INVENTORY CONTROL IN THE RETAIL OPERATION OF A GROCERY CHAIN STORE

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This is to certify that the

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INVENTORY CONTROL IN THE RETAIL OPERATION

OF A GROCERY CHAIN STORE

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# CHAPTER I

# INTRODUCTION

## Definition of Problem

Inventory control, as used by the grocery retailer of today, includes many phases of the retail operation. The relation of stock on hand to sales, the amount of inventory required on hand and the efficiency in handling the physical inventory can all be classified as phases of inventory control. In this study, inventory control is considered as the control necessary to maintain a balanced inventory in the grocery department of a retail chain store. Only that control which is necessary to obtain and maintain an inventory with a minimum amount of loss is included. The problem arises from the inability of store managers to disclose and control factors which contribute to inventory loss at the store level.

## Purpose of the Study

The purpose of this study in inventory control is to consider the factors which cause inventory losses in the retail stores and to determine the importance of each. The problem is to find better methods of control and to determine the factors to consider when an investigation is made in the store. It is the author's primary purpose to present the procedures used today by members of the food chain industry. Ideas obtained from these operational procedures may suggest better inventory control methods to establish. This information was obtained through a questionnaire which was sent to fifty food chains. The results of the questionnaire are the basis for this study of inventory control.

## Importance of The Study

A need for a study of this nature is evidenced by the importance of inventory control in the operation of a retail store. The amount of money lost each year by the grocery industry through inventory loss is difficult to determine. A large number of factors which could contribute to an inventory loss accounts primarily for the complexity of the problem. Since the degree to which each factor is involved is difficult to measure accurately, grocers find the problem still more difficult to solve. "Shortage may be caused by theft, by breakage, by loss, by physical shrinkage, by mismeasuring and by overselling. There is no way to determine how much of the physical loss is attributed to each of these factors."[1] It is hoped that this study will make some contribution to the food industry by pointing out methods which may benefit store managers in their endeavor to obtain better control over their inventory.

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1. John W. Wingate and Elmer O. Schaller. Techniques of Retail Merchandising. New York: Prentice-Hall, Inc. 1950. p. 226.

## Limitations

This study is limited to the operation of the grocery department and all reference, unless otherwise mentioned, will pertain only to the grocery department operation. The perishable nature of the items handled by the produce and meat departments makes necessary a different type of operation and the problem, as defined in this study[2], does not consider the operations of these departments. The size of the store or company is not taken into consideration although the discussion is concerned mainly with chains having central accounting departments, company warehouse service and top management located outside the stores. Self-service stores that include mainly groceries with a small amount of non-food items are referred to as average stores. A one-floor operation is implied when reference is made to the operational procedure of a super market. As stated by the definition of inventory control, only those procedures which deal with maintaining the correct amount of physical inventory on hand is considered. When warehouses and delivery equipment are mentioned in the study, the assumption is made that the grocery companies own and operate this property.

When "the survey" is mentioned in this study, reference is made to the contact made by the author with executives in grocery companies through the questionnaire.

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2. See page 1

## Procedure Followed in Obtaining Information

A list of fifty grocery chains from every section of the United States was selected from the 1951 Directory of Grocery and Supermarket Chains. No scientific sampling was performed since the purpose of the list was to include the major food companies in each section of the country. A questionnaire[3], along with a covering letter[4], was sent to an executive in each of these companies. This questionnaire was constructed to follow the outline of this thesis and included questions pertaining to various phases of inventory control. In addition to facts regarding procedures, the questionnaire requested information regarding methods, policies and opinions of top management. The questionnaire was sent to fifty companies, of which forty replied, an excellent return of 80 percent. Therefore, when reference is made to the survey, it is implied that the number or percent used is based on the forty returned questionnaires.

The questionnaires received were then edited and tabulated for use as a basis for ideas and conclusions set up in this study. Particular attention was given to the different answers submitted by food executives and extreme care was exercised in their interpretation. A master answer sheet

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3. Complete questionnaire appears in appendix A.

4. Complete letter appears in appendix B.

was set up to facilitate a more rapid determination of the results. Although a few sources of information other than the questionnaire are cited in this report, the results of this survey are used as the major authority. The responses by the grocery industry and the information obtained from food publications made it possible to bring forth methods that could aid the grocery industry in mastering some of the problems of inventory control.

# CHAPTER II

## RECEIVING MERCHANDISE

### Checking Warehouse Shipments

A check of merchandise received by the store is considered in this study to be an important phase in inventory control. First of all, shipments are received from the company warehouse which is the store's major supplier. The survey shows that on the average 20 percent of the incoming merchandise is received at the store through drop shipments. Therefore, 80 percent of the incoming merchandise is received through warehouse deliveries. Since warehouse shipments constitute such a large portion of the shipments received, it would seem desirable to establish a reliable method for checking these shipments.

TABLE 1

METHODS USED TO CHECK INCOMING SHIPMENTS FROM COMPANY WAREHOUSE

| Methods Used | Number of Companies |
|---|---|
| Piece count of merchandise | 11 |
| Item count of merchandise | 24 |
| Piece count and item count | 4 |
| No check | 1 |
| Total | 40 |

Table 1 shows that the method most frequently used and considered the most effective is a check by item against the warehouse invoice. An item check requires the employee to find the item in question and then check this item off the warehouse invoice. Twenty-four companies out of forty have established this method as the one to use in their respective company. It can be seen that the piece count method is widely used but not to the extent of the item count method. The piece count consists of a count of the items charged the store by number only. Based on the results of Table 1, 11 of the forty companies use the piece count method. Regardless of the method used, it is desirable that the grocery manager be positive that he receives all the merchandise with which he is charged.

## Checking Drop Shipments

The remainder of the merchandise received by the store can be placed in the drop shipment category. As stated previously, on page six, an average of 20 percent of all merchandise received by the forty companies is received in this manner. Since 36 companies require a check of the merchandise against the invoice, it is evident that this smaller percent of shipments in no way lessens the importance of checking them. Responsibility for checking drop shipments varies with different companies.

TABLE 2

PERSON RESPONSIBLE FOR CHECKING
DROP SHIPMENTS

| Responsible Person | Number of Companies |
|---|---|
| Store Manager | 12 |
| Assistant Manager | 10 |
| Stock Clerk | 10 |
| Either of the three | 8 |
| Total | 40 |

Table 2 shows much variation as to the persons who are responsible for checking drop shipments. The answers given were interpreted, however, to mean that the responsibility is placed on one person. Efficient performance of this task is difficult when different employees check drop shipments and no particular employee assumes the responsibility. The importance of checking drop shipments to control the elimination of inventory shortage is indicated by members of the food industry in their method of checking these shipments compared to the methods used to check warehouse shipments. The presence of deliverymen not employeed by the purchasing company makes control more difficult since it is reasonable to assume that the suppliers' representatives have less interest in the grocery company than do the store employees.

Probably the failure to enforce checking methods is the major cause for difficulties resulting from the receipt of direct store deliveries.

## Time of Delivery

Sometimes deliveries of grocery department merchandise are made at times other than store hours. Often these deliveries are made when no store employees are present to check and receive this merchandise. This seems to place an excessive amount of responsibility on the deliveryman. Such deliveries as this do not seem desirable unless some responsible person is present to receive the merchandise. The survey shows that an average of 20.6 percent of the stores operated by the companies responding engage in night stocking. If night deliveries are to be made it appears that more control could be exercised if these deliveries were made in the stores who stock at night.

## Container Returns

Associated with the delivery of merchandise is the receipt and return of permanent packing cases used by many companies to consolidate small grocery items. In order to encourage the return of these containers by store managers, a deposit is charged to the stores by 22.5 percent of the companies replying. The failure to take credit upon the return of these containers can very easily cause errors which would affect the store inventory. The policies of the companies determine the procedure to follow but it is important that the manager check the store personnel for accurate performance in recording store credit for returned containers.

## Case Price-marking

It is not the purpose of the author to measure in any way the efficiency of various operational methods used by food companies, unless it is felt that it directly concerns the inventory of the store. Methods of unloading and checking merchandise differ greatly because the types of operation vary. One of the procedures used by the companies in the receiving operation is marking the unit price on the outside of each case of merchandise. This practice is used to help reduce errors that may occur during the stamping operation and to speed up the marking operation.

TABLE 3

PERIOD IN WHICH MERCHANDISE
IS MARKED DURING RECEIVING OPERATION

| Period | Number of Companies |
|---|---|
| At the company warehouse | 1 |
| During the unloading operation | 9 |
| After storage | 14 |
| Price not marked on outside case | 16 |
| Total | 40 |

Table 3 relates the time during the receiving operation at which the unit price is marked on each case. It is interesting to note that 16 companies did not mark the unit price on each case, even when placed in storage. It is possible that some methods of stamping and stocking would not warrant the use of marking the unit price on each case of merchandise. Since the various types of operations are not given and explained, a statement that this procedure is the best could not be substantiated. However, it would seem desirable to utilize this method when possible to eliminate errors in marking merchandise. Records have a tendency to become lost or scattered and when there is no indication of the price at which the store is charged, only the shelf price can be used.

The type of stockroom operation employed by each company would determine the applicability and desirability of such a procedure. When merchandise is placed in storage for any length of time, it would seem desirable to mark the case with the unit price for the purpose of taking inventory and price-stamping control. Little time is necessary to change the case price of those items which are included in the regular price-changes of the store. When price-stamping is done during business hours and off the selling floor, the time consumed in determining the correct price may be reduced if the price appears on the case.

## CHAPTER III

## MARKING MERCHANDISE

### Results of Illegible Price Marks

Another control factor in the operation of the super market is the marking of merchandise with the selling price. The results of badly-marked merchandise in a super market operation is as follows:

1. The customers are not sure the price they are being charged is the correct price. They may also select an item which appears to be one price and be asked to pay another at the checkout counter. This causes dissatisfaction and is contrary to good customer relations.
2. The checker is interrupted, when an illegibly marked article is received and must take time to determine the selling price. Therefore, the checkout procedure is halted which may cause customers to become impatient and dissatisfied.
3. Often the checker asks someone else in the store to find the correct price, thus taking the time of two employees in addition to delaying customers.
4. There is a possibility that the checker may fail to determine the correct price and charge the wrong price for some article. Again there is the danger of a dissatisfied customer as well as an overage or shortage in the store's inventory.

## Incorrectly-priced Merchandise

Similar to illegibly-marked merchandise is the article which is marked with a wrong price. The result is more damaging to inventory control than the illegible price mark since it is very probable that the checker will not recognize the error. At least one super market manager believes that incorrectly-priced merchandise is one of the most important factors contributing to inventory loss and customer dissatisfaction.

## Stamping Methods

TABLE 4

TYPES OF STAMPS USED FOR MARKING BY SUPER MARKETS

| Type of Stamp | Number of Companies |
|---|---|
| National Cash Register Stamp Set | 30 |
| Adjustable band stamp and pad | 25 |
| Quick Mark Set | 1 |
| Garver Set | 1 |
| Self-inking hand type | 3 |
| Total | 60* |

* Some companies used more than one type

The type of price stamp used in stamping merchandise is an important factor in obtaining legible prices. Table 4 lists the types of stamps used by the companies surveyed.

The adoption of the National Cash Register Stamp Set by thirty companies indicates their preference for this type of stamp. It is the opinion of the author that this stamp set increases the legibility as well as the efficiency of the stamping operation. There has been some opposition to this type of stamp because of the cost involved, however, the benefits derived would seem to justify its use.

Another factor determining the accuracy of the marking operation is the human element involved. Company policy will determine where the responsibility for accurate marking is placed, however, strict enforcement of this procedure is necessary to control this phase of grocery operation. The type of stamp is not as important as proper use.

## Price Changes

An important factor in the management of a super market and a very important one in inventory control is item price changes. They are considered by some managers as a burden to their operation but they seem to be necessary to good management. Although price changes cannot be made in the retail store as frequently as wholesale changes occur, it is necessary to change retail prices before the store supply has diminished.

TABLE 5

FREQUENCY OF REGULAR PRICE CHANGES
IN THE SUPERMARKET

| Period | Number of Companies |
|---|---|
| Daily | 3 |
| Twice each week | 4 |
| Every week | 30 |
| When necessary | 3 |
| Total | 40 |

Table 5 indicates the frequency with which price changes are sent to the stores by the companies contacted. Since regular weekly price-change lists are normal in thirty of the forty companies it can be assumed that such lists are essential and should be so considered by store managers. The danger to inventory control, however, is not the frequency of changes but the negligence in carrying out the change and the follow-through by managers for proper performance of marking.

One grocery manager has stated that the greatest problem he faces in controlling inventory is keeping the correct selling price on merchandise, both original marking and subsequent price changes. Some causes for incorrect shelf prices are as follows:

1. Failure to make the physical price change as directed by the price-change letter.

2. Failure to change the selling price on the entire shelf stock when changes occur. Sometimes the front portion of the shelf stock is changed while the back portion is left untouched. This is probably due to inadequate supervision of employees to make certain an assigned job is completed.
3. Incorrect marking of merchandise in the stock room. This may be caused by the failure to change the case price of stock on hand when price changes are received.
4. Failure to change back any special-priced merchandise on hand after a special feature has expired.
5. Carelessness of store personnel in marking merchandise.
6. Frequently managers will change items that are increased in price but do not change those items which are decreased.

The causes of incorrect prices are not as important to inventory control as the results. Incorrect prices result in a loss to the company when there is an undercharge and a loss of customer good will when there is an overcharge. To alleviate this problem, the following practices can be followed in handling price changes:

1. Make price changes immediately upon receipt of notice or by the time they become effective.
2. Make price changes on shelf merchandise and on cases in storage, both regular and special prices.

3. Check changed prices against the price change lists received to assure accurate performance.
4. Check shelf prices with the authorized price book after changes are made and have discrepancies corrected.

In order to minimize incorrect prices, store managers must continually check for accuracy in marking, changing and maintaining correct shelf prices.

When price changes are made in the store, a difference between the current selling price and the price at which the stere was charged occurs. This difference should be accounted for through a charge or credit. If this is not done the store's inventory absorbs the gain or loss. It is thought by some people in the food industry that when regular price changes occur, the increases tend to balance the decreases. This could not be true of special price changes since they are only decreased. However, when merchandise is charged to the store at a special price, the number of featured items previously maintained in the store inventory could balance the amount on hand after the special feature has expired.

## Price Change Credit

Table 6 shows the methods used to extend credit to the stores for regular price changes. Since there were no ans-

TABLE 6

METHODS OF EXTENDING CREDIT
FOR REGULAR PRICE CHANGES

| Method | Number of Companies |
|---|---|
| Charge and credit on inventory | 8 |
| Markup and markdown | 3 |
| Test stores | 3 |
| Advance and decline sheets | 1 |
| No answer | 10 |
| Total | 25* |

*The companies extending credit for regular price changes wers to the question about methods of handling special price changes, it is assumed that the methods used are the same for each type of price change. It can be seen in Table 6 that 25 companies give credit to the stores for regular price changes while 22 give credit for special price changes.

Some companies gave credit based on an inventory taken by store personnel of those items changing in price. This method was discontinued by many companies because of the abuse by store managers. There was a tendency for managers to pad the actual inventory to cover losses incurred from other sources. The true amount of inventory loss or gain could not be audited which is another reason for discontinuing the practice.

Test stores are used by some companies to determine the average amount of inventory loss or gain which stores of each class should receive for price changes. The test store average is credited or charged to every store within a certain category. This method is being regarded with favor by the companies adopting it and especially those changing from the store inventory method.

When the manager of a store is required to take a physical inventory to determine the credit given for price changes, a checkup on the validity of the manager's inventory is desirable. The information received from the questionnaire showed that only seventeen of the companies had such check. Of these seventeen, 70 percent used only an occasional spot check for accuracy. These results indicate that a check on the manager's inventory either holds little importance or that the checks are too costly to be used frequently.

In the process of marking merchandise, a company or store may set up certain procedures and policies to follow. Pre-stamping should be considered when formulating pricing policies in any operation. Pre-stamping is referred to in this study as the procedure of stamping all merchandise when it is received whether it is needed on the selling floor or not. This is referred to as complete pre-stamping. It is true that pre-stamping of fast-moving items is done in the majority of stores today but to effectively employ the complete pre-stamping method, the following factors should be considered:

1. Merchandise should be ordered accurately and only that merchandise which is needed for shelf stock in a delivery period should be ordered.
2. Sufficient notice should be given before price changes become effective. The survey shows an average of 2.3 days notice is given by companies replying.
3. Stock turnover should be rapid enough to warrant the use of pre-stamping.
4. Extreme care should be taken to reduce price errors when the merchandise is stamped and sent to the selling floor.

A complete pre-pricing policy places a heavy burden on the stock room clerk when price changes occur. Merchandise in storage, which has previously been marked, must be remarked when a price change is received. However, 28 of the forty companies surveyed now employ this method of marking in their grocery departments.

## Authorization Lists

The survey shows that 92.5 percent of the grocery retailers employ an authorization list for the purchase of merchandise. It is necessary for companies having specialized purchasing departments to exercise some control over outside purchases in order to coordinate the efforts of purchasing, sales, merchandising and other departments which service the stores. In addition to this, it is also a preventive measure to keep managers from making "deals" at the expense of the customer to cover for other losses. When asked if their managers were able to purchase unauthorized items, thirty-five answered in the negative. Thirty-five percent also do not allow managers to purchase items authorized in their store but out of stock in the company warehouse. The questionnaire indicates that the grocery industry is in general agreement on the subject of product authorization.

# CHAPTER IV

# STOCK CONTROL

## Definition

Unit stock control is sometimes defined as "an organized method of determining, analyzing and controlling sales and stocks in terms of units"[1]. That is, merchandise is thought of in terms of quantity and stock turnover instead of stock handling. It is true that stock turnover has a direct bearing on inventory control and a slow rate of turnover may cause some goods to become shopworn or stale. The physical handling of merchandise in the store is of greater importance in the reduction of inventory loss than the quantity factor. The quantity of merchandise is more directly related to sales whereas the proper handling of store merchandise is related to the amount of inventory loss incurred through stock damages. Stock control, therefore, is defined for the purpose of this study as the control of stock handling in the operation of a super market.

## Broken-Case Merchandise

The storage of broken-case merchandise is an important consideration in the stocking operation. The finding of

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1. John W. Wingate and Elmer O. Schaller. Techniques of Retail Merchandising. New York: Prentice-Hall, Inc. 1950. p. 405.

suitable storage space to properly protect this merchandise from damage is more difficult in stores not having storage space under gondolas. The survey shows that thirteen companies use gondolas which provide storage space for broken-case merchandise, while the remainder use their stock rooms. The inventory control problem is to avoid damage to the merchandise in broken cases while they are handled and stored. Broken-case merchandise should be consolidated into cases of similar packages and products to conserve on storage space and for greater efficiency. A practice which may serve as a partial solution requires the use of all broken-case merchandise as shelf stock before similar merchandise should be recognized as an important cause of inventory loss.

## Customer Breakage

Another factor which should be considered in controlling inventory is customer breakage. This factor can be considered a problem in the food industry since customers cannot successfully be reprimanded for breakage. Grocers feel that the damage to company goodwill is greater than the amount of loss prevented by less customer breakage.

TABLE 7

EQUIPMENT AND METHODS USED TO DECREASE CUSTOMER BREAKAGE

| Method of Equipment | Number of Companies |
|---|---|
| Use of cardboard between containers | 2 |
| Tilt in shelf | 5 |
| Caution in stocking | 2 |
| Low gondolas | 3 |
| Improved shopping cart | 2 |
| None | 15 |
| No answer | 11 |
| Total | 40 |

Since only fourteen companies mentioned in Table 7 employ any method of preventing customer breakage, it is assumed that little importance is placed on this factor by the food companies replying. However, the results of the questionnaire show that 25 companies did consider breakage when locating and building store displays. To establish the importance of customer breakage, the grocery executives were asked what percent of the inventory loss is caused by customers breaking items. The thirteen companies answering this question indicated that on the average, 4.6 percent of inventory loss is attributed to this factor. Since little attention is given by grocery company executives to methods of reducing customer breakage, it is assumed that the problem is not considered too important.

## Stockroom Training

It is thought by some companies today that the solution to the improper handling of stock by employees is the establishment of a training program for store personnel. Twenty-five of the forty companies employ some type of training program for their employees.

TABLE 8

TYPES OF TRAINING PROGRAMS USED FOR STOCKROOM OPERATIONS AND STOCKING

| Type of Program | Number of Companies |
|---|---|
| On-the-job training program | 18 |
| Training school with discussion and experience | 5 |
| Training by work simplification | 2 |
| Total | 25 |

Some store executives feel that little training is necessary to perform the duties of the marking and stocking operations. Although it may not require the specialized training some of the other jobs require, instruction in company policy and methods is desirable. If efficiency is improved in the stocking operation, less inventory shrinkage will result.

## Stock Rotation

Another phase of stock handling and important to inventory control is stock rotation. Table 9 shows the methods of rotation used by the companies replying.

TABLE 9

METHODS OF ROTATING STOCK

| Methods | Number of Companies |
|---|---|
| Merchandise is coded | 14 |
| Old merchandise in front | 13 |
| Store manager checks | 2 |
| Rotation chart | 1 |
| Turnover takes care | 1 |
| Food-o-mat | 1 |
| Left to right method | 1 |
| No answer | 7 |
| Total | 40 |

It can be seen in the above table that coding merchandise for the rotation of stock is the practice used by 14 of the companies. The terminology used in Table 9 is the same as used by store executives in replying to the questions regarding stock rotation methods. The purpose of stock rotation is to place the oldest merchandise in the front part of the display to be sold first. Thus the answer "old merchandise in front" is not a method but rather the results of rotation. Proper rotation of stock decreases spoilage, stales and package deterioration. It also enhances shelf appearance by moving out obsolete package designs and sizes while it lessens the changes of retaining merchandise until it becomes damaged or less desirable.

# CHAPTER V

# PILFERAGE CONTROL

## Importance

One of the things which the grocer must consider regarding pilferage is how important this problem is compared with the many others which he must face. The definition of pilferage covers not only customer pilferage but employee and salesmen pilferage as well. The latter types will be discussed later in this chapter. Customer pilferage is a much discussed topic with many disagreements coming from men in the food industry. To arrive at some conclusion regarding the importance of customer pilferage, food company executives were asked the following question; "Approximately what percent of the average inventory loss do you think is contributed by pilferage?". The result was somewhat discouraging since only 21 answers were received. The variation in these replies is so great that an average would seem to the author as insignificant. It can be said, however, that one-half of the companies gave percentages varying from 25 to 75 percent of inventory loss while the other half was below 25 percent. This disagreement apparently points out the complexity of the problem of customer pilferage and that the dollar value of pilferage is unknown.

To further establish the importance of pilferage, recent food publications wereconsulted on this problem. One article stated that "four out of five chain stores say shoplifting is their major problem"[1]. This could mean that the inability to cope with shoplifters is as much a problem as the frequency of violation. It seems impossible to establish any meaningful figure on the frequency of pilferage or its importance in inventory control. The fact that the total value of pilferage is unknown and unmeasurable has caused some store managers to use this as an excuse to their superiors for bad management. Yet it seems reasonable to assume that pilferage is an important inventory control factor that seems to be growing in importance in many areas.

## Preventive Measures

More attention has been given recently by the grocery industry to preventive measures against pilferage than methods of apprehension and persecution. Table 10 shows the preventive measures used by the grocery companies surveyed. Many of the measures require adoption by the complete company since they involve the installation of permanent fixtures.

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1. Anon. Says 80% of Units Call Pilfering Top Problem. Supermarket News. 12 (April 1953).

TABLE 10

PREVENTIVE MEASURES AGAINST PILFERAGE

| Measures | Number of Companies |
|---|---|
| Limit the height of gondolas | 24 |
| Use regular mirrors | 11 |
| Use one-way mirrors | 14 |
| Arrangement of stock | 30 |
| Elevate office | 25 |
| Check articles previously purchased | 18 |
| Warning signs from outside agency | 2 |
| Use detectives | 2 |
| Total | 116* |

* Some companies use more than one measure

Table 11 discloses the results of the question concerning the value of stock arrangement in decreasing pilferage.

TABLE 11

IMPORTANCE OF STOCK ARRANGEMENT AS
A DEVICE FOR CONTROLLING PILFERAGE

| Degree of Importance | Number of Companies |
|---|---|
| Very important | 13 |
| Important | 4 |
| Effective | 1 |
| Not very important | 10 |
| Not practical | 1 |
| Important for some items | 6 |
| No answer | 5 |
| Total | 40 |

Table 10 shows that arrangement of stock is used by thirty companies as a means to discourage shoplifters. Table 11 shows that about one-half the companies consider stock arrangement an effective device for controlling pilferage. Preventive measures are considered by grocery companies today to be more effective than apprehension of shoplifters.

## Handling Offenders

Each company has established definite procedures to be followed by store personnel in apprehending shoplifters. To determine the procedures used, a checklist was included in the questionnaire. Although this checklist is not complete, an idea can be obtained of the various policies used in handling first offenders.

TABLE 12

PROCEDURE FOR HANDLING PILFERAGE VIOLATORS WHO ARE FIRST OFFENDERS

| Procedures | Number of Companies |
|---|---|
| Manager talks to them | 36 |
| Charge for the merchandise | 23 |
| Call police | 10 |
| Ban them from the store | 10 |
| Call detective | 2 |
| Return merchandise | 1 |
| Total | 82* |

* Some companies used more than one procedure

It can be seen from Table 12 that grocery companies are trying to avoid prosecution of persons for their first offense. There may be a number of reasons for this; first, company good-will is lost when an individual is prosecuted by a large company; second, it costs the company in employee time and money to get a conviction. Store managers and employees are taken from their jobs to testify thereby creating a loss in payroll hours; third, there is a lack of cooperation by some law enforcement officials in pressing charges; fourth, if the shoplifter is willing to pay for the merchandise, a second chance may gain an honest customer for the store.

Some store owners spend money to apprehend pilferers and then do not persecute them. "Word spreads that Mr. X makes no arrests of those found stealing and thus encourages shoplifting."[2]. The store manager is likely to be held responsible for the inventory loss even though the company refuses to prosecute shoplifters. Cooperation with local law enforcement organizations seems desirable in order to keep pilferage at a minimum in any area. Although it is not desirable for companies to continuously prosecute pilferers, it is sometimes desirable to establish a positive stand against violators.

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2. Ibid.

What can store managers do to combat customer pilferage? Probably the most mentioned method used by the grocery companies is the placement of store personnel so as to keep each part of the store under observation. It is desirable for the manager to observe the selling floor as much as possible and especially during busy hours. Store personnel should be trained to be alert to customer actions at all times. It is important that checkers be trained to observe any suspicious actions by customers. The success of preventing pilferage will depend largely on the interest and cooperation of the store personnel.

## Employee Pilferage

The previous discussion has been concerned with customer pilferage, however, there are others such as employee pilferage. Store employees should be reprimanded when there is some indication of dishonest acts. Destruction and confiscation of store property is not considered dishonest by many employees when the value is reasonably small. Store managers should stress the importance of honesty and continually observe employees for violations of company policy.

## Salesmen Pilferage

Another type of pilferage is that performed by deliverymen and salesmen. This has been discussed briefly in Chapter II but cannot be overemphasized. Persons who have access to the store through the back door, both company and non-company personnel, can very easily take merchandise if they are not closely checked. Careless managers who pay little attention to the back door soon find themselves with a short inventory. To alleviate this problem, it is good practice to have a responsible person accompany these delivery men and salesmen.

Pilferage is rather frustrating for the store manager. It is not reasonable to assume that pilferage accounts for the entire amount of inventory loss, yet it is impossible to accurately measure the amount which it does contribute. Thus pilferage falls in the same category as many other determining factors in controlling inventory. The loss may be a reality but the cause may be unknown.

## CHAPTER VI

## ACCOUNTING PROCEDURE FOR RECORDING CHARGES AND CREDITS

An important phase in inventory control is maintaining accurate records for charges and credits, both in the store and the accounting department. Without accuracy to store and accounting records, the correct dollar value of the physical inventory can not be computed. This study will include only those accounting forms usable by most grocery companies as an aid to inventory control and taking a physical inventory.

### Charging Merchandise to Store

One of the things to consider in accounting procedure is the methods by which merchandise is charged to the stores.

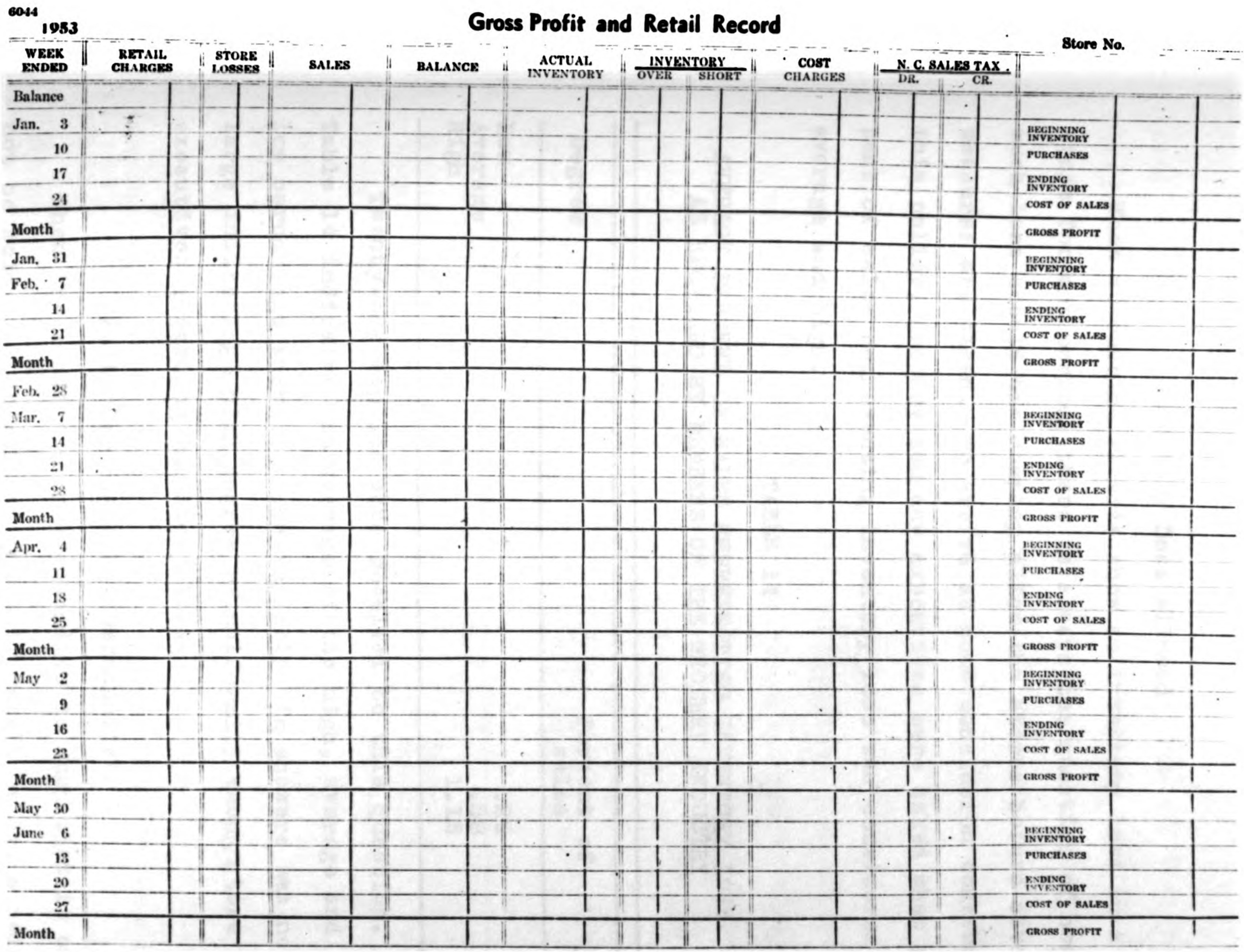
TABLE 13

METHODS OF CHARGING MERCHANDISE TO THE STORES

| Methods | Number of Companies |
|---|---|
| Cost | 8 |
| Retail | 19 |
| Cost and retail | 12 |
| No answer | 1 |
| Total | 40 |

It is not known what method of charging merchandise is the best, although Table 13 does show that the retail price is more widely used. It does, however, seem reasonable that charging at both cost and retail price will be useful in inventory control and other accounting procedures.

Figure 1 on the following page illustrates an accounting form which charges the store with both cost and retail price. This form is used by the accounting department to compile information received from the stores each week. On this form retail charges include all charges made to the company for merchandise received from all sources. Store losses include credit given the stores by the company for losses incurred from price changes. The sales figure is derived from the accounting forms sent to the accounting department by the stores at the end of each week. A book balance is then determined and when a physical inventory is taken in the store, an actual inventory overage or shortage can be determined. It can be seen from Figure 1 that a cost figure must be shown to determine the gross profit of the store. Through the use of test stores, a permanent cost figure is determined in the form of a certain percent of sales or of the retail price. Thus we have on the one form a record of the sales at retail, at cost, the actual inventory and the gross profit of the store.



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1953

**Gross Profit and Retail Record**

Store No.

| WEEK ENDED | RETAIL CHARGES | STORE LOSSES | SALES | BALANCE | ACTUAL INVENTORY | INVENTORY OVER | INVENTORY SHORT | COST CHARGES | N. C. SALES TAX DR. | N. C. SALES TAX CR. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Balance | | | | | | | | | | | | |
| Jan. 3 | | | | | | | | | | | BEGINNING INVENTORY | |
| 10 | | | | | | | | | | | PURCHASES | |
| 17 | | | | | | | | | | | ENDING INVENTORY | |
| 24 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |
| Jan. 31 | | | | | | | | | | | BEGINNING INVENTORY | |
| Feb. 7 | | | | | | | | | | | PURCHASES | |
| 14 | | | | | | | | | | | ENDING INVENTORY | |
| 21 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |
| Feb. 28 | | | | | | | | | | | | |
| Mar. 7 | | | | | | | | | | | BEGINNING INVENTORY | |
| 14 | | | | | | | | | | | PURCHASES | |
| 21 | | | | | | | | | | | ENDING INVENTORY | |
| 28 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |
| Apr. 4 | | | | | | | | | | | BEGINNING INVENTORY | |
| 11 | | | | | | | | | | | PURCHASES | |
| 18 | | | | | | | | | | | ENDING INVENTORY | |
| 25 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |
| May 2 | | | | | | | | | | | BEGINNING INVENTORY | |
| 9 | | | | | | | | | | | PURCHASES | |
| 16 | | | | | | | | | | | ENDING INVENTORY | |
| 23 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |
| May 30 | | | | | | | | | | | | |
| June 6 | | | | | | | | | | | BEGINNING INVENTORY | |
| 13 | | | | | | | | | | | PURCHASES | |
| 20 | | | | | | | | | | | ENDING INVENTORY | |
| 27 | | | | | | | | | | | COST OF SALES | |
| Month | | | | | | | | | | | GROSS PROFIT | |

FIGURE 1. A Form Used by the Accounting Department of a Grocery Company

## Inventory Loss Allowed

When accounting records show an inventory loss in a store for any period, there is always the question of how much loss should the company allow the stores before severe measures are taken. To arrive at some conclusion concerning this policy, grocery company executives were asked what percent of sales representing inventory loss was considered low, average and high.

TABLE 14

AVERAGE PERCENT OF SALES REPRESENTING INVENTORY LOSS AS REQUIRED BY MEMBERS OF THE GROCERY INDUSTRY

| Degree | Percent of sales |
|---|---|
| Low | .29 |
| Average | .58 |
| High | 1.15 |

Twenty-one replies were received to this question. Table 14 indicates the average of the high, average and low percentage answers. The variation in answers was not large indicating a high degree of uniformity among store executives regarding inventory loss.

## Credit For Unsalable Merchandise

When the condition of merchandise is such that it cannot be sold to customers at the full retail price, a reduction in price is necessary and sometimes complete loss occurs. The store should be given credit for such loss to avoid creating an inventory loss. Variations in the answers tabulated in Table 14 are due in part to difference in company policies regarding credit for markdowns and loss due to deterioration of merchandise. The amount of credit given the stores would be a matter of company policy and would go hand in hand with the company policy on inventory loss allowed.

Table 15 shows the number of companies out of the forty replying to the questionnaire giving credit for damaged merchandise.

TABLE 15

PERCENT OF COMPANIES GIVING CREDIT TO STORES FOR MERCHANDISE LOSSES

| Nature of Loss | Number of Companies |
|---|---|
| Bent cans | 25 |
| Swells | 29 |
| Breakage | 26 |
| Stales | 21 |

Many manufacturers today are absorbing some of these losses thereby relieving the grocery retailers of much of their inventory loss. Manufacturers have special representatives visiting stores and giving credit for their products which are unsalable. In other cases the damaged merchandise is returned to manufacturers via company warehouses. It is advantageous to the grocery manager to take advantage of this service and make sure the necessary accounting form accompanies the return merchandise. Some grocery companies have discontinued credit to their stores since, in some cases, credit claims were padded with fictitious losses to cover other inventory losses. Table 15 shows that the majority of grocery companies replying do give credit for various merchandise losses. It is important for store managers to make certain that the store is credited for all legitimate inventory losses.

## Approving Credit Memos

Under ordinary operating conditions a store should end each accounting period with an inventory loss since there will always be losses through pilferage and other causes. There is, therefore, a tendency on the part of store managers to manipulate inventory figures so as to keep the loss as low as possible. The procedure for receiving credit for unsalable merchandise should be definitely established and all credit memos should be authorized by a responsible company representative. Table 16 indicates the individual responsible for approving credit memos.

TABLE 16

PERSON APPROVING CREDIT MEMOS

| Person | Percent of Companies |
|---|---|
| Manager | 32.5 |
| Supervisor | 42.5 |
| Both manager and supervisor | 12.5 |
| Accounting department | 2.5 |
| Grocery buyer | 2.5 |
| No answer | 7.5 |
| Total | 100.0 |

In about one-third of the stores reporting the manager authorized credit memos. In the rest of the companies higher echelon personnel authorized credit memos largely on the basis of reasonableness or average losses.

## Office Fund Audit

The majority of grocery companies furnish their store managers with office funds necessary to operate their stores efficiently. Although it is usually the responsibility of the manager to keep this fund intact, an audit is frequently necessary as a protective measure. The frequency of this audit by the forty grocery companies replying can be seen from the following table.

TABLE 17

FREQUENCY OF STORE OFFICE FUND AUDITS

| Frequency of Audit | Number of Companies |
|---|---|
| Twice each week | 1 |
| Weekly | 2 |
| Monthly | 21 |
| Every six weeks | 2 |
| Every two months | 2 |
| Every three months | 5 |
| Yearly | 1 |
| Irregularly | 2 |
| No store funds | 3 |
| No answer | 1 |
| Total | 40 |

It can be noted that a monthly check of office funds is the procedure used more often by the grocery companies. The assumption is also made, based on Table 17, that the majority of companies feel that some check is necessary for better control of funds and records.

The forms used by each company in their accounting systems have not been explained. As previously mentioned, the number of forms and systems are too numerous to describe, however, something should be said about the manner in which records are regarded and handled in the stores. According to the survey, the average accounting period in the stores consist of one week. It is necessary to the accounting operation and to inventory control that the accounting records be accurate and complete. Store managers contribute to their own misfortunes when accounting forms are not properly completed and promptly submitted at the end of the accounting period. The store manager should realize that if accurate records are not sent to the accounting office, the amount of store inventory loss can not be accurately determined.

# CHAPTER VII

## CHECKOUT PROCEDURES

### Type of Checkstand

The checkout procedure of supermarkets presents another factor for consideration in inventory control. One of the first things to consider in the checkout operation is the type of checkstand to employ. Since this study will be concerned primarily with the accuracy and not the efficiency of the checkout operation, a description and comparison of the many types will not be given. It may be interesting to note, however, the types used by companies included in the survey.

TABLE 18

TYPES OF CHECKSTANDS EMPLOYED
BY COMPANIES SURVEYED

| Types | Number of Companies |
|---|---|
| Straight manual | 23 |
| Conveyor belt (motor) | 19 |
| Speed-Dee | 3 |
| Split-type stand | 4 |
| Miscellaneous | 8 |
| Total | 57* |

*Some companies used more than one type

The practice of segregating items by departments before checking is not readily adaptable to some types of checkstands. It is felt by some grocery companies that there is much more accuracy at the checkstand when merchandise is segregated because everytime the register department keys are changed, there is a chance for error.[1] This is assuming that the regular register with non-motorized department keys are used. A new type of register has been designed by the National Cash Register Company which is equipped with electrified department keys. This type of register was designed for checkstands that require no sorting of items before checking. The material presented furnishes little basis for an accurate conclusion regarding the type of checkstand to use in the checkout operation. However, the decision probably should be made by management on the basis of the checkstand's applicability or other determining factors.

## Losses From Inaccurate Checking

There is much inventory loss resulting from inaccurate checking in supermarkets.

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1. National Association of Food Chains. Checkout Clinic. Chicago: February, 1950. p. 3.

TABLE 19

RESULTS OF 95 SHOPPING TESTS MADE IN NINE CHAINS ON ORDERS RANGING FROM $1.88 TO $8.31[2]

| Results | Number of Cashiers (basis of 100) |
|---|---|
| Charged the correct price | 13 |
| Overcharged the customer | 30 |
| Undercharged the customer | 57 |
| Total | 100 |

The shortages less the overcharges gave a net loss of 1.4 percent of total sales or eleven cents on an eight dollar order. These tests show that the checker is inclined to undercharge the customer when the price is not known. An undercharge is not likely to cause loss of customer good will but will result in an inventory loss. When an overcharge is made a loss of customers, good will and consequently sales results. Even though overcharges offset inventory losses the resultant loss of customers outweighs the gain. It is important for store managers to make certain their checkers are being as accurate as possible.

2. The Market Basket Corporation. Cashier's Manual. Geneva New York: 1951, p. 2.

Causes for Checkout Errors

Some of the causes for errors made by checkers in the checkout procedure are:

1. Fractions are computed incorrectly. Some grocery company representatives feel that this may be caused by public school teaching practices which instructs pupils to drop fractions when the amount is less than one-half cent and add only when the fraction is more than one-half cent.[3]
2. Incapable mental facilities for accurate addition. This condition can sometimes be discovered during employment interviews.
3. Complete omission of items during checkout procedure. This can be done when checkers attempt to check too rapidly. Also the checker may have little interest in the job or may be grossly incompetent.
4. Errors caused by illegible or wrong price-marking.
5. Mistakes in making change. Frequently a checker will make costly mistakes in making change or in cashing checks.

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3. National Association of Food Chains. Checkout Clinic. Chicago: February, 1950. p. 5.

6. Failure to punch the correct keys on the cash register. The tendency to reverse figures, such as 14 for 41 is one of the most frequent mistakes in the incorrect recording of prices.
7. Failure to record the sale of an item in the right department.
8. Lack of concentration by conversing with persons other than the customer. Many customers resent this conversation since it delays their checking operation and may cause them to lose confidence in the checker's ability.
9. Failure to post price list on checkstand for items not marked. This, as well as outdated price lists, encourages mistakes and inconveniences in the checkout operation.

### Accuracy of Checkers

The accuracy of checkers seems to be one of the most important checkout factors affecting inventory control. The problem for the super market manager is how often and in what manner should a checker's accuracy be verified? What factors should be considered in selecting a procedure for checking cashiers?

TABLE 20

FREQUENCY WITH WHICH CASHIERS ARE
CHECKED FOR ACCURACY

| Frequency | Percent of Companies |
|---|---|
| Daily | 2.5 |
| Weekly | 22.5 |
| Every two weeks | 2.5 |
| Monthly | 30.0 |
| Every two months | 2.5 |
| Every three months | 7.5 |
| When necessary | 15.0 |
| Seldom spot check | 15.0 |
| No answer | |
| Total | 100.0 |

Table 20 shows that the majority of companies included in the survey check on the accuracy of their cashiers at least once each month. It is the opinion of the author and 22.5 percent of the companies that cashiers should be checked at least once every week to insure alertness.

There are many variations in methods used today by grocery companies for checking cashier accuracy.[4] Many companies use shoppers, some their own employees and other commercial agencies. The usual procedure is to use test baskets of mer-

4. Ibid. page 9

chandise for the check. When a shopper is not used for the test, the merchandise is returned to the selling floor and the amount recorded on the cash register is voided. A check by the manager on the cashier in the presence of a shopper may sometimes be embarrassing for everyone. The survey indicates that 45 percent of the companies use an outside agency for checking cashiers. This company sends representatives to the stores periodically to shop and grade the checker' performances. A test basket of merchandise is used by the agency's representative and then returned to the store manager. The report of the checker's performance is sent to the company's headquarters and then forwarded through channels to the store.

## Checker Training

It is interesting to note that 95 percent of the companies included in the survey have some type of checker training program. This extensive use of checker training programs is evidence that management is convinced that training is an effective means of increasing checker accuracy. Even though checker training is used by such a large number of companies the length of the training period is difficult to establish since the variations in time consumed are great and the time spent for refresher training differs in each company.

TABLE 21

LENGTH OF INITIAL TRAINING PERIOD
FOR CHECKERS

| Length of Period | Number of Companies |
|---|---|
| Three days | 10 |
| Four days | 2 |
| Five days | 1 |
| One week | 9 |
| Two weeks | 5 |
| Three weeks | 2 |
| One month | 4 |
| Six weeks | 1 |
| Indefinite | 4 |
| No answer | 2 |
| Total | 40 |

Table 21 shows that the majority of companies in the survey have checker training periods from three days to one week. It is difficult to determine the exact length of a checker training program since each company requires specific instruction necessary to their operation. The general objective of checker training is probably considered by most companies to increase checker accuracy and efficiency.

Training checkers in the proper approach to customers is considered as important as the mechanical operations necessary. The attitude of the checker and a consciousness of the importance of an accurate performance can be favorably enhanced through proper training. Interest, initiative and a devotion to the job will improve the accuracy of checkers.

## Employee Purchases

Many grocery companies have found it necessary to establish policies governing employee purchases in their stores.

TABLE 22

PROCEDURES FOR HANDLING EMPLOYEE PURCHASES

| Procedure | Percent of Companies |
|---|---|
| Purchases checked out by manager | 40.0 |
| Purchases checked out by another employee | 22.5 |
| Handled as customers | 22.5 |
| Place slips in drawer | 5.0 |
| No answer | 10.0 |
| Total | 100.0 |

It can be seen from Table 22 that 85 percent of grocery companies surveyed require employees to have their purchases checked out by the manager or some other checker. Contrary to the procedure followed by the department and specialty stores, only 5 percent of the grocery companies give discounts to employees on purchases. When a discount is given the store should receive credit for the amount of the discount so as to keep the inventory records accurate.

## CHAPTER VIII

## SUPERMARKET PERSONNEL

### Human Element

The human element involved resulting from the actions of store personnel is very important to inventory control. The effectiveness of each phase of inventory control is dependent upon the employees' actions and the manner in which the established policy is followed. The responsibility for each procedure in the store operation should be assigned to as well as assumed by someone if effective control over store inventory is to be maintained. This study has mentioned procedures desirable for store personnel to follow in applying the policies thought necessary for better inventory control. The unpredictable human element is an important contributing factor to successful application of procedures giving better control over inventories.

### Employee Carelessness

Factors relating to employees may be divided into two separate parts: (a) employee carelessness and (b) employee dishonesty.[1] Employee carelessness includes the failure of an employee to assume the responsibility for the performance

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1. Controllers' Congress National Retail Dry Goods Association. Stock Shortage Control Manual. New York: 1951. p. 35

the phases of store operation assigned to him. The carelessness of workers has led to the establishment of procedures which place more responsibility on managers and higher supervisors for employee task performance.

TABLE 23

PERSON RESPONSIBLE FOR KEEPING DELIVERY DOOR CLOSED DURING THE DAY

| Person Responsible | Percent of Companies |
|---|---|
| Store manager | 60.0 |
| Stock room clerk | 35.0 |
| Assistant manager | 7.5 |
| All personnel | 2.5 |
| No answer | 5.0 |
| Total | 110.0* |

*Some companies gave more than one answer

As was stated in Chapter II, an open back door constitutes an excellent opportunity for getting merchandise out of the store illegally. Table 23 shows that the responsibility for keeping the back door locked is assigned to the store manager in the majority of companies, however, it is often necessary to delegate this task to someone else. Regardless of the person who performs this job, a constant check by store supervisors is necessary to provide an increasing amount of control over this factor in order to decrease inventory losses.

The consideration of responsibility raises the question of the desirability of single supervision and dual supervision in the supermarket. The survey shows that 45 percent of the companies assigned the responsibility of the entire store operation to the grocery manager. It is the author's opinion that better control over inventories can probably be achieved when there is a single line of authority since there is less likelihood of confusion and misunderstanding concerning responsibility.

Some grocery companies use a double lock system on their stores for the purpose of providing a check on employees responsible for opening the store. This makes it impossible for one person to open the store without the other person being present. Forty percent of the companies surveyed use this method. This procedure relieves the store manager of a tremendous amount of responsibility when the store is closed and furnishes a barrier to dishonest persons holding store keys.

Time recording locks are used by 22.5 percent of the companies for the same purpose. This policy seems effective since it provides a check on the store manager as to the hours at which the door was locked or unlocked.

"Employee carelessness is not so much a case of ineffident employees as it is a care of poorly-trained employees"[2] Adequate training and instruction will increase employee efficiency and decrease inventory losses through the establishment of favorable work attitudes and job initiative.

## Employee Dishonesty

Employee dishonesty can be considered a part of the human element involved in inventory control. One of the things to consider is the consumption of food by employees while working in the stores. Over 90 percent of the companies surveyed have established a non-consumption of food policy by their employees.

TABLE 24

METHODS OF ENFORCING A NON-CONSUMPTION OF FOOD POLICY IN THE SUPERMARKET

| Method | Number of Companies |
|---|---|
| Require register receipt on article | 11 |
| Manager observe and take action | 7 |
| Manager's responsibility | 2 |
| No answer | 17 |
| Total | 37* |

*Constitutes 92.5 percent of all companies in the survey

2. Ibid. p. 35

Table 24 shows the methods used by the grocery companies in the survey for enforcing a non-consumption of food policy in the store. The amount of loss occurring from merchandise consumed in the store can become damaging to inventory control as well as to store profits. Consuming merchandise owned by the company is not considered dishonest by many employees since they feel the amount is so small. When violators are not corrected by managers, food consumption in the stores tends to increase. New employees should be properly notified that this practice is not tolerated. Store managers should observe store personnel and discourage consumption of food by employees.

It may be interesting to note that 50 percent of the companies surveyed furnish delivery-door keys to night delivery drivers. Twenty-five percent of this number have no delivery cage or partition separating the storage area from the selling floor. This practice seems to increase the opportunith for dishonesty, offers little control over the actions of disreputable persons and complicates the checking of merchandise delivered to the store.

## CHAPTER IX

## PHYSICAL INVENTORY

The counting and recording of the amount of stock on hand at a given time is an essential part of retailing. The total value of the stock on hand is needed to enable the accountants to prepare the balance sheet and departmental, store-wide and company-wide profit-and-loss statements.[1] An accurate inventory is important since the difference between the physical inventory and the book value determine the inventory loss or gain. The procedures used by grocery companies in taking the physical inventory are important in that they affect its accuracy.

### Responsibility for Taking Inventory

One of the important considerations is who should take the inventory. The questionnaire shows that 65 percent of the companies surveyed employ full-time inventory teams consisting of two persons. One of the two persons on the team is frequently given the title of inventory superintendent and is responsible for the efficiency and accuracy of the inventory. These teams can give valuable assistance to the store managers by informing him of incorrect prices and other

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1. John W. Wingate and Elmer O. Schaller. Techniques of Retail Merchandising. New York: Prentice-Hall, Inc. 1950. p. 195

factors which may cause inventory losses in the stores. The two persons may work together, one counting and one recording; or they may work separately. Their training and experience in inventory taking is usually sufficiently extensive to insure accuracy. Thirty-five percent of companies do not employ inventory teams. Table 25 provides information indicating persons who are responsible for taking the physical inventories.

TABLE 25

PERSONS RESPONSIBLE FOR TAKING INVENTORIES
(Other than inventory teams)

| Persons | Number of Companies |
|---|---|
| District Superintendent | 4 |
| Store personnel | 9 |
| Contracted inventory crew | 1 |
| Total | 14* |

*Number of companies not using inventory teams

It is sometimes necessary for companies employing inventory teams to resort to other personnel for taking inventories, when the teams are not available. Frequently a store superintendent may be required to direct store personnel in taking inventory, a check of their qualifications is important since nothing is gained when accuracy is sacrificed to gain speed or reduce cost.

Another important consideration is how often should inventories be taken?

TABLE 26

COMPARISON BY DEPARTMENTS OF THE LENGTH OF INVENTORY PERIODS IN FORTY GROCERY COMPANIES

| Inventory Period | Percent of Companies by Department | | |
| --- | --- | --- | --- |
| | Grocery Department | Meat Department | Produce Department |
| One week | | 35.0 | 22.5 |
| Two weeks | | 12.5 | 10.0 |
| One month | 45.0 | 47.5 | 52.5 |
| Six weeks | 15.0 | | |
| Two months | 10.0 | | |
| Three months | 30.0 | 2.5 | 5.0 |
| No answer | | 2.5 | 10.0 |
| Total | 100.0 | 100.0 | 100.0 |

Table 26 shows that the inventory period of one month, sometimes referred to as a four-week period, is used by the majority of companies. Some companies shorten the inventory period for the meat and produce departments due to the perishable nature of their merchandise.

Taking inventories is a costly operation but determining the length of the inventory period should be influenced by the accounting requirements of the company and the desired frequency of checking store managers.

The companies were asked to estimate the average cost of taking inventory. There was such a great variation in the answers received that the average of $81.74 is not very useful.

Inventory Retakes

Table 27 gives reasons given by 77.5 percent of the companies returning the questionnaire for using inventory retakes.

TABLE 27

REASONS FOR USING INVENTORY RETAKES

| Reasons | Percent of Companies (Based on 31) |
|---|---|
| To check accuracy of previous inventories | 35.5 |
| Bad inventories | 38.7 |
| To change managers | 3.2 |
| Inconsistent results | 9.7 |
| No answer | 12.9 |
| Total | 100.0 |

When inventory shortages occur, it is sometimes necessary to use retakes to establish a control period to use in the investigation. It can be said that the major reason for the use of inventory retakes is to check the accuracy of a physical inventory when there is a great difference between the book inventory and the physical inventory.

## Preparation for Inventory

It is desirable to make some preparation for the physical inventory that will help increase the accuracy and efficiency of this task. If adequate notice is given store managers the store personnel can prepare the stock on the selling floor and in the back room by placing price marks for easy visibility. As previously mentioned, the majority of companies use inventory teams of two persons, one a caller and one a recorder. Figure 2 on page 63 illustrates a form used to record inventories.

## Procedure for Taking Inventory

The first step in taking inventory is to record the cash register sales to establish the amount of sales in the current accounting period. The caller then "blocks" the shelves to facilitate easier counting and calls the number and price of articles to his assistant who repeats and records the data. This procedure is followed throughout the store until the entire inventory is completed. It is necessary, as shown by Figure 2, to record the invoices for all merchandise received during the accounting period. Transfers, price changes and any other factors which would affect charges and credits are also recorded. When the data are compiled, the form is sent to the company accounting office.

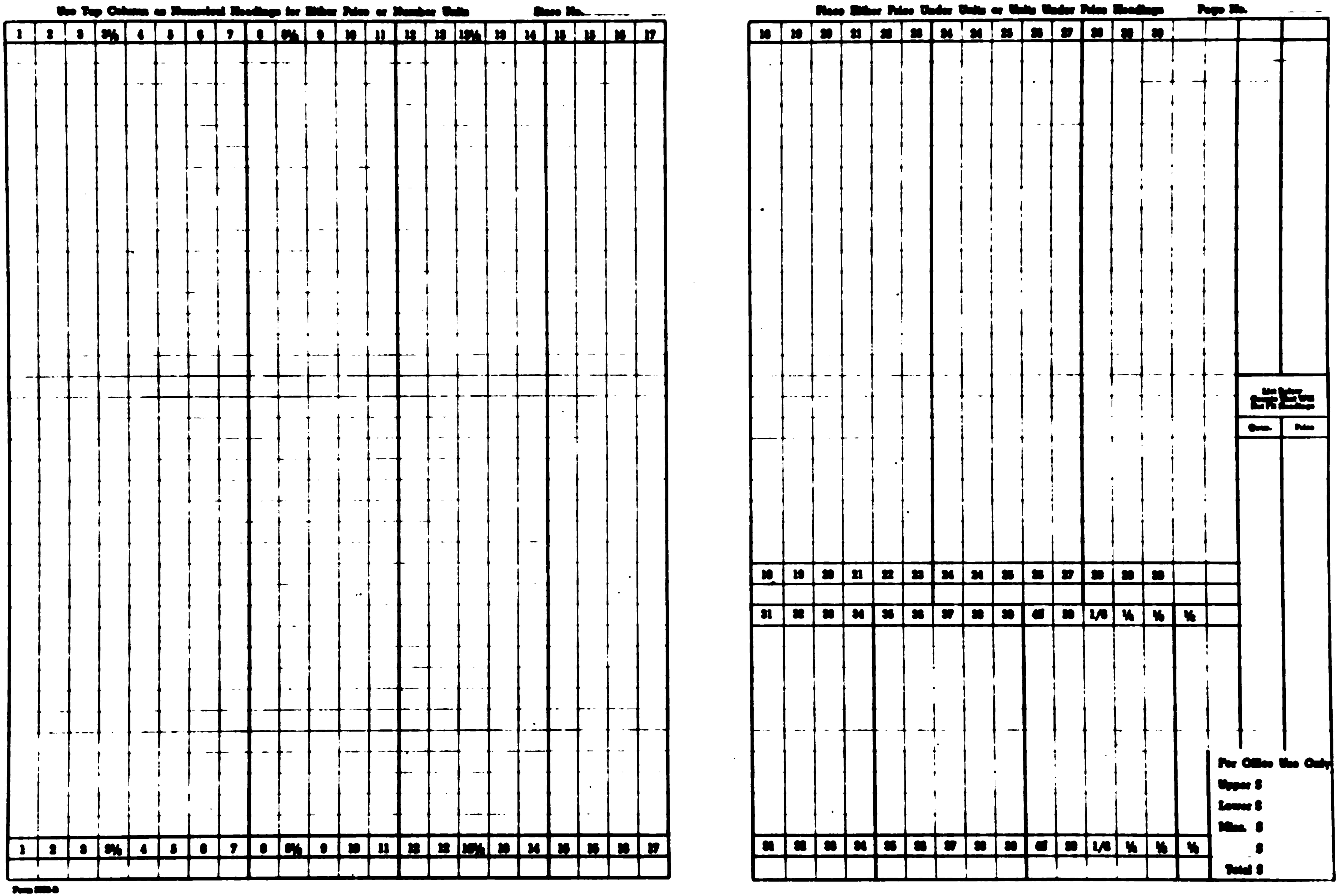


FIGURE 2. A Form Used for Taking Inventory in the Store

Regardless of the method used in taking inventory, it is necessary to instruct all personnel involved, in the procedures and policies to follow. Greater control can be exercised if emphasis is placed on accuracy instead of speed during the process of taking inventory. It has been said that the persons selected for inventory.jobs should not always be the most capable person in regular grocery operations since the person must be suited to perform the detailed and repetitive routines involved in taking an inventory. Often initiative causes persons to invent short-cut methods or procedures which reduce the accuracy of the inventory.[2] Although managers usually take little part in taking inventories, it is important that a check be made by him on the factors contributing to its accuracy.

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2. Neuschel, R. F. How to Take Inventory. McGraw-Hill Book Company, New York: p. 33.

# CHAPTER X

## SUMMARY AND CONCLUSION

### Summary

The purpose of this study is to consider factors which cause inventory losses in retail stores and to determine the importance of each factor. The information for the study was obtained from a questionnaire which was sent to fifty grocery companies in all sections of the United States. The questionnaire contained information relating to the methods, policies and opinions of top management regarding inventory control. It is hoped that the results of this study will be an aid to the food industry in mastering some of the problems of inventory control.

The method of checking warehouse shipments most frequently used by the companies in the survey is a check by item of merchandise received. This method is used by 90 percent of the companies for checking drop shipment. An average of 20 percent of all merchandise received consist of drop shipments whereas 80 percent constitutes warehouse shipments. There are differences of opinion regarding the responsibility for checking drop shipments, however, a greater number of companies surveyed assign this responsibility to the store manager. The large number of companies using the item count method for checking drop shipments indicates the importance to inventory control of a check on these shipments.

The survey indicates that an average of 20.6 percent of the stores operated by the companies engage in night stocking. Deliveries are sometimes made during the night to stores that do not engage in night stocking, however, more control could be exercised if night deliveries were made at the stores which stocked at this time. Only 22.5 percent of the companies use a deposit on permanent packing cases sent to the store. Failure to receive credit for returned cases causes inventory error.

The procedure for marking the selling price of articles on the outside of each case is practiced by 35 percent of the companies surveyed while merchandise is marked after storage in 14 of the forty companies.

The type of price stamp used most frequently for marking merchandise in the stores is the National Cash Register Stamp Set. The type of stamp used combined with the human element involved are the determining factors in maintaining accuracy in marking merchandise. Price changes are sent to 75 percent of the stores each week. Incorrect prices on shelf stock is attributed to the failure of personnel to change all merchandise as directed.

The method used most frequently for extending credit to the stores for regular price changes is based on a charge and credit inventory taken in the store. Padding the inventory by store managers caused some companies to discontinue credit or give it based on averages determined by test stores. When an inventory of items on which the price has changed is required of the store manager, only 17 of the companies replying have any check on the validity of the inventory. Of this number, 70 percent used only an occasional spot check for accuracy. Twenty-eight companies employ the method of pre-stamping merchandise in the stores and 92.5 percent of the companies require managers to follow an authorization list for the merchandise stocked in the store.

Stock control is defined in this study as the control of stock handling in the operation of a super market. The survey shows that 13 out of forty companies use space under their gondolas for the storage of broken-case merchandise, while the remainder use their stock rooms. The consolidation of related merchandise into cases reduces the possibility of damage by crushing or falling.

Only 35 percent of the companies use any equipment or method to decrease customer breakage. However, 25 companies did consider breakage in locating and building displays. The average estimated percent of inventory loss contributed by breakage was given by grocery company executives as a mere 4.6 percent average.

Twenty-five companies employ a training program for employees working in the stockroom. Eighteen of these companies use an on-the-job training program. Associated with the stocking operation is the method of stock rotation used by the companies surveyed. The coding of merchandise to facilitate adequate rotation is the most frequently used method.

The variation of replies received from 21 grocery companies concerning the importance of pilferage is so great that the average is considered insignificant. A study shows that pilferage is considered by 80 percent of grocery managers as their top problem, however, it would seem almost impossible to establish any meaningful figure on the frequency of pilferage or its importance in inventory control. The arrangement of equipment and the location of stock was used by 32.5 percent of the companies as a preventive measure against pilferage. Grocery companies today are trying to avoid prosecution of pilferers for the following reasons:

1. Company goodwill is lost when an individual is prosecuted by a large company.
2. It cost the company in employee time and money to get a conviction.
3. Lack of cooperation by some law enforcement officials in pressing charges.
4. If the shoplifter is willing to pay for the merchandise, a second chance may be given which might obtain a good customer for the store.

The procedure for handling first offenders in most cases consists of a demand by the manager to pay for the merchandise with no further action.

Store owners today spend money to apprehend pilferers but do not wish to prosecute them. This practice encourages shoplifting. Employee pilferage along with salesman pilferage cause store managers difficulty when strict pilferage control is not exercised. Managers who pay little attention to employees and salesmen are soon confronted with a short inventory.

The method used most frequently for charging merchandise to the stores is to charge retail prices. The average percent of sales representing inventory loss as stated by the companies in the survey consist of .29 percent for low, .58 percent for average and 1.15 percent for high. Although only 21 replies were received the distribution of percentage points was not too great.

The responsibility for approving credit memos is assumed by supervisors in 42.5 percent of the companies with 32.5 percent placing this responsibility on the store managers. Therefore the majority of companies do require some type of check on credit memos before they become effective. A check on the store office fund is a necessary protective measure as indicated by over 50 percent of the companies surveyed.

Straight manual types of checkstands are used by 40 percent of the companies returning questionnaires and the conveyor belt (motor) is used by 33.3 percent of the companies. The results of 95 shopping tests made in nine chains on orders ranging from $1.88 to $8.31 show an average net loss of 1.4 percent of total sales or eleven cents on an eight dollar order. This test shows that a checker is inclined to undercharge the customer when the price is not known. Only 13 percent of the checkers charged the correct price indicating the importance of training checkers.

The frequency with which cashiers are checked for accuracy is shown to be monthly by 30 percent of the respondents while 22.5 percent check their cashiers every week. Forty-five percent of the companies use some kind of agency such as Willmark Service System, Inc. for the purpose of checking cashiers. The use of test baskets of groceries constitutes the most frequently used method of checking on the accuracy of cashiers. Ninety-five percent of the companies in the survey had some type of checker training program but the length of the period varied greatly among the companies, however, the most frequently used period extended from three days to one week.

Factors relating to employees in the supermarket operation may be divided into two separate parts: (a) employee carelessness and (b) employee dishonesty. The store manager is given the responsibility for keeping delivery doors closed during the day by 60 percent of the companies. Forty percent of the companies replying use double locks on their store doors while 22.5 percent use time recording locks. Employee carelessness is said to be caused by poorly trained employees. The method most frequently used in enforcing a non-consumption of food policy is the requirement of the register receipt indicating the article has been purchased by the employee.

The basic function of a physical inventory is to determine the total value of the stock on hand so that the balance sheet and departmental, store-wide, and company-wide profit-and-loss statements may be prepared. Sixty-five percent of the companies replying employ full-time inventory teams, which usually consist of two persons. The 35 percent of companies who do not employ inventory teams use store personnel for taking inventories. Over 90 percent of the companies take their inventories on a retail price basis.

A comparison by departments of the length of inventory periods in the forty grocery companies shows that once a month is the inventory period used most frequently. The period is, however, shorter in the meat and produce departments than in the grocery department. Inventory retakes are used by 77.5 percent of the companies returning the questionnaire with the major reason for its use resulting from an excessive inventory loss. When adequate notice is given store managers, inventories may be completed in a shorter period since

store personnel can check the merchandise for prices and neatness. The steps to follow vary between companies but usually include a reading of the checkout register sales to obtain the amount of sales for the period, a recording of the store inventory on the sales floor and the back room and a check on all invoices of merchandise r eceived during the current accounting period. The person selected for the job should be suited to perform the detailed and repetitive routines involved in taking an inventory without attempting to revise the procedures set up.

## Conclusion

Inventory control has been a major problem in the food industry for many years and although much progress has been made in control methods, the food industry has much to do before this problem becomes insignificant. The results of the survey made in this study bring out the many policies and procedures of grocery companies pertaining to inventory control. Causes of inventory loss were derived from the procedures used by the grocery companies surveyed for the purpose of establishing better control methods. Needless to say, the importance of inventory control to a retail operation is not to be overlooked as has been pointed out in this study.

The many procedures necessary to perform the receiving operation of a retail store is not as important as the human element involved in performing these procedures. When mer-

chandise is charged to the store, it is necessary that the manager be positive the store received the merchandise with which it was charged. The type of price stamp used in the stamping operation is an important determining factor in the accuracy and legibility of price marking, yet without the proper performance of store personnel, success would not be possible.

Customer breakage is considered by the members of the grocery companies responding to be relatively unimportant, however, employee breakage of merchandise was considered more important. The number of training programs for the operators of stock rooms indicates that training is being used as a means of reducing loss through damage and breakage.

Even though the replies received in this survey show pilferage to be of little importance, the amount of attention given it in food publications today indicates that it is still a top problem in the food industry. The advice given by most companies to managers in regard to combating pilferage is to maintain employees on the selling floor as much as possible and then make it known to the public that the company will not hesitate to prosecute when it seems necessary.

The accounting procedures in the store should be performed accurately to establish a correct basis for determining inventory loss or gain. Responsibility for various checks on employee performance should be well defined and readily assumed. The accuracy of the checkout procedure is determined largely by the ability and attitude of the checker. Since the performance of the checkout operation depends greatly on the human element, frequent checks should be made on the cashier's accuracy. Employee carelessness and employee dishonesty is said to be the main causes of undesirable performance by store personnel. Thus, it is evident that the human element is an important factor in inventory control and is probably one of the greatest causes of inventory losses. Strict supervision combined with proper and adequate training are essential in the store for effective inventory control.

## Recommendations

Throughout the study recommendations have been given which would make possible better control over inventories. They may be more clearly understood in the form of a check-list of procedures to follow in controlling inventories or investigating factors leading to inventory losses. Although this check-list may not be complete, it will give the reader many important factors to consider and some procedures to follow in combating inventory loss.

1. Check incoming warehouse shipments by item against the warehouse invoice.

2. Check incoming drop shipments by item against the invoice received.
3. Place the responsibility for checking shipments on one person if adaptable to the type of operation.
4. Check for damaged merchandise in all shipments.
5. Make grocery deliveries when some responsible person is present to receive them.
6. Empty containers should be returned promptly and recorded on the correct form for credit before they leave the store.
7. The unit price should be marked on each case of merchandise when such merchandise is placed in storage.
8. Mark <u>all</u> prices on merchandise legibly.
9. Perform price changes as soon as possible and check for accurate performance by the markers.
10. Keep the authorized price book up-to-date.
11. Assign the responsibility for accurate and legible price marks to one employee, probably the senior stock room clerk.
12. Remove special prices from merchandise taken off display before it is stored.
13. Change entire shelf stock when price changes are completed.

14. Change all case prices in stock room when price changes are received.
15. Change all decreases as well as increases that appear on the price-change letter.
16. Audit manager's inventory frequently when it is used to give credit for price changes.
17. When pre-stamping is done, order merchandise, accurately and only that needed for shelf stock.
18. Restrict manager's authority to purchase items not authorized for the store.
19. Store broken-case merchandise in one place and check frequently.
20. Eliminate customer breakage by proper stacking of displays.
21. See that every employee is properly instructed and trained for the job he is assigned.
22. Rotate stock to eliminate spoilage and stales.
23. Keep employees alerted to observe all parts of the store for shoplifters.
24. Check customer packages before they leave the store.
25. The store manager should spend as much time on the floor as possible during rush hours.
26. Arrange equipment and locate stock to help decrease pilferage.

27. Use caution when apprehending pilferers.
28. Set up checks in store to discourage employee pilferage.
29. Keep delivery doors locked except when in use.
30. Check salesmen and delivery men in and out of store.
31. Check invoices for quantity and price.
32. Check to see that damaged merchandise is recorded for credit.
33. Set up an established procedure for the approval of credit memos.
34. Audit office funds at least once per month.
35. Lock cash registers when not in use.
36. Use an established procedure for checkers to obtain change, preferably from the store manager.
37. Train checkers to use correct price -- never guess.
38. Allow checkers to converse with no one but the customer when checking.
39. Checkers should touch and slide every item when checking.
40. Check all cashiers for accuracy at least once per week.
41. Voids are authorized by the manager or assistant manager.
42. No employee will check his own grocery purchases.

43. Use a checkers training program -- initial and follow-up.

44. Place store keys in the hands of responsible employees only.

45. Restrict employee food consumption during working hours.

46. Take inventories regularly, at least every four weeks.

47. Permit only company authorized and experienced personnel to take a physical inventory.

48. Take nothing for granted.

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# APPENDEX A

## QUESTIONNAIRE ON INVENTORY CONTROL

This questionnaire deals with inventory control in the grocery department of the retail store although the other departments may be mentioned briefly. Unless otherwise stated, questions will pertain to the operation of the grocery department.

Are the following items included in the grocery, meat, produce or other departments in recording sales?

| | | | | |
|---|---|---|---|---|
| Bakery: | Grocery_____ | Meat_____ | Produce_____ | Others_____. |
| Dairy: | Grocery_____ | Meat_____ | Produce_____ | Others_____. |
| Delicatessen: | Grocery_____ | Meat_____ | Produce_____ | Others_____. |
| Frozen Foods: | Grocery_____ | Meat_____ | Produce_____ | Others_____. |
| Ice Cream: | Grocery_____ | Meat_____ | Produce_____ | Others_____. |

RECEIVING MERCHANDISE:

1. Are your stores serviced by a company owned warehouse?
   Yes ___ No ___

2. Do you own your delivery trucks?
   Yes ___ No ___

3. What methods do you use at the store to check incoming shipments from your warehouse?

4. Approximately what percent of your purchases are received in drop shipments by outside vendors? ________________

5. What is the procedure for checking drop shipments and who does it?

6. Are grocery shipments received in the majority of your stores during: Day ___ Night ___ ?

7. What percent of your stores engage in night stocking _____?

8. Are the stores charged for returnable packing cases in which small items are received Yes ___ No ___
   If yes, what kind? ________________________________

9. Are these empties returned by the transportation facilities that deliver the merchandise? Yes ___ No ___

10. Is the price marked on the outside of each case of merchandise: At warehouse ____On truck before unloading ___ During unloading ___After storage___Not marked ___?

MARKING:

1. The type of price stamp used for marking groceries is: NCR set _____Band stamp _____Others______________________?

2. How often are regular price changes sent to the store? Every week _____Two weeks _____Others____________________

3. Are the stores given credit for price increases or decreases? Regular price changes: Yes _____ No _____Special changes: Yes _____ No _____ If yes, how? Regular__________________

   Special _______________________________________

4. If a physical inventory of items having price changes is taken by the manager, is there any audit or checkup on the validity of the manager's inventory? Yes ___ No ___ If yes, by whom? ____________________ How often? ______________

5. Do you follow the policy of complete pre-stamping of merchandise? Yes ___ No ___ If yes, how many days notice is given before the price change becomes effective? ______________

6. Do you issue an authorization list of items carried by the stores? Yes ___ No ___

7. May the managers purchase items not on the authorization list? Yes ___ No ___ If yes, how are these items priced? Established Markup____________ Others _________________________

8. May the managers purchase items which are authorized but out of warehouse stock? Yes ___ No ___ If yes, how controlled? ____________________________________________________________

STOCK CONTROL:

1. Where are broken cases of grocery merchandise stored? Back room ___ Basement ___ Under gondolas ___ Other ___

2. What type of equipment and/or specially designed shelves do you use to decrease customer breakage?

3. Is breakage a consideration in locating and building displays? Yes ___ No ___

4. Approximately what percentage of inventory loss is due to breakage? _______

5. Do you have a training program for backroom operation and stocking? Yes ___ No ___ If yes, what type? ___________

6. What methods are used for rotating shelf stock?

PILFERAGE CONTROL:

1. Check the preventive measures against pilferage used in your stores.

   Limit the height of gondolas for view of store _____
   Regular mirrors _____
   One-way vision mirrors _____
   Arrangement of stock easily pilfered _____
   Elevated office _____
   Check articles not purchased in the store _____
   Others ________________________________________

3. Are stores given varying pilferage allowances? Yes ___ No___
   If yes, what is the basis for this variation? _______________

4. Do you consider mirrors an effective psychological preventive measure in pilferage control? Yes ___ No ___

5. How important is stock arrangement as a device for controlling pilferage?

6. Approximately what percent of the average inventory loss do you think is contributed by pilferage? __________________

7. Are you serviced by Willmark? Yes ___ No ___ Other similar service? Yes ___ No ___ If yes, name ___________________

ACCOUNTING PROCEDURE FOR RECORDING CHARGES AND CREDITS:

1. What percent of inventory loss is considered:
   Low __________ Average __________ High __________?

2. Is the merchandise charged to the store at: Cost _____
   Retail _____ Cost & Retail ______

3. Is credit given the store for: Bent cans _____ Swells _____ Breakage _____ Stales _____

4. Credit memos for groceries charged to the store are approved by: Manager _______ Supervisor _______ Others ______________

5. How often is an audit or check made of the store's office funds? __________

6. Are store reports sent to the accounting office weekly ___ Two weeks _____ Others _______________

If possible, I would like to have a sample copy of the accounting forms used to record charges and credits in the store, the accounting department and the forms used for taking a physical inventory.

CHECKOUT PROCEDURES:

1. Are the checkers required to separate items by departments before checking the order? Yes ___ No ___

2. How long is your initial training period for checkers?

3. What type of checkout stand do you employ? Describe.
   ____________________________________________________________

4. How often are cashiers checked for accuracy in ringing up groceries?

5. Who checks the register at the end of the day? ___________

6. What restrictions are placed on employee purchases and payment?

7. Do you give employees discounts on their purchases? Yes ___ No ___

8. How long is the cash register detail tape kept? _________

STORE PERSONNEL:

1. Who is responsible for keeping the back door locked during the day? ___________________

2. Are two locks used on the front door? Yes ___ No ___

3. Do you use time recording locks? Yes ___ No ___

4. Is the grocery manager responsible for all departments? Yes ___ No ___ If no, what other managers? ___________

5. Do you require employees to pay for merchandise consumed in the store? Yes ___ No ___ If yes, how enforced?______
_______________________________________________

6. Are keys to the back door furnished night delivery drivers? Yes ___ No ___ If yes, is a delivery cage used around the back door? Yes ___ No ___ If no, is there any partition limiting the area the delivery man may enter? Yes ___ No ___

PHYSICAL INVENTORY

1. Do you employ full-time inventory teams? Yes ___ No ___

2. If not, who takes the physical inventory? _______________

3. Are the inventories taken at Cost ____ Retail ____?

4. How often is the inventory taken in grocery ______ meat____ and produce __________departments?

5. Do you use inventory retakes? Yes ____ No ____

6. If yes, what are your reasons? ___________________________
_______________________________________________

7. If yes, how long after the regular inventory is the retake made? __________________

8. How much does taking a physical inventory cost for the average store? ______________________

COMMENTS: Any comments which you may wish to make about the questions or the study will be welcomed.

APPENDIX B

Date

Name
Title
Company
Address
"

Dear Sir:

I am a graduate student at Michigan State College with a major in Food Distribution and have undertaken a study of Inventory Control in the Retail Operation of a Grocery Chain Store . This study is limited to the control of inventory in the grocery department. The results of this study will be presented in a thesis which will be completed in June, 1953. It is felt that a need for research on this problem exists in the food industry today and that the conclusions reached will be of interest and value to the food retailer.

Will you be so generous as to complete the enclosed questionnaire? It has been prepared to obtain a survey of the various practices of food chain stores and is designed to require as little of your time as possible. Your company name will not be mentioned in any reference to the data received.

Any additional information which you may have on the subject will be gratefully accepted. The success of this study will depend on the assistance given by members of the food industry. Your cooperation in completing the enclosed questionnaire is greatly appreciated.

Very truly yours,

Woodrow H. Joyner

| | |
|---|---|
| JA 26 '55 | Nov 20 '58 |
| Mar 5 '55 | 23 Mar 59 |
| Apr 25 '55 | 10 Jun 59 |
| Jan 25 '56 pd | MAR 1 1960 |
| May 12 '56 | MAR 15 1960 |
| Jun 15 '56 | APR 1 1960 |
| Jun 28 '56 | |
| Oct 22 '56 | |
| Nov 26 '56 | OCT 25 1960 |
| Nov 30 '56 | ~~NOV 7 1960~~ |
| Jan 24 '57 | ~~NOV 26 1961~~ |
| Feb 6 '57 | ~~APR 17 1964~~ |
| | ~~NOV 16 1964~~ 15 |
| Feb 29 '57 | ~~NOV 30 1964~~ |
| Dec 2 '57 | ~~MAR 16 1967~~ |
| Dec 9 '57 | |
| Dec 17 '57 | |
| Feb 21 '58 | |
| Mar 10 '58 | |
| Apr 4 58 | |
| Oct 23 '58 pd | |