Principlesofaccounting.com

chapter 5

Special Issues for Merchants

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.

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

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		

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
	Sold merchandise on account 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 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.

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
⋮	⋮

NET SALES

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.)

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.

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 lots of 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.

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	-
		AMOUNT	TOTAL	$1,000

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.

PURCHASE CONSIDERATIONS FOR MERCHANDISING BUSINESSES

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.

MERCHANDISE ACQUISITION

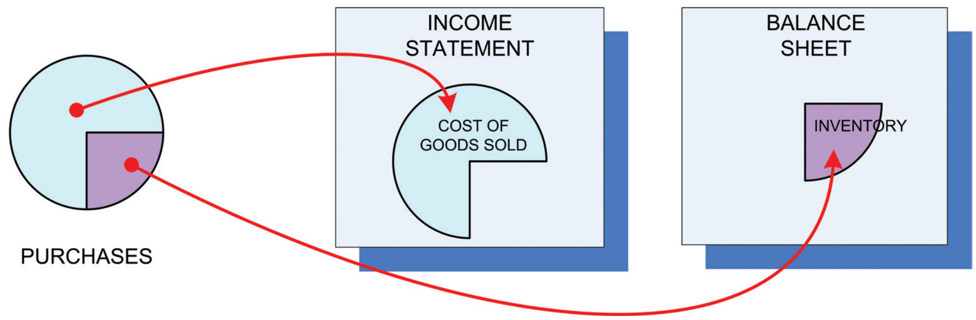
The first phase of the merchandising cycle occurs when the merchant acquires goods to be stocked for resale to customers. The appropriate accounting for this action requires the recording of the purchase. Now, there are two different techniques for recording the purchase -- depending on whether a periodic 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.

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:



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			

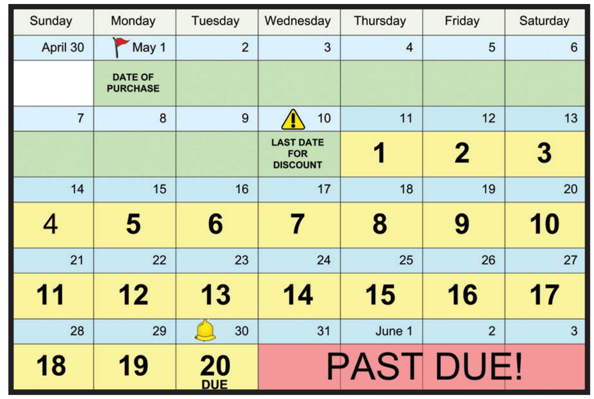
Purchase returns and allowances are subtracted from purchases to calculate the amount of net purchases for a period. The specific calculation of net purchases will be demonstrated after a few more concepts are introduced.

CASH DISCOUNTS

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. 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.

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 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			

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		

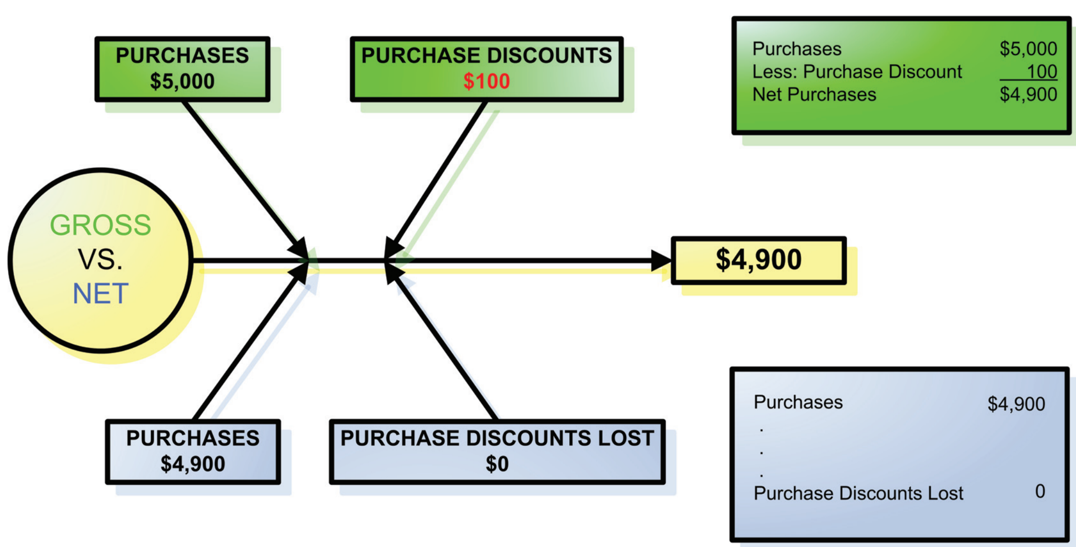
If payment is made *outside* the discount period, the lost discounts are recorded in a separate account. The Purchase Discounts Lost account is debited to reflect the added cost associated with missing out on the available discount amount:

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

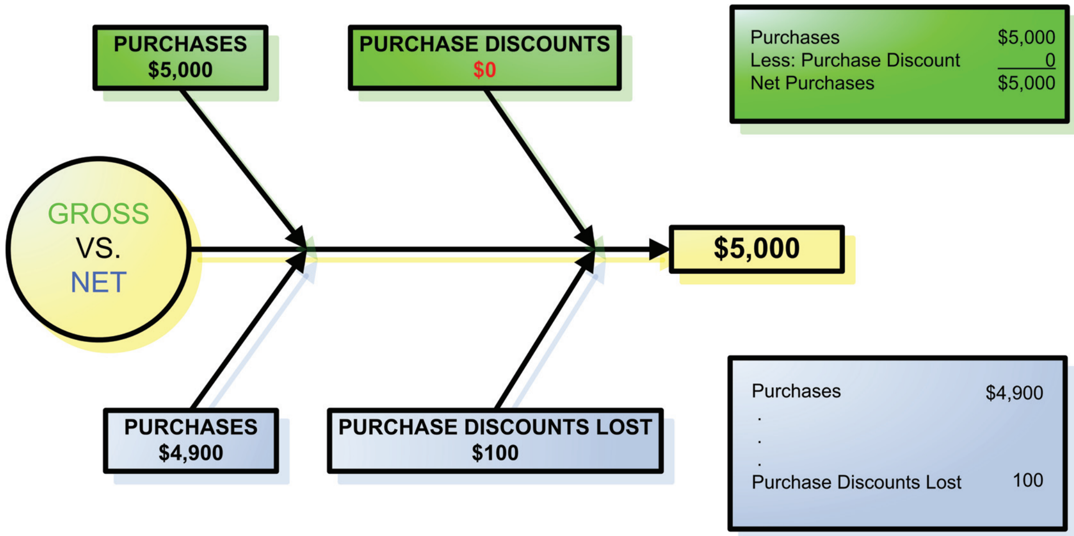
COMPARISON OF GROSS VS. NET

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.



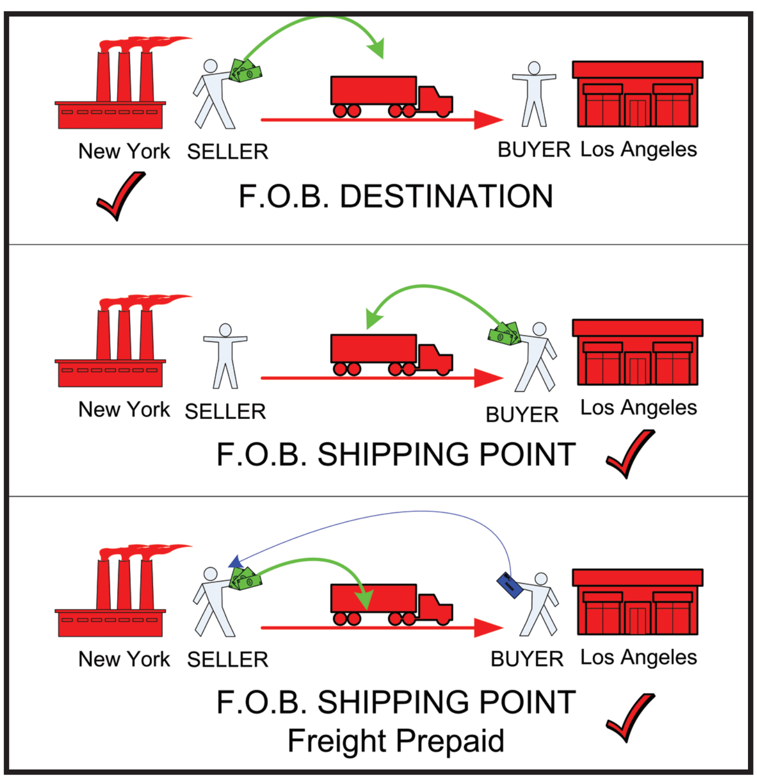
The next diagram contrasts the gross and net methods for the case where the discount is lost. Notice that $5,000 is accounted for under each method. The gross method simply reports the $5,000 gross purchase, without any discount. In contrast, the net method shows purchases of $4,900 and an additional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



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 is 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 left, 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%).

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 to calculate the "net purchases" during a period.

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

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.

COST OF GOODS SOLD

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	

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.

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.

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

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 lines 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.

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 lines 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.

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 above 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)			

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.

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.

ANALYSIS OF A DETAILED INCOME STATEMENT

No matter which income statement format is used, all the detail in the world is of no value of 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

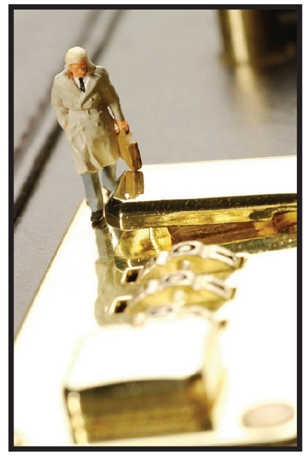
Net Profit on Sales = Net Income/Net Sales
$39,000/$653,000 = 5.97% for Hunter

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.

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.

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.

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.

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.