

Monthly Physical Inventory and Monthly Food Cost Calculations

CHAPTER

11

Learning Objectives

After reading this chapter, you should be able to:

- perform inventory-taking procedures for food and beverage products;
- use perpetual inventory and periodic inventory, and distinguish between the two;
- calculate inventory value;
- understand and use the various inventory valuation methods;
- assign costs of inventory issues and transfers;
- calculate inventory turnover ratios.

In Practice

Myla Thomas called a meeting with the executive chef, Robert Clark; the purchasing manager, Scott Vincent; and the new beverage manager, Dana Miller, to discuss her concerns regarding the level of inventory on the books and her walk-through observation of inventory conditions.

“Thank you all for coming,” Myla said. “I have been reviewing our inventory records. There is a major issue that we need to work on before we do anything else: We have more inventory than similar-sized operations, and we are experiencing waste. And that hurts our bottom line.”

“Are you referring to the complexities of our various inventory types and procedures?” asked Robert.

Myla nodded. “Yes. Our procedures seem to be flawed. One part of it is that we are not rotating products consistently,” Myla continued.

“Yes, I agree,” Scott said. “But things have changed since our last meeting.”

“Like a reduction in spoilage?” Myla asked.

“Most definitely. I’d add that we can improve turnover ratios on the inventory,” Scott replied confidently.

“I would be very pleased to see that,” Myla responded. The new beverage manager, Dana, sat listening quietly and with some satisfaction. She was getting the impression that she had been hired by a group that meant business.

Finally, Dana spoke up. “What method of valuation are we using to determine the value of our inventory?”

Myla replied, “As you know, each of the methods has advantages and disadvantages, but after close examination of the records, we are using the last price method.”

INTRODUCTION

cash flow A stream of receipts (inflows) and payments (outflows) resulting from operational activities or investments.

As mentioned in Chapter 1, inventory directly affects profit, cash flow, production levels, and customer service. It is a balancing act between not having enough products to satisfy your customer demand, and carrying too much stock, thereby decreasing profitability. Success in inventory management is measured in terms of available cash flow, decreased theft, reduced cost, and reduced waste. **Cash flow** is the total cash available from sales, minus actual cash expenditures required to obtain those sales. The amount of cash invested or tied into inventory on hand could limit the company's ability to operate without cash constraints for other important expenditures like payroll and operating supplies.

There are two kinds of mistakes to avoid regarding inventory: misappropriation (buying too much, too little, or incorrect stock) and incorrect valuation (placing lower or higher value on inventory than is actually the case). For example, a change in menu offerings due to product seasonality (or sales mix) may leave material surpluses because your product needs have changed. As another example, prices may have declined substantially while the inventory values stated on the books remain at the original high prices.

Customer demand changes throughout the year. For example, hot soups are preferred in winter, and salads are more popular during the summer. Restaurants must adjust their inventory levels to take advantage of the seasonal trends in demand. While controlling inventory, the manager or purchaser is responsible for establishing reorder frequencies, economical order quantities, and quantities required to meet desired customer service levels. In this role you will also want to choose vendors that can assure consistent availability of products to meet your demands.

raw material Uncooked, as-purchased products.

work in progress Partially cooked products that are still in the production process; products that have begun production as raw materials but not yet been completed as finished cooked meal.

finished goods Menu items that have been completely prepared and are ready to serve to customers.

There are three classes of inventories: **raw materials** such as whole, unbutchered tenderloin; **work in progress** such as precut, prepared beef patties; and **finished goods** such as cooked, ready-to-eat patties. In each of these classes, the amount of inventory on hand depends on the type of restaurant and the sales volume. In this chapter, we will discuss proper inventory valuation methods and inventory turnover ratios. A high inventory turnover ratio, which is a figure calculated to show how quickly you are using your products, indicates that you are buying stock at about the right rate.

You will also learn how to value your inventory, which means using one of a number of methods to count what you have and match it to a dollar figure. These values are vital to reporting and comparison, in order to show where the company stands, what costs are being incurred, and where wastes and deficiencies are damaging the company's profit. Improperly valued inventory numbers distort the important data relationships between current inventory and working capital, turnover, and average (inventory) age. This is not something you can do by comparing your values to those at another company; such comparisons may yield invalid numbers because valuation methods are usually different. You have to be able to use the data from your own organization to plan, analyze, and execute inventory controls.

INVENTORY OF FOOD AND BEVERAGE ITEMS

Reporting inventory and unit cost accurately is essential to determining actual costs. Inventory is commonly conducted monthly, but it can be based on any period your company selects. Determining the accurate value of the product inventory is of great importance. Improper valuation of the inventory will cause inaccurate calculations of gross costs and gross profit. Since the ending inventory of one month is the beginning inventory for the next month, any over- or understatement will misrepresent the gross food and beverage cost and the gross divisional profit for the following month. It could also lead to inaccurate ordering because you do not have a true count of your inventory on hand when you place an order. For example, let us

assume that the perpetual inventory system is showing four beef patties, but the actual quantity on hand is six. You could easily order more than you need because you do not know what you have. If your perpetual inventory is connected to your POS system, you could actually end up with a negative balance in your perpetual inventory database as you sell your products; the system says you only have four, but you continue to sell more patties and your POS records the sales. It is very easy to lose track of your inventory with these kinds of errors.

Inventory accuracy is a process of continual checking and adherence to your procedures. If you have a large staff, there are many hands in the stockroom to contribute to possible inaccuracies. You will have to set up policies and practices that clarify your methods for your staff, and then ensure that they are carried out. This is important because inventory is an enormous asset to a restaurant. As you attempt to keep costs low and to increase profit, your role is to manage inventory accurately and efficiently.

You can determine the value of your inventory by either physical inventory or perpetual inventory. These numbers are then extended with the correct unit cost—that is, the cost is factored in so that you have a picture of the value of each inventoried item. Both methods are described below so that you will be able to set your own standards and come up with accurate values in your establishment.

Physical Inventory

In a physical inventory process, you should have preprinted lists of all (or the majority of) the items in the inventory, with spaces for entering the correct counts of each item. You should create these sheets for entering the counts in advance. Companies with computerized inventory systems can generate count sheets through the system. The sheets should be organized in the order in which the items sit on the shelves, to facilitate accurate counting and recording. This process occurs once a month. The purchaser also takes a similar but somewhat more extensive inventory before placing an order.

To carry out a physical inventory process, form teams of two staff members. One staff person calls the item counts, while the second records the counts on the sheets. To ensure control, at least one member of each team should not have any connection with the area being inventoried. This encourages integrity and independent verification of the process. It is imperative that the inventory be taken in the order in which the physical stock appears on the shelves. In other words, it is the recorder of the counts who should jump from sheet to sheet if necessary to find the item that has been called. The caller should follow along the shelves to be sure every item is counted. For auditing and verification purposes, both people should sign all of the sheets at the conclusion of the inventory.

It is easiest and most accurate to take a physical inventory during times when the outlet and storeroom are closed. Remember that inventory must also include items that are in the outlets themselves, such as kitchens and bars, so your two-person teams must also call and record what is found there. If you have beverage items used for cooking in the kitchen area, the team counting the kitchen inventory should count them; the beverage team will count any food items in the beverage areas.

When entering inventory counts, you can use whole numbers or decimal values. For example, if you counted 6 gallons of mustard and your case description is four 1-gallon containers, you can enter counts in any of the following formats:

Description	Unit	Case	Parts
Mustard	4/1	1.5	
			6
		1	2

Beverage bottles should be recorded in tenths, which means that one full bottle equals 10/10, while half of a bottle equals 5/10 (expressed on the inventory sheet as 0.5). Great care should be taken that all tenths of a unit are properly noted. Costly errors can be made if tenths of a bottle are recorded as a full bottle.

Various companies handle batch ingredients (processed goods) differently. Some use certain specified amounts to account for the value each month. This is not an entirely correct method because you will likely have different amounts of such items each month, and this could diminish the accuracy of actual versus potential variance depending on how much of the product you actually have.

The correct method is to count exactly what is on hand. Apply the recipe cost or batch cost to what is counted. We will use our vegetable soup example from Chapter 10. From our potential recipe costing data, a batch of 20 gallons of soup costs \$38.78. At 1.5 batches in the inventory, our extension is \$58.17. It's important to note that the potential costing data must be totally accurate and up to date for this counting method to work.

Figure 11-1 is an example of a limited inventory worksheet that includes a variety of types of items, so that you can see how this might look for your establishment.

Month of: _____

Outlet: _____	Periods: _____	Date: _____
Signature of who is calling: _____	Signature of who is recording: _____	Signature of who extended the count: _____

Item #	Item Description	Unit Description	Case	Part	Inventory Counts Unit	Unit Price	Extension
Main storeroom							
565	Mustard	1/4	1	2		\$10.00	\$15.00
577	Flour all purpose	50#					
555	Rice white	50#					
Recipe items							
L103	Vegetable soup	20 gal batch	1.5			\$38.78	\$58.17
L105	Beef roasted entree	10 oz portion					
Freezer							
212	Beef ground	30#					
215	Beef patties	10#					
210	Beef NY strip	1# (30# avg)					
Walk-in cooler							
100	Lemons	115 ct					
101	Oranges	88 ct					
110	Tomatoes 5x6	60 ct					

Figure 11-1 Inventory-Taking Worksheet

Perpetual Inventory

A perpetual inventory is a continuous reporting of items on hand. When merchandise is received, sold, issued, or transferred, the system record is adjusted to show the new quantity on hand. In a computerized environment, this is done automatically by the computer system. The perpetual inventory also tells you when you need to reorder, reveals the average monthly use per item, and provides a constant inventory figure. A physical count is taken at month's end to ensure that the real inventory equals the perpetual inventory records. If there are any discrepancies between physical and perpetual inventory records, the inventory will have to be adjusted to reflect the physical count. Some possible reasons for the differences include

receiving errors, transfers, items sold with an incorrect inventory number, and theft. These reasons are explained in more detail later in this chapter. Discrepancies should be documented and given to the manager for appropriate resolution. In a larger operation, the cost controller can do the documentation and reporting of discrepancies.

REASONS FOR INVENTORY TAKING AND RECONCILIATION

Determining an accurate value of the product inventory is of great importance. Periodic physical inventory helps to achieve both financial reporting and cost control because it helps you verify your numbers and detect any irregularities. There are no industry standards or benchmarks for measuring actual versus potential variances for food. However, the differences between actual physical inventory and computed inventory should be no more than plus or minus 1 percent. If the difference exceeds the 1 percent variance, the following steps should be taken:

- Verify accuracy of requisitions.
- Verify ending inventory extension methods to ensure consistency. This is discussed more in detail below.
- Verify unit prices on requisitions compared to those on the actual inventory.
- Alert the food and beverage manager of any adjustments to be made.
- Review all the paperwork and calculations related to products that exhibit large variances. Any errors found should be corrected accordingly.
- Review and revise security measures as needed.

Inventory value is recorded as a **current asset** in the company **financial balance sheet**. Owners of a larger company, or their accountants, usually make financial decisions, while control decisions are generally handled by a cost controller. In a more limited, informal, “Mom and Pop” type of business, the owners may handle all these decisions. Many companies use perpetual inventories instead of physical inventories, but such a system may not be as reliable as the operators might wish. Some companies, because of timing and control concerns, may conduct physical inventories in some areas and use perpetual numbers in others. This is a combination inventory approach that uses a rotation system to schedule an area for a physical count one month and to use perpetual figures for that area the following month. At times, the previous month’s balance is brought forward to the current month. At a bare minimum, you need to spot-check perpetual inventories periodically and randomly. This is called **circled count**. It is less formal than scheduled physical inventory-taking processes, but if your ability to take physical inventories is limited, it can be an option for at least some oversight of inventories. The objectives are early detection and correction of discrepancies, as well as accurate reporting of inventory value and quantity on hand. The method used for circle count is generally the same as we described above for physical inventory, except that it is done randomly rather than on a set schedule.

current assets Assets that are expected to be converted to cash within one year. They include cash, inventory, and accounts receivable.

financial balance sheet A statement reporting on the financial position of a business by presenting its assets, liabilities, and equity on a given date.

circled count A periodic and random spot check of perpetual inventories. The objectives are early detection and correction of discrepancies, and accurate reporting of inventory value and quantity on hand.

INVENTORY VALUATION METHODS

There are several generally accepted accounting practices (GAAPs) for setting inventory values in the industry. The methods are first in, first out (FIFO); last in, first out (LIFO); average method; actual method; and last price method. These methods should be applied only to the raw material inventory; the recipe cost should be used for processed and finished goods.

Food products are very unstable in price and quality. Because of this, any method used will affect the cost of goods sold. Keep in mind your tax and accounting requirements, and think through any of these methods—with the collaboration of your accounting team, if applicable—before applying them. You must be consistent in which method you use. Below is a brief description of how the methods differ and how each method impacts your cost of goods sold.

First In, First Out (FIFO)

In this method, the cost of goods sold is charged with the latest purchase prices for raw materials, in-process items, and finished items. This method assumes that, as food items are perishable and storeroom space is limited, you will use the oldest inventory before more recent purchases. In other words, products are rotated and used on a strictly first-in, first-out basis. To value the products, this method uses recent purchase prices to extend the inventory items' values. In times of rapid inflation FIFO inflates profits, since the least-expensive inventory is charged against the cost of current sales, resulting in inventory profits that may not be accurate. Management could be paying taxes and paying out bonuses to staff members based on reported profit that may not reflect the situation accurately. In Figure 11-2, we use the 6 gallons of mustard from the physical inventory worksheet above to create an example with several possible inventory scenarios.

Figure 11-2 First In, First Out Method 1

	Count	Price	Extension
Beginning inventory	4	\$7.80	\$31.20
Purchases on 7/7 before inventory	4	\$8.50	\$34.00
Purchases on 7/14 before inventory	4	\$7.95	\$31.80
Purchases on 7/21 before inventory	4	\$8.95	\$35.80
Purchases on 7/28 before inventory	4	\$8.00	\$32.00

All of different prices in the figure would mean some simple—and possibly inaccurate—inventory calculations. Using FIFO, however, we have a standard for valuation. The ending inventory from our physical count was 6 gallons of mustard; knowing that the older products were rotated and used, these last 6 must be the 4 most recent purchases and 2 of the second-most recent. When we extend the prices of these 6 gallons, we see the result shown in Figure 11-3.

Figure 11-3 First In, First Out Method 2

	Count	Price	Extension
Purchases on 7/21 before inventory	2	\$8.95	\$17.90
Purchases on 7/28 before inventory	4	\$8.00	\$32.00
The totals:	6		\$49.90

The price difference between the beginning and ending inventory prices is not very large: $\$8.00 - \$7.80 = \$0.20$. However, in a highly inflationary period, FIFO is not recommended for inventory valuation.

Last In, First Out (LIFO)

This is not a commonly-used method in the food service industry, but it may be valuable under certain circumstances. In LIFO, the most recent items are considered the first ones

used. Items in inventory at the end of the inventory cycle are treated as though they had been in the opening inventory, plus or minus purchases during the period, to make up the correct total. In the United States, the government tends to keep inflation under control. This is not the case, however, in most other countries. Using alternative valuation procedures can help to manage inflationary fluctuations. LIFO offers a lower amount of income than FIFO during a period of rising prices, so there is no overstatement of profits, resulting in income tax and possible incentive payments that are based on results. You still rotate the stock physically by the first in, first out method, and you still rotate stock items on the shelves. However, the value assigned to the inventory is the oldest purchase price. If we were to use LIFO in our mustard example, the ending inventory valuation would be as shown in Figure 11-4.

Figure 11-4 Last In, First Out Method 1

	Count	Price	Extension
Beginning inventory	4	\$7.80	\$31.20
Purchases on 7/7 before inventory	2	\$8.50	\$17.00
The result:	6		\$48.20

Average Method

This method is also called the weighted average method; both terms refer to an average of a set of values. This is calculated by adding all of the prices paid, then dividing by the number of different prices. The calculation of this valuation is shown in Figure 11-5.

Figure 11-5 Last In, First Out Method 2

	Count	Price	Extension
Beginning inventory	4	\$7.80	\$31.20
Purchases on 7/7 before inventory	4	\$8.50	\$34.00
Purchases on 7/14 before inventory	4	\$7.95	\$31.80
Purchases on 7/21 before inventory	4	\$8.95	\$35.80
Purchases on 7/28 before inventory	4	\$8.00	\$32.00
			\$41.20
Average (divide \$41.20 by 5)		\$8.24	

Our ending inventory value for the mustard is $\$8.24 \times 6 = \49.44 . This is a prudent method as it offers a weighted average of inventory value, but it does not represent an accurate assessment of our ending inventory if we are rotating inventory according to FIFO. This method is also quite time consuming if you are using a manual system. If you are using a computer system, the computer can average your entire inventory’s items quickly based on any criteria you choose.

Actual Method

This method extends the ending inventory count according to individual purchase prices. This is possible if you write the purchase price on every item. This method is also time consuming if you must read each of the prices. However, there are electronic devices that can read or scan

them. Most companies do not have the clerical staff or time to use this method correctly. Also, consider what you're trying to achieve with this method, and then consider how much it costs to achieve it. If this is the method your company uses, you will need to know how to calculate inventory values with it. In the mustard example, assume that the purchase prices recorded on the gallons counted are as shown in Figure 11-6. The purchase prices of the individual gallons are multiplied by the number of gallons purchased at each price and then totaled.

Figure 11-6 Actual Method

	Count	Price	Extension
Purchases on 7/14 before inventory	2	\$7.95	\$15.90
Purchases on 7/21 before inventory	2	\$8.95	\$17.90
Purchases on 7/28 before inventory	2	\$8.00	\$16.00
The result			\$49.80

Last Price Method

This is similar in concept to the FIFO method except that you use the last purchase price to extend the inventory counted. It is the most commonly used method in the food service industry. It applies the concept of FIFO for product rotation, but the inventory valuation is based on last, or most recent, purchase prices. If you want to compare the actual cost of goods sold to the potential cost, then you must use this method of inventory valuation consistently; otherwise you may have tough time trying to reconcile the difference. The calculation for last price method is shown in Figure 11-7. Now all gallons are extended at the most recent purchase price.

Figure 11-7 Last Price Method 1

	Count	Price	Extension
Purchases on 7/28 before inventory	6	\$8.00	\$48.00

When we compare all the methods described above, we can see the differences in valuation (Figure 11-8). Although the difference for one item is insignificant, when you apply one method to an entire inventory of hundreds or even thousands of items, the difference will affect the amount that shows up as profit and the amount recorded in your balance sheet.

Figure 11-8 Last Price Method 2

	Value
FIFO method	\$49.90
LIFO method	\$48.20
Average method	\$49.44
Actual price method	\$49.80
Summary of Inventory Valuation Method	\$48.00

FIFO is the recommended method of product rotation regardless of your method of valuing your inventory because it helps you preserve product quality and reduce waste. However, FIFO is not recommended for inventory valuations based on its poor performance in inflationary times and its lack of consistency with potential costing methods.

LIFO is recommended for inventory valuation during an inflationary period. Average and actual price methods share the disadvantage of taking quite a bit of time to implement, and thereby incurring excessive labor costs. Last price method is the best overall approach because of its sound valuations and because it is also used in potential costing and recipe calculations. Using the same system consistently throughout your entire operation in this way makes accurate reporting easier to attain.

MONTHLY FOOD COST CALCULATION AND CONTROLS

In Chapter 10 we said that the actual cost of goods is determined via the following formula:

$$(\text{beginning inventory} + \text{net purchases} + / - \text{transfers}) - \text{ending inventory} = \text{cost}$$

The result varies depending on which method of valuation you use. Assume that the beginning inventory is \$100, purchases total \$60, and net requisition and transfers between departments equal \$10. Using our example of mustard, the ending inventory will be valued according to each method as shown in Figure 11-9. With just this one item, the differences are small. With the entire inventory, however, the differences can be significant.

Figure 11-9 Monthly Food Cost

	FIFO	LIFO	Average Price	Actual Price	Last Price
Beginning inventory	1000.00	1000.00	1000.00	1000.00	1000.00
Purchases	600.00	600.00	600.00	600.00	600.00
Net requisition	100.00	100.00	100.00	100.00	100.00
Total inventory	1700.00	1700.00	1700.00	1700.00	1700.00
Ending inventory	49.90	48.20	49.44	49.80	48.00
Cost of goods consumed	1650.10	1651.80	1650.56	1650.20	1652.00

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Other Costs That Contribute to the Monthly Cost Calculation

Before we can calculate the exact monthly cost, we must consider the following extra items that contribute to the figures. We will discuss employee meals, spillage and breakage waste, promotional costs, steward sales, and sales of recyclable products. With the exception of employee meal costs, all of these topics apply to food cost calculations, and most apply to beverage cost calculations as well. Companies generally do not provide alcoholic beverages to employees for employee meals.

Employee Meals

Most companies provide free meals to their employees. How this is accomplished differs from one company to another, and the application of tax is different in each state. Usually, the chef must forecast an expected number of employees each day before preparing employee meals.

Weekly menus are often posted in an employee newsletter or bulletin. This is a fundamentally important area because it requires a balancing act between allowable costs and employee satisfaction. States such as California allow a certain tax-exempt provision for operations that provide complimentary employee meals; these states treat the meals as a form of payment, and so the employee pays the tax.

Figure 11-10 is an example of statutory meal value allowances provided by the State of California. The numbers in this chart are per employee. This money can be collected through the payroll time and attendance records.

Figure 11-10 Statutory Value of Meals

Year	Breakfast	Lunch	Dinner
2009	\$2.45	\$3.35	\$4.50

Based on the number of days an employee works in a given pay period, companies add these meal values to the gross wages for taxation. The meal value is later deducted from net pay. In effect, this all evens out, except that the employee pays the payroll tax. States such as Colorado, however, treat employee meals as an employee benefit rather than as a form of payment. The company pays the sales tax for the reported amount without passing the tax burden to the employee. In both cases, the offset is a food cost credit on the establishment's profit and loss statement.

Whether or not the state provides a tax shelter for an employee meal program, companies try to track portion cost, monitor food quality, calculate waste, and document the difference between allowable and actual costs. The following paragraphs detail the different industry standards used in accounting for employee meals.

The sales credit method charges the employees' departments a retail price for the meals. This is common in a situation in which the employee is allowed to order certain items from the regular customer menu. This method effectively accounts for the labor cost of preparing the meals and for the food cost. Opponents of this method claim that, since there is no actual sale generated, charging retail prices distorts the true sales numbers. The accounting treatment is fairly simple: The departments' meal accounts are charged at retail, and the restaurant keeps the entire recorded sales. The following journal entry can be added to the general ledger:

	Debit	Credit
Employee Meal Expense Account	xxx	
Food Sales Account		xxx

The sales credit is not very popular, due to the fact that it distorts the sales totals on which most companies base their financial reporting. The best alternative is called cost credit. In this method, the menu item is treated not as sales but as cost, and it is charged to the proper department accordingly. The journal entry should then look like this:

	Debit	Credit
Employee Meal Expense Account	xxx	
Food Sales Account		xxx

It is important to note that the government expects use tax to be assessed and paid on self-consumed items such as employee meals. You need to add the use tax amount to the journal entry above. Use tax is a tax that is collectible from the end user by the seller. In this case the end user is the company itself, and it is not exempt from resale certificate status with regards to self-consumed items such as employee meals.

In the requisition method, the cost of employee meals is determined through product requisitions and portion cost control. Many companies use vending machines to control serving sizes. Employee meals are recognized here as a cost center, and all related requisitions and purchases are charged to that center. Companies use this method most often when they have a separate kitchen or area for preparing employee meals. The labor costs of meal preparation can be charged to the cost center by using the payroll time record. Food cost, requisition, and purchase credits and debits are charged, preferably, to the human resources department.

The monthly budget method is most commonly used in the hotel industry. In this method, the controller simply specifies an amount on the books for the chef to use as a food credit. The amount allowed may vary from one accounting period to another, depending on business and staff levels. It is up to the chef to plan and prepare employee meals within the budgeted amount.

Cost of Breakage, Spoilage, and Spillage

The control and reporting of breakage, spoilage, and spillage are important aspects of any food service cost control system. The initial point of control rests with the manager of the outlet, who, when rejecting a particular entrée item from the kitchen, should document the incident. The incident report notes the cause of the spoilage, such as a misordered product, the use of defective recipe items, overcooking, or other errors. Then, at the end of the month, the incident report should be costed to relieve the work-in-progress inventory, and the following journal entry can be added to the general ledger:

	Debit	Credit
Spoiled Inventory	xxx	
Work in Progress Inventory		xxx

This entry is calculated by multiplying the potential cost of the item by the number reported spoiled, spilled, or otherwise wasted. See Chapter 10 for an example of a spoilage form.

Promotional and Entertainment Expenses

Food and beverage used for the purposes of promotion or tasting should be accounted for on a requisition form and ordered through the storeroom. If the promotion is in an outlet, the charge should be processed to the department account of the staff member who is hosting the event. The person who prepares actual food cost numbers should be sent a list of the charges. This person will be responsible for recording the charges in the profit and loss account statement at cost or at retail price, depending on company policies and accounting practices. The accounting entries are as follows: Debit the department (expense account) of the person hosting the entertainment, and credit food or beverage (cost account), depending on the type of menu item ordered.

Generally, most entertainment expenses are tax deductible. For entertainment expenses to be allowed as tax deductions, however, the law requires all pertinent information to be printed on the check, including the following:

- Name of the staff member doing the entertaining
- Name of the person(s) being entertained
- Company affiliation of the person(s) being entertained
- Subject of their discussion
- Signature of the person doing the entertaining

Figure 11-11 provides guidelines for people to whom you may wish to allow this privilege in the example of a hotel setting, either with or without prior approval from management.

Figure 11-11 Food and Beverage Signing Privilege

Positions	Outlets							
	Banquet		Room Service		Cafe		Bar	
	Promotion	Staff	Promotion	Staff	Promotion	Staff	Promotion	Staff
General Manager	x	x	x	x	x	x	x	x
Resident Manager	x	x	x	x	x	x	x	x
Controller	x	x	x	x	x	x	x	x
Sales Director	x	x	x	x	x	x	x	x
Rooms Director	x	x	x	x	x	x	x	x
Personnel Director	x	x	x	x	x	x	x	x
Food & Beverage Director	x	x	x	x	x	x	x	x
Executive Chef	x	x	x	x	x	x	x	x
Room Service Manager				x				
Cafe Manager						x		
Bar Manager								x

As shown in the chart, staff members might be authorized for promotional spending, staff spending, or both. You can use these categories to delimit your promotional spending—in fact, you will want to base your decisions regarding this authorization on your own operations. Following are descriptions of these two types of spending. They should help you determine who should be allowed to engage in each type.

Spending on Promotions

Persons who are being entertained under the promotional category ought to be potential or current business sources for the company, either for food and beverage outlets or for other aspects of your business. The check should be signed as follows:

- Printed name of staff member
- Printed name of guest(s)
- Printed name of corporation represented by guest(s)
- Discuss: Printed topic of discussion
- Signature of manager

Persons who are being entertained may also be business associates, such as suppliers, associates from other companies, or providers of technical assistance.

Spending on the Staff

If you have an employee cafeteria, insist that managers use it in most cases when they meet with staff. However, there may be occasions, such as a confidential discussion, when it is not practical to use the cafeteria; department heads may use an outlet for such meetings. The check is to be signed as follows:

- Printed name of hosting staff member
- Printed name of staff member(s) attending
- Signature of manager

There are some general rules to observe in any promotional or staff use of your outlets. First, insist upon a check at all times so that it can be signed personally and accounted for. Second, a dollar amount or percentage tip should be added to the check. Third, exercise good judgment; restaurant and lounge entertainment is a significant expense and is a privilege, not a right. Fourth, staff should avoid utilizing the outlets during busy periods, as priority must be given to paying guests.

Steward Sales

Sales of food or beverage products to employees at cost are called steward sales. These should be credited to purchasing to relieve food or beverage cost. For every credit there must be debit. The food or beverage product sold to employee is no longer in inventory. Therefore, the accounting offset is a reduction of inventory. This is a very common practice in the industry. Management should, however, control it to avoid using the purchasing department as the employees' grocery store.

Sales from Recyclable Food Products

This is one instance in which you can make a bit of revenue on your old or used product. Cooking greases or oils can at times be sold to the cosmetics industry as a by-product for making lipstick. The amount of income is relatively small compared to other items, but it is revenue nonetheless. The revenue should be credited to the cost of sales account. In the future, there may be more used products that can be utilized elsewhere. Watch trade journals for this and other ways of saving money by recycling your waste products.

Monthly Food Cost Calculation

After determining all of the other factors that contribute to actual food cost, you will need to adjust the cost of goods sold with respect to each. The net result will look like our example in Figure 11-12. These numbers are just for illustrative purposes; they do not represent any particular establishment. It is important to note that *g* could also be a negative number, depending on the net results of all the transfers. The final step, after deriving the cost percentage, is to compare the numbers to potential cost and to reconcile any variances. Please see Chapter 10 for a complete discussion of how to determine potential cost and what to do with variances.

		Formula
	Food Sales	220.00
A	Beginning inventory	100.00
B	Plus net purchases	60.00
C	Plus requisitions or transfer from i.e. bar to food	10.00
D	Total inventory before ending inventory	170.00
E	Less ending inventory	70.00
F	Gross cost of food sold	100.00
G	Less transfers food to other outlet i.e. food to bar	10.00
H	Less steward sales revenue	10.00
I	Less employees meals credit	10.00
J	Less promotional food cost credit	10.00
K	Net cost of food sold	60.00
L	Percentage of cost to sales	27.27%

$f = d - e$
 $k = f - g - h - i - j$
 $L = k / \text{food sales}$

Figure 11-12 Net Result of Food Costs

Accruals

Accrual accounting is an accounting system in which revenues are recognized when they are earned and expenses are recognized when they are incurred. To accrue means to accumulate. In an accrual system, expenses and revenues are recorded at the end of a given period (usually monthly) whether or not cash has been received or paid. The opposite, cash basis accounting, is used in some establishments; however, cash basis accounting may not reflect total cost or total revenue accurately. Most companies practice accrual accounting for their entire operation.

Accrued revenues are revenues that are earned in one month but are posted in another; an example of this might be a New Year's Eve dinner. Because this type of party happens so late at

accrual System of reporting revenue and expenses in the period in which they are considered to have been earned or incurred, regardless of the actual time of collection or payment.

night, any revenue after midnight will probably be recorded by your POS machine as a January sale. When figuring the December revenues, the adjusting entry strategy will be to debit January food receivables for the sales for that night, and to credit the December revenue. Accrued revenues are sometimes referred to as accrual assets; they are shown under current assets in your company’s balance sheet.

Accrued expenses are expenses that have been incurred at the end of the reporting period but have not yet been paid. These are also called accrued liabilities, and they are shown under current liabilities on the balance sheet. We will look at a specific situation for an example of how accrued expenses work.

Assume Vendor A sent you \$100 of beef tenderloins—15.38 pounds at \$6.50 per pound. You used them at your New Year’s Eve celebration. At the same time, you received 35 pounds of chicken from Vendor B, though you had ordered only 25 pounds. You rejected the extra 10 pounds, but you must pay the entire invoice and then receive a credit. The chicken costs \$2 per pound. Therefore, credit equals \$20 and total invoice is equal to \$70. On January 1, you’ve paid neither Vendor A nor Vendor B; nor have you received credit from Vendor B. The accounting treatment is shown in Figure 11-13.

MONTH: **DECEMBER** Approved by:

ACCRUALS (Expenses)				
VENDOR NAME	FOOD?	BEVERAGE?	GL Account No.	Amount in \$
A	X		100-1	\$100.00
B	X		100-1	\$70.00
ACCRUALS (Credits)				
B	X		100-1	(\$20.00)
Net balance				\$150.00

Figure 11-13 Accruals

Net food and beverage accrual is a debit of \$150, which is the sum of the numbers in the right-hand column. This amount should be added to the total purchase figure to find the monthly food cost calculation.

Inventory (Asset) or Period Expense: Who Cares?

From Figure 11-13 it is clear that whether a cost is considered an inventory (asset) or a period expense can have an important impact on a restaurant’s financial statement. It is important to record revenue and expenses in the proper period. We will discuss four specific considerations.

Period vs. product costs

Period costs are expensed in the time period in which they are incurred. All selling and administrative costs are typically considered to be period costs. The rules of accrual accounting apply to these costs. As previously mentioned, accruals are a system of reporting revenue and expenses in the period in which they are considered to have been earned or incurred, regardless of the actual time of collection or payment. For example, administrative salary costs are “incurred” when they are earned and not necessarily when they are paid to employees.

Product costs, on the other hand, are added to units of product (i.e., “inventoried”) as they are incurred and are not treated as expenses until the units are sold. This can result in a delay of one or more periods between the time in which the cost is incurred and when it appears as

an expense on the income statement. Product costs are also known as inventoriable costs. Take for example a batch of soup entrée prepared but not sold until the following day—after the end of the period.

Inventory Valuation and Cost of Goods Sold

In a restaurant, raw materials purchased are recorded in a raw materials inventory account. These costs are transferred to a work in progress inventory account when the materials are released to the kitchen departments. Other production costs—direct labor and production overhead—are charged to the work in progress inventory account as incurred. As work in progress is completed, its costs are transferred to the finished goods inventory account. These costs become expenses only when the finished goods are sold. Period expenses are taken directly to the income statement as expenses of the period.

Schedule of Cost of Goods Produced

Because of inventories, the cost of goods sold for a period is not simply the production costs incurred during the period. Some of the cost of goods sold may be for recipe units completed in a previous period, and some of the recipe units completed in the current period may not have been sold and will still be on the balance sheet as assets. The cost of goods sold is computed with the aid of a schedule of costs of goods produced, which takes into account changes in inventories. The schedule of cost of goods produced is not ordinarily included in external financial reports, but must be compiled by the manager within the company in order to arrive at the cost of goods sold.

MANAGEMENT CODE OF ETHICAL CONDUCT

Proper ethical conduct transcends all aspects of our personal and business lives. What happens if management decides not to follow proper accrual principles due to financial pressures? The Institute of Management Accountants (IMA) offers some guidelines to practitioners. The guidelines have two parts. The first part provides general information for ethical behavior. In a nutshell, a manager has ethical responsibilities in four broad areas: maintaining a high level of professional competence; treating sensitive matters with confidentiality; maintaining personal integrity; and being objective in all disclosures. The second part of the guidelines specifies what should be done if an individual finds evidence of ethical misconduct.

Practitioners of management accounting and financial management have an obligation to the public, their profession, the organization they serve, and themselves, to maintain the highest standards of ethical conduct. In recognition of this obligation, the Institute of Management Accountants has promulgated the following standards of ethical conduct for practitioners of management accounting and financial management. Adherence to these standards, both domestically and internationally, is integral to achieving the Objectives of Management Accounting. Practitioners of management accounting and financial management shall not commit acts contrary to these standards nor shall they condone the commission of such acts by others within their organizations.

Competence. Practitioners have a responsibility to:

- Maintain an appropriate level of professional competence by ongoing development of their knowledge and skills.

(continues)

(continued)

- Perform their professional duties in accordance with relevant laws, regulations and technical standards.
- Prepare complete and clear reports and recommendations after appropriate analysis of relevant and reliable information.

Confidentiality. Practitioners have responsibility to:

- Refrain from disclosing confidential information acquired in the course of their work except when authorized, unless legally obligated to do so.
- Inform subordinates as appropriate regarding the confidentiality of information acquired in the course of their work and monitor their activities to assure the maintenance of that confidentiality.
- Refrain from using or appearing to use confidential information acquired in the course of their work for unethical or illegal advantage either personally or through third parties.

Integrity. Practitioners have responsibility to:

- Avoid actual or apparent conflicts of interests and advise all appropriate parties of any potential conflict.
- Refrain from engaging in any activity that would prejudice their ability to carry out their duties ethically.
- Refuse any gift, favor, or hospitality that would influence or would appear to influence their actions.
- Refrain from either actively or passively subverting the attainment of the organization's legitimate and ethical objectives.
- Recognize and communicate professional limitations or other constraints that would preclude responsible judgment or successful performance of an activity.
- Communicate unfavorable as well as favorable information and professional judgments or opinions.
- Refrain from engaging in or supporting any activity that would discredit the profession.

Objectivity. Practitioners have responsibility to:

- Communicate information fairly and objectively.
- Disclose fully all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, comments, and recommendations presented.

Resolution of Ethical Conflict. In applying the standards of ethical conduct, practitioners may encounter problems in identifying unethical behavior or in resolving an ethical conflict. When faced with significant ethical issues, practitioners of management accounting and financial management should follow the established policies of the organization bearing on the resolution of such conflict. If these policies do not resolve the ethical conflict, such practitioner should consider the following courses of action:

- Discuss such problems with the immediate superior except when it appears that the superior is involved, in which case the problem should be presented initially to the next higher management level. If a satisfactory resolution cannot be achieved when the problem is initially presented, submit the issues to the next higher managerial level.

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(continued)

- If the immediate superior is the chief executive officer, or equivalent, the acceptable reviewing authority may be a group such as the audit committee, executive committee, board of directors, board of trustees, or owners. Contact with levels above the immediate superior should be initiated only with the superiors' knowledge, assuming the superior is not involved. Except where legally prescribed, communication of such problems to authorities or individual not employed or engaged by the organization is not considered appropriate.
- Clarify relevant ethical issues by confidential discussion with an objective advisor (e.g., IMA Ethics Counseling Service) to obtain a better understanding of possible courses of action.
- Consult your own attorney as to legal obligations and rights concerning the ethical conflict.
- If the ethical conflict still exists after exhausting all levels of internal review, there may be no other recourse on significant matters than to resign from the organization and to submit an informative memorandum to an appropriate representative of the organization. After resignation, depending on the nature of the ethical conflict, it may also be appropriate to notify other parties.

Source: The Institute of Management Accountants, formerly National Association of Accountants, *Statement on Management Accounting: Objectives of Management Accounting*. Statement No. 1B, NY, June 17, 1982, as revised in 1997. NAA PUBLICATION by IMA/NAA. Copyright 1982 by Institute of Management Accountants. Reproduced with permission of Institute of Management Accountants in the format Textbook via Copyright Clearance Center.

The IMA ethical standards provide sound, practical advice for managers. Most of the rules in the ethical standards are motivated by a very practical consideration: If these rules were not followed in business, then the economy and all of us suffer. Consider the following excerpts from a conversation recorded on the IMA Ethics Hot Line:

Caller: My problem basically is that my boss, the division general manager, wants me to put costs into inventory that I know should be expensed now. . . .

Counselor: Have you expressed your doubts to your boss?

Caller: Yes, but he is basically a salesman and claims he knows nothing about Generally Acceptable Accounting Practice (GAAP). He just wants the "numbers" to back up the good news he keeps telling corporate [headquarters], which is what corporate demands. Also, he asks if I am ready to make the entries that I think are improper. It seems he wants to make it look like my idea all along. Our company had legal problems a few years ago with some government contracts, and it was the lower level people who were "hung out to dry" rather than the higher-ups who were really at fault.

Counselor: . . . what does he say when you tell him these matters need resolution?

Caller: He just says we need a meeting, but the meetings never solve anything . . .

(continues)

(continued)

Counselor: Does your company have an ethics hot line?

Caller: Yes, but my boss would view use of the hot line as snitching or even whistle blowing. . . .

Counselor: . . . If you might face reprisals for using the hot line, perhaps you should evaluate whether or not you really want to work for a company whose ethical climate is one you are uncomfortable in.

Source: Curtis C. Verschoor, "Using a Hot Line Isn't Whistle Blowing," *Strategic Finance*, April 1999, pp. 27–28. STRATEGIC FINANCE by Curtis C. Verschoor. Copyright 1999 by Institute of Management Accountants. Reproduced with permission of Institute of Management Accountants in the format Textbook via Copyright Clearance Center.

INVENTORY TURNOVER RATIO

Historically, restaurants operated under the assumption that some level of inventory is needed to act as a safety stock to prevent running out of products. Now managers are finding out that the costs of carrying inventory are much greater than were previously supposed—costs such as storage, record-keeping, handling, inspection, and procurement. As a result, some managers prefer that orders be placed more frequently and in smaller amounts. Others are placing fewer but larger orders to avoid high procurement cost. You will have to decide what is best for your restaurant, but the ultimate goal is keeping inventory at a minimum. To monitor progress toward this goal, managers are computing inventory turnover by type of product to reduce these costs, to reduce waste, and to free up capital for other needs.

An inventory turnover ratio indicates how many times the average inventory balance has been used—and thereby replaced—during the period under review (Figure 11-14). The greater the inventory balance in relation to cost of sales, the smaller the number of times that turnover will occur. Therefore, a decrease in the turnover rate is a negative indicator of progress toward reducing the amount of inventory on hand.

It is the responsibility of the manager to maintain storeroom inventory turnover within the company's guidelines to minimize product deterioration, interest on borrowed funds, and the impact on cash flow or other company obligations. Most restaurants adopt one or both of the following methods of reporting: *ratio of inventory to cost of sales* and *turnover ratio by category*. Both are illustrated in Figure 11-14.

Figure 11-14 includes inventory turnover ratios for three categories: food, beer, and wine. It also measures how many times during the course of the year inventory has been sold. Follow the first column and the second column, which are the descriptions and the formulas. You will want to include many months of historical data to judge the effectiveness of inventory management. The formula looks like this:

$$\text{rate of inventory turnover} = \text{Line A (cost of sales)} \div \text{Line D (average inventory)}$$

In this case, looking at the year-to-date average column, the inventory turnover ratio for food is 2.39 times per month; for beer it is .751 times per month; and for wine it is .266 times per month. Food turnover is generally higher than beverage turnover due to deterioration. Some food service operations do their best to adopt what are called just-in-time (JIT) inventory systems. Under ideal conditions, the manager operating a JIT inventory system would purchase only enough products to meet a given day's needs. This is common in fast-food and catering outlets, in which high volumes of precut or preportioned foods dominate the menu. Hotels that package meals and room rates together are also able to forecast upcoming business for this kind of inventory turnover. In the latter, the meal becomes the chef's choice for the day, and any other meal order is subject to extra charges. This affords the chef or the manager the

Inventory Analysis

JANUARY 2008 DECEMBER 2008

Line #		Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	YTD AVERAGE
#	FOOD													
	Inventory Turnover													
a	Cost Of Sales	69,108	88,752	117,337	123,486	103,812	128,991	124,043	121,138	115,814	96,453	86,882	117,345	107,763.42
b	Beginning Inventory	43,865	41,529	39,357	38,736	51,476	41,866	42,736	40,619	44,439	48,439	45,574	60,621	44,937.90
c	Ending Inventory	41,529	39,357	38,736	51,476	41,866	42,736	40,619	44,439	48,439	45,574	60,621	47,638	45,252.31
d	Average Inventory Balance = (b+c)/2	42,697	40,443	39,046	45,106	46,671	42,301	41,677	42,529	46,439	47,006	53,097	54,129	45,095.11
e	Rate Of Inventory Turnover=a/d	1.619	2.195	3.005	2.738	2.224	3.049	2.976	2.848	2.494	2.052	1.636	2.168	2.390
	Age Of Inventory In Days													
f	Days In Period	31	28	31	30	31	30	30	31	30	31	30	31	30.33
g	Inventory To Cost Of Sales=d/a	0.618	0.456	0.333	0.365	0.450	0.328	0.336	0.351	0.401	0.487	0.611	0.461	0.42
h	Average Age Of Inventory=gxf	19.15	12.76	10.32	10.96	13.94	9.84	10.08	10.88	12.03	15.11	18.33	14.30	12.693
	Sales Efficiency													
i	Revenues	355,325	410,897	537,268	561,119	525,916	638,980	647,114	580,277	615,063	439,707	426,535	459,169	516,447.50
j	Cost Percentages=a/i	19.45%	21.60%	21.84%	22.01%	19.74%	20.19%	19.17%	20.88%	18.83%	21.94%	20.37%	25.56%	21%
k	Sales To Inventory=i/d	8.32	10.16	13.76	12.44	11.27	15.11	15.53	13.64	13.24	9.35	8.03	8.48	11.45
#	BEER													
	Inventory Turnover													
a	Cost Of Sales	2,066	987	1,403	4,606	3,121	2,335	2,861	1,463	4,963	2,638	2,113	1,718	2,522.83
b	Beginning Inventory	3,139	2,474	2,813	2,710	8,090	4,914	3,884	2,109	2,063	2,033	2,359	2,930	3,293.22
c	Ending Inventory	2,474	2,813	2,710	8,090	4,914	3,884	2,109	2,063	2,033	2,359	2,930	4,694	3,422.79
d	Average Inventory Balance = (b+c)/2	2,807	2,644	2,762	5,400	6,502	4,399	2,997	2,086	2,048	2,196	2,645	3,812	3,358.01
e	Rate Of Inventory Turnover=a/d	0.736	0.373	0.508	0.853	0.480	0.531	0.955	0.701	2.423	1.201	0.799	0.451	0.751
	Age Of Inventory In Days													
f	Days In Period	31	28	31	30	31	30	30	31	30	31	30	31	30.33
g	Inventory To Cost Of Sales=d/a	1.358	2.678	1.968	1.172	2.083	1.884	1.047	1.426	0.413	0.832	1.252	2.219	1.33
h	Average Age Of Inventory=gxf	42.11	74.99	61.02	35.17	64.58	56.52	31.42	44.19	12.38	25.81	37.55	68.79	40.38
	Sales Efficiency													
i	Revenues	7,208	3,058	5,197	16,165	11,878	7,058	8,624	5,053	16,586	8,085	6,989	5,919	8,485.00
j	Cost Percentages=a/i	28.66%	32.28%	27.00%	28.49%	26.28%	33.08%	33.17%	28.95%	29.92%	32.63%	30.23%	29.03%	30%
k	Sales To Inventory=i/d	2.57	1.16	1.88	2.99	1.83	1.60	2.88	2.42	8.10	3.68	2.64	1.55	2.53
#	WINE													
	Inventory Turnover													
a	Cost Of Sales	4,196	3,010	4,827	9,209	8,687	8,461	6,514	4,494	8,237	6,381	4,937	7,530	6,373.58
b	Beginning Inventory	21,389	20,142	18,884	20,800	39,824	28,001	26,803	23,176	22,921	21,017	21,783	20,788	23,793.91
c	Ending Inventory	20,142	18,884	20,800	39,824	28,001	26,803	23,176	22,921	21,017	21,783	20,788	25,299	24,119.77
d	Average Inventory Balance = (b+c)/2	20,766	19,513	19,842	30,312	33,912	27,402	24,989	23,048	21,969	21,400	21,285	23,043	23,956.84
e	Rate Of Inventory Turnover=a/d	0.202	0.154	0.243	0.304	0.256	0.309	0.261	0.195	0.375	0.298	0.232	0.327	0.266
	Age Of Inventory In Days													
f	Days In Period	31	28	31	30	31	30	30	31	30	31	30	31	30.33
g	Inventory To Cost Of Sales=d/a	4.949	6.483	4.111	3.292	3.904	3.239	3.836	5.129	2.667	3.354	4.311	3.060	3.76
h	Average Age Of Inventory=gxf	153.42	181.52	127.43	98.75	121.02	97.16	115.09	158.99	80.01	103.96	129.34	94.87	114.02
	Sales Efficiency													
i	Revenues	9,359	7,274	11,258	21,759	20,772	20,837	18,431	9,968	22,750	15,737	11,206	15,872	15,435.25
j	Cost Percentages=a/i	44.83%	41.38%	42.88%	42.32%	41.82%	40.61%	35.34%	45.08%	36.21%	40.55%	44.06%	47.44%	41%
k	Sales To Inventory=i/d	0.45	0.37	0.57	0.72	0.61	0.76	0.74	0.43	1.04	0.74	0.53	0.69	0.64

Figure 11-14 Food and Beverage Inventory Analysis

flexibility to order what is needed according to the menu of the day. Any leftovers from previous days or catering events are incorporated into the next day's chef's choice menu or made available to employees as employee meals.

As this sequence suggests, JIT means that raw material or semifinished products (such as pre-cut meat or partially prepared dough) are received just in time to be cooked and served to the customers. This requires careful planning of your sales orders, accurate business forecasts, and successful vendor cooperation. The result can be substantial reductions in ordering and warehousing costs, increases in inventory turnover, and streamlined operations that permit chef creativity and food cost reduction. As Line J in Figure 11-14 suggests:

$$\text{food cost \%} = \text{Line A (cost of sales)} \div \text{Line I (revenue)}$$

There are no industry standards for frequency of inventory replenishment; it depends on sales activity and storage capacity, as well as purchasing factors such as lead time, volume discounts, cash flow constraints, and product shelf lives. For example, produce has a higher turnover than staples, and beer has a higher turnover than wine.

The average age of inventory is a figure used to determine inventory effectiveness in days; with years of reliable average age data and expected sales levels, the manager or controller can predict inventory balances for budgeting purposes. The formula is as follows:

$$\text{average age of inventory in days} = \text{Line G (inventory to cost of sales)} \times \text{Line F (days in period)}$$

You can see in Figure 11-14 that food is averaging 12.69 days per month, beer is 40.38 days per month, and wine is 114.02 days per month. Fewer days in inventory is better, as we have been discussing. How do you compare to your competitors? You will have to be the judge.

Sales efficiency figures are used to measure the relationship of revenues to average inventory. You can see these results in Line K of Figure 11-14. The result will indicate the adequacy of inventory levels at different sales volumes. The objective is to find that balanced amount of inventory that both meets sales requirements and is quickly utilized. The formula is as follows:

$$\text{sales efficiency} = \text{Line I (revenue)} \div \text{Line D (average inventory balance)}$$

Inventory consumption is more efficient if the decrease in inventory balance does not affect sales efforts or cause inventory shortages, which could affect customer satisfaction negatively. You want to strike a balance between efficiency and customer needs.

What Causes Excessive Inventory?

When a restaurant has excessive inventory on hand, reasons might include the following:

- The manager is depending on a large inventory to avoid running out of stock.
- The purchasing department is not coordinating with the kitchen and the sales department on projected business levels and banquet event orders.
- The kitchen is not coordinating with the front-of-the-house management, and thus is overprepping in anticipation for higher business levels than expected.
- The kitchen may be overprepping to keep everyone busy.

Operating inefficiencies result from circumstances like these. The sheer volume of overinventoried product makes waste and miscounts likely.

You can apply the same chart format used in Figure 11-14 to individual products in order to identify patterns that require improvement. Examples of these patterns include the following:

- Excessive or depleted levels of inventory that may contribute to cash flow constraints or detract from guest satisfaction
- Slow-moving or potentially obsolete inventory, resulting in waste

- Unknown or inaccurate numbers, resulting in the inability to determine production levels relative to sales

Furthermore, to evaluate the performance of the purchasing department, the food and beverage storeroom inventory turnover ratio should be calculated independently of calculating the production inventory. Recommended guidelines for inventory turnover ratios are as follows:

- Food (storeroom only): 4.0 to 2.5 ratio
- Beverage (storeroom only): 2.0 to 1.0 ratio
- Food (storeroom and production): 2.5 to 1.5 ratio
- Beverage (storeroom and production): 1.0 to 0.5 ratio

Dead Stock

The results of the ratio analysis above should also be used to assess the level of dead stock. Dead stock, or stock without significant inventory movement, should be viewed as a waste of company capital. Such items are an expense, and they do not offer any potential revenue generation. A large inventory of dead stock will also lower the inventory turnover ratio. In order to minimize the effect of dead stock, follow these procedures:

- Physically segregate all dead or slow-moving stock into one area of the storeroom.
- Monitor and evaluate inventory levels each month.
- Consult with the purchasing manager; distribute a dead stock inventory list (including on-hand amounts and values) to the manager.
- Discuss the financial impact of these items, and attempt to use them whenever financially feasible (for example, in restaurant specials, the employee cafeteria, steward sales, or catering functions.)
- The catering manager should monitor sales closely in order to make intelligent decisions regarding inventory or specialty purchases, particularly for use in single banquet functions.

Inventory lists and valuation of all stock with or without inventory movement should be updated monthly by the purchasing manager. This gives you a clear picture of the assets in your storeroom and lays out a roadmap for how to use them wisely.

SUMMARY

Reporting inventory and unit cost accurately is essential to determining actual costs. Inventory is commonly conducted monthly, but it can be based on any period your company selects. This helps to achieve both financial reporting and cost control because you verify your numbers and detect any irregularities. Inventory value is recorded as a current asset in the company financial balance sheet.

There are several generally accepted accounting practices (GAAPs) for setting inventory values in the industry. The methods are first in, first out (FIFO); last in, first out (LIFO); average method; actual method; and last price method. These methods should be applied only to the raw material inventory; the recipe cost should be used for processed and finished goods.

It is the responsibility of the manager to maintain storeroom inventory turnover within the company's guidelines to minimize product deterioration, interest on borrowed funds, and the impact on cash flow or other company obligations.

Period costs are expensed in the time period in which they are incurred. All selling and administrative costs are typically considered to be period costs. The rules of accrual accounting apply to these costs. Accruals are a system of reporting revenue and expenses in the period in which they are considered to have been earned or incurred, regardless of the actual time of collection or payment.

CHAPTER QUESTIONS

Discussion Questions

1. Why are accurate inventory counts and valuation critical?
2. What are the advantages and disadvantages of each of the inventory valuation methods?
3. What are the laws governing employee meal benefits in your state?
4. Why is it prudent to audit the inventory function?

Critical Thinking Questions

1. What are the advantages and disadvantages of a perpetual inventory system?
2. What are the advantages and disadvantages of an accrual accounting system?
3. What are the advantages and disadvantages of a high inventory turnover ratio?

Objective Questions

1. Establishing a perpetual inventory eliminates the need to take physical inventory. True or False?
2. Food turnover ratios are typically higher than beverage turnover ratios. True or False?
3. A perpetual inventory records all items purchased and requisitioned, and it should match the physical inventory. True or False?
4. The beginning inventory for February 1998 is equal to the ending inventory for January 1998. True or False?

Multiple Choice Questions

1. Calculate the cost of food consumed, assuming the following:

Beginning inventory	\$ 5,890
Net purchases	\$22,500
Transfers in	\$ 870
Transfers out	\$ 490
Ending inventory	\$ 5,010

- A. \$23,760
 - B. \$24,250
 - C. \$29,260
 - D. \$23,380
2. Assuming the data in Question 1, if employee meals cost \$870 and the promotional food costs were \$440, what is the actual cost of food sold?
- A. \$22,890
 - B. \$22,450
 - C. \$23,380
 - D. \$27,950
3. Assuming the data in Questions 1 and 2, and food sales of \$90,000, what is the actual food cost of sales percentage for the month?
- A. 24.94 percent
 - B. 26.4 percent
 - C. 23.86 percent
 - D. 25.43 percent
4. Determine the total value of the inventory based on the FIFO method.

	Count	Price	Extensions
Beginning inventory	6	\$5.65	\$33.90
Purchases on 2/6 before inventory	6	\$6.30	\$37.80
Purchases on 2/13 before inventory	12	\$6.10	\$73.20
Purchases on 2/20 before inventory	6	\$6.30	\$37.80
Purchases on 2/27 before inventory	4	\$5.80	\$23.20

Ending inventory: 12 units

- A. \$69.60
 - B. \$73.20
 - C. \$71.90
 - D. \$72.67
5. Determine the total value of the inventory based on the average price method.

	Count	Price	Extensions
Beginning inventory	6	\$5.65	\$33.90
Purchases on 2/6 before inventory	6	\$6.30	\$37.80
Purchases on 2/13 before inventory	12	\$6.10	\$73.20
Purchases on 2/20 before inventory	6	\$6.30	\$37.80
Purchases on 2/27 before inventory	4	\$5.80	\$23.20

Ending inventory: 12 units

- A. \$69.60
- B. \$73.20
- C. \$71.90
- D. \$72.67

6. Determine the total value of the inventory based on the last price method.

	Count	Price	Extensions
Beginning inventory	6	\$5.65	\$33.90
Purchases on 2/6 before inventory	6	\$6.30	\$37.80
Purchases on 2/13 before inventory	12	\$6.10	\$73.20
Purchases on 2/20 before inventory	6	\$6.30	\$37.80
Purchases on 2/27 before inventory	4	\$5.80	\$23.20

Ending inventory: 12 units

- A. \$69.60
 B. \$73.20
 C. \$71.90
 D. \$72.67
7. Which of the following methods typically generates the greatest credit for employee meals?
- A. Monthly budget
 B. Sales credit
 C. Requisition method
 D. All methods generate credit equally
8. Because no revenue is generated, which of the following should not be recorded?
- A. Spending on the staff
 B. Promotional or entertainment expenses
 C. Employee meals
 D. All of the above should be recorded
9. In an accrual accounting system, if you purchase and receive \$50 worth of chicken on January 31, but will not be billed for the chicken until February 6, and the chicken remains in inventory until it is used on February 2, on what date is the expense for the chicken actually accrued?
- A. January 31
 B. February 6
 C. February 2
 D. None of the above

CASE STUDIES

Case Study 1: Business Ethics of Accrual Accounting

Clement Patrick is the controller of a privately held restaurant whose stock is not listed on a national stock exchange. The restaurant has just won a catering contract to supply all food and beverage for a newly built stadium that is expected to yield substantial profits in a year or two. At the moment, however, the restaurant is experiencing financial difficulties, and because of inadequate working capital is on the verge of defaulting on a note held by its bank.

At the end of the most recent fiscal year, the restaurant's president instructed Clement to not record several invoices as accounts payable. Clement objected because

the invoices represented bona fide liabilities. However, the president insisted that the invoices not be recorded until after year end, at which time it was expected that additional financing could be obtained. After several very strenuous objections expressed to both the president and another member of senior management, Clement finally complied with the president's instructions.

Your task:

1. Did Clement act in an ethical manner? Explain fully.
2. If the new contract fails to yield substantial profits and the company becomes insolvent, can Clement's actions be justified by the fact that he was following orders from a superior? Explain.

Case Study 2: Missing Data Statement: Inventory Computation

"I was sure that when our menu hit the market it would be an instant success," said Clement Matthew, president of Michael's Bistro. "But just look at the gusher of red ink for the first quarter. It's obvious that we're better cooks than we are businesspeople." Clement is referring to the data shown below:

MICHAEL'S BISTRO, INC.		
Income Statement		
For the Quarter Ended March 31, 2005		
	1st Quarter	Percent
Food Sales	1,000,000	83.33
Beverage Sales	200,000	16.67
Total Food and Beverage Sales	1,200,000	100.00
	1st Quarter	Percent
Food Cost	320,000	32.00
Beverage Cost	76,000	38.00
Total Cost of Sales	396,000	33.00
Salaries and Wages	330,000	27.50
Employee Benefits	35,000	10.61
Tax and Benefits	31,000	9.39
Total Payroll	396,000	33.00
China, Glass, Silverware	10,000	0.83
Credit Card Fee	12,000	1.00
Decorations Expense	4,000	0.33
Equipment Repairs—General	8,000	0.67
General/Office Supplies	2,000	0.17
Janitorial/Cleaning Supplies	5,000	0.42
Laundry and Dry Cleaning	2,500	0.21

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Linens—Replacement	1,500	0.13
Operating Supplies	25,000	2.08
Postage	5,000	0.42
Printing Supplies/Forms	5,000	0.42
Promotion	10,000	0.83
Smallwares/Utensils	10,000	0.83
Telephone	3,000	0.25
Trash Removal	5,000	0.42
Uniforms—Replacement	3,000	0.25
Utilities	15,000	1.25
Controllable Expenses	126,000	10.50
Rent	36,000	3.00
Interest Expense	144,000	12.00
Depreciation—Equipment	60,000	5.00
Property and Liability Insurance	60,000	5.00
Total Noncontrollables Expenses	300,000	25.00
Profit and Loss Before Tax	−18,000	−1.50

“At this rate we’ll be out of business within a year,” said Keri Patrick, the restaurant’s accountant. “But I’ve double-checked these figures, so I know they’re right.”

Michael’s Bistro introduced a new menu at the beginning of the current year to capture the fast-paced lunch crowd coming from nearby executive suites. Ms. Culver, an experienced accountant who recently left the company to do independent consulting work, set up the restaurant’s accounting system. Keri, her assistant, prepared the statement above.

“We won’t last a year if the insurance company doesn’t pay the \$30,000 it owes us for the food inventory lost in the warehouse fire last week,” said Clement Matthew. “The insurance adjuster says our claim is inflated, but he’s just trying to pressure us into a lower figure. We have the data to back up our claim, and it will stand in any court.”

On April 1, just after the end of the first quarter, the restaurant’s finished goods storage area was swept by fire, and all \$30,000 in food product counted as of March 31 was destroyed. The company’s insurance policy states that the company will be reimbursed for the cost of any food inventory destroyed or stolen. Keri has determined this cost as follows:

Total costs for the quarter: \$1,218,000

Total meals served for three months: 81,200

Cost per meal served: $\$1,218,000 \div 81,200 = \15

Ending inventory: 2,000 items $\times \$15 = \$30,000$ insurance claim

The following additional information is available on the company’s activities during the quarter ended March 31:

- Inventories at the beginning and end of the quarter were as follows:

	January 1, 2005	March 31, 2005
Purchased Food	\$0	\$420,000
Raw product counted	\$0	\$100,000
Ending food inventory counted	\$0	2,000 destroyed in the fire

- The restaurant historically uses last price method to value its inventory.

Your task:

1. What conceptual error or errors, if any, were made in preparing the income statement above?
2. Prepare a corrected income statement for the first quarter. Your statement should show in detail how the cost of goods sold is computed.
3. Do you agree that the insurance company owes Michael’s Bistro \$30,000?

Case Study 3: Cost Allocation

The Water’s Edge Resort has three restaurants to serve its guests. The three restaurants have different menu themes, so the guests have a variety of menus from which to choose; however, they share a central purchasing center. About 95 percent of all purchases are requisitioned from the purchasing department, and costs are charged accordingly.

Elizabeth is the controller at the resort. She allocates food cost variances to the three restaurants on the basis of sales dollars each month. All three restaurants adopted standard recipe costing, and menu costs are determined each month. In 2005, the food cost variance was \$15,000; this was the difference between the potential cost and the actual cost. These costs were allocated as follows:

	Restaurant			Total
	A	B	C	
Total sales: March 2005	1,000,000	1,200,000	1,500,000	3,700,000
Percentage of total sales	27	32	41	100
Allocation (based on the above percentages)	4,054	4,865	6,081	15,000

During the following month, Restaurant C doubled its sales numbers. This was credited to targeted advertising and to the fact that the executive chef participated in local events, which gave publicity to the restaurant. The sales levels in the other two restaurants remained unchanged. As a result of Restaurant C’s sales increase, the resort’s sales data appeared as follows:

	Restaurant			Total
	A	B	C	
Total sales: April 2005	1,000,000	1,200,000	3,000,000	5,200,000
Percentage of total sales	19	23	58	100

Food cost variance in the resort remained unchanged at \$15,000 during the month of April.

Your task:

1. Using sales dollars as the basis for your allocation, show how food cost variance should be allocated among the three restaurants in the April case.
2. Compare your allocation from March 2005 above to the allocations for April 2005. As the manager of Restaurant C, how would you feel about the allocation that has been charged to you for April 2005?
3. Comment on the usefulness of sales dollars as an allocation base.