Current Assets

Christopher J. Skousen; Larry M. Walther

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Contents

Special Issues for Merchants

Part 1

Your goals for this “merchandising” chapter are to learn about:

- Merchandising businesses and related sales recognition issues.
- Purchase recognition issues for the merchandising business.
- Alternative inventory system: The perpetual method.
- Enhancements of the income statement.
- The control structure.

1. The Merchandising Operation - Sales

The discussion and illustrations in the earlier chapters were all based on businesses that generate their revenues by providing services (like law firms, lawn services, architects, etc.). Service businesses are a large component of an advanced economy. However, we also spend a lot of time in the stores or on the internet, buying the things we want or need. Such businesses are generally referred to as "merchants," and their business models are generally based upon purchasing inventory and reselling it at a higher price to customers.

Therefore, this chapter shifts focus from the service business to the merchandising business. Measuring income and reporting it on the income statement involves unique considerations. The most obvious issue is the computation and presentation of an amount called "gross profit." Gross profit is the difference between sales and cost of goods sold, and is reported on the income statement as an intermediate amount. Observe the income statement for Chair Depot below. The gross profit number indicates that the company is selling merchandise for more than cost ($200,000 in sales was generated from goods that cost $120,000 to buy). Of course, the company also incurred other operating expenses; advertising, salaries, and rent. Nevertheless, the gross profit was sufficient to easily cover those costs and leave a tidy profit to boot. The presentation of the gross profit information is very important for users of the financial statements to get a clear picture of operating success. Obviously, if the gross profit rate is small, the business might have trouble making a profit, even if sales improved. Quite the reverse is true if the gross profit rate is strong; improved sales can markedly improve the bottom-line net income (especially if operating expenses like rent, etc., don't change with increases in sales)! It is easy to see why separating the gross profit number from the other income statement components is an important part of reporting for the merchandising operation.

CHAIR DEPOT
Income Statement
For the Year Ending December 31, 20X3

Sales		$200,000
Cost of goods sold		120,000
Gross profit		$ 80,000
Expenses		
Advertising	$ 6,000	
Salaries	9,000	
Rent	5,000	20,000
Net income		$ 60,000

1.1 Sales

The Sales account is a revenue account used strictly for sales of merchandise. Sales are initially recorded via one of the following entries, depending on whether the sale is for cash or on account:

Cash sale:

1-5-X5	Cash		4,000	
	Sales			4,000
	Sold merchandise for cash			

Sale on account:

1-5-X5	Accounts Receivable		4,000	
	Sales			4,000
	Sold merchandise on account			

1.2 Sales Returns and Allowances

Occasionally, a customer returns merchandise. When that occurs, the following entry should be made:

1-9-X5	Sales Returns and Allowances		1,000	
	Accounts Receivable			1,000
	Customer returned merchandise previously purchased on account			

Notice that the above entry included a debit to Sales returns and allowances (rather than canceling the sale). The Sales returns and allowances account is a contra-revenue account that is deducted from sales; sales less sales returns and allowances is sometimes called "net sales." This approach is deemed superior because it allows interested parties to easily track the level of sales returns in relation to overall sales. Importantly, this presentation reveals information about the relative level of returns and provides a measure of customer satisfaction or dissatisfaction. Sales returns (on account) are typically documented by the creation of an instrument known as a credit memorandum. The credit memorandum indicates that a customer's account receivable balance has been credited (reduced), and that payment for the returned goods is

CHAIR DEPOT
Income Statement
For the Year Ending December 31, 20X3

Sales	$200,000
Less: Sales returns and allowances	10,000
Net sales	$190,000
Cost of goods sold	114,000
Gross profit	$ 76,000

not expected. If the preceding transaction involved a cash refund, the only difference in the entry would involve a credit to cash instead of accounts receivable. The calculation of net sales would be unaffected.

Note that use of the word “allowances” in the account title “Sales Returns and Allowances.” What is the difference between a return and an allowance? Perhaps a customer’s reason for wishing to return an item is because of a minor defect; they may be willing to keep the item if the price is slightly reduced. The merchant may give them an allowance (e.g., a reduction in the price they previously agreed to) to induce them not to return the item. The entry to record an allowance would be identical to that above for the agreed amount of the price reduction, and the customer would keep the inventory item. (Of course, one could use a separate account for returns and another for allowances if they wished to track information about each of these elements.)

1.3 Trade Discounts

Product catalogs often provide a “list price” for an item. Oftentimes those list prices bear little relation to the actual selling price. A merchant may offer customers a trade discount that involves a reduction from the catalog or list price. Ultimately, the purchaser is responsible for the invoice price, that is, the list price less the applicable trade discount. Trade discounts are not entered in the accounting records. They are not considered to be a part of the sale because the exchange agreement was based on the reduced price level. Remember the general rule: sales are recorded when an exchange takes place, based on the exchange price. Therefore, the amount recorded as a sale is the invoice price. The entries above (for the $4,000 sale) would still be appropriate if the list price was $5,000, subject to a 20% trade discount.

1.4 Credit Cards

In the retail trade, merchants often issue credit cards. Why? Because they induce people to spend, and interest charges that may be assessed can themselves provide a generous source of additional profit. However, these company issued cards introduce many added costs: customers that don't pay (known as bad debts), maintenance of a credit department, periodic billings, and so forth. To avoid the latter, many merchants accept other forms of credit cards like American Express, Master Card, and so forth. When a merchant accepts these cards, they are usually paid instantly by the credit card company (net of a service charge that is negotiated in the general range of 1% to 3% of the sale). The subsequent billing and collection is handled by the credit card company. Many merchants will record the full amount of the sale as revenue, and then recognize an offsetting expense for the amount charged by the credit card companies.

1.5 Cash Discounts

Merchants often sell to other businesses. For example, assume that Barber Shop Supply sells equipment to various barber shops on open account (i.e., a standing agreement to extend credit for purchases). In these settings, the seller would like to be paid promptly after billing, and may encourage prompt payment by offering a cash discount (also known as a sales discount).

There is a catch, though. To receive the cash discount, the buyer must pay the invoice promptly. The amount of time one has available to pay is expressed in a unique manner, such as 2/10, n/30 -- these terms mean that a 2% discount is available if the invoice is paid within 10 days, otherwise, the net amount is expected to be paid within 30 days. Assume that Barber Shop Supply sold goods for $1,000, subject to terms of 2/10, n/ 30. The following entry would be recorded at the time of sale:

5-11-X4	Accounts Receivable		1,000	
	Sales			1,000
	Sold merchandise on account, terms 2/10, n/30			

The invoice that would be issued by Barber Shop Supply is illustrated on the next page. Take special note of the invoice date, terms, and invoice amount.

BARBER SHOP SUPPLY
987 Industrial Blvd.
Chicago, IL 12345

Invoice #88765

BILL TO: Tomas Mueller
Hair Port Landing
111 Style Lane, Suite 15
Dallas, TX 99889

DATE

TERMS

P.O. NUMBER	INVOICE DATE	F.O.B. POINT	TERMS
66554f8	MAY 11, 20X4	Dallas	2/10,n/30

QTY.	PART #	DESCRIPTION	UNIT PRICE	TOTAL
4	A7786	Full Length Mirrors	$ 90	$ 360
1	C8876	Swivel Chair -- Brown Leather	500	500
1	M8776	Barber Pole Motor and Light Kit	140	140
		THANK YOU FOR YOUR BUSINESS!		
			Subtotal	$1,000
			Sales Tax	-
			Shipping and Handling	-
			Other	-
			TOTAL	$1,000

AMOUNT

If Hair port landing pays the invoice in time to receive the discount, the check below for $980 would be received by Barber Shop Supply, and recorded via the following entry. This entry reflects that the customer took advantage of the discount terms by paying within the 10-day window. Notice that the entry reduces accounts receivable for the full invoice amount because the payment satisfied the total obligation. The discount is recognized in a special Sales Discount account. The discount account would be reported in like manner to the Sales Returns and Allowance account presented earlier in this chapter.

Hair Port Landing
111 Style Lane, Suite 15
Dallas, TX 99889

Date: May 19, 20X4

Pay to the order of: BARBER SHOP SUPPLY $980.00

********* NINE-HUNDRED EIGHTY AND NO/100 DOLLARS **********

1st CORNER BANK

MEMO Invoice #88765

Tomas Mueller

5-19-X4	Cash		980	
	Sales Discounts		20	
	Accounts Receivable			1,000
	Collected outstanding receivable within discount period, 2% discount granted			

If the customer pays too late to get the discount, then the payment received should be for the full invoice amount, and it would be recorded as follows:

5-29-X4	Cash		1,000	
	Accounts Receivable			1,000
	Collected outstanding receivable outside of the discount period			

Having looked at several of the important and unique issues for recognizing sales transactions of merchandising businesses, it is now time to turn to the accounting for purchasing activities.

2. Purchase Considerations for Merchandising Business

A quick stroll through most any retail store will reveal a substantial investment in inventory. Even if a merchant is selling goods at a healthy profit, financial difficulties can creep up if a large part of the inventory remains unsold for a long period of time. Goods go out of style, become obsolete, and so forth. Therefore, a prudent business manager will pay very close attention to inventory content and level. There are many detailed accounting issues that pertain to inventory, and a separate chapter is devoted exclusively to inventory issues. This chapter's introduction is brief, focusing on elements of measurement that are unique to the merchant's accounting for the basic cost of goods.

2.1 Merchandise Acquisition

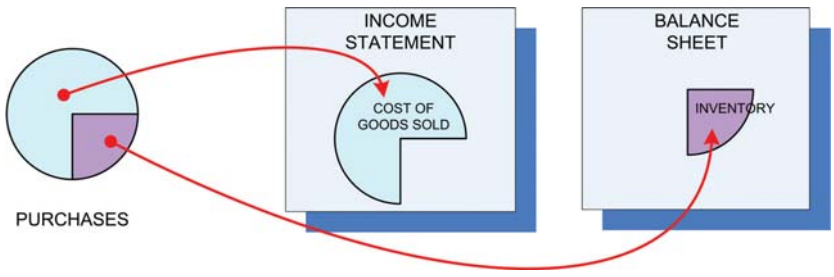
The first phase of the merchandising cycle occurs when the merchant acquires goods to be stocked for resale to customers. The appropriate accounting for this action requires the recording of the purchase. Now, there are two different techniques for recording the purchase -- depending on whether a periodic system or a perpetual system is in use. Generalizing, the periodic inventory system is easier to implement but is less robust than the "real-time" tracking available under a perpetual system. Conversely, the perpetual inventory system involves more "systemization" but is a far superior business management tool. Let's begin with the periodic system; we'll then return to the perpetual system.

2.2 Periodic Inventory System

When a purchase occurs and a periodic inventory system is in use, the merchant should record the transaction via the following entry:

7-7-X1	Purchases		3,000	
	Accounts Payable			3,000
	Purchased inventory on account			

The Purchases account is unique to the periodic system. The Purchases account is not an expense or asset, per se. Instead, the account's balance represents total inventory purchased during a period, and this amount must ultimately be apportioned between cost of goods sold on the income statement and inventory on the balance sheet. The apportionment is based upon how much of the purchased goods are resold versus how much remains in ending inventory. Soon, you will see the accounting mechanics of how this occurs. But, for the moment, simply focus on the concepts portrayed by this graphic:



2.3 Purchase Returns and Allowances

Recall the earlier discussion of sales returns and allowances. Now, the shoe is on the other foot. Let's see how a purchaser of inventory would handle a return to its vendor/supplier. First, it is a common business practice to contact the supplier before returning goods. Unlike the retail trade, transactions between businesses are not so easily undone. A supplier may require that you first obtain an "RMA" or "Return Merchandise Authorization." This indicates a willingness on the part of the supplier to accept the return. When the merchandise is returned to a supplier a debit memorandum may be prepared to indicate that the purchaser is to debit their Accounts Payable account; the corresponding credit is to Purchases Returns and Allowances:

7-19-X1	Accounts Payable		1,000	
	Puchase Returns and Allowances			1,000
	To record the return of defective inventory to vendor			

Purchase returns and allowances are subtracted from purchases to calculate the amount of net purchases for a period. The specific calculation of net purchases will be demonstrated after a few more concepts are introduced.

2.4 Cash Discount

Recall the previous discussion of cash discounts (sometimes called purchase discounts from the purchaser's perspective). Discounts are typically very favorable to the purchaser, as they are designed to encourage early payment. While discounts may seem slight, they usually represent a substantial savings and should usually be taken. Consider the calendar on the facing page, assuming a purchase was made on May 1, terms 2/10, n/30. The discount can be taken if payment is made within the "green shaded" days (or potentially one additional day, depending on the specific agreement). The discount cannot be taken during the yellow shaded days (of which there are twenty, as noted). The bill becomes past due during the "red shaded days." What is important to note here is that skipping past the discount period will only achieve a 20-day deferral of the payment. If you consider that you are "earning" a 2% return by paying 20 days early, it is indeed a large savings. Consider that there are more than 18 twenty-day periods in a year (365/20), and, at 2% per twenty-day period, this equates to over a 36% annual interest cost equivalent.

Discount terms vary considerably. Here are some examples:

- 1/15, n/30 -- 1% if paid within 15 days, net in 30 days
- 1/10, n/eom -- 1% if paid within 10 days, net end of month
- .5/10, n/60 -- ½% if paid within 10 days, net in 60 days

Occasionally, a company may opt to skip a discount. In the case of the half-percent discount example, notice that the net amount is not due until the 60th day. Perhaps the purchaser would conclude that the additional 50 days is worth forgoing the half-percent savings, as the annual interest cost equivalent is only about 3.65% (365/50 = 7.3 "periods" per year -- times 0.5% per "period"). But, this is the exception rather than the rule. In short, taking the discounts usually makes good economic sense!

A business should set up its accounting system to timely process and take advantage of all reasonable discounts. In a small business setting, this might entail using a hanging-file system where invoices are filed for payment to match the discount dates. A larger company will usually have an automated payment system where checks are scheduled to process concurrent with invoice discount dates. Very large payments, and global payments, are frequently set up as "wire transfers." This method enables the purchaser to retain use of funds (and the ability to generate investment income on those funds) until the very last minute. This is considered to be a good business practice.

However, there is an ethical issue for you to consider. Many vendors will accept a "discounted payment" outside of the discount period. In other words, a purchaser might wait 30, 60, or 90 days and still take the discount! Some vendors are glad to receive the payment and will still grant credit for the discount. Others will return the payment and insist on the full amount due. Is it a good business practice to "bend the terms" of the agreement to take a discount when you know that your supplier will stand for this practice? Is it ethical to "bend the terms" of the agreement? If you discuss this with your classmates, you will find a diversity of opinion.

2.5 Gross Recording of Purchases/Discounts

A fundamental accounting issue is how to account for purchase transactions when discounts are offered. One technique is the gross method of recording purchases. This technique records purchases at their total gross or full invoice amount:

11-5-X7	Purchases		5,000	
	Accounts Payable			5,000
	Purchased inventory on account, terms 2/10, n/30			

If payment is made within the discount period, the purchase discount is recognized in a separate account. The Purchase Discounts account is similar to Purchases Returns & Allowances, as it is deducted from total purchases to calculate the net purchases for the period:

11-13-X7	Accounts Payable		5,000	
	Purchase Discounts			100
	Cash			4,900
	Paid outstanding payable within discount period, discount taken ($5,000 X 2% = $100)			

If payment is made outside the discount period, the entry is quite straightforward:

11-29-X7	Accounts Payable		5,000	
	Cash			5,000
	Paid outstanding payable outside of the discount period			

2.6 Net Recording of Purchases/Discounts Lost

Rather than recording purchases gross, a company may elect to record the same transaction under a net method. With this technique, the initial purchase is again recorded by debiting Purchases and crediting Accounts Payable, but only for the net amount of the purchase (the purchase less the available discount):

11-5-X7	Purchases		4,900	
	Accounts Payable			4,900
	Purchased $5,000 of inventory on account, terms 2/10,n/30			

If payment is made within the discount period, the entry is quite straightforward because the payable was initially established at net of discount amount:

11-13-X7	Accounts Payable		4,900	
	Cash			4,900
	Paid accounts payable within discount period			

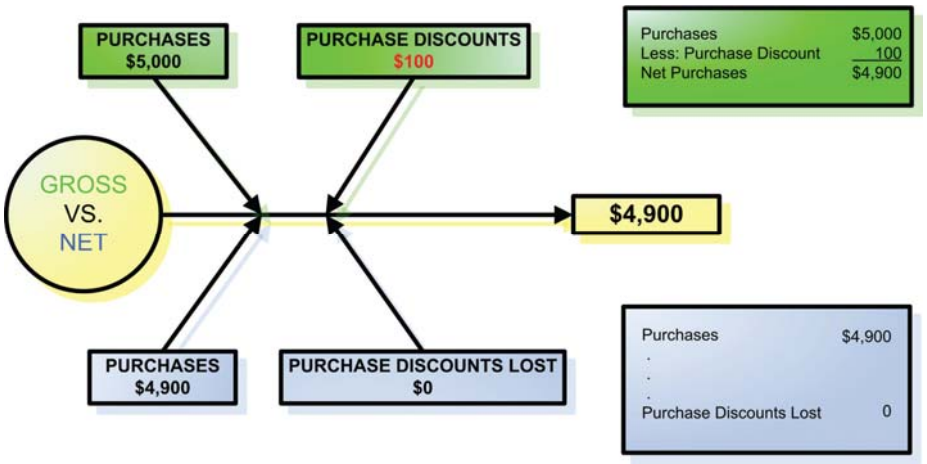
If payment is made outside the discount period, the lost discounts are recorded in a separate account. The Purchase Discounts Lost account is debited to reflect the added cost associated with missing out on the available discount amount:

11-29-X7	Accounts Payable		4,900	
	Purchase Discounts Lost		100	
	Cash			5,000
	Paid outstanding payable outside of the discount period			

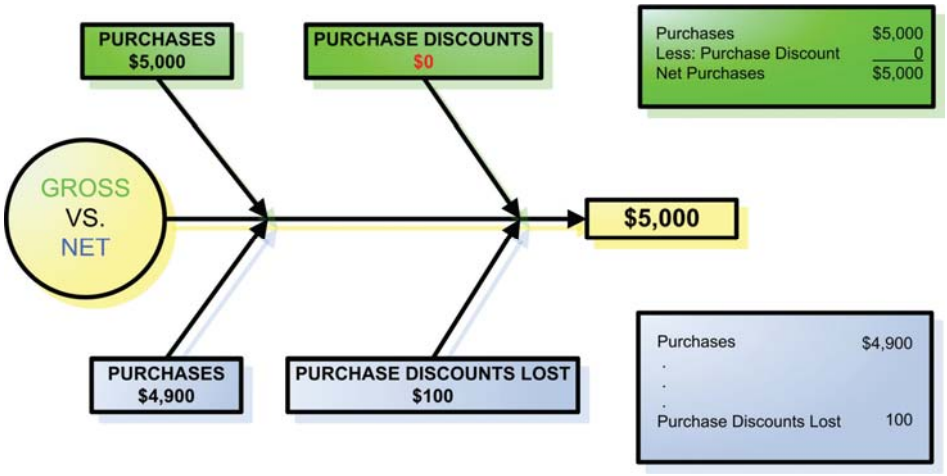
2.7 Comparison of Gross vs. Net

In evaluating the gross and net methods, notice that the Purchase Discounts Lost account (used only with the net method) indicates the total amount of discounts missed during a particular period. The presence of this account draws attention to the fact that discounts are not being taken; frequently an unfavorable situation. The Purchase Discounts account (used only with the gross method) identifies the amount of discounts taken, but does not indicate if any discounts were missed. For reporting purposes, purchases discounts are subtracted from purchases to arrive at net purchases, while purchases discounts lost are recorded as an expense following the gross profit number for a particular period.

The following diagram contrasts the gross and net methods for a case where the discount is taken. Notice that $4,900 is accounted for under each method. The Gross method reports the $5,000 gross purchase, less the applicable discount. In contrast, the net method only shows the $4,900 purchase amount.



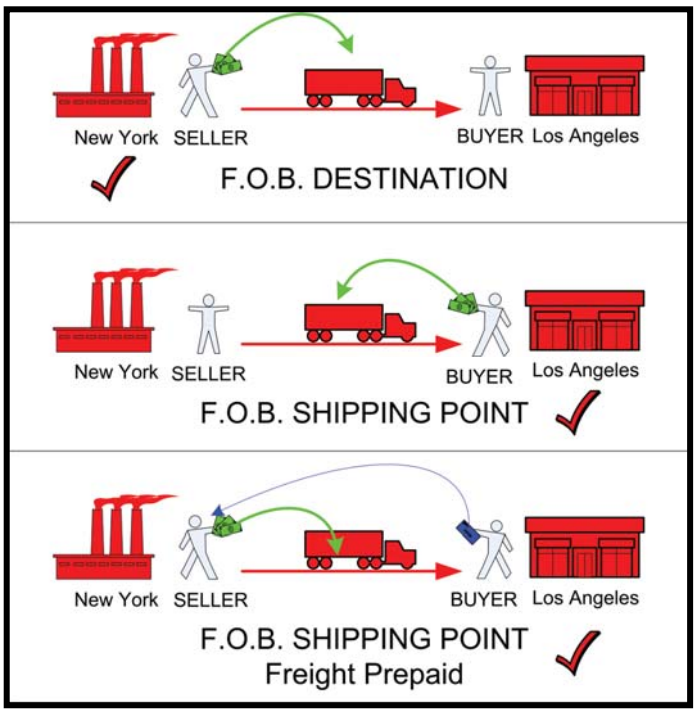
The next diagram contrasts the gross and net methods for the case where the discount is lost. Notice that $5,000 is accounted for under each method. The gross method simply reports the $5,000 gross purchase, without any discount. In contrast, the net method shows purchases of $4,900 and an additional $100 charge pertaining to lost discounts.



2.8 Freight Charges

A potentially significant inventory-related cost pertains to freight. The importance of considering this cost in any business transaction cannot be understated. The globalization of commerce, rising energy costs, and the increasing use of overnight delivery via more expensive air transportation vehicles all contribute to high freight costs. Freight costs can easily exceed 10% of the value of a transaction. As a result, business negotiations relate not only to matters of product cost, but must also include consideration of freight terms. Freight agreements are often described by abbreviations that describe the place of delivery, when the risk of loss shifts from the seller to the buyer, and who is to be responsible for the cost of shipping. One very popular abbreviation is F.O.B. This abbreviation stands for "free on board." Its historical origin apparently related to a seller's duty to place goods on some shipping vessel without charge to the buyer. Whether that historical explanation is exactly correct or not is unclear. What is important to know is that F.O.B. is a common term.

The F.O.B. point is normally understood to represent the place where ownership of goods transfers. Along with shifting ownership comes the responsibility for the purchaser to assume the risk of loss, a duty to pay for the goods, and the understanding that freight costs beyond the F.O.B. point will be borne by the purchaser.



In the drawing at right, notice that money is paid by the seller to the transport company in the top illustration. This is the case where the terms called for F.O.B. Destination – the seller had to get the goods to the destination. This situation is reversed in the middle illustration: F.O.B. Shipping Point -- the buyer had to pay to get the goods delivered. The third illustration calls for the buyer to bear the freight cost (F.O.B. Shipping Point). However, the cost is prepaid to the trucker by the seller as an accommodation. Notice that the buyer then sends a check (in blue) to the seller to reimburse for the prepaid freight; ultimately the buyer is still bearing the freight cost. Of course, other scenarios are possible. For example, terms could be F.O.B. St. Louis, in which case the seller would pay to get the goods from New York to St. Louis, and the buyer would pay to bring the goods from St. Louis to Los Angeles.

Take a moment and look at the invoice presented earlier in this chapter for Barber Shop Supply. You will notice that the seller was in Chicago and the purchaser was in Dallas. Just to the right of the invoice date, you will note that the terms were F.O.B. Dallas. This means that Barber Shop Supply is responsible for getting the goods to the customer in Dallas. That is why the invoice

included $0 for freight; the purchaser was not responsible for the freight cost. Had the terms been F.O.B. Chicago, then Hair Port Landing would have to bear the freight cost; the cost might be added to the invoice by Barber Shop Supply if they prepaid the cost to a transportation company, or Hair Port might be expected to prepare a separate payment to the transport company. Next are presented appropriate journal entries to deal with alternative scenarios.

- If goods are sold F.O.B. destination, the seller is responsible for costs incurred in moving the goods to their destination. Freight cost incurred by the seller is called freight-out, and is reported as a selling expense that is subtracted from gross profit in calculating net income.

Seller's entry:

5-11-X4	Accounts Receivable		7,000	
	Freight-out		400	
	Cash			400
	Sales			7,000
	Sold merchandise on account for $7,000, terms F.O.B. destination, and paid the freight bill of $400			

Buyer's entry:

5-11-X4	Purchases		7,000	
	Accounts Payable			7,000
	Purchased $7,000 of inventory, terms F.O.B. destination			

- If goods are sold F.O.B. shipping point, the purchaser is responsible for paying freight costs incurred in transporting the merchandise from the point of shipment to its destination. Freight cost incurred by a purchaser is called freight-in, and is added to purchases in calculating net purchases:

Seller's entry:

6-6-X4	Accounts Receivable		8,000	
	Sales			8,000
	Sold merchandise on account for $8,000, terms F.O.B. shipping point			

Buyer's entry:

6-6-X4	Purchases		8,000	
	Freight-in		1,500	
	Cash			1,500
	Accounts Payable			8,000
	Purchased $8,000 of inventory, terms F.O.B. shipping point, and paid the shipping freight bill of $1,500			

- If goods are sold F.O.B. shipping point, freight prepaid, the seller prepays the trucking company as an accommodation to the purchaser. This prepaid freight increases the accounts receivable of the seller. That is, the seller expects payment for the merchandise and a reimbursement for the freight. The purchaser would record this transaction by debiting Purchases for the amount of the purchase, debiting Freight-In for the amount of the freight, and crediting Accounts Payable for the combined amount due to the seller.

Seller's entry:

3-10-X8	Accounts Receivable		10,400	
	Cash			400
	Sales			10,000
	Sold merchandise on account for $10,000, terms F.O.B. shipping point, $400 freight prepaid			

Buyer's entry:

3-10-X8	Purchases		10,000	
	Freight-in		400	
	Accounts Payable			10,400
	Purchased merchandise on account for $10,000, terms F.O.B. shipping point, $400 freight prepaid			

Importantly, cash discounts for prompt payment are not usually available on the freight charges. For example, if there was a 2% discount on the above purchase, it would amount to $200 ($10,000 X 2%), not $208 ($10,400 X 2%).

2.9 The Calculation of Net Purchases

A number of new accounts have been introduced in this chapter. Purchases, Purchase Returns and Allowances, Purchase Discounts, and Freight-in have all been illustrated. Each of these accounts is necessary to calculate the "net purchases" during a period.

Notice that the table at right reveals total purchases of $400,000 during the period. This would be based on the total invoice amount for all goods purchased during the period, as identified from the Purchases account in the ledger. The cost of the purchases is increased for the freight-in costs. Purchase discounts and purchase returns and allowances are subtracted. The result is that the "net purchases" are $420,000. Net purchases reflect the actual costs that were deemed to be ordinary and necessary to bring the goods to their location for resale to an end customer. Importantly, storage costs, insurance, interest and other similar costs are considered to be period costs that are not attached to the product. Instead, those ongoing costs are simply expensed in the period incurred as an operating expense of the business.

Add: Purchases		$400,000
Freight-in		40,000
		$440,000
Less: Purchase discounts	$ 6,000	
Purchase returns & allowances	14,000	20,000
Net purchases		$420,000

2.10 Cost of Goods Sold

Early in this chapter, it was indicated that the cost of purchases must ultimately be allocated between cost of goods sold and inventory, depending on the portion of the purchased goods that have been resold to end customers. This allocation must also take into consideration any beginning inventory that was carried over from prior periods.

Beginning inventory, Jan. 1	$115,000	From end of prior period
Plus: Net purchases	420,000	From calculations above
Goods available for sale	$535,000	
Less: Ending inventory, Dec. 31	91,000	From physical count
Cost of goods sold	$444,000	

Very simply, goods that remain unsold at the end of an accounting period should not be "expensed" as cost of goods sold. Therefore, the calculation of cost of goods sold requires an assessment of total goods available for sale, from which ending inventory is subtracted.

With a periodic system, the ending inventory is determined by a physical count. In that process, the goods held are actually counted and assigned cost based on a consistent method. The actual methods for assigning cost to ending inventory is the subject of considerable discussion in the inventory chapter. For now, let's just take it as a given that the $91,000 shown represents the cost of ending inventory.

Understanding the allocation of costs to ending inventory and cost of goods sold is very important and is worthy of additional emphasis. Consider the following diagram:

The beginning inventory is equal to the prior year's ending inventory, as determined by reference to the prior year's ending balance sheet. The net purchases is extracted from this year's ledger (i.e., the balances of Purchases, Freight-in, Purchase Discounts, and Purchase Returns & Allowances). Goods available for sale is just the sum of beginning inventory and net purchases. Goods available for sale is not an account, per se; it is merely an abstract result from adding two amounts together. Now, the total cost incurred (cost of goods available for sale) must be "allocated" according to its nature at the end of the year -- if the goods are still held, those costs become an asset amount (inventory), and to the extent the goods are not still held, those costs are attributed to the cost of goods sold expense category.

2.11 Detailed Income Statement for Merchandise Operation

Wow, what a lot of activity to consider -- net sales, net purchases, cost of sales, gross profit, etc.! How do you keep all this straight? A detailed income statement provides the necessary organization of data in an understandable format. Study the following detailed income statement for Bill's Sporting Goods.

As you do so, focus on the following points:

- Note the calculation of net sales
- Note the inclusion of the details about net purchases
- Note the cost of sales
- Note the gross profit amount
- Note that freight-out is reported in the expense section

BILL'S SPORTING GOODS
Detailed Income Statement
For the Year Ending December 31, 20X5

REVENUES				
Sales				$750,000
Less: Sales discounts			$ 7,000	
Sales returns & allowances			3,000	10,000
Net sales				$740,000
COST OF GOODS SOLD				
Beginning inventory, Jan. 1			$115,000	
Add: Purchases		$400,000		
Freight-in		40,000		
		$440,000		
Less: Purchase discounts	$ 6,000			
Purchase returns & allow.	14,000	20,000		
Net purchases			420,000	
Goods available for sale			$535,000	
Less: Ending inventory, Dec. 31			91,000	
Cost of goods sold				444,000
GROSS PROFIT				$296,000
EXPENSES				
Advertising			$ 60,000	
Freight-out			32,000	
Depreciation			18,000	
Utilities			29,000	
Salaries			134,000	
Rent			12,000	285,000
NET INCOME				$ 11,000

Sales		$750,000
Less: Sales discounts	$ 7,000	
Sales returns & allowances	3,000	10,000
Net sales		$740,000

Add: Purchases		$400,000
Freight-in		40,000
		$440,000
Less: Purchase discounts	$ 6,000	
Purchase ret. & allow.	14,000	20,000
Net purchases		$420,000

Beginning inventory, Jan. 1	$115,000
Net purchases	420,000
Goods available for sale	$535,000
Less: Ending inventory, Dec. 31	91,000
Cost of goods sold	$444,000

Net sales	$740,000
Cost of goods sold	444,000
Gross profit	$296,000

Be aware that the income statement you see for a merchandising company may not present all of this detail. Depending on the materiality of the individual line items, it may be sufficient to only present line items for the key elements, like net sales, cost of sales, gross profit, various expense accounts, and net income.

2.12 Closing Entries

Because of all the new income statement related accounts that were introduced for the merchandising concern, it is helpful to revisit the closing process. Recall the importance of closing; to transfer the net income to retained earnings, and reset the income statement accounts to zero in preparation for the next accounting period. As a result, all income statement accounts with a credit balance must be debited and vice versa. The closing entries for Bill's Sporting Goods appear on the following page. Several items are highlighted in these journal entries, and are discussed further in the next paragraph.

These closing entries are a bit more complex than that from the earlier chapter. In particular, note that the closing includes all of the new accounts like purchases, discounts, etc. In addition, it is very important to update the inventory records. You may be confused to see inventory being debited and credited in the closing process. After all isn't inventory a balance sheet (real) account? And, don't we only close the temporary accounts? Why then is inventory included in the closing? The answer is that inventory must be updated to reflect the ending balance on hand. Remember that the periodic system resulted in a debit to purchases, not inventory. Further, as goods are sold, no entry is made to reduce inventory. Therefore, the Inventory account would continue to carry the beginning of year balance throughout the year. As a result, Inventory must be updated at the time of closing. The following entries accomplish just that objective by crediting/removing the beginning balance and debiting/establishing the ending balance. If you study these entries carefully, you will note that they include causing the Income Summary account to be reduced by the cost of sales amount (beginning inventory + net purchases - ending inventory).

12-31-X5	Sales		750,000	
	Purchase Discounts		6,000	
	Purchase Returns & Allowances		14,000	
	Inventory		91,000	
	Income Summary			861,000
	To close income statement accounts with a credit balance, and establish ending inventory balance			
12-31-X5	Income Summary		850,000	
	Sales Discounts			7,000
	Sales Returns & Allowances			3,000
	Purchases			400,000
	Freight-in			40,000
	Advertising Expense			60,000
	Freight-out			32,000
	Depreciation Expense			18,000
	Utilities Expense			29,000
	Salaries Expense			134,000
	Rent Expense			12,000
	Inventory			115,000
	To close income statement accounts with a debit balance, and remove the beginning inventory balance			
12-31-X5	Income Summary		11,000	
	Retained Earnings			11,000
	To close Income Summary to retained earnings (note that the balance is equal to the net income)			

3. Alternative Inventory System

Earlier in the chapter this was stated:

> "Now, there are two different techniques for recording the purchase -- depending on whether a periodic system or a perpetual system is in use. Generalizing, the periodic inventory system is easier to implement but is less robust than the "real-time" tracking available under a perpetual system. Conversely, the perpetual inventory system involves more "systemization" but is a far superior business management tool."

The periodic system only required the recording of inventory purchases to a Purchases account; inventory records were updated only during the closing process based on the results of a physical count. No attempt is made to adjust inventory records concurrent with actual purchase and sale transactions. The weakness of the periodic system is that it provides no real-time data about the levels of inventory or gross profit data. If inventory is significant, the lack of up-to-date inventory data can be very costly. Managers need to know what is selling, and what is not selling, in order to optimize business success. That is why many successful merchants use sophisticated computer systems to implement perpetual inventory management. You have no doubt noted bar code scanners at a checkout for quickly pricing goods, but did you know that the business's inventory records may also be updated as the item is being scanned? With a high-performance perpetual system, each purchase or sale results in an immediate update of the inventory and cost of sales data in the accounting system. The following entries are appropriate to record the purchase and subsequent resale of an inventory item:

Entry to record purchase of inventory:

12-12-X1	Inventory		3,000	
	Accounts Payable			3,000
	Purchased $3,000 of inventory on account			

Entries to record sale of inventory:

12-21-X1	Accounts Receivable		5,000	
	Sales			5,000
	Sold merchandise on account			
12-21-X1	Cost of Goods Sold		3,000	
	Inventory			3,000
	To record the cost of merchandise sold			

With the perpetual system, the Purchases account is not needed. The Inventory account and Cost of Goods Sold account are constantly being adjusted as transactions occur. Freight-in is added to the Inventory account. Discounts and returns reduce the Inventory account. Therefore, the determination of cost of goods sold is determined by reference to the account's general ledger balance, rather than needing to resort to the calculations illustrated for the periodic system.

If you think the perpetual system looks easier, don't be deceived. Consider that it is no easy task to determine the cost of each item of inventory as it is sold, and that is required for a proper application of the perpetual system. In a large retail environment, that is almost impossible without a sophisticated computer system. Nevertheless, such systems have become commonplace. This has come about with the decline in the cost of computers, along with a growth in "chain stores" that can apply the same technology to many individual stores.

One final point should be noted. A physical count of goods, where employees take to the store and count every item on hand, is still needed with a perpetual system. No matter how good the computer system, differences between the computer record and physical quantity on hand will arise. Differences are created by theft, spoilage, waste, errors, and so forth. Therefore, merchants must occasionally undertake a physical count, and adjust the Inventory accounts to reflect what is actually on hand.

4. Income Statement Enhancements

The expanded income statement for Bill's Sporting Goods was presented above. Yet, there are even more issues that can influence the form and shape of the income statement.

In the illustration for Bill's Sporting Goods, the operating expenses were all reported together. Often, companies will wish to further divide the expense items according to their nature: selling expenses (those associated with the sale of merchandise) or general and administrative (costs incurred in the management of the business). Some costs must be allocated between the two categories; like depreciation of the corporate headquarters wherein both sales and administrative activities are conducted.

A business may, from time to time, have incidental or peripheral transactions that contribute to income. For example, a business might sell land at a gain. Or, a fire might produce a loss. These gains and losses are often reported separate and apart from the measures of revenues and expenses associated with central ongoing operations.

Likewise, many businesses break out the financing costs (i.e., interest expense) from the other expense components. This tends to separate the operating impacts from the cost of capital needed to produce those operating results. This is not to suggest that interest is not a real cost. Instead, the company has made decisions about borrowing money ("leverage"), and breaking out the interest cost separately allows users to have a better handle on how well the borrowing decisions are working -- investors want to know if enough extra income is being produced to cover the added financing costs associated with growing via debt financing.

Not to be overlooked in the determination of income is the amount of any tax that must be paid. Businesses are subject to many taxes, not the least of which is income tax. Income tax must be paid, and is usually based on complex formulas related to the amount of businesses income. As a result, it is customary to present income before tax, then the amount of tax, and finally the net income.

The income statement below illustrates the added concepts via a multiple-step income statement. A multiple-step approach divides the businesses operating results into separate categories or steps, and simplifies the financial statement user's ability to understand the intricacy of an entity's operations. This illustration is fairly elaborate, but you also need to know that income reporting can become even more involved. In a subsequent chapter, you will learn about additional special reporting for other unique situations, like discontinued operations, extraordinary events, and so forth.

HUNTER COMPANY Income Statement For the Year Ending December 31, 20X9				
REVENUES				
Sales				$660,000
Less: Sales discounts			$ 5,000	
Sales returns & allowances			2,000	7,000
Net sales				$653,000
COST OF GOODS SOLD				
Beginning inventory, Jan. 1			$120,000	
Add: Purchases		$230,000		
Freight-in		10,000		
		$240,000		
Less: Purchase discounts	$ 2,400			
Purchase returns & allowances	3,600	6,000		
Net purchases			234,000	
Goods available for sale			$354,000	
Less: Ending inventory, Dec. 31			71,000	
Cost of goods sold				283,000
GROSS PROFIT				$370,000
SELLING EXPENSES				
Advertising		$ 70,000		
Freight-out		4,000		
Depreciation		28,000		
Utilities		11,000		
Salaries		29,000	$142,000	
GENERAL & ADMINISTRATIVE				
Salaries		$ 63,000		
Depreciation		17,000		
Utilities		22,000		
Insurance		44,000		
Rent		24,000	170,000	
OTHER				
Loss on sale of land		$ 2,000		
Interest expense		7,000	9,000	321,000
INCOME BEFORE TAX				$ 49,000
Income tax expense				10,000
NET INCOME				$ 39,000

Accountants must always be cognizant of the capacity of the financial statement user to review and absorb the reports. Sometimes, the accountant may decide that a simplified presentation is more useful. In those cases, the income statement may be presented in a "single-step" format. This very simple approach reports all revenues (and gains) together, and the aggregated expenses (and losses) are tallied and subtracted to arrive at income. The single-step income statement for Hunter is shown below:

HUNTER COMPANY Income Statement For the Year Ending December 31, 20X9		
REVENUES		
Net sales		$653,000
EXPENSES AND LOSSES		
Cost of goods sold	$283,000	
Selling expenses	142,000	
General & administrative	170,000	
Loss on sale of land	2,000	
Interest expense	7,000	604,000
INCOME BEFORE TAX		$ 49,000
Income tax expense		10,000
NET INCOME		$ 39,000

Caution should be used when examining a single-step presentation. One should look at more than the bottom-line net income, and be certain to discern the components that make up income. For example, a company's core operations could be very weak, but the income could be good because of a non-recurring gain from the sale of assets. Tearing away such "masking" effects are a strong argument in favor of the more complex multiple-step approach.

4.1 Analysis of a Detailed Income Statement

No matter which income statement format is used, all the detail in the world is of no value if it is not carefully evaluated. One should monitor not only absolute dollar amounts, but should also pay close attention to ratios and percentages. It is typical to monitor the gross profit margin and the net profit on sales:

Gross Profit Margin = Gross Profit/Net Sales
$370,000/$653,000 = 56.66% for Hunter

Net Profit on Sales = Net Income/Net Sales
$39,000/$653,000 = 5.97% for Hunter

There are countless variations of these calculations, but they all go to the same issue – evaluating trends in performance unrelated to absolute dollar amounts.

You should also be aware that margins can be tricky. For example, suppose Liu's Janitorial Supply sold plastic trash cans. During Year 1, sales of cans were $3,000,000, and these units cost

$2,700,000. During Year 2, oil prices dropped significantly. Oil is a critical component in plastics, and Liu passed along cost savings to his customers. Liu's Year 2 sales were $1,000,000, and the cost of goods sold was $700,000. Liu was very disappointed in the sales drop. However, he should not despair, as his gross profit was $300,000 in each year, and the gross profit margin soared during Year 2. The gross profit margin in Year 1 was 10% ($300,000/$3,000,000), and the gross profit margin in Year 2 was 30% ($300,000/$1,000,000). Despite the plunge in sales, Liu may actually be better off. Although this is a dramatic example to make the point, even the slightest shift in business circumstances can change the relative relationships between revenues and costs. A smart manager or investor will always keep a keen eye on business trends revealed by the shifting of gross profit and net profit percentages over time.

5. The Control Structure

An organization should carefully define various measures to safeguard its assets, check the reliability and accuracy of accounting information, ensure compliance with management policies, and evaluate operating performance and efficiency. The internal control structure depends on the accounting system, the control environment, and the control procedures. The control environment is the combined effect of a firm's policies and attitudes toward control implementation. Control procedures are specifically integrated into the accounting system and relate to the following features:

- One important control is limited access to assets. This control feature assures that only authorized and responsible employees can obtain access to key assets. For example, a supplies stock area may be accessible only to department supervisors.

- Separation of duties is another important control. Activities like transaction authorization, transaction recording, and asset custody should be performed by different employees. Separating functions reduces the possibility of errors (because of cross-checking of accounting records to assets on hand, etc.) and fraud (because of the increased need for collusion among employees).

- A number of accountability procedures can be implemented to improve the degree of internal control:

    - Duty authorization is a control feature which requires that certain functions be performed by a specific person (e.g., customer returns of merchandise for credit can be approved only by a sales manager).

    - Prenumbered documents allow ready identification of missing items. For example, checks are usually prenumbered so that missing checks can be identified rapidly.

    - Independent verification of records is another control procedure. Examples include comparing cash in a point of sale terminal with the sales recorded on that register and periodic reconciliation of bank accounts.

- A company may engage an accounting firm or CPA to provide an independent review of the company's accounting records and internal controls. The accountant may offer suggestions for improvement and test the established system to determine if it is functioning as planned.

In designing and implementing an internal control system, careful attention should be paid to the costs and benefits of the system. It is folly to develop a system which costs more to establish and maintain than it is worth to the company.

5.1 Internal Control in the Merchandising Environment

The basic elements of control are common to most businesses. However, the merchandiser must pay special attention to several unique considerations. Foremost is asset control. Obviously, the retailer has a huge investment in inventory, and that inventory is not easily "isolated." As a result, theft and spoilage are all too common. Retailers should go to great lengths to protect against these costly events. Let's think, for a moment, about walking through an electronics retail store. Upon entering the front door, you may first notice "architecturally pleasing" barricades (like planter boxes or posts) to prevent crash entry. Next you may be greeted by a doorman (guard), who perhaps oversees separate entrances and exists, and is responsible for matching receipts to goods leaving the store. Of course, there is the ever-present sensor that will lock down the exit if a hidden sensor has not been deactivated at check out. And, a quick glance up reveals that you are on "candid" camera! As you stroll the store, you may note that the most expensive items are display only; to get the one you want to buy, you present a claim ticket at a caged area. Only authorized employees can enter that area. At check out, point-of-sale terminals must be accessed with a key that is assigned to an employee. The terminal knows who checked-out the sale. In addition, an employee may look inside the box that contains the item you are buying, compare you to your picture ID, and so forth. In general, the goal is simple -- make sure that only purchased merchandise gets out of the store. Several times daily, the cash drawers in the terminals will be pulled (replaced with another) and their contents audited. Daily bank runs (maybe via armored courier) will occur to make sure that funds are quickly and safely deposited in the bank. These controls are what you see on the "front end" of the business. Behind the scenes, a lot more is going on. Next, we will contemplate the purchasing cycle controls.

5.2 Internal Control and the Purchasing Cycle

Purchasing cycle controls are invisible to the customer, but every much as important. And, these purchasing controls are pervasive in other non-merchandising businesses as well. There is no single, correct process, but the following concepts should be considered:

- Purchases should be initiated only by appropriate supervisory personnel, in accord with budgets or other authorizing plans.
- The purchasing action should be undertaken by trained purchasing personnel who know how to negotiate the best terms (with full understanding of freight issues, discount issues, and so forth).
- Purchasing departments should have strong procedural rules, including prohibitions against employees receiving "gifts," limitations on dealings with related parties, and obtaining multiple bids.
- A purchase order should be prepared to initiate the actual order.
- When goods are received, the receiving department should not accept them without inspection, including matching the goods to an open purchase order to make sure that what is being delivered was in fact ordered.
- The receiving department should prepare a receiving report, indicating that goods have been received in good order.
- When an invoice ("bill") is received, it should be carefully matched to the original purchase order and receiving report. The bill should be scheduled for payment in time to take advantage of available discounts. It is important to only pay for goods that were ordered and received. In a large organization, the person preparing the check to pay the invoice has likely never seen the goods; hence the importance of complete documentation.
- Before payment is released, an independent supervisor should make one last review of all the documents -- the purchase order, the receiving report, and the check.

5.3 Generalizing About Control

At this point in your study, most of your thought process has been directed toward procedural elements. These aspects must be understood, of course, but accounting is so much more involved than that. Accountants spend much of their time dealing with issues that are complex, like designing and testing the control environment! For example, an auditor does not just look at a bunch of transactions to see if the debits and credits are correct. Instead, they will carefully study the control environment and test to see if it is working as planned. If it is, then the "system" should be producing correct financial data, and much less time can be devoted to actually focusing on specific transactions.

There are control elements associated with virtually every accounting issue, and those will become ever more apparent as you move forward in your study of accounting. The next series of chapters delve into specific topical areas, following the normal balance sheet line up -- cash and highly liquid investments, receivables, inventories, and so forth. Those discussions focus less on debits and credits, and more on the business side of accounting.

Cash and Highly-Liquid Investments

Part 2

Your goals for this “cash and highly-liquid investments” chapter are to learn about:

- The composition of cash and how cash is presented on the balance sheet.
- Cash management and controls for receipts and disbursements.
- Reconciliation of bank accounts.
- The correct operation of a petty cash system.
- Accounting for highly-liquid investments known as “trading securities.”

6. Cash Composition

Given its liquid and vital status, cash is typically listed first within the current asset section of the balance sheet. But what exactly is cash? This may seem like a foolish question until one considers the possibilities. Obviously, cash includes coins and currency. But what about items like money on deposit in bank accounts, undeposited checks from customers, certificates of deposit, and similar items? Some of these are deemed to be cash and some are not. What rule shall be followed? Generalizing, cash includes those items that are acceptable to a bank for deposit and are free from restrictions (i.e., available for use in satisfying current debts). Cash typically includes coins, currency, funds on deposit with a bank, checks, and money orders. Items like postdated checks, certificates of deposit, IOUs, stamps, and travel advances are typically not classified as cash. The existence of compensating balances (amounts that must be left on deposit and cannot be withdrawn) should be disclosed; if such amounts are very significant, they are reported separately from cash. Also receiving separate treatment are "sinking funds" (monies that must be set aside to satisfy debts) and heavily restricted foreign currency holdings (that cannot easily be converted into dollars). These unique categories of funds may be reported in the long-term investments category.

6.1 Cash Equivalents

In lieu of reporting "cash," some companies will report "cash and cash equivalents." Cash equivalents arise when companies place their cash in very short-term interest-earning financial instruments that are deemed to be highly secure and will convert back into cash within 90 days. Many short-term government-issued securities (e.g., treasury bills) meet these conditions. In addition, active markets exist for such securities, and these financial instruments are usually very marketable in the event the company needs access to funds in advance of maturity. Cash management strategies dictate that large amounts of cash not be held in "unproductive" accounts that do not generate interest income. As a result, surplus cash is often invested in these instruments. Because of their unique nature, they are considered to be cash equivalents, and are often reported with cash on the balance sheet. Following is an excerpt from a recent balance sheet of the automotive division of General Motors Corporation. You will note that the company held over $15 billion in cash:

Cash and cash equivalents (Note 1) $ 15,187

Note 1 to the financial statements included this additional commentary about cash:

> Cash and Cash Equivalents
>
> > Cash equivalents are defined as short-term, highly-liquid investments with original maturities of 90 days or less.

7. Cash Management

It is very important to ensure that sufficient cash is available to meet obligations and to make sure that idle cash is appropriately invested to maximize the return to the company. One function of the company “treasurer” is to examine the cash flows of the business, and pinpoint anticipated periods of excess or deficit cash flows. A detailed cash budget is often maintained and updated on a regular basis. The cash budget is a major component of a cash planning system and represents the overall plan of activity that depicts cash inflows and outflows for a stated period of time. A future chapter provides an in-depth look at cash budgeting.

You may tend to associate cash shortages as a sign of weakness, and, indeed, that may be true. However, such is not always the case. A very successful company with a great product or service may be rapidly expanding via new business locations, added inventory levels, growing receivables, and so forth. All of these events give rise to the need for cash and can create a real crunch even though the business is fundamentally prospering. To sustain the growth, careful planning must occur.

7.1 Strategies to Enhance Cash Flows

As a business looks to improve cash management or add to the available cash supply, a number of options are available. Some of these solutions are “external” and some are “internal” in nature. External solutions include:

Issuing additional shares of stock -- This solution has a definite advantage, because it allows the company to obtain cash, without a fixed obligation to repay. As a result, this may seem like a sure-fire costless option. Unfortunately, the existing shareholders do incur a very real detriment, because the added share count dilutes their ownership proportions. In essence, it is akin to existing shareholders selling off part of the business; a solution that may be seen as a last resort if the future is bright.

Borrowing additional funds -- This solution brings no additional shareholders to the table, but borrowed funds must be repaid along with interest. Thus, the business cost and risk is increased. On a related note, many companies will establish a standing line of credit that enables them to borrow as needed, and not borrow at all if funds are not needed. This solution provides a ready source of liquidity, without actually increasing debt levels. Banks typically provide such lines of credit in exchange for a fee based on the amount of the line of credit.

The company may look within its own operating structure to find internal cash flow enhancements:

Accelerate cash collections -- If a company can move its customer base to pay more quickly, a significant source of cash is found! Simple tools include electronic payment, credit cards, lockbox systems (i.e., the establishment of bank depositories near to the customer for quick access to funds/thereby avoiding mail and clearing delays), and cash discounts for prompt payment.

Postponement of cash outflows -- Companies may “drag their feet” on cash outflows, delaying payment as long as possible. In addition, paying via check sent through the mail allows use of the “float” to preserve cash on hand. However, you need to know that it is illegal to issue a check when there are insufficient funds in the bank to cover that item (even if you know a deposit is forthcoming that will cover the check). Some companies make travel advances to employees for anticipated costs to be incurred on an upcoming trip; it is better for cash flow to have the employee incur the cost (perhaps on a credit card) and then submit receipts for reimbursement.

Cash control -- Systems and procedures should be adopted to safeguard an organization’s funds. Internal control for cash is based on the same general control features introduced in the previous chapter; access to cash should be limited to a few authorized personnel, incompatible duties should be separated, and accountability features (like prenumbered checks, etc.) should be developed.

- The control of receipts from cash sales should begin at the point of sale and continue through to deposit at the bank. Specifically, cash registers (or other point-of-sale terminals) should be used, actual cash on hand at the end of the day should be compared to register tapes, and daily bank deposits should be made. Any cash shortages or excesses should be identified and recorded in a Cash Short & Over account.

- Control of receipts from customers on account begins when payments are received (in the mail or otherwise). The person opening the mail should prepare a listing of checks received and forward the list to the accounting department. The checks are forwarded to a cashier who prepares a daily bank deposit. The accounting department enters the information from the listing of checks into the accounting records and compares the listing to a copy of the deposit slip prepared by the cashier.

- The controls over cash disbursements include procedures that allow only authorized payments for actual expenditures and maintenance of proper separation of duties. Control features include requiring that significant disbursements be made by check, performance of periodic bank reconciliations, proper utilization of petty cash systems, and verification of supporting documentation before disbursing funds.

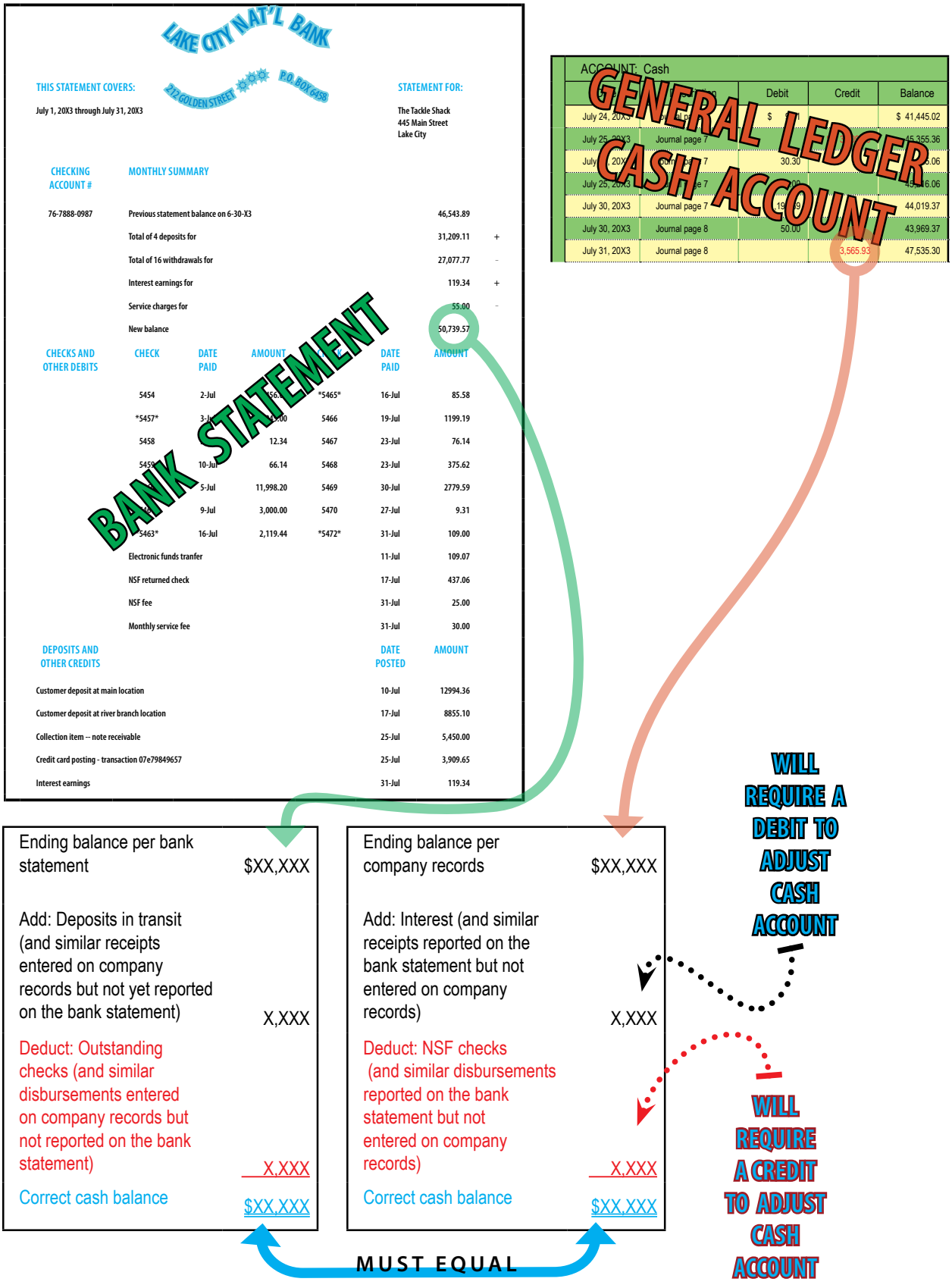
The bank reconciliation and petty cash systems referred to above have specific accounting implications to consider, and are the subject of the following sections of this chapter.

8. Bank Reconciliation

One of the most common cash control procedures, and one which you may already be performing on your own checking account, is the bank reconciliation. In business, every bank statement should be promptly reconciled by a person not otherwise involved in the cash receipts and disbursements functions. The reconciliation is needed to identify errors, irregularities, and adjustments for the Cash account. Having an independent person prepare the reconciliation helps establish separation of duties and deters fraud by requiring collusion for unauthorized actions.

There are many different formats for the reconciliation process, but they all accomplish the same objective. The reconciliation compares the amount of cash shown on the monthly bank statement (the document received from a bank which summarizes deposits and other credits, and checks and other debits) with the amount of cash reported in the general ledger. These two balances will frequently differ. Differences are caused by items reflected on company records but not yet recorded by the bank; examples include deposits in transit (a receipt entered on company records but not processed by the bank) and outstanding checks (checks written which have not cleared the bank). Other differences relate to items noted on the bank statement but not recorded by the company; examples include nonsufficient funds (NSF) checks ("hot" checks previously deposited but which have been returned for nonpayment), bank service charges, notes receivable (like an account receivable, but more "formalized") collected by the bank on behalf of a company, and interest earnings.

The following format is typical of one used in the reconciliation process. Note that the balance per the bank statement is reconciled to the "correct" amount of cash; likewise, the balance per company records is reconciled to the "correct" amount. These amounts must agree. Once the correct adjusted cash balance is satisfactorily calculated, journal entries must be prepared for all items identified in the reconciliation of the ending balance per company records to the correct cash balance. These entries serve to record the transactions and events which impact cash but have not been previously journalized (e.g., NSF checks, bank service charges, interest income, and so on).



8.1 Comprehensive Illustration of Bank Reconciliation

The following illustration provides a detailed example of a bank statement, additional data, the reconciliation process, and the corresponding journal entries. Conducting a bank reconciliation requires careful attention to the slightest of details. Even the smallest error will lead to frustration in trying to bring closure to the reconciliation effort.

LAKE CITY NAT'L BANK

212 GOLDEN STREET P.O. BOX 6458

THIS STATEMENT COVERS:	STATEMENT FOR:
July 1, 20X3 through July 31, 20X3	The Tackle Shack 445 Main Street Lake City

CHECKING ACCOUNT #	MONTHLY SUMMARY		
76-7888-0987	Previous statement balance on 6-30-X3	46,543.89	
	Total of 4 deposits for	31,209.11	+
	Total of 16 withdrawals for	27,077.77	–
	Interest earnings for	119.34	+
	Service charges for	55.00	–
	New balance	50,739.57	

CHECKS AND OTHER DEBITS	CHECK	DATE PAID	AMOUNT	CHECK	DATE PAID	AMOUNT
	5454	2-Jul	4,456.09	*5465*	16-Jul	85.58
	5457	3-Jul	245.00	5466	19-Jul	1199.19
	5458	3-Jul	12.34	5467	23-Jul	76.14
	5459	10-Jul	66.14	5468	23-Jul	375.62
	5460	5-Jul	11,998.20	5469	30-Jul	2779.59
	5461	9-Jul	3,000.00	5470	27-Jul	9.31
	5463	16-Jul	2,119.44	*5472*	31-Jul	109.00
	Electronic funds tranfer				11-Jul	109.07
	NSF returned check				17-Jul	437.06
	NSF fee				31-Jul	25.00
	Monthly service fee				31-Jul	30.00

DEPOSITS AND OTHER CREDITS		DATE POSTED	AMOUNT
	Customer deposit at main location	10-Jul	12994.36
	Customer deposit at river branch location	17-Jul	8855.10
	Collection item -- note receivable	25-Jul	5,450.00
	Credit card posting - transaction 07e79849657	25-Jul	3,909.65
	Interest earnings	31-Jul	119.34

Additional Data

The preceding bank statement is for The Tackle Shop for July of 20X3. The following additional data is needed to reconcile the account:

- The first check listed on the previous page, #5454, was written in June but did not clear the bank until July 2.
- There were no other outstanding checks, and no deposits in transit at the end of June.
- The EFT (electronic funds transfer) on July 11 relates to the monthly utility bill; The Tackle Shop has authorized the utility to draft their account directly each month.
- The Tackle Shop is optimistic that they will recover the full amount, including the service charge, on the NSF check ("hot check") that was given to them by a customer during the month.
- The bank collected a $5,000 note for The Tackle Shop, plus 9% interest ($5,450).
- The Tackle Shop's credit card clearing company remitted funds on July 25; the Tackle Shop received an email notification of this posting and simultaneously journalized this cash receipt in the accounting records.

- The Tackle Shop made the 2 deposits listed on the previous page, and an additional deposit of $3,565.93 late in the afternoon on July 31, 20X3.
- The ending cash balance, per the company general ledger, was $47,535.30.
- The following check register is maintained by The Tackle Shop, and it corresponds to the amounts within the Cash account in the general ledger:

DATE	PARTY	REF #	CHECK	DEPOSIT	Balance
1-Jul		Balance			$42,087.80
1-Jul	Bailey	5457	$ 245.00		41,842.80
2-Jul	Boyatzis	5458	12.34		41,830.46
3-Jul	Smith	5459	66.14		41,764.32
5-Jul	Blaize	5460	11,998.20		29,766.12
8-Jul	Paronto	5461	3,000.00		26,766.12
8-Jul	Void	5462			26,766.12
9-Jul	Deposit			$12,994.36	39,760.48
15-Jul	Sanchez	5463	2,119.44		37,641.04
15-Jul	Bauer	5464	525.00		37,116.04
15-Jul	Cameron	5465	85.58		37,030.46
17-Jul	Deposit			8,855.10	45,885.56
19-Jul	Hartman	5466	1,199.19		44,686.37
21-Jul	Ashkanasy	5467	76.14		44,610.23
22-Jul	Forest	5468	375.62		44,234.61
24-Jul	Augier	5469	2,779.59		41,455.02
24-Jul	Arbaugh	5470	9.31		41,445.71
25-Jul	Credit Card			3,909.65	45,355.36
25-Jul	Bento	5471	30.30		45,325.06
30-Jul	Peterson	5472	109.00		45,216.06
30-Jul	Taggart	5473	1,196.69		44,019.37
30-Jul	Klimoski	5474	50.00		43,969.37
31-Jul	Deposit			3,565.93	47,535.30
			$23,877.54	$29,325.04	

Bank Reconcinilation

The bank reconciliation for July is determined by reference to the preceding bank statement and other data. You must carefully study all of the data to identify deposits in transit, outstanding checks, and so forth. Be advised that tracking down all of the reconciling items can be a rather tedious, sometimes frustrating, task. Modern bank statements facilitate this process by providing sorted lists with asterisks beside the check numbers that appear to have gaps in their sequence numbering. Below is the reconciliation of the balance per bank statement to the correct cash balance. You should try to identify each item in this reconciliation within the previously presented data. If you need help, you might wish to refer to the companion website for a link to a line drawing that helps you find the necessary elements.

	A	B	C	D
2		**Ending balance per bank statement**		$ 50,739.57
3				
4				
5		**Add:** Deposits in transit		3,565.93
6				
7				
8		**Deduct:** Outstanding checks		
9		#5464	$ 525.00	
10		#5471	30.30	
11		#5473	1,196.69	
12		#5474	50.00	(1,801.99)
13				
14				
15		**Correct cash balance**		$ 52,503.51

The reconciliation of the balance per company records to the correct cash balance is presented below. This reconciliation will trigger various adjustments to the Cash account in the company ledger. If you need a little help finding the noted items, check the link provided on the companion website. The identified items caused cash to increase by $4,968.21 ($52,503.51 correct balance, less the balance on the company records of $47,535.30). Most of these amounts are fairly intuitive, except for the $462.06 debit to Accounts Receivable -- which indicates that The Tackle Shop is going to attempt to collect on the NSF check and related charge. The interest income of $569.34 reflects that posted by the bank ($119.34) plus the $450 on the collected note.

	B	C	D
16			
17	**Ending balance per company records**		$ 47,535.30
18			
19			
20	**Add:** Customer note collection	$ 5,450.00	
21	Interest earnings	119.34	5,569.34
22			
23	**Deduct:**		
24	EFT for utilities	$ 109.07	
25	NSF check returned	437.06	
26	NSF fee	25.00	
27	Service charges	30.00	(601.13)
28			
29			
30	**Correct cash balance**		$ 52,503.51

7-31-X3	Cash		4,968.21	
	Utilities Expense		109.07	
	Accounts Receivable		462.06	
	Miscellaneous Expense		30.00	
	Notes Receivable			5,000.00
	Interest Income			569.34
	To record adjustments necessitated by bank reconciliation			

8.2 Proof of Cash

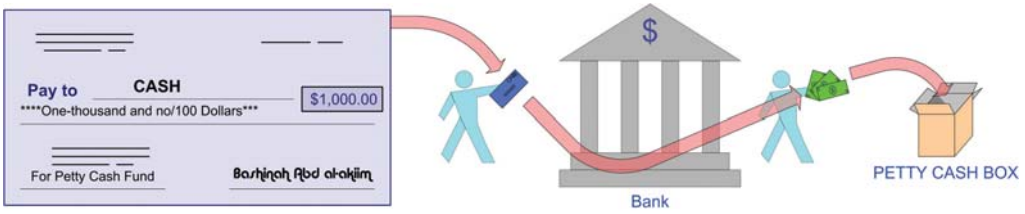
Many a business prepares a reconciliation just like that illustrated. But, you should note that it leaves one gaping hole in the control process. What if you learned that the bank statement included a $5,000 check to an employee near the beginning of the month, and a $5,000 deposit by that employee near the end of the month (and these amounts were not recorded on the company records)? In other words, the employee took out an unauthorized “loan” for a while. The reconciliation would not reveal this unauthorized activity because the ending balances are correct and in agreement. To overcome this deficiency, some companies will reconcile not only the beginning and ending balances, but also the total checks per the bank statement to the total disbursements per the company records, and the total deposits per the bank statement to the total receipts on the company accounts. If a problem exists, the totals on the bank statement will exceed the totals per the company records for both receipts and disbursements. This added reconciliation

technique is termed a proof of cash. It is highly recommended where the volume of transactions and amount of money involved is very large. Such unauthorized “borrowing” not only steals company interest income, but it also presents a risk of loss if the company funds are not replaced. Make no mistake, such schemes are highly illegal!

Also illegal is “kiting.” Kiting occurs when one opens numerous bank accounts at various locations and then proceeds to write checks on one account and deposit them to another. In turn, checks are written on that account, and deposited to yet another bank. And, over and over and over. In time, each of the bank accounts may appear to have money, but it is illusionary, because there are numerous checks “floating” about that will hit and reduce the accounts. Somewhere in the process of running this scam, the crook makes off with a cash withdrawal (or writes a check that appears to be good to an unsuspecting merchant) and skips town. That is why you will often see bank notices that deposited funds cannot be withdrawn for several days; they have been burned once too often, and want to be sure that a deposit clears the bank on which it is drawn before releasing those funds. Now, the point of this discussion is not to give you any ideas -- but to alert you to be careful in your dealings with others. Kiting is complex and illegal, and many a person is “doing time” in jail for such dealings. Enhanced electronic clearing procedures adopted by banks in recent years have made kiting far more difficult to accomplish.

9. Petty Cash

Petty cash, also known as imprest cash, is a fund established for making small payments that are impractical to pay by check. Examples include postage due, reimbursement to employees for small purchases of office supplies, and numerous similar items. The establishment of a petty cash system begins by making out a check to cash, cashing it, and placing the cash in a petty cash box:



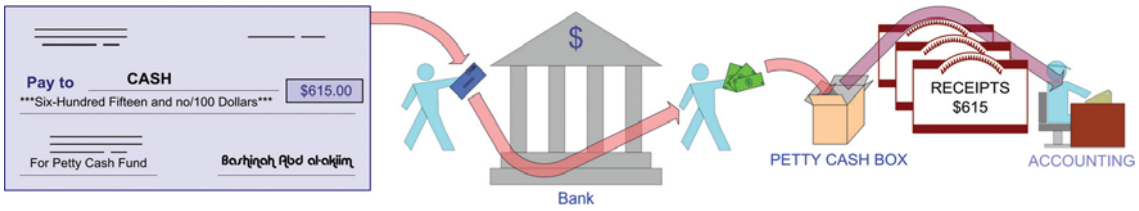
A petty cash custodian should be designated to have responsibility for safeguarding and making payments from this fund. At the time the fund is established, the following journal entry is needed. This journal entry, in essence, subdivides the petty cash portion of available funds into a separate account.

1-31-X4	Petty Cash		1,000	
	Cash			1,000
	To establish a $1,000 petty cash fund			

Policies should be established regarding appropriate expenditures (type and amount) that can be paid from petty cash. When a disbursement is made from the fund by the custodian, a receipt should always be placed in the petty cash box. The receipt should clearly set forth the amount and nature of expenditure. The receipts are sometimes known as petty cash vouchers. Therefore, at any point in time, the receipts plus the remaining cash should equal the balance of the petty cash fund (i.e., the amount of cash originally placed in the fund and recorded by the entry above).

9.1 Replenishment of Petty Cash

As expenditures occur, cash in the box will be depleted. Eventually the fund will require replenishment back to its original level. To replenish the fund, a check for cash is prepared in an amount to bring the fund back up to the desired balance. The check is cashed and the proceeds are placed in the petty cash box. At the same time, receipts are removed from the petty cash box and formally recorded as expenses.



The journal entry for this action involves debits to appropriate expense accounts as represented by the receipts, and a credit to Cash for the amount of the replenishment. Notice that the Petty Cash account is not impacted -- it was originally established as a base amount and its balance has not been changed by virtue of this activity.

2-28-X4	Supplies Expense		390	
	Fuel Expense		155	
	Miscellaneous Expense		70	
	Cash			615
	To replenish petty cash; receipts on hand of $615 -- office supplies ($390), gasoline ($155), coffee and drinks ($70). Remaining cash in the fund was $385, bringing the total to $1,000 ($615 + $385).			

9.2 Cash Short and Over

Occasionally, errors will occur, and the petty cash fund will be out of balance. In other words, the sum of the cash and receipts differs from the correct Petty Cash balance. This might be the result of simple mistakes, such as math errors in making change, or perhaps someone failed to provide a receipt for an appropriate expenditure. Whatever the cause, the available cash must be brought back to the appropriate level. The journal entry to record full replenishment may require an additional debit (for shortages) or credit (for overages) to Cash Short (Over). In the following entry, $635 is placed back into the fund, even though receipts amount to only $615. The difference is debited to Cash Short (Over):

2-28-X4	Supplies Expense		390	
	Fuel Expense		155	
	Miscellaneous Expense		70	
	Cash Short (Over)		20	
	Cash			635
	To replenish petty cash; receipts on hand of $615 -- office supplies ($390), gasoline ($155), coffee and drinks ($70). Remaining cash in the fund was $365, bringing the total to $980 ($615 + $365; a $20 shortage was noted and replenished.			

The Cash Short (Over) account is an income statement type account. It is also applicable to situations other than petty cash. For example, a retailer will compare daily cash sales to the actual cash found in the cash register drawers. If a surplus or shortage is discovered, the difference will be recorded in Cash Short (Over); a debit balance indicates a shortage (expense), while a credit represents an overage (revenue). As a means of enforcing accountability, some companies may pressure employees to reimburse cash shortages.

9.3 Increasing the Base Fund

As a company grows, it may find a need to increase the base size of its petty cash fund. The entry to increase the fund would be identical to the first entry illustrated above; that is, the amount added to the base amount of the fund would be debited to Petty Cash and credited to Cash. Otherwise, take note that the only entry to the Petty Cash account occurred when the fund was established -- subsequent reimbursements of the fund did not change the Petty Cash account balance.

10. Trading Securities

From time to time a business may invest cash in stocks of other corporations. Or, a company may buy other types of corporate or government securities. Accounting rules for such investments depend on the "intent" of the investment. If these investments were acquired for long-term purposes, or perhaps to establish some form of control over another entity, the investments are classified as noncurrent assets. The accounting rules for those types of investments are covered in subsequent chapters. But, when the investments are acquired with the simple intent of generating profits by reselling the investment in the very near future, such investments are classified as current assets (following cash on the balance sheet). These investments are appropriately known as "trading securities."

Trading securities are initially recorded at cost (including brokerage fees). However, the value of these readily marketable items may fluctuate rapidly. Subsequent to initial acquisition, trading securities are to be reported at their fair value. The fluctuation in value is reported in the income statement as the value changes. This approach is often called "mark-to-market" or "fair value" accounting. Fair value is defined as the price that would be received from the sale of an asset in an orderly transaction between market participants.

10.1 An Illustration

Assume that Webster Company's management was seeing a pickup in their business activity, and believed that a similar uptick was occurring for its competitors as well. One of its competitors, Merriam Corporation, was a public company, and its stock was trading at $10 per share. Webster had excess cash earning very low rates of interest, and decided to invest in Merriam -- intending to sell the investment in the very near future for a quick profit. The following entry was needed on March 3, 20X6, the day Webster bought stock of Merriam:

3-3-X6	Trading Securities		50,000	
	Cash			50,000
	To record the purchase of 5,000 shares of Merriam stock at $10 per share			

Next, assume that financial statements were being prepared on March 31. Despite Webster's plans for a quick profit, the stock declined to $9 per share by March 31. Webster still believes in the future of this investment, and is holding all 5,000 shares. But, accounting rules require that the investment "be written down" to current value, with a corresponding charge against income. The charge against income is recorded in an account called Unrealized Loss on Investments:

3-31-X6	Unrealized Loss on Investments		5,000	
	Trading Securities			5,000
	To record a $1 per share decrease in the value of 5,000 shares of Merriam stock			

Notice that the loss is characterized as "unrealized." This term is used to describe an event that is being recorded ("recognized") in the financial statements, even though the final cash consequence has not yet been determined. Hence, the term "unrealized."

April had the intended effect, and the stock of Merriam bounced up $3 per share to $12. Still Webster decided to hang on for more. At the end of April, another entry is needed if financial statements are again being prepared:

4-30-X6	Trading Securities		15,000	
	Unrealized Gain on Investments			15,000
	To record a $3 per share increase in the value of 5,000 shares of Merriam stock			

Notice that the three journal entries now have the trading securities valued at $60,000 ($50,000 - $5,000 + $15,000). This is equal to their market value ($12 X 5,000 = $60,000). The income statement for March includes a loss of $5,000, but April shows a gain of $15,000. Cumulatively, the income statements show a total gain of $10,000 ($5,000 loss + $15,000 gain). This cumulative gain corresponds to the total increase in value of the original $50,000 investment. The preceding illustration assumed a single investment. However, the treatment would be the same even if the trading securities consisted of a portfolio of many investments. That is, each and every investment would be adjusted to fair value.

10.2 Rationale for Fair Value Accounting

The fair value approach is in stark contrast to the historical cost approach used for other assets like land, buildings, and equipment. The rationale is that the market value for trading securities is readily determinable, and the periodic fluctuations have a definite economic impact that should be reported. Given the intent to dispose of the investments in the near future, the belief is that the changes in value likely have a corresponding effect on the ultimate cash flows of the company. As a result, the accounting rules recognize those changes as they happen.

10.3 Alternative: A Valuation Adjustments Account

As an alternative to directly adjusting the Trading Securities account, some companies may maintain a separate Valuation Adjustments account that is added to or subtracted from the Trading

Securities account. The results are the same; the reason for using the alternative approach is to provide additional information that may be needed for more complex accounting and tax purposes. One such purpose is to determine the "taxable gain or loss" on sale. Tax rules generally require comparing the sales price to the original cost (you may be surprised to learn that tax rules sometimes differ from accounting rules -- the mark-to-market approach used for accounting is normally not acceptable for tax purposes). There are also more involved accounting rules relating to measurement of the "realized" gains and losses when the securities are in fact sold. Those rules are ordinarily the subject of more advanced courses.

10.4 Dividend and Interest

Since trading securities are turned over rather quickly, the amount of interest and dividends received on those investments is probably not very significant. However, any dividends or interest received on trading securities is reported as income and included in the income statement:

9-15-X5	Cash		75	
	Dividend Income			75
	To record receipt of dividend on trading security investment			

The presence or absence of dividends or interest on trading securities does not change the basic mark-to-market valuation for the Trading Securities account.

10.5 Derivatives

Beyond the rather straight-forward investments in trading securities are an endless array of more exotic investment options. Among these are commodity futures, interest rate swap agreements, options related agreements, and so on. These investments are generally referred to as derivatives, because their value is based upon or derived from something else (e.g., a cotton futures contract takes its value from cotton, etc.). The underlying accounting approach follows that for trading securities. That is, such instruments are initially measured at fair value, and changes in fair value are recorded in income as they happen.

Accounts Receivable

Part 3

Your goals for this “Accounts Receivable” chapter are to learn about:

- The costs and benefits of selling on credit.
- Accounting considerations for uncollectible receivables.
- Alternative approaches to account for uncollectibles.
- Notes receivable and interest, including dishonored obligations.

11. The Costs and Benefits of Selling on Credit

You already know that receivables arise from a variety of claims against customers and others, and are generally classified as current or noncurrent based on expectations about the amount of time it will take to collect them. The majority of receivables are classified as trade receivables, which arise from the sale of products or services to customers. Such trade receivables are carried in the Accounts Receivable account. Nontrade receivables arise from other transactions and events, including advances to employees and utility company deposits.

11.1 Credit Sales

To one degree or another, many business transactions result in the extension of credit. Purchases of inventory and supplies will often be made on account. Likewise, sales to customers may directly (by the vendor offering credit) or indirectly (through a bank or credit card company) entail the extension of credit. While the availability of credit facilitates many business transactions, it is also costly. Credit providers must conduct investigations of credit worthiness, and monitor collection activities. In addition, the creditor must forego alternative uses of money while credit is extended. Occasionally, a creditor will get burned when the borrower refuses or is unable to pay. Depending on the nature of the credit relationship, some credit costs may be offset by interest charges. And, merchants frequently note that the availability of credit entices customers to make a purchase decision.

11.2 Credit Cards

Banks and financial services companies have developed credit cards that are widely accepted by many merchants, and eliminate the necessity of those merchants maintaining separate credit departments. Popular examples include MasterCard, Visa, and American Express. These credit card companies earn money off of these cards by charging merchant fees (usually a formula-based percentage of sales) and assess interest and other charges against the users. Nevertheless, merchants tend to welcome their use because collection is virtually assured and very timely (oftentimes same day funding of the transaction is made by the credit card company). In addition, the added transaction cost is offset by a reduction in the internal costs associated with maintaining a credit department.

The accounting for credit card sales depends on the nature of the card. Some bank-card based transactions are essentially regarded as cash sales since funding is immediate. Assume that Bassam Abu Rayyan Company sold merchandise to a customer for $1,000. The customer paid with a bank card, and the bank charged a 2% fee. Bassam Abu Rayyan Company should record the following entry:

1-9-X3	Cash		980	
	Service Charge		20	
	Sales			1,000
	Sold merchandise on "bank card;" same day funding, net of fee of 2% assessed by bank			

Other card sales may involve delayed collection, and are initially recorded as credit sales:

1-9-X3	Accounts Receivable		1,000	
	Sales			1,000
	Sold merchandise on "nonbank card"			
1-25-X3	Cash		980	
	Service Charge		20	
	Accounts Receivable			1,000
	Collected amount due from credit card company; net of fee of 2%			

Notice that the entry to record the collection included a provision for the service charge. The estimated service charge could (or perhaps should) have been recorded at the time of the sale, but the exact amount might not have been known. Rather than recording an estimate, and adjusting it later, this illustration is based on the simpler approach of not recording the charge until collection occurs. This expedient approach is acceptable because the amounts involved are not very significant.

12. Accounting for Uncollectible Receivables

Unfortunately, some sales on account may not be collected. Customers go broke, become unhappy and refuse to pay, or may generally lack the ethics to complete their half of the bargain. Of course, a company does have legal recourse to try to collect such accounts, but those often fail. As a result, it becomes necessary to establish an accounting process for measuring and reporting these uncollectible items. Uncollectible accounts are frequently called “bad debts.”

12.1 Direct Write-off Method

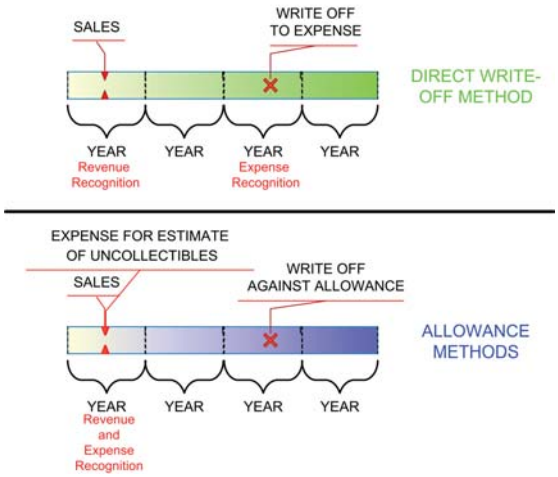
A simple method to account for uncollectible accounts is the direct write-off approach. Under this technique, a specific account receivable is removed from the accounting records at the time it is finally determined to be uncollectible. The appropriate entry for the direct write-off approach is as follows:

2-10-X7	Uncollectible Accounts Expense		500	
	Accounts Receivable			500
	To record the write off of an uncollectible account from Jones			

Notice that the preceding entry reduces the receivables balance for the item that is uncollectible. The offsetting debit is to an expense account: Uncollectible Accounts Expense.

While the direct write-off method is simple, it is only acceptable in those cases where bad debts are immaterial in amount. In accounting, an item is deemed material if it is large enough to affect the judgment of an informed financial statement user. Accounting expediency sometimes permits "incorrect approaches" when the effect is not material. Recall the discussion of nonbank credit card charges above; there, the service charge expense was recorded subsequent to the sale, and it was suggested that the approach was lacking but acceptable given the small amounts involved. Again, materiality considerations permitted a departure from the best approach. But, what is material? It is a matter of judgment, relating only to the conclusion that the choice among alternatives really has very little bearing on the reported outcomes.

You must now consider why the direct write-off method is not to be used in those cases where bad debts are material; what is "wrong" with the method? One important accounting principle is the notion of matching. That is, costs related to the production of revenue are reported during the same time period as the related revenue (i.e., "matched"). With the direct write-off method, you can well understand that many accounting periods may come and go before an account is finally determined to be uncollectible and written off. As a result, revenues from credit sales are recognized in one period, but the costs of uncollectible accounts related to those sales are not recognized until another subsequent period (producing an unacceptable mismatch of revenues and expenses).



To compensate for this problem, accountants have developed "allowance methods" to account for uncollectible accounts. Importantly, an allowance method must be used except in those cases where bad debts are not material (and for tax purposes where tax rules often stipulate that a direct write-off approach is to be used). Allowance methods will result in the recording of an estimated bad debts expense in the same period as the related credit sales. As you will soon see, the actual write off in a subsequent period will generally not impact income.

13. Alternative Approaches for Uncollectibles

Having established that an allowance method for uncollectibles is preferable (indeed, required in many cases), it is time to focus on the details. Let's begin with a consideration of the balance sheet. Suppose that Ito Company has total accounts receivable of $425,000 at the end of the year, and is in the process or preparing a balance sheet. Obviously, the $425,000 would be reported as a current asset. But, what if it is estimated that $25,500 of this amount may ultimately prove to be uncollectible? Thus, a more correct balance sheet presentation would appear as shown at right.

ITO COMPANY Balance Sheet December 31, 20X3		
Assets		
. . .		
Accounts receivable	$425,000	
Less: Allowance for uncollectibles	(25,500)	$399,500
. . .		

The total receivables are reported, along with an allowance account (which is a contra asset account) that reduces the receivables to the amount expected to be collected. This anticipated amount to be collected is often termed the "net realizable value."

13.1 Determining the Allowance Account

In the preceding illustration, the $25,500 was simply given as part of the fact situation. But, how would such an amount actually be determined? If Ito Company's management knew which accounts were likely to not be collectible, they would have avoided selling to those customers in the first place. Instead, the $25,500 simply relates to the balance as a whole. It is likely based on past experience, but it is only an estimate. It could have been determined by one of the following techniques:

- AS A PERCENTAGE OF TOTAL RECEIVABLES: Some companies anticipate that a certain percentage of outstanding receivables will prove uncollectible. In Ito's case maybe 6% ($425,000 X 6% = $25,500).

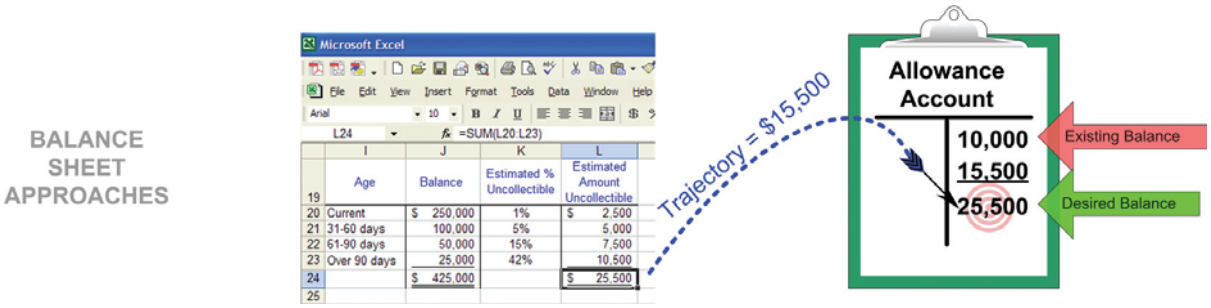
- VIA AN AGING ANALYSIS: Other companies employ more sophisticated aging of accounts receivable analysis. They will stratify the receivables according to how long they have been outstanding (i.e., perform an aging), and apply alternative percentages to the different strata. Obviously, the older the account, the more likely it is to represent a bad account. Ito's aging may have appeared as follows:

	I	J	K	L
19	Age	Balance	Estimated % Uncollectible	Estimated Amount Uncollectible
20	Current	$ 250,000	1%	$ 2,500
21	31-60 days	100,000	5%	5,000
22	61-90 days	50,000	15%	7,500
23	Over 90 days	25,000	42%	10,500
24		$ 425,000		$ 25,500
25				

Both the percentage of total receivables and the aging are termed “balance sheet approaches.” In both cases, the allowance account is determined by an analysis of the outstanding accounts receivable on the balance sheet. Once the estimated amount for the allowance account is determined, a journal entry will be needed to bring the ledger into agreement. Assume that Ito’s ledger revealed an Allowance for Uncollectible Accounts credit balance of $10,000 (prior to performing the above analysis). As a result of the analysis, it can be seen that a target balance of $25,500 is needed; necessitating the following adjusting entry:

12-31-X5	Uncollectible Accounts Expense		15,500	
	Allow. for Uncollectible Accounts			15,500
	To adjust the allowance account from a $10,000 balance to the target balance of $25,500 ($25,500 - $10,000)			

You should carefully note two important points: (1) with balance sheet approaches, the amount of the entry is based upon the needed change in the account (i.e., to go from an existing balance to the balance sheet target amount), and (2) the debit is to an expense account, reflecting the added cost associated with the additional amount of anticipated bad debts.



Rather than implement a balance sheet approach as above, some companies may follow a simpler income statement approach. With this equally acceptable allowance technique, an estimated percentage of sales (or credit sales) is simply debited to Uncollectible Accounts Expense and credited to the Allowance for Uncollectible Accounts each period. Importantly, this technique merely adds the estimated amount to the Allowance account. To illustrate, assume that Pick Company had sales during the year of $2,500,000, and it records estimated uncollectible accounts at a rate of 3% of total sales. Therefore, the appropriate entry to record bad debts cost is as follows:

12-31-X5	Uncollectible Accounts Expense		75,000	
	Allow. for Uncollectible Accounts			75,000
	To add 3% of sales to the allowance account ($2,500,000 X 3% = $75,000)			

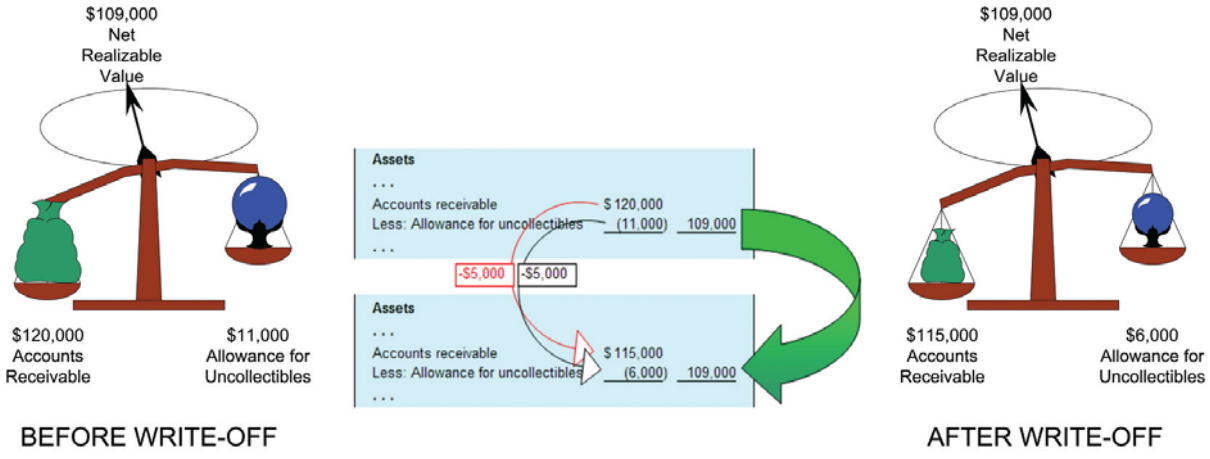
This entry would be the same even if there was already a balance in the allowance account. In other words, the income statement approach adds the calculated increment to the allowance, no matter how much may already be in the account from prior periods.

13.2 Writing off Uncollectible Accounts

Now, we have seen how to record uncollectible accounts expense, and establish the related allowance. But, how do we write off an individual account that is determined to be uncollectible? This part is easy. The following entry would be needed to write off a specific account that is finally deemed uncollectible:

3-15-X3	Allow. for Uncollectible Accounts		5,000	
	Accounts Receivable			5,000
	To record the write-off of an uncollectible account from Aziz			

Notice that the entry reduces both the allowance account and the related receivable, and has no impact on the income statement. Further, consider that the write off has no impact on the net realizable value of receivables, as shown by the following illustration of a $5,000 write off:



13.3 Collection of an Account Previously Written off

On occasion, a company may collect an account that was previously written off. For example, a customer that was once in dire financial condition may recover, and unexpectedly pay an amount that was previously written off. The entry to record the recovery involves two steps: (1) a reversal of the entry that was made to write off the account, and (2) recording the cash collection on the account:

6-16-X6	Accounts Receivable		1,000	
	Allow. for Uncollectible Accounts			1,000
	To reestablish an account previously written off via the reversal of the entry recorded at the time of write off			
6-16-X6	Cash		1,000	
	Accounts Receivable			1,000
	To record collection of account receivable			

It may trouble you to see the allowance account being increased because of the above entries, but the general idea is that another as yet unidentified account may prove uncollectible (consistent with the overall estimates in use). If this does not eventually prove to be true, an adjustment of the overall estimation rates may eventually be indicated.

13.4 Matching Achieved

Carefully consider that the allowance methods all result in the recording of estimated bad debts expense during the same time periods as the related credit sales. These approaches satisfy the desired matching of revenues and expenses.

13.5 Monitoring and Managing Accounts Receivable

A business must carefully monitor its accounts receivable. This chapter has devoted much attention to accounting for bad debts; but, don't forget that it is more important to try to avoid bad debts by carefully monitoring credit policies. A business should carefully consider the credit history of a potential credit customer, and be certain that good business practices are not abandoned in the zeal to make sales. It is customary to gather this information by getting a credit application from a customer, checking out credit references, obtaining reports from credit bureaus, and similar measures. Oftentimes, it becomes necessary to secure payment in advance or receive some other substantial guarantee such as a letter of credit from an independent bank. All of these steps are normal business practices, and no apologies are needed for making inquiries into the creditworthiness of potential customers. Many countries have very liberal laws that make it difficult to enforce collection on customers who decide not to pay or use "legal maneuvers" to escape their obligations. As a result, businesses must be very careful in selecting parties that are allowed trade credit in the normal course of business.

Equally important is to monitor the rate of collection. Many businesses have substantial dollars tied up in receivables, and corporate liquidity can be adversely impacted if receivables are not actively managed to insure timely collection. One ratio that is often monitored is the accounts receivable turnover ratio. That number reveals how many times a firm's receivables are converted to cash during the year. It is calculated as net credit sales divided by average net accounts receivable:

Accounts Receivable Turnover Ratio
=
Net Credit Sales/Average Net Accounts Receivable

To illustrate these calculations, assume Shoztic Corporation had annual net credit sales of $3,000,000, beginning accounts receivable (net of uncollectibles) of $250,000, and ending accounts receivable (net of uncollectibles) of $350,000. Shoztic's average net accounts receivable is $300,000 (($250,000 + $350,000)/2), and the turnover ratio is "10":

10 = $3,000,000/$300,000

A closely related ratio is the "days outstanding" ratio. It reveals how many days sales are carried in the receivables category:

Days Outstanding = 365 Days/Accounts Receivable Turnover Ratio

For Shoztic, the days outstanding calculation is:

36.5 = 365/10

By themselves, these numbers mean little. But, when compared to industry trends and prior years, they will reveal important signals about how well receivables are being managed. In addition, the calculations may provide an "early warning" sign of potential problems in receivables management and rising bad debt risks. Analysts carefully monitor the days outstanding numbers for signs of weakening business conditions. One of the first signs of a business downturn is a delay in the payment cycle. These delays tend to have ripple effects; if a company has trouble collecting its receivables, it won't be long before it may have trouble paying its own obligations.

14. Notes Receivable

A written promise from a client or customer to pay a definite amount of money on a specific future date is called a note receivable. Such notes can arise from a variety of circumstances, not the least of which is when credit is extended to a new customer with no formal prior credit history. The lender uses the note to make the loan more formal and enforceable. Such notes typically bear interest charges. The maker of the note is the party promising to make payment, the payee is the party to whom payment will be made, the principal is the stated amount of the note, and the maturity date is the day the note will be due.

Interest is the charge imposed on the borrower of funds for the use of money. The specific amount of interest depends on the size, rate, and duration of the note. In mathematical form: Interest = Principal X Rate X Time. For example, a $1,000, 60-day note, bearing interest at 12% per year, would result in interest of $20 ($1,000 X 12% X 60/360). In this calculation, notice that the "time" was 60 days out of a 360 day year. Obviously, a year normally has 365 days, so the fraction could have been 60/365. But, for simplicity, it is not uncommon for the interest calculation to be based on a presumed 360-day year or 30-day month. This presumption probably has its roots in olden days before electronic calculators, as the resulting interest calculations are much easier with this assumption in place. But, with today's technology, there is little practical use for the 360 day year, except that it tends to benefit the creditor by producing a little higher interest amount -- caveat emptor (Latin for "let the buyer beware")! The following illustrations will preserve this archaic approach with the goal of producing nice round numbers that are easy to follow.

14.1 Accounting for Notes Receivable

To illustrate the accounting for a note receivable, assume that Butchko initially sold $10,000 of merchandise on account to Hewlett. Hewlett later requested more time to pay, and agreed to give a formal three-month note bearing interest at 12% per year. The entry to record the conversion of the account receivable to a formal note is as follows:

6-1-X8	Notes Receivable		10,000	
	Accounts Receivable			10,000
	To record conversion of an account receivable to a note receivable			

When the note matures, Butchko's entry to record collection of the maturity value would appear as follows:

8-31-X8	Cash		10,300	
	Interest Income			300
	Notes Receivable			10,000
	To record collection of note receivable plus accrued interest of $300 ($10,000 X 12% X 90/360)			

14.2 A Dishonored Note

If Hewlett dishonored the note at maturity (i.e., refused to pay), then Butchko would prepare the following entry:

8-31-X8	Accounts Receivable		10,300	
	Interest Income			300
	Notes Receivable			10,000
	To record dishonor of note receivable plus accrued interest of $300 ($10,000 X 12% X 90/360)			

The debit to Accounts Receivable in the above entry reflects the hope of eventually collecting all amounts due, including the interest, from the dishonoring party. If Butchko anticipated some difficulty in collecting the receivable, appropriate allowances would be established in a fashion similar to those illustrated earlier in the chapter.

14.3 Notes and Adjusting Entries

In the above illustrations for Butchko, all of the activity occurred within the same accounting year. However, if Butchko had a June 30 accounting year end, then an adjustment would be needed to reflect accrued interest at year-end. The appropriate entries illustrate this important accrual concept:

Entry to set up note receivable:

6-1-X8	Notes Receivable		10,000	
	Accounts Receivable			10,000
	To record conversion of an account receivable to a note receivable			

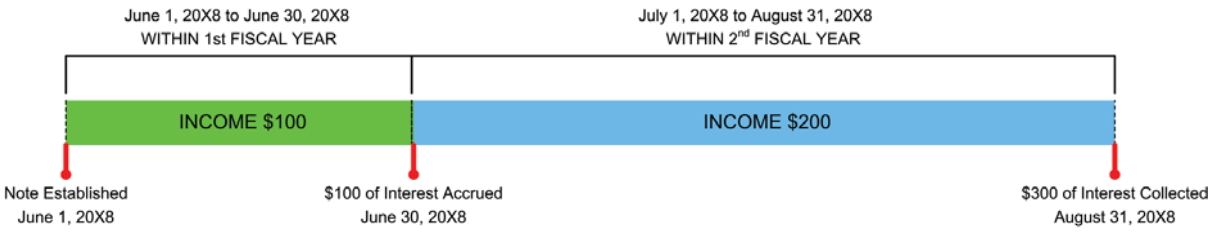
Entry to accrue interest at June 30 year end:

6-30-X8	Interest Receivable		100	
	Interest Income			100
	To record accrued interest at June 30 ($10,000 X 12% X 30/360 = $100)			

Entry to record collection of note (including amounts previously accrued at June 30):

8-31-X8	Cash		10,300	
	Interest Income			200
	Interest Receivable			100
	Notes Receivable			10,000
	To record collection of note receivable plus interest of $300 ($10,000 X 12% X 90/360); $100 of the total interest had been previously accrued			

The following drawing should aid your understanding of these entries:



Inventory

Part 4

Your goals for this “Inventory” chapter are to learn about:

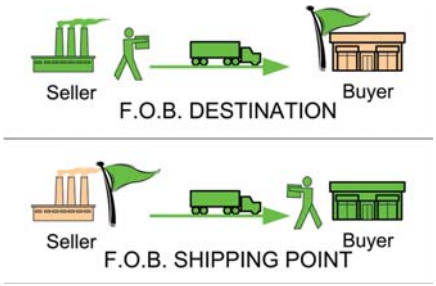
- The correct components to include in inventory.
- Inventory costing methods, including specific identification, FIFO, LIFO, and weighted-average techniques.
- The perpetual system for valuing inventory.
- Lower-of-cost-or-market inventory valuation adjustments.
- Two inventory estimation techniques: the gross profit and retail methods.
- Inventory management and monitoring methods, including the inventory turnover ratio.
- The impact of inventory errors.

15. The Components of Inventory

You have already seen that inventory for a merchandising business consists of the goods available for resale to customers. However, retailers are not the only businesses that maintain inventory. Manufacturers also have inventories related to the goods they produce. Goods completed and awaiting sale are termed “finished goods” inventory. A manufacturer may also have “work in process” inventory consisting of goods being manufactured but not yet completed. And, a third category of inventory is “raw material,” consisting of goods to be used in the manufacture of products. Inventories are typically classified as current assets on the balance sheet. A substantial portion of the managerial accounting chapters of this book deal with issues relating to accounting for costs of manufactured inventory. For now, we will focus on general principles of inventory accounting that are applicable to most all enterprises.

15.1 Determining Which Goods to Include in Inventory

Recall from the merchandising chapter the discussion of freight charges. In that chapter, F.O.B. terms were introduced, and the focus was on which party would bear the cost of freight. But, F.O.B. terms also determine when goods are (or are not) included in inventory. Technically, goods in transit belong to the party holding legal ownership. Ownership depends on the F.O.B. terms. Goods sold F.O.B. destination do not belong to the purchaser until they arrive at their final destination. Goods sold F.O.B. shipping point become property of the purchaser once shipped by the seller. Therefore, when determining the amount of inventory owned at year end, goods in transit must be considered in light of the F.O.B. terms. In the case of F.O.B. shipping point, for instance, a buyer would need to include as inventory the goods that are being transported but not yet received. The diagram at right is meant to show who includes goods in transit, with ownership shifting at the F.O.B. point noted with a “flag.”



Another problem area pertains to goods on consignment. Consigned goods describe products that are in the custody of one party, but belong to another. Thus, the party holding physical possession is not the legal owner. The person with physical possession is known as the consignee. The consignee is responsible for taking care of the goods and trying to sell them to an end customer. In essence, the consignee is acting as a sales agent. The consignor is the party holding legal ownership/title to the consigned goods in inventory. Because consigned goods belong to the consignor, they should be included in the inventory of the consignor -- not the consignee!

Consignments arise when the owner desires to place inventory in the hands of a sales agent, but the sales agent does not want to pay for those goods unless the agent is able to sell them to an end customer. For example, auto part manufacturers may produce many types of parts that are very

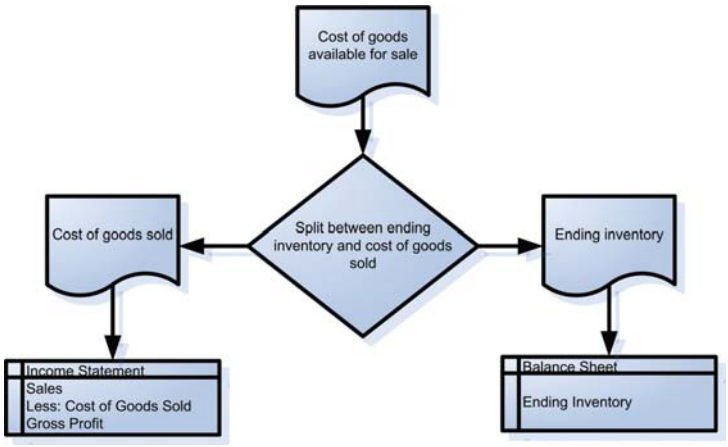
specialized and expensive, such as braking systems. A retail auto parts store may not be able to afford to stock every variety. In addition, there is the real risk of ending up with numerous obsolete units. But, the manufacturer desperately needs these units in the retail channel -- when brakes fail, customers will go to the source that can provide an immediate solution. As a result, the manufacturer may consign the units to auto parts retailers.

Conceptually, it is fairly simple to understand the accounting for consigned goods. Practically, they pose a recordkeeping challenge. When examining a company's inventory on hand, special care must be taken to identify both goods consigned out to others (which are to be included in inventory) and goods consigned in (which are not to be included in inventory). Obviously, if the consignee does sell the consigned goods to an end user, the consignee would keep a portion of the sales price, and remit the balance to the consignor. All of this activity requires a good accounting system to be able to identify which units are consigned, track their movement, and know when they are actually sold or returned.

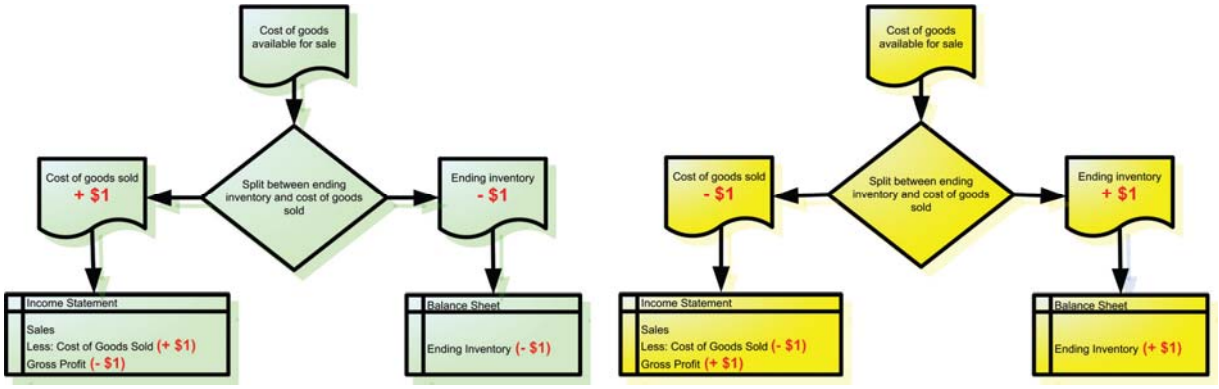
16. Inventory Costing Methods

Even a casual observer of the stock markets will note that stock values often move significantly on information about a company's earnings. Now, you may be wondering why a discussion of inventory would begin with this observation. The reason is that inventory measurement bears directly on the determination of income! Recall from earlier chapters this formulation:

Notice that the goods available for sale are "allocated" to ending inventory and cost of goods sold. In the graphic, the units of inventory appear as physical units. But, in a company's accounting records, this flow must be translated into units of money. After all, the balance sheet expresses inventory in money, not units. And, cost of goods sold on the income statement is also expressed in money:



This means that allocating $1 less of the total cost of goods available for sale into ending inventory will necessarily result in placing $1 more into cost of goods sold (and vice versa). Further, as cost of goods sold is increased or decreased, there is an opposite effect on gross profit. Remember, sales minus cost of goods sold equals gross profit. Thus, a critical factor in determining income is the allocation of the cost of goods available for sale between ending inventory and cost of goods sold:



16.1 Determining the Cost of Ending Inventory

In earlier chapters, the dollar amount for inventory was simply given. Not much attention was given to the specific details about how that cost was determined. To delve deeper into this subject, let's begin by considering a general rule: Inventory should include all costs that are "ordinary and necessary" to put the goods "in place" and "in condition" for their resale.

This means that inventory cost would include the invoice price, freight-in, and similar items relating to the general rule. Conversely, "carrying costs" like interest charges (if money was borrowed to buy the inventory), storage costs, and insurance on goods held awaiting sale would not be included in inventory accounts; instead those costs would be expensed as incurred. Likewise, freight-out and sales commissions would be expensed as a selling cost rather than being included with inventory.

16.2 Costing Methods

Once the unit cost of inventory is determined via the preceding rules of logic, specific costing methods must be adopted. In other words, each unit of inventory will not have the exact same cost, and an assumption must be implemented to maintain a systematic approach to assigning costs to units on hand (and to units sold).

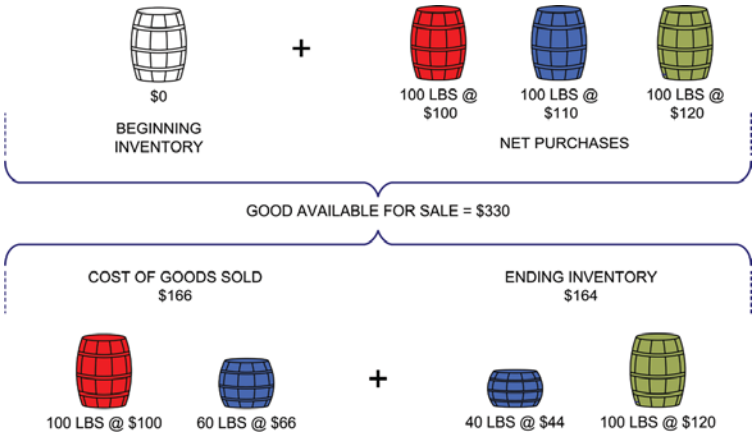
To solidify this point, consider a simple example: Mueller Hardware has a storage barrel full of nails. The barrel was restocked three times with 100 pounds of nails being added at each restocking. The first batch cost Mueller $100, the second batch cost Mueller $110, and the third batch cost Mueller $120. Further, the barrel was never allowed to empty completely and customers have picked all around in the barrel as they bought nails from Mueller (and new nails were just dumped in on top of the remaining pile at each restocking). So, its hard to say exactly which nails are "physically" still in the barrel. As you might expect, some of the nails are probably from the first purchase, some from the second purchase, and some from the final purchase. Of course, they all look about the same. At the end of the accounting period, Mueller weighs the barrel and decides that 140 pounds of nails are on hand (from the 300 pounds available). The accounting question you must consider is: what is the cost of the ending inventory? Remember, this is not a trivial question, as it will bear directly on the determination of income! To deal with this very common accounting question, a company must adopt an inventory costing method (and that method must be applied consistently from year to year). The methods from which to choose are varied, generally consisting of one of the following:

- First-in, first-out (FIFO)
- Last-in, first-out (LIFO)
- Weighted-average

Each of these methods entail certain cost-flow assumptions. Importantly, the assumptions bear no relation to the physical flow of goods; they are merely used to assign costs to inventory units. (Note: FIFO and LIFO are pronounced with a long "i" and long "o" vowel sound). Another method that will be discussed shortly is the specific identification method; as its name suggests, it does not depend on a cost flow assumption.

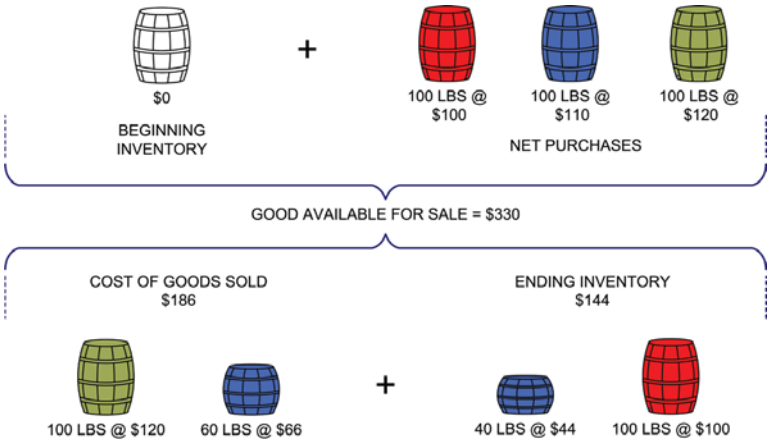
16.3 First-in, First-out Calculations

With first-in, first-out, the oldest cost (i.e., the first in) is matched against revenue and assigned to cost of goods sold. Conversely, the most recent purchases are assigned to units in ending inventory. For Mueller's nails the FIFO calculations would look like this:



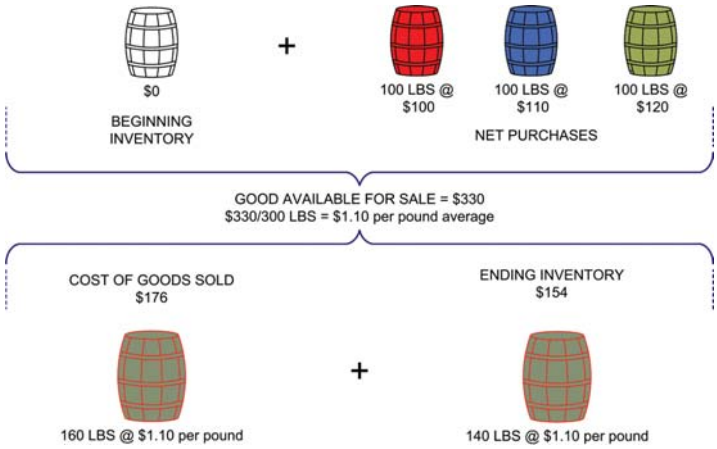
16.4 Last-in, First-out Calculations

Last-in, first-out is just the reverse of FIFO; recent costs are assigned to goods sold while the oldest costs remain in inventory:



16.5 Weighted-Average Calculations

The weighted-average method relies on average unit cost to calculate cost of units sold and ending inventory. Average cost is determined by dividing total cost of goods available for sale by total units available for sale. Mueller Hardware paid $330 for 300 pounds of nails, producing an average cost of $1.10 per pound ($330/300). The ending inventory consisted of 140 pounds, or $154. The cost of goods sold was $176 (160 pounds X $1.10):



16.6 Preliminary Recap and Comparison

The preceding discussion is summarized by the following comparative illustrations. Examine each, noting how the cost of beginning inventory and purchases flow to ending inventory and cost of goods sold. As you examine this drawing, you need to know that accountants usually adopt one of these cost flow assumptions to track inventory costs within the accounting system. The actual physical flow of the inventory may or may not bear a resemblance to the adopted cost flow assumption.

16.7 Detailed Illustrations

Having been introduced to the basics of FIFO, LIFO, and weighted average, it is now time to look at a more comprehensive illustration. In this illustration, there will also be some beginning inventory that is carried over from the preceding year. Assume that Gonzales Chemical Company had a beginning inventory balance that consisted of 4,000 units with a cost of $12 per unit. Purchases and sales are shown in the schedule. The schedule suggests that Gonzales should have 5,000 units on hand at the end of the year. Assume that Gonzales conducted a physical count of inventory and confirmed that 5,000 units were actually on hand.

Date	Purchases	Sales	Units on Hand
1-JAN			4,000
5-MAR	6,000 UNITS @ $16 EACH		10,000
17-APR		7,000 UNITS @ $22 EACH	3,000
7-SEP	8,000 UNITS @ $17 EACH		11,000
11-NOV		6,000 UNITS @ $25 EACH	5,000

Based on the information in the schedule, we know that Gonzales will report sales of $304,000. This amount is the result of selling 7,000 units at $22 ($154,000) and 6,000 units at $25 ($150,000). The dollar amount of sales will be reported in the income statement, along with cost of goods sold and gross profit. How much is cost of goods sold and gross profit? The answer will depend on the cost flow assumption adopted by Gonzales.

16.8 FIFO

If Gonzales uses FIFO, ending inventory and cost of goods sold calculations are as follows, producing the financial statements at right:

Beginning inventory 4,000 X $12 = $48,000	+	**Net purchases** ($232,000 total) 6,000 X $16 = $96,000 8,000 X $17 = $136,000
=		
Cost of goods available for sale ($280,000 total) 4,000 X $12 = $48,000 6,000 X $16 = $96,000 8,000 X $17 = $136,000		
=		
Ending inventory ($85,000) 5,000 X $17 = $85,000	+	**Cost of goods sold** ($195,000 total) 4,000 X $12 = $48,000 6,000 X $16 = $96,000 3,000 X $17 = $51,000

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

REVENUES		
Net sales		$304,000
COST OF GOODS SOLD		
Beginning inventory, Jan. 1	$ 48,000	
Net purchases	232,000	
Goods available for sale	$280,000	
Less: Ending inventory, Dec. 31	85,000	
Cost of goods sold		195,000
GROSS PROFIT		$109,000
. . .		

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

ASSETS	
. . .	
Inventory	85,000

16.9 LIFO

If Gonzales uses LIFO, ending inventory and cost of goods sold calculations are as follows, producing the financial statements at right:

Beginning inventory 4,000 X $12 = $48,000	+	**Net purchases ($232,000 total)** 6,000 X $16 = $96,000 8,000 X $17 = $136,000
=		
Cost of goods available for sale ($280,000 total) 4,000 X $12 = $48,000 6,000 X $16 = $96,000 8,000 X $17 = $136,000		
=		
Ending inventory ($64,000) 4,000 X $12 = $48,000 1,000 X $16 = $16,000	+	**Cost of goods sold ($216,000 total)** 8,000 X $17 = $136,000 5,000 X $16 = $80,000

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

REVENUES		
Net sales		$304,000
COST OF GOODS SOLD		
Beginning inventory, Jan. 1	$ 48,000	
Net purchases	232,000	
Goods available for sale	$280,000	
Less: Ending inventory, Dec. 31	64,000	
Cost of goods sold		216,000
GROSS PROFIT		$ 88,000
. . .		

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

ASSETS	
. . .	
Inventory	64,000

16.10 Weighted-Average

If the company uses the weighted-average method, ending inventory and cost of goods sold calculations are as follows, producing the financial statements at right:

Cost of goods available for sale	$280,000
Divided by units (4,000 + 6,000 + 8,000)	18,000
Average unit cost (note: do not round)	$15.5555 per unit
Ending inventory (5,000 units @ $15.5555)	$77,778
Cost of goods sold (13,000 units @ $15.5555)	$202,222

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

REVENUES		
Net sales		$304,000
COST OF GOODS SOLD		
Beginning inventory, Jan. 1	$ 48,000	
Net purchases	232,000	
Goods available for sale	$280,000	
Less: Ending inventory, Dec. 31	77,778	
Cost of goods sold		202,222
GROSS PROFIT		$101,778
. . .		

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

ASSETS	
. . .	
Inventory	77,778

16.11 Comparing Inventory Methods

The following table reveals that the amount of gross profit and ending inventory numbers appear quite different, depending on the inventory method selected:

	FIFO	LIFO	Weighted-Average
Sales	$304,000	$304,000	$304,000
Cost of Goods Sold	195,000	216,000	202,222
Gross Profit	$109,000	$ 88,000	$101,778
Ending Inventory	$ 85,000	$ 64,000	$ 77,778

The results above are consistent with the general rule that LIFO results in the lowest income (assuming rising prices, as was evident in the Gonzales example), FIFO the highest, and weighted average an amount in between. Because LIFO tends to depress profits, you may wonder why a company would select this option; the answer is sometimes driven by income tax considerations. Lower income produces a lower tax bill, thus companies will tend to prefer the LIFO choice. Usually, financial accounting methods do not have to conform to methods chosen for tax purposes. However, in the USA, LIFO "conformity rules" generally require that LIFO be used for financial reporting if it is used for tax purposes. In many countries LIFO is not permitted for tax or accounting purposes.

Accounting theorists may argue that financial statement presentations are enhanced by LIFO because it matches recently incurred costs with the recently generated revenues. Others maintain that FIFO is better because recent costs are reported in inventory on the balance sheet. Whichever side of this debate you find yourself, it is important to note that the inventory method in use must be clearly communicated in the financial statements and related notes. Companies that use LIFO will frequently augment their reports with supplement data about what inventory would be if FIFO were instead used. No matter which method is selected, consistency in method of application should be maintained. This does not mean that changes cannot occur; however, changes should only be made if financial accounting is improved.

16.12 Specific Identification

As was noted earlier, another inventory method is specific identification. This method requires a business to identify each unit of merchandise with the unit's cost and retain that identification until the inventory is sold. Once a specific inventory item is sold, the cost of the unit is assigned to cost of goods sold. Specific identification requires tedious record keeping and is typically only used for inventories of uniquely identifiable goods that have a fairly high per-unit cost (e.g., automobiles, fine jewelry, and so forth).

17. Perpetual Inventory Systems

All of the preceding illustrations were based on the periodic inventory system. In other words, the ending inventory was counted and costs were assigned only at the end of the period. A more robust system is the perpetual system. With a perpetual system, a running count of goods on hand is maintained at all times. Modern information systems facilitate detailed perpetual cost tracking for those goods.

17.1 Perpetual FIFO

The following table reveals the FIFO application of the perpetual inventory system for Gonzales:

Date	Purchases	Sales	Cost of Goods Sold	Balance
1-Jan				4,000 X $12 = $ 48,000
5-Mar	6,000 X $16 = $ 96,000			4,000 X $12 = $ 48,000 6,000 X $16 = $ 96,000 $144,000
17-Apr		7,000 X $22 = $154,000	4,000 X $12 = $ 48,000 3,000 X $16 = $ 48,000 $ 96,000	3,000 X $16 = $ 48,000
7-Sep	8,000 X $17 = $136,000			3,000 X $16 = $ 48,000 8,000 X $17 = $136,000 $184,000
11-Nov		6,000 X $25 = $150,000	3,000 X $16 = $ 48,000 3,000 X $17 = $ 51,000 $ 99,000	5,000 X $17 = $ 85,000
31-Dec				5,000 X $17 = $ 85,000

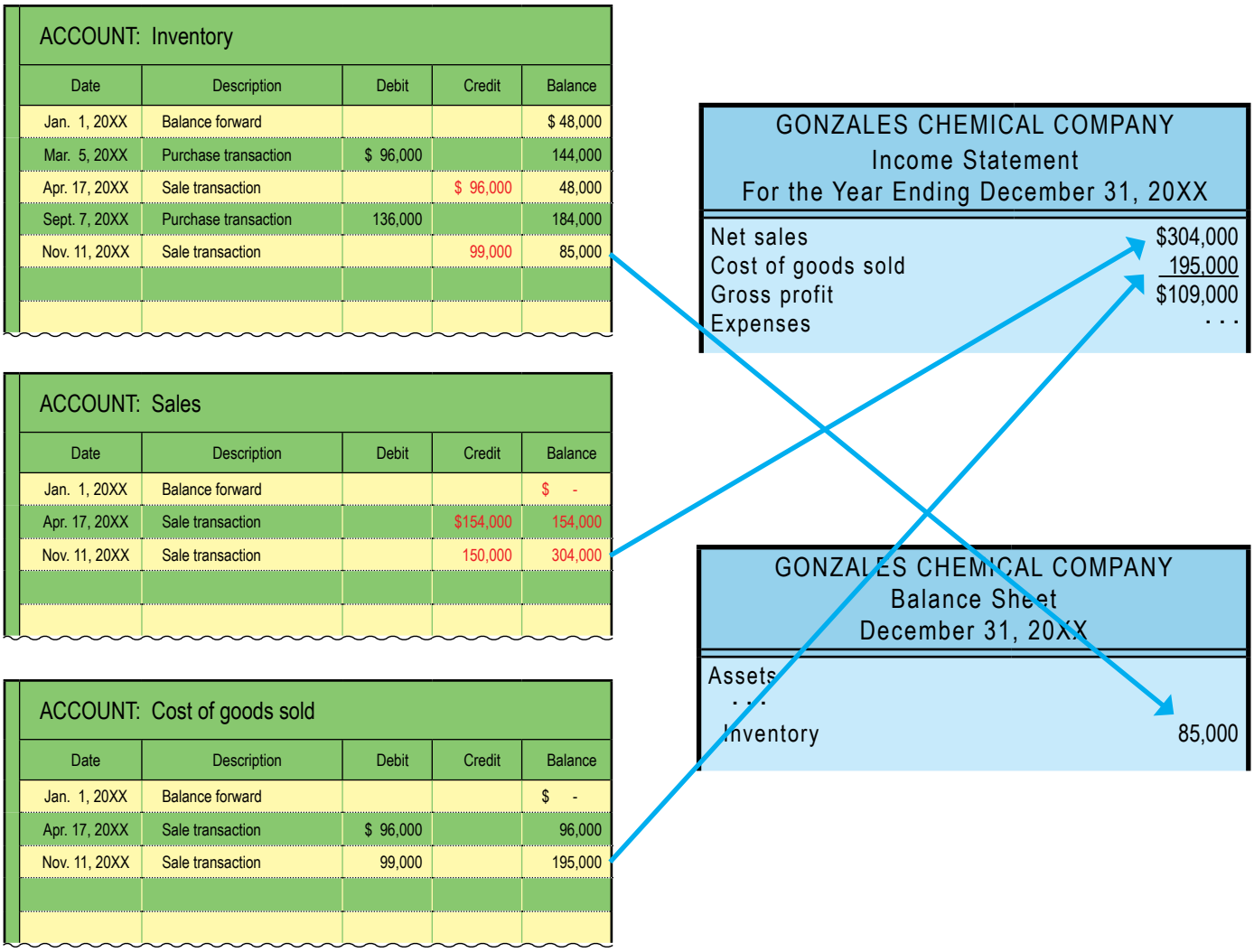
Two points come to mind when examining this table. First, there is considerable detail in tracking inventory using a perpetual approach; thank goodness for computers. Second, careful study is needed to discern exactly what is occurring on each date. For example, look at April 17 and note that 3,000 units remain after selling 7,000 units. This is determined by looking at the preceding balance data on March 5 (consisting of 10,000 total units (4,000 + 6,000)), and removing 7,000 units as follows: all of the 4,000 unit layer, and 3,000 of the 6,000 unit layer. Remember, this is the FIFO application, so the layers are peeled away based on the chronological order of their creation. In essence, each purchase and sale transaction impacts the residual composition of the layers associated with the item of inventory. Realize that this type of data must be captured and maintained for each item of inventory if the perpetual system is to be utilized; a task that was virtually impossible before cost effective computer solutions became commonplace. Today, the method is quite common, as it provides better "real-time" data needed to run a successful business.

17.2 Journal Entries

The table above provides information needed to record purchase and sale information. Specifically, Inventory is debited as purchases occur and credited as sales occur. Following are the entries:

3-5-XX	Inventory		96,000	
	Accounts Payable			96,000
	Purchased inventory on account (6,000 X $16)			
4-17-XX	Accounts Receivable		154,000	
	Sales			154,000
	Sold merchandise on account (7,000 X $22)			
4-17-XX	Cost of Goods Sold		96,000	
	Inventory			96,000
	To record the cost of merchandise sold ((4,000 X $12) + (3,000 X $16))			
9-7-XX	Inventory		136,000	
	Accounts Payable			136,000
	Purchased inventory on account (8,000 X $17)			
11-11-XX	Accounts Receivable		150,000	
	Sales			150,000
	Sold merchandise on account (6,000 X $25)			
11-11-XX	Cost of Goods Sold		99,000	
	Inventory			99,000
	To record the cost of merchandise sold ((3,000 X $16) + (3,000 X $17))			

Let's see how these entries impact certain ledger accounts and the resulting financial statements:



ACCOUNT: Inventory

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ 48,000
Mar. 5, 20XX	Purchase transaction	$ 96,000		144,000
Apr. 17, 20XX	Sale transaction		$ 96,000	48,000
Sept. 7, 20XX	Purchase transaction	136,000		184,000
Nov. 11, 20XX	Sale transaction		99,000	85,000

ACCOUNT: Sales

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction		$154,000	154,000
Nov. 11, 20XX	Sale transaction		150,000	304,000

ACCOUNT: Cost of goods sold

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction	$ 96,000		96,000
Nov. 11, 20XX	Sale transaction	99,000		195,000

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

Net sales	$304,000
Cost of goods sold	195,000
Gross profit	$109,000
Expenses	. . .

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

Assets	
. . .	
Inventory	85,000

If you are very perceptive, you will note that this is the same thing that resulted under the periodic FIFO approach introduced earlier. So, another general observation is in order: The FIFO method will produce the same financial statement results no matter whether it is applied on a periodic or perpetual basis. This occurs because the beginning inventory and early purchases are peeled away and charged to cost of goods sold -- whether the associated calculations are done "as you go" (perpetual) or "at the end of the period" (periodic).

17.3 Perpetual LIFO

LIFO can also be applied on a perpetual basis. This time, the results will not be the same as the periodic LIFO approach (because the "last-in" layers are constantly being peeled away, rather than waiting until the end of the period). The following table reveals the application of a perpetual LIFO approach. Study it carefully, this time noting that sales transactions result in a peeling away of the most recent purchase layers. The journal entries are not repeated here for the LIFO approach. Do note, however, that the accounts would be the same (as with FIFO); only the amounts would change.

Date	Purchases	Sales	Cost of Goods Sold	Balance
1-Jan				4,000 X $12 = $ 48,000
5-Mar	6,000 X $16 = $ 96,000			4,000 X $12 = $ 48,000 6,000 X $16 = $ 96,000 $144,000
17-Apr		7,000 X $22 = $154,000	6,000 X $16 = $ 6,000 1,000 X $12 = $ 12,000 $108,000	3,000 X $12 = $ 36,000
7-Sep	8,000 X $17 = $136,000			3,000 X $12 = $ 36,000 8,000 X $17 = $136,000 $172,000
11-Nov		6,000 X $25 = $150,000	6,000 X $17 = $102,000	3,000 X $12 = $ 36,000 2,000 X $17 = $ 34,000 $ 70,000
31-Dec				3,000 X $12 = $ 36,000 2,000 X $17 = $ 34,000 $ 70,000

ACCOUNT: Inventory

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ 48,000
Mar. 5, 20XX	Purchase transaction	$ 96,000		144,000
Apr. 17, 20XX	Sale transaction		$108,000	36,000
Sept. 7, 20XX	Purchase transaction	136,000		172,000
Nov. 11, 20XX	Sale transaction		102,000	70,000

ACCOUNT: Sales

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction		$154,000	154,000
Nov. 11, 20XX	Sale transaction		150,000	304,000

ACCOUNT: Cost of goods sold

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction	$108,000		108,000
Nov. 11, 20XX	Sale transaction	102,000		210,000

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

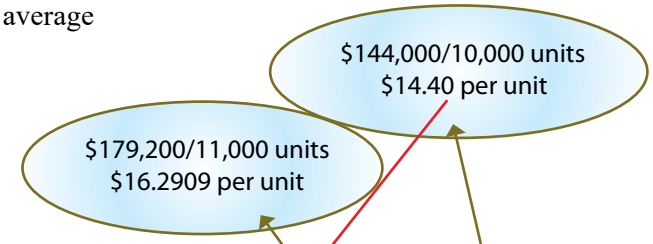
Net sales	$304,000
Cost of goods sold	210,000
Gross profit	$ 94,000
Expenses	

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

Assets	
. . .	
Inventory	70,000

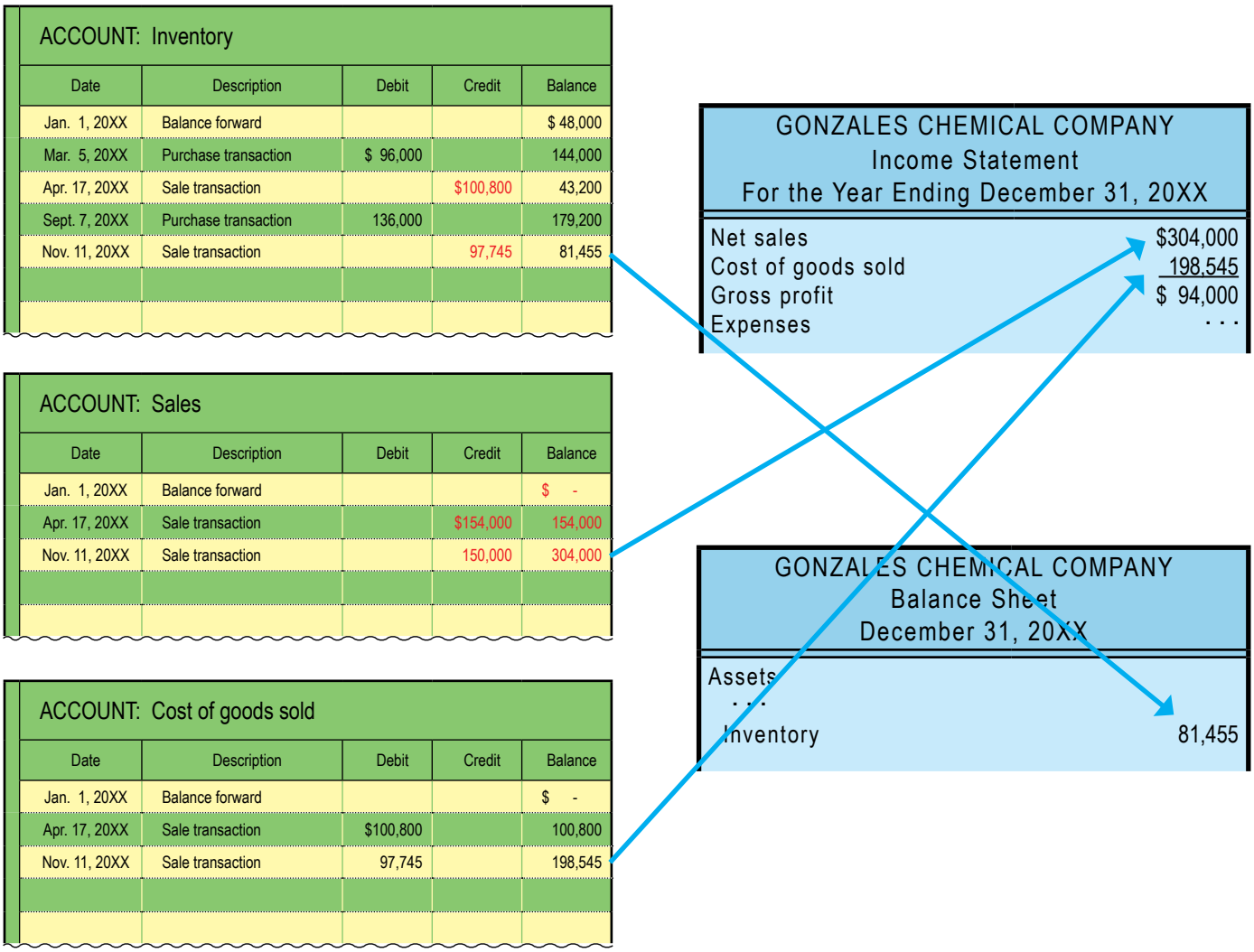
17.4 Moving Average

The average method can also be applied on a perpetual basis, earning it the name “moving average” approach. This technique is considerably more involved, as a new average unit cost must be computed with each purchase transaction. For the last time, we will look at the Gonzales Chemical Company data:



Date	Purchases	Sales	Cost of Goods Sold	Balance
1-Jan				4,000 X $12 = $ 48,000
5-Mar	6,000 X $16 = $ 96,000			4,000 X $12 = $ 48,000 6,000 X $16 = $ 96,000 $144,000
17-Apr		7,000 X $22 = $154,000	7,000 X $14.40 = $100,800	3,000 X $14.40 = $ 43,200
7-Sep	8,000 X $17 = $136,000			3,000 X $14.40 = $ 43,200 8,000 X $17 = $136,000 $179,200
11-Nov		6,000 X $25 = $150,000	6,000 X $16.2909 = $97,745	5,000 X $16.2909 = $ 81,455
31-Dec				5,000 X $16.2909 = $ 81,455

The resulting financial data using the moving-average approach are:



ACCOUNT: Inventory

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ 48,000
Mar. 5, 20XX	Purchase transaction	$ 96,000		144,000
Apr. 17, 20XX	Sale transaction		$100,800	43,200
Sept. 7, 20XX	Purchase transaction	136,000		179,200
Nov. 11, 20XX	Sale transaction		97,745	81,455

ACCOUNT: Sales

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction		$154,000	154,000
Nov. 11, 20XX	Sale transaction		150,000	304,000

ACCOUNT: Cost of goods sold

Date	Description	Debit	Credit	Balance
Jan. 1, 20XX	Balance forward			$ -
Apr. 17, 20XX	Sale transaction	$100,800		100,800
Nov. 11, 20XX	Sale transaction	97,745		198,545

GONZALES CHEMICAL COMPANY
Income Statement
For the Year Ending December 31, 20XX

Net sales	$304,000
Cost of goods sold	198,545
Gross profit	$ 94,000
Expenses	. . .

GONZALES CHEMICAL COMPANY
Balance Sheet
December 31, 20XX

Assets	
. . .	
Inventory	81,455

As with the periodic system, observe that the perpetual system produced the lowest gross profit via LIFO, the highest with FIFO, and the moving-average fell in between.

18. Lower of Cost or Market Adjustments

Although every attempt is made to prepare and present financial data that are free from bias, accountants do employ a degree of conservatism. Conservatism dictates that accountants avoid overstatement of assets and income. Conversely, liabilities would tend to be presented at higher amounts in the face of uncertainty. This is not a hardened rule, just a general principle of measurement.

In the case of inventory, a company may find itself holding inventory that has an uncertain future; meaning the company does not know if or when it will sell. Obsolescence, over supply, defects, major price declines, and similar problems can contribute to uncertainty about the "realization" (conversion to cash) for inventory items. Therefore, accountants evaluate inventory and employ "lower of cost or market" considerations. This simply means that if inventory is carried on the accounting records at greater than its market value, a write-down from the recorded cost to the lower market value would be made. In essence, the Inventory account would be credited, and a Loss for Decline in Market Value would be the offsetting debit. This debit would be reported in the income statement as a charge against (reduction in) income.

18.1 Measuring Market Value

Market values are very subjective. In the case of inventory, applicable accounting rules define "market" as the replacement cost (not sales price!) of the goods. In other words, what would it cost for the company to acquire or reproduce the inventory?

However, the lower-of-cost-or-market rule can become slightly more complex because the accounting rules further specify that market not exceed a ceiling amount known as “net realizable value” (NRV = selling price minus completion and disposal costs). The reason is this: occasionally “replacement cost” for an inventory item could be very high (e.g., a supply of slide rules at an office supply store) even though there is virtually no market for the item and it is unlikely to produce much net value when it is sold. Therefore, “market” for purposes of the lower of cost or market test should not exceed the net realizable value. Additionally, the rules stipulate that “market” should not be less than a floor amount, which is the net realizable value less a normal profit margin.

What we have then, is the following decision process:

> Step 1: Determine Market -- replacement cost, not to exceed the ceiling nor be less than the floor.
>
> Step 2: Report inventory at the lower of its cost or market (as determined in step 1).

To illustrate, consider the following four different inventory items, and note that the “cost” is shaded in light yellow and the appropriate “market value” is shaded in tan (step 1). The reported value is in the final row, and corresponds to the lower of cost or market:

	Item A	Item B	Item C	Item D
Cost	**$1,000**	**$2,500**	**$3,000**	**$4,000**
Vs. “Market”:				
Replacement cost	**$1,200**	**$2,400**	**$3,000**	**$2,000**
Net realizable value (ceiling)	**$1,400**	**$2,800**	**$2,800**	**$3,000**
NRV less normal profit margin (floor)	**$1,100**	**$2,200**	**$2,200**	**$2,500**
VALUE TO REPORT	**$1,000**	**$2,400**	**$2,800**	**$2,500**

18.2 Application of the Lower-of-Cost-or-Market Rule

Despite the apparent focus on detail, it is noteworthy that the lower of cost or market adjustments can be made for each item in inventory, or for the aggregate of all the inventory. In the latter case, the good offsets the bad, and a write-down is only needed if the overall market is less than the overall cost. In any event, once a write-down is deemed necessary, the loss should be recognized in income and inventory should be reduced. Once reduced, the Inventory account becomes the new basis for valuation and reporting purposes going forward. Write-ups of previous write-downs (e.g., if slide rules were to once again become hot selling items and experience a recovery in value) would not be permitted under GAAP.

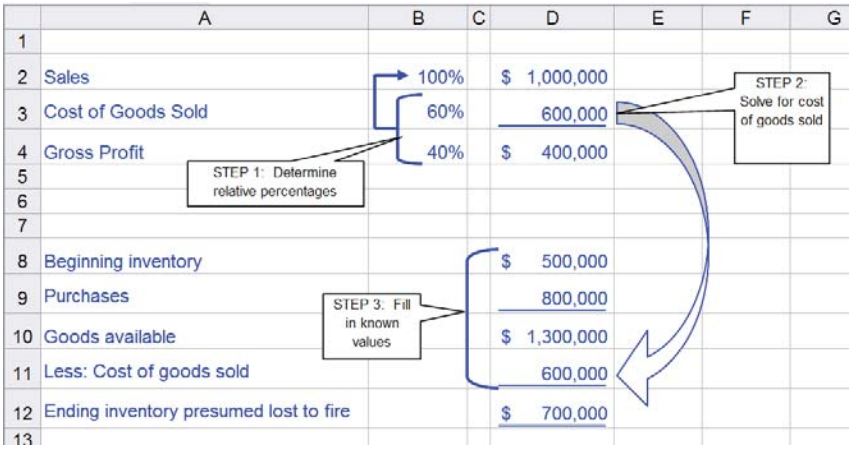
19. Inventory Estimation Techniques

Whether a company uses a periodic or perpetual inventory system, a physical count of goods on hand should occur from time to time. The quantities determined via the physical count are presumed to be correct, and any differences between the physical count and amounts reflected in the accounting records should be matched with an adjustment to the accounting records. Sometimes, however, a physical count may not be possible or is not cost effective. Then, estimation methods are employed.

19.1 Gross Profit Method

One such estimation technique is the gross profit method. This method might be used to estimate inventory on hand for purposes of preparing monthly or quarterly financial statements, and certainly would come into play if a fire or other catastrophe destroyed the inventory. Such estimates are often used by insurance companies to establish the amount that has been lost by an insured party. Very simply, a company's historical normal gross profit rate (i.e., gross profit as a percentage of sales) would be used to estimate the amount of gross profit and cost of sales. Once these data are known, it is relatively simple to project the lost inventory.

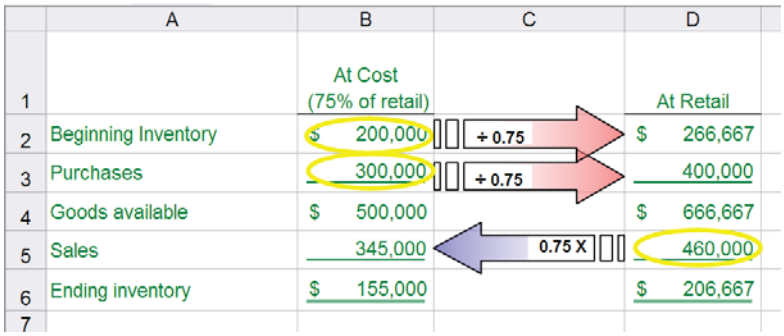
For example, assume that Tiki's inventory was destroyed by fire. Sales for the year, prior to the date of the fire were $1,000,000, and Tiki usually sells goods at a 40% gross profit rate. Therefore, Tiki can readily estimate that cost of goods sold was $600,000. Tiki's beginning of year inventory was $500,000, and $800,000 in purchases had occurred prior to the date of the fire. The inventory destroyed by fire can be estimated via the gross profit method, as shown.



19.2 Retail Method

A method that is widely used by merchandising firms to value or estimate ending inventory is the retail method. This method would only work where a category of inventory sold at retail has a consistent mark-up. The cost-to-retail percentage is multiplied times ending inventory at retail. Ending inventory at retail can be determined by a physical count of goods on hand, at their retail value. Or, sales might be subtracted from goods available for sale at retail. This option is shown in the following example.

To illustrate, Crock Buster, a specialty cookware store, sells pots that cost $7.50 for $10 -- yielding a cost to retail percentage of 75%. The beginning inventory totaled $200,000 (at cost), purchases were $300,000 (at cost), and sales totaled $460,000 (at retail). The calculations suggest an ending inventory that has a cost of $155,000. In reviewing these calculations, note that the only "givens" are circled in yellow. These three data points are manipulated by the cost to retail percentage to solve for several unknowns. Be careful to note the percentage factor is divided within the red arrows and multiplied within the blue.



20. Inventory Management

The best run companies will minimize their investment in inventory. Inventory is costly and involves the potential for loss and spoilage. In the alternative, being out of stock may result in lost customers, so a delicate balance must be maintained. Careful attention must be paid to the inventory levels. One ratio that is often used to monitor inventory is the Inventory Turnover Ratio. This ratio shows the number of times that a firm's inventory balance was turned ("sold") during a year. It is calculated by dividing cost of sales by the average inventory level:

Inventory Turnover Ratio
=
Cost of Goods Sold/Average Inventory

If a company's average inventory was $1,000,000, and the annual cost of goods sold was $8,000,000, you would deduce that inventory turned over 8 times (approximately once every 45 days). This could be good or bad depending on the particular business; if the company was a baker it would be very bad news, but a lumber yard might view this as good. So, general assessments are not in order. What is important is to monitor the turnover against other companies in the same line of business, and against prior years' results for the same company. A declining turnover rate might indicate poor management, slow moving goods, or a worsening economy. In making such comparisons and evaluations, you should now be clever enough to recognize that the choice of inventory method affects the reported amounts for cost of goods sold and average inventory. As a result, the impacts of the inventory method in use must be considered in any analysis of inventory turnover ratios.

21. Inventory Errors

In the process of maintaining inventory records and the physical count of goods on hand, errors may occur. It is quite easy to overlook goods on hand, count goods twice, or simply make mathematical mistakes. Therefore, it is vital that accountants and business owners fully understand the effects of inventory errors and grasp the need to be careful to get these numbers as correct as possible.

A general rule is that overstatements of ending inventory cause overstatements of income, while understatements of ending inventory cause understatements of income. For instance, compare the following correct and incorrect scenario -- where the only difference is an overstatement of ending inventory by $1,000 (note that purchases were correctly recorded -- if they had not, the general rule of thumb would not hold):

	Correct		Incorrect
Beginning inventory	$ 5,000		$ 5,000
Purchases	11,000		11,000
Cost of goods available for sale	$16,000		$16,000
Ending inventory	4,000	Overstated	5,000
Cost of goods sold	$12,000		$11,000
Sales	$25,000		$25,000
Cost of goods sold	12,000		11,000
Gross profit	$13,000	Overstated	$14,000

Had the above inventory error been an understatement ($3,000 instead of the correct $4,000), then the ripple effect would have caused an understatement of income by $1,000. Inventory errors tend to be counterbalancing. That is, one year's ending inventory error becomes the next year's beginning inventory error. The general rule of thumb is that overstatements of beginning inventory cause that year's income to be understated, while understatements of beginning inventory cause overstatements of income. Examine the following table where the only error relates to beginning inventory balances:

	Correct		Incorrect
Beginning inventory	$ 4,000	Overstated	$ 5,000
Purchases	11,000		11,000
Cost of goods available for sale	$15,000		$16,000
Ending inventory	3,000		3,000
Cost of goods sold	$12,000		$13,000
Sales	$25,000		$25,000
Cost of goods sold	12,000		13,000
Gross profit	$13,000	Overstated	$12,000

Hence, if the above data related to two consecutive years, the total income would be correct ($13,000 + $13,000 = $14,000 + $12,000). However, the amount for each year is critically flawed.