

STOCK LOCATION MANAGEMENT

1. Introduction. In the chapter on Storage Management, the organization and layout of storage facilities were discussed. Various storage factors such as size, quantity, activity, shelf life, flashpoint, security classification, and pilferage affect the placement of an item in storage. It has been said that of all the logistics functions, none has greater impact on the overall support role than storage. In this light, stock location, being the "heart" of the storage operation, plays a significant role in whether or not a distribution center can adequately supply the customer in a timely manner. The readiness posture of a distribution center is directly linked to the accuracy level of its stock location system. This chapter will address the stock location system used in a DoD storage operation. Emphasis is placed on the management techniques used in the establishment and maintenance of such a system to include the essential elements of a stock location system.

2. Objectives. After completing this lesson, you will be able to:

- a. List the goals of a stock location system.
- b. Recall the elements of a stock location system and their function.
- c. Identify the errors and problems associated with poor location accuracy.
- d. Identify stock location performance requirements and associated problem indicators.

3. References.

- a. DoD 4145.19 R-1: Storage and Materials Handling. Section III.
- b. DLAM 4140.2, Vol III: Distribution Center Transportation and Supply Procedures.

4. Stock Location System Goals. In order to be considered effective in the storage function, to

include receiving, stowage, and issue, a reliable stock location system must be able to:

- a. Accelerate the selection of stock for shipment.
- b. Expedite movement of receipts into location.
- c. Achieve maximum use of storage space while conforming to the minimum storage criteria.
- d. Provide rapid response to demands for location information.
- e. Meet or exceed the minimum acceptable accuracy of 99.5 percent for distribution center stock location records.
- f. Ensure that the ratio of the total number of locations to the total number of line items is minimized.

5. Impact of the Stock Location System on Storage.

The stock location system within a distribution center has always been a most crucial function. It demands efficiency and accuracy from distribution center storage managers since they must know where the materiel is at all times in order to remain responsive. It is of little value to commit millions of dollars to design, develop, procure, produce, and receive an item, if, after receiving it at a distribution center, the item is improperly located or "lost" within storage. All of the efforts of hundreds of people, as well as a great deal of expense, are wasted. Even worse, the urgent requirements still remain unsatisfied or the supplies are found and issued to the customer too late.

6. Elements of the Stock Location System.

Each DoD stock location system has three essential parts which must be properly established and constantly maintained in order to achieve the previously listed goals. Each

element plays a specific role in the stock location system.

a. **Planograph.** In reference to the Storage Management chapter, a planograph is a scale drawing of the actual floor layout of each storage facility, be it a general-purpose warehouse or outside storage. It can be equated to a map of the facility.

(1) The planograph portrays the manner in which the gross space within the facility is subdivided. These subdivisions are identified by their respective uses such as storage areas, shipping and receiving areas, main and cross aisles, locker rooms or restrooms, heating plants, offices, materials handling equipment parking, fire access aisles, etc.

(2) The planograph also provides a grid network to which a descriptive address is assigned. This description consists of alphanumeric characters which are separated into groups for easier reading. The significance of the makeup of the location description, with respect to the individual characters, is determined by DLA. This description pattern must ensure that the materiel locations are clearly and specifically identified. Two types of location descriptions can be used at distribution distribution centers. They are Bulk and Bin locations. Some distribution centers use one physical location code to identify locations (see Exhibit 1). Illustrations of the locations are pictured in Exhibit 2.

(3) ADP systems provide for these location descriptions to be recorded by the computer. In the bin area, the computer keeps not only the locator data but also maintains empty bin locations. These empty locations are assigned to new bin items received at the distribution center. For ammunition, a planograph is maintained within the system that pictorially illustrates where each line is stored.

b. **Stock Locator File.** Once the planograph has been completed and location descriptions developed, it is essential to establish the "address

directory" for all of the stored materiel. The stock locator file serves as this directory by listing the addresses for each item stored.

(1) One must recognize the importance of establishing and maintaining an accurate stock locator file. This particular element is one which demands constant vigilance or it can cause chaos in the functional areas of receiving, storage, and shipping.

(2) Existing records may be used to initially establish the stock locator file; however, to ensure accuracy, the file should be established on the basis of a complete location survey of all materiel and active locations. The stock locator file contains various fields of information pertinent to the item stored in a specific location. The minimum requirements for the file data elements are:

(a) General Supply. National stock number (NSN), location, nomenclature, condition code, unit of issue, security classification code, shelf-life code, and expiration date.

(b) Ammunition. NSN, location nomenclature, condition code, unit of issue, security classification code, and lot number.

(3) Positive control must be established over all additions, deletions, and any changes made to the stock locator file. Special effort must also be directed to limiting the number of locations for any one NSN. This can be accomplished to a large degree by selecting the storage locations which can hold the total quantity onhand. Continuous surveillance is necessary to maintain peak efficiency in proper space utilization and location accuracy.

(4) The stock locator file is maintained by the computer. Input access to these files is accomplished through the use of remote terminal devices located in the various warehouses throughout the distribution center. These terminals can also receive information at the warehouse site. This type of system is common within distribution centers throughout DoD.

c. **File Maintenance.** The third and final element of the stock location system which keeps the file current and ensures accuracy of all data is a rigid file maintenance program. All distribution centers are required by DoD to participate in an audit program which ensures that file maintenance is being performed. This program is a series of actions or checks, excluding physical counts, required to ensure compatibility and accuracy between assets in storage and stock locator records and between the stock locator records and the Accountable Activity records. Two basic parts make up the DoD Stock Location Audit Program. They are the Location Survey and the Quantitative Location Reconciliation.

(1) **Location Survey.** The survey is conducted on a continuing basis by a dedicated team that completes a 100-percent location survey each year spread over a 12-month period. Each item of supply with stock in a physical location and each stock locator record are validated during the survey. The location survey determines if stock in a physical location and its corresponding stock locator record are in agreement.

(a) The Inventory Integrity Division plans and schedules the overall location survey requirements in terms of laborpower, equipment, etc., based upon the total number of recorded locations.

(b) Once the office plans and schedules the survey, the team conducts the location survey by checking each warehouse location. There are three types of errors which are labeled location survey errors: (1) stock locator records reflect a recorded location without corresponding stocks at that location; (2) physical assets are in the warehouse location without a supporting stock locator record; and (3) a mismatch of any of the following data elements: unit of issue, condition code, stock number, security or pilferage code, shelf-life code, or lot number for ammunition. Only one error per location is reported on accuracy performance reports.

(c) During a location survey, the members of the survey team ensure agreement between the physical stocks in location and the recorded information in the stock locator file. They verify that (1) the right stock is in the right location, (2) empty locations are empty, and (3) catalog data elements are correct. Even though the Inventory Integrity Division schedules all location surveys, the survey team may be pulled from the schedule to conduct a location survey elsewhere in the distribution center where location problems have developed.

(d) When the location survey has been completed for each location, a detailed review and analysis is conducted. The results of these efforts are then compiled into the performance reports dealing with location accuracy and error causes. It is from these reports that the data for reporting to the DDC is compiled.

(2) **Quantitative Location Reconciliation.** The second part of the audit program is the matching or validating of each of the distribution center stock locator records with the accountable records maintained at the accountable activity. This portion of the program is sometimes called the Location Record Audit Match. DLA refers to it as the Location Reconciliation.

(a) Semiannually, the custodial/stock locator records of the distribution center are validated with the financial records at the ICP. The quantitative location reconciliation is a match of the distribution center's custodial stock locator records with the ICP's financial records to determine if both are in agreement. The four types of errors which can occur during such a location reconciliation indicate what is being checked during the reconciliation. The four errors are: (1) accountable records with a stock balance without a supporting distribution center record; (2) distribution center records with a stock balance without a supporting accountable record; (3) accountable and distribution center records which reflect a quantity discrepancy; and (4) mismatch of any of the data elements pertaining to unit of issue, stock number,

ownership code, security and pilferable code, or shelf-life code.

(b) Once again, only one error per NSN is to be reported for accuracy standard purposes but an analysis of all three error types is conducted by the accountable activity. It is through these analyses that managers are able to correct those elements of stock location causing problems which affect supply performance. All errors resulting from the location reconciliation are researched and reconciled by the accountable activity. Any resulting requirement for physical inventory is directed to the distribution center at this time. Physical inventory procedures are presented in the Physical Inventory Management chapter.

d. **Quality Control.** In addition to the Location Survey and the Location Reconciliation which check on the accuracy of the location system, certain quality control checks are performed. These include a statistical sampling of the locations surveyed to validate the accuracy of the survey and to ensure that errors were not overlooked and that corrections, where necessary, have been made. Additionally, a statistical sample of the corrections will be checked to verify that the corrections were made to the stock locator file and the physical location as directed by the accountable activity.

7. Type Storage Code. There is a need for various sizes of storage space as well as a variety of physical facility requirements. Storage requirements include a need for bin storage, bulk, small lot, medium lot, large lot, heated warehouse, humidity-controlled space, refrigerated area, etc. The determination as to which type of storage space is needed is dependent largely upon the item to be stored, recognizing that available facilities do play a role.

a. In order to assist the distribution center managers in keeping up with the various types of storage space requirements, a series of type storage codes have been developed. These codes enable much of daily operations to be handled by a computer.

b. The type storage code is used to identify each location as to the type of space and/or environment in which the location is situated, as well as the type of storage aid used and the size of the location. All of these factors are essential in order to determine where managers will place specific items in the storage facility while maximizing the use of space. For bin locations, the computer assigns locations for new bin items not presently being stored using the type storage code. The type storage code is displayed on the computer produced bin labels.

8. Application of Stock Location. Now that the purpose of the stock location system has been addressed, it will be most beneficial at this point to see how it applies to the operation of a distribution center.

a. Whenever supplies are received at a distribution center, they must be moved into a storage location expeditiously. For bin items, which are the majority of the items handled, the computer will determine, based on the stock number, where to place the item. This statement assumes that the item has been stocked and an "active" location exists for the item. For items not previously stored, the computer will assign a location from the empty bin location file based upon the type storage code. Both of these actions are accomplished through the use of the storage data request document and a series of computer codes. It should be noted that locations are assigned by the computer, but locations may be changed by the manager. These actions, however, are to be kept to a minimum. As the computer assigns locations for new items received, it also provides location labels for identifying what is in the location.

b. For active bulk items, the actions are the same as they are for bin items. It is for new bulk items, items not having an active location, where the process differs. For the new items, normally, a temporary location is manually assigned by personnel for a particular warehouse. Once the new bulk items are placed in a permanent location, the new location data is input to the computer. In reality, the assignment of a location

for new bulk items is selected/assigned through a manual process first, then input to the computer. A location label is also produced by the computer for bulk locations.

c. When ammunition items are received, the computer provides a blank planograph for location assignment. The specific location is indicated by storage activity personnel who shade the area where the stocks are stored and enter the descriptive location on the planograph. The data is then processed through the remote terminal to the stock locator file segment of the computer.

d. Regardless of the type of supplies in storage or where in storage the items are located, the computer maintains the location data on file. Therefore, distribution center managers know, at all times, where they are located.

e. The location to line ratio must be maintained for peak efficiency in the storage operations. This is not to say that there must be only one location for each line by condition code. Many instances arise where multiple locations for specific items are a must. The most common of these would be bin items with bulk backup. Another situation would be whenever the physical stocks of a particular item increase due to operational requirements of the field elements. Nevertheless, the location-to-line ratio must be managed and kept to a minimum.

f. Using the computer for correcting errors, making changes, deleting or adding locations, and verifying data elements in the stock locator file are all accomplished at a remote terminal. Upon retrieving the information from an inquiry, personnel review and make necessary changes. This action updates the data on the stock locator file.

9. Management of the Stock Location System.

Within the stock location area, there are certain problem indicators which require attention by management. The following are examples of problem areas:

a. A high materiel release denial (MRD) rate is one of the most visible indicators of trouble at a distribution center. MRD registers can have each denial indicated as to its location (e.g., warehouse, open area, etc.). These MRDs can be summarized to indicate the problem areas. If personnel who research MRDs consistently find materiel out of location in a particular warehouse, it indicates that the warehouse locations need to be surveyed.

b. Major rewarehousing projects should always be followed by a location survey. Storage managers inform inventory managers when a rewarehousing is in progress. Distinguishing between major and minor rewarehousing may, at times, be difficult, but other indicators should be considered. To illustrate, a warehouse with "minor" rewarehousing actions may cause many MRDs.

c. Regulations require a daily check of the accuracy of input to the stock location system. In the sampling technique used for quality control checks, all warehouses should be considered; otherwise, results can be misleading regarding where the problem areas are located. One of the goals of quality control is to identify those individuals responsible for errors and those warehouses which require location surveys.

d. Coordination of the related functions of storage such as receipt, issue, location survey, inventory, inspection in storage, and internal movement of material, is probably the greatest challenge to the distribution center manager. Of these, the location is the most critical. A mistake in location causes the item(s) to become lost among the thousands of other locations in the storage facility.

e. Deviation from procedures concerning stock location systems on the part of employees is a very real problem for the distribution center manager. These deviations generally cause trouble because they impact on the closely coordinated operations of other functional areas like stock selection, receiving, and physical inventory. One fact is certain--if materiel cannot

be found, it cannot be surveyed or counted. Moreover, the materiel cannot be issued to the customer.

f. Errors in daily stock location transactions are most difficult to control. They generally take the form of file errors created by incorrect input information. Also included are receipt and issue errors created by personnel who store materiel in, or issue materiel from, a wrong location. In addition, automatic data processing errors created by personnel who incorrectly transcribe source document information are typical errors.

g. Supervision of these day-to-day transactions often takes the form of instructing an employee in the proper procedure. There is very little margin for error due to the tremendous pressure placed upon the distribution center by the UMMIPS. Each employee must not only know his job, but also know how his job interfaces with the others around him. He must be aware of the chain reaction his problems can cause such as locating materiel in a wrong bin, or failing to record the correct location on a source document. The manager must be alert to performance indicators and be constantly observing storage personnel and ensuring they are working as a team in the receipt, storage, and issue of materiel.

h. Since many items stored in bins have bulk back-up storage, replenishing bins can expedite the MRO selection process. Bin replenishment actions should be accomplished after stock is selected for issue and the remaining items in the bin are insufficient to fill future requisitions. When the bin replenishment action has been initiated, it is important for managers to follow up on the location to ensure that bin replenishment has in fact occurred. If bins are not replenished, empty locations may not be deleted from the stock locator file and potential warehouse denials may occur. Also, not deleting empty or temporary locations will give managers inaccurate location to line ratio statistics.

i. The stock location system has many other uses within the storage function as a management tool. It can, for example, be used in future

storage planning for rewarehousing or initiating storage extensions in existing storage areas. Also, it may be used as an aid in inventory or a source for management reports to higher headquarters.

10. Summary.

a. This chapter focused on the purpose of the distribution center stock location system and its impact upon the military distribution system. The essential elements of a stock location system were also addressed along with types of locations used in the distribution center storage function. Moreover, the purpose of a location survey and location reconciliation were also discussed. Also, accuracy levels with regard to file maintenance were identified. Finally, characteristics of an ineffective stock location system were presented as well as management actions designed to correct these problems.

b. The stock location system is the heart of distribution center operations. Without an effective stock location system, distribution center functions are severely hampered. As a result, the distribution center fails in its mission of effectively and efficiently supporting the customer.

EXHIBIT 1

DLA PHYSICAL LOCATION CODES

A	24	44	17	E	C
GROUP OF WAREHOUSES OR A WAREHOUSE OR MULTISTORIED WHSE	BLDG WITHIN AREA OR A WHSE OR SECTIONS OF WHSE	AISLE OR ROW	SEGMENT (STACK, RACK, BIN)	LEVEL	COMPARTMENT

EXHIBIT 2

DEFENSE LOGISTICS AGENCY

AREA EXAMPLES

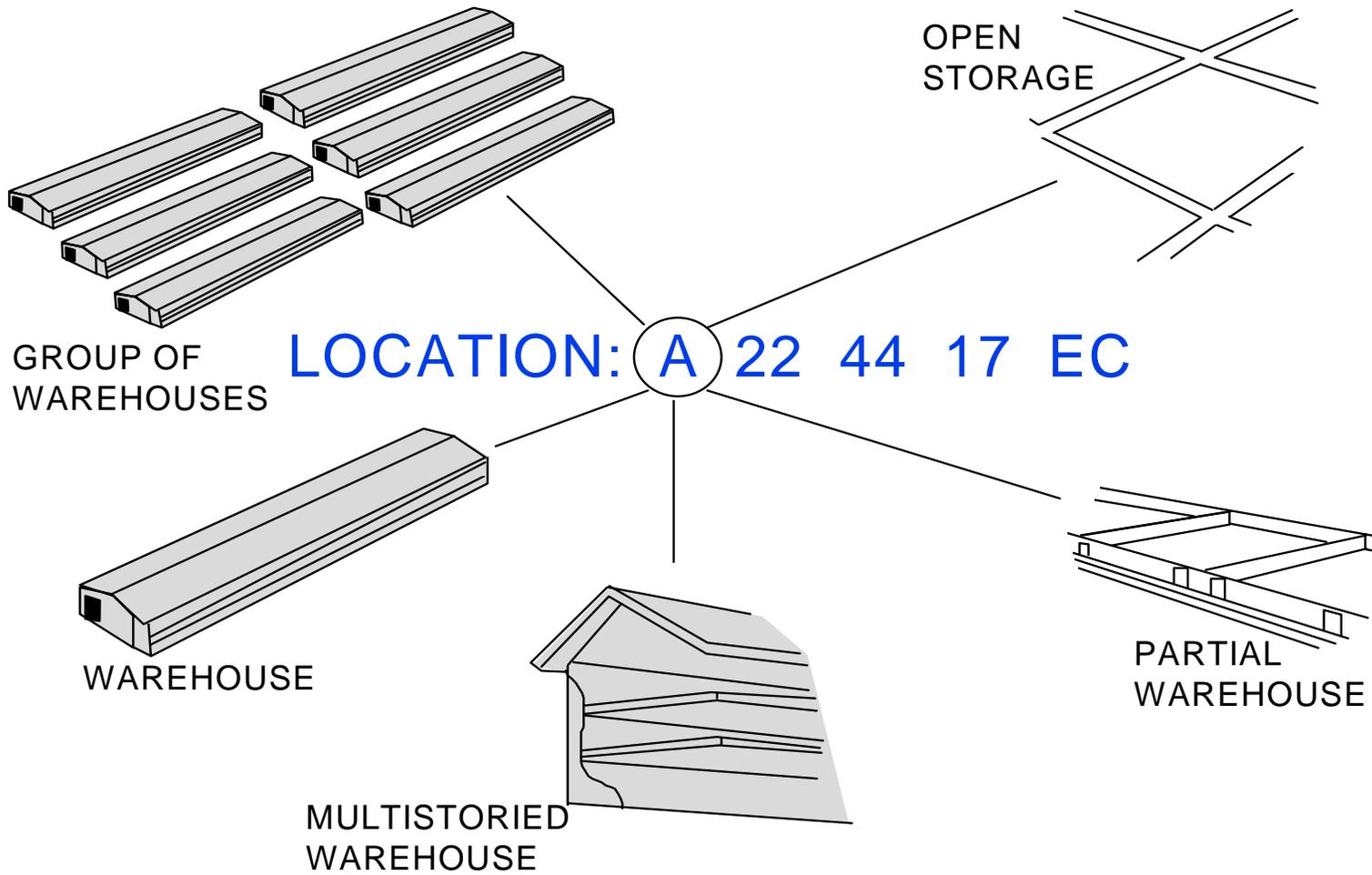
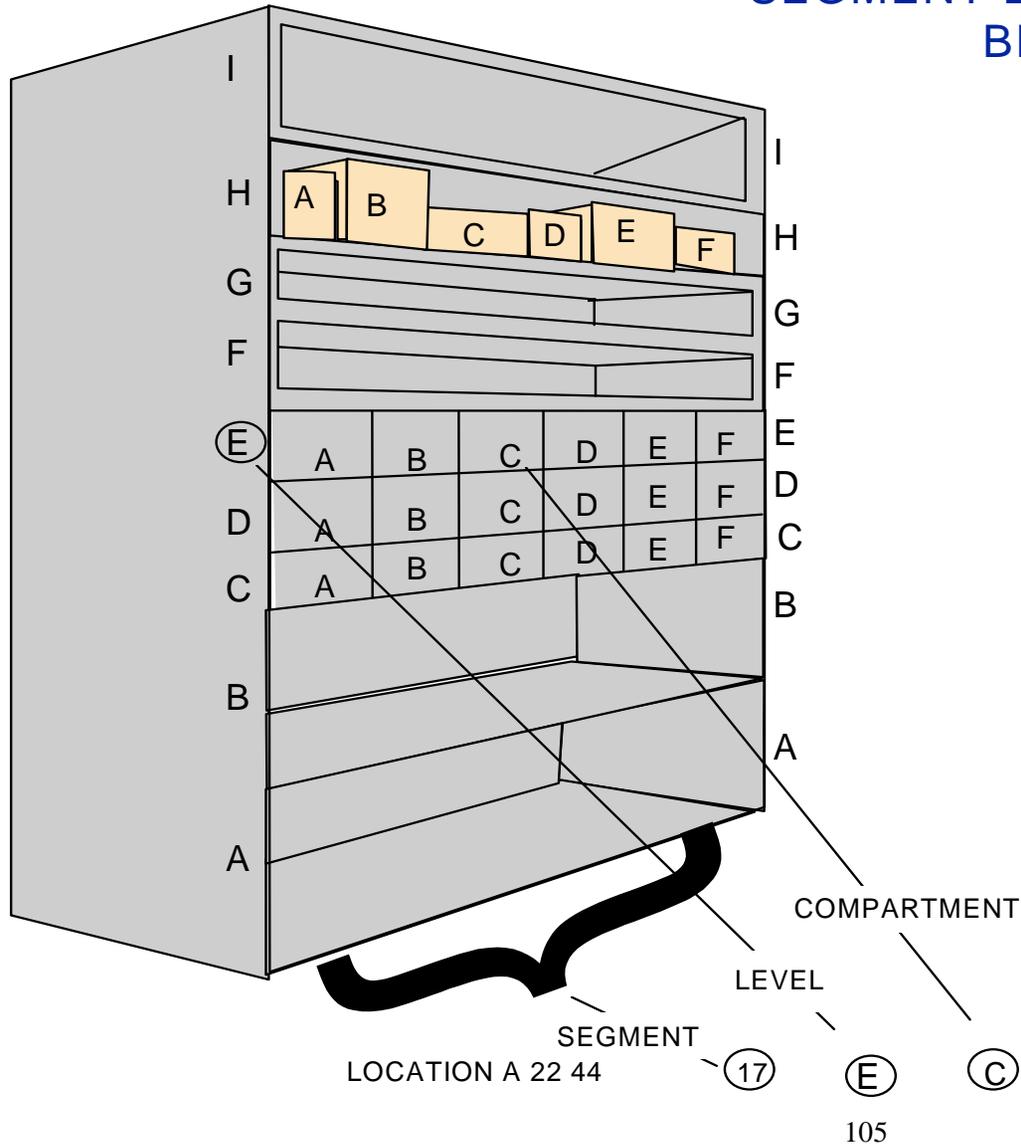


EXHIBIT 2 (CONT'D)

DEFENSE LOGISTICS AGENCY

SEGMENT-LEVEL-COMPARTMENT
BIN STORAGE



G6SLEE1-8.PPT

OUTLINE FOR NOTETAKING
STOCK LOCATION MANAGEMENT

I. Stock Location.

A. Definition.

B. Background.

II. Stock Location System Goals.

III. Impact of Stock Location System on the Storage Function.

IV. Elements of Stock Location System.

A. Planograph.

B. Stock Locator File.

C. File Maintenance.

1. Location Survey.

2. Location Reconciliation.

V. Quality Control.

VI. Type Storage Code.

VII. Application of Stock Location System.

VIII. Management of the Stock Location System.

IX. Summary.

STUDY QUESTIONS

1. What is the purpose of a stock location system?
2. What are the three elements of a stock location system?
3. What type of data elements are maintained in the stock locator file (i.e., address directory)?
4. What is the location to line ratio? Explain its importance to a distribution center manager.
5. What are the two parts of the stock location audit program? Define each part.
6. What type of errors are identified during a location survey?
7. How is location survey accuracy calculated?
8. What is a location reconciliation? How often is it conducted?
9. What is the purpose of the type storage code?
10. Identify several indicators of a poor stock location system. What are appropriate corrective actions?

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