Test for obsolete inventory</b> by inquiry of factory employees and management, and alertness for items that are damaged, or located in inappropriate places.</li> </ul>
7. Classification	<ul style="list-style-type: none"> <li>● <b>Examine inventory description on the tags</b> and <b>compare with the actual inventory</b> for raw material, WIP and finished goods.</li> <li>● <b>Evaluate whether the % of completion</b> recorded on the tags <b>for WIP is reasonable</b>.</li> </ul>
8. Presentation and disclosure	<ul style="list-style-type: none"> <li>● Check that the figures disclosed in the financial statement agree to the audited figures and that inventories have been <b>correctly analysed between finished goods, raw materials and WIP</b>.</li> </ul>

## 6.2 Inventory held by third parties

6.2.1 Where the client has inventory at locations not visited by the auditor, the auditor normally obtains confirmation of the quantities, value and condition from the holder.

6.2.2 The confirmation request will be sent by the client to those parties and the reply should directly to the auditor to prevent it being tampered with by the client.

6.2.3 The auditor needs to consider the following matters: (Dec 10)

- (a) The **ability of the third party** to **provide relevant and reliable evidence**.
- (b) The **integrity and independence** of the third party.
- (c) **Observing, or arranging for another auditor to observe**, the physical inventory count.
- (d) **Obtaining another auditor's report** on the adequacy of the third party's internal control for ensuring that inventory is correctly counted and adequately safeguarded.
- (e) **Inspecting documentation** regarding inventory held by third parties, for example, warehouse receipts.

### 6.3 Attendance of physical inventory count at the year-end

#### 6.3.1 Audit procedure for physical inventory count

Stocktaking	Audit Procedures
2. Before the stocktaking (Jun 13)	<ul style="list-style-type: none"> <li>● <b>Consider the risk of material misstatement</b> related to inventory</li> <li>● <b>Consider the nature of internal control</b></li> <li>● Whether <b>adequate procedures</b> are established and proper instructions issued? (Appendix I)</li> <li>● The <b>timing of the count</b></li> <li>● The <b>locations</b> at which inventory is held</li> <li>● Whether an <b>expert's assistance</b> is needed</li> <li>● <b>Materiality</b> of the inventory and the sample size</li> </ul>
2. During the stocktaking (Dec 09, Dec 12, Jun 13, Dec 14)	<ul style="list-style-type: none"> <li>● <b>Obtain evidence</b> whether the management's <b>control activities are adequately carried out</b></li> <li>● Perform <b>test count</b> over both the <b>completeness and the accuracy</b> of the count records by tracing items from those records</li> <li>● For <b>cut-off test</b>, obtain necessary information of documentation regarding the details of movement of inventory just prior to, during and after the count for subsequent checking</li> <li>● <b>Consider</b> whether the <b>procedures for identifying obsolete, damaged or slow moving items</b> are operated properly</li> <li>● Consider whether the <b>overall stocktaking has been</b></li> </ul>

	<b>properly carried out</b> and is sufficiently reliable as a basis <b>for determining the existence of inventories</b>
3. After the stocktaking (Dec 12, Jun 13)	<ul style="list-style-type: none"> <li>● Follow up the matters recorded in working papers at time of count</li> <li>● <b>Test the final inventory schedules</b> to assess whether they accurately reflect the actual inventory counts</li> <li>● <b>Obtain copies of inventory sheets with count results</b> and use them <b>to validate the final inventory balance</b></li> <li>● Ensure the <b>differences between the stock sheets and physical counts</b> have been <b>investigated and solved</b></li> </ul>

#### 6.4 Additional procedures if the inventory count date is after the year end date

(Dec 12)

6.4.1 If the inventory count is performed after the year end date, the following additional procedures should be carried out as follows:

- (a) **Select samples from the inventory list** (with quantity and value) and check they **agree with the count sheets** (with quantity only) which were prepared on the inventory count date and **perform roll back test**.
- (b) **Select samples from count sheets** and **match them with the inventory list** and **perform roll back test**.
- (c) **Roll back test**:
  - (i) **check the inventory movements** between the year end date and inventory count date against **goods delivery notes and invoices issued**.
  - (ii) **check the inventory movements** between the year end date and inventory count date against **goods received notes and invoices received**.

#### 6.5 Alternative procedures of not attending physical inventory count at the year-end

(Jun 10)

6.5.1 If the auditor is unable to attend the physical inventory count at the year-end date, the auditor should:

- (a) **Observe** some physical counts **on an alternative date**; and
- (b) **Perform audit procedures on intervening transactions**, when necessary.

6.5.2 When attendance of physical count is **impracticable**, for example, due to the nature and location of the inventory; the auditor should consider:

- (a) Whether **alternative procedures provide sufficient appropriate audit evidence of existence**; and

- (b) Condition to conclude that the auditor need not make reference to a scope limitation.

**Question 2 (20 marks – approximately 36 minutes)**

You are the manager in charge of the audit of the financial statements of Lucky Moon Limited (“LML”). LML is a private company engaged in the fashion wholesale business. This is the first time you have worked on this audit assignment. You have to prepare the planning for the audit of the financial statements of LML for the year ended 31 December 2011. The client sent you an email and advised that the Christmas and New Year holidays are peak seasons for their business and therefore the inventory count date has to be delayed until 5 January 2012.

**Required:**

- (a) Why is the audit of inventory important? (3 marks)
- (b) What are the benefits of audit planning? (5 marks)
- (c) What are the audit procedures as at the inventory count date? (8 marks)
- (d) What are the additional procedures if the inventory count date is after the year end date? (4 marks)

(HKIAAT PBE Paper III Auditing and Information System December 2012 Q3)

## **Appendix I – Instructions for Physical Inventory**

ABC Department Stores

Instructions for Physical Inventory

July 26, 2013

### **To All Supervisors**

A complete physical inventory of all departments in each store will be taken Sunday, August 5, 2013, beginning at 8:30 am and continuing until completed. Employees are to report at 8:15 am to receive their final briefing on their instructions, which are appended hereto.

Within one week prior to August 5, supervisors should make sure that merchandise in departments is well organized. All merchandise with the same stock number should be located together. Merchandise that is **damaged should be segregated for separate listing on inventory sheets.**

Each count team should be formed and started by a supervisor, and should be periodically observed by that supervisor to assure that instructions are being complied with in the counting and listing processes.

A block of **sequential prenumbered inventory sheets** will be **issued to each supervisor at 8:00 am August 5**, for later issuance to count teams. **Each supervisor is to account for all sheets – used, unused, or voided. In addition, each supervisor will be furnished at that time with a listing of count teams under his or her supervision.**

When a count team reports completion of a department, that **team's supervisor should accompany a representative of the independent auditors**, McDonald & Company, in **performing test counts**. A space is provided on each inventory sheet for the supervisor's signature as reviewer. When the independent auditors have "cleared" a department, the supervisor responsible should take possession of the count sheets. All completed count sheets are to be placed in numerical sequence and turned over to me when the entire inventory has been completed.

Before supervisors and employees leave the stores Saturday evening, August 4, they are to make certain that "housekeeping" is in order in each department, and that all merchandise bears a price ticket.

If you have any questions about these instructions or any other aspect of the physical inventory, please see me.