

Accounting Transactions

In this chapter you will gain a better understanding of how different accounting transactions are processed in the accounting system. There are a number of unique transactions that take place in construction accounting that do not occur in other industries. Most of these transactions are a result of the construction industry's focus on job costing, equipment tracking, and accounting for long-term contracts. Understanding these transactions is important for three reasons: First, some project costs—such as labor burden and equipment costs—are often generated by the accounting system rather than an invoice or time card. Understanding how these costs are obtained will help you gain a better understanding of how to estimate these costs and incorporate them in the financial analysis of the project. Second, financial managers must review the accounting reports for errors—improperly billed costs and omitted costs—and ensure that the necessary corrections are made. Understanding how the costs are generated will help you better understand how to interpret the accounting reports. Finally, for the general manager and owner, understanding construction accounting is necessary to ensure that the accounting system is set up to meet the needs of the company. Many construction companies are using substandard accounting systems because management does not understand how accounting systems should be structured to meet the needs of the construction industry.

Now that we have looked at the different ledgers used in a construction accounting system, it is important to understand how common construction transactions affect the different ledgers and how the ledgers are interrelated. These transactions may be referred to as journal entries. Transactions or journal entries that occur on the balance sheet portion of the general ledger consist of both debits and credits, with the total of the debits equaling the total of the credits. Debits increase the balance of asset accounts and decrease the balance of liability and owners' equity accounts, whereas credits decrease the balance of asset accounts and increase the balance of liability and owners' equity accounts. The relationship between debits and credits and the accounts on the balance sheet is shown in Figure 3-1. To make it easier to understand how a transaction affects

FIGURE 3-1 Debits and Credits

	ASSET	LIABILITY EQUITY
INCREASE	DEBIT	CREDIT
DECREASE	CREDIT	DEBIT

the different accounts, this book indicates simply whether the transaction increases or decreases the balance of the account.

As we look at these transactions, we need to keep in mind the key relationships discussed in the previous chapter. Let's look at some common transactions that occur in construction companies. For these transactions we use the chart of accounts in Figure 2-1 and the cost codes in Figure 2-6. The chart of accounts will also be broken into its two separate components: the balance sheet and the income statement.

INVOICE CHARGED TO A JOB WITHOUT RETENTION

When a material, subcontract, or other cost type invoice that is billable to a construction project—on which the contractor will not hold retention from the payment—is received and entered into the accounting system it affects the income statement, balance sheet, and job cost ledger. Most commonly this type of invoice is an invoice for materials. For discussion purposes we look at how a material invoice is handled. On the income statement the material invoice is recorded as a cost in the material section of the construction costs. The increase in the construction costs decreases the profit on the income statement by the amount of the invoice. This decrease in profit is not offset until revenues are recorded. On the balance sheet the materials invoice is recorded as an accounts payable-trade in the liability section. This increase in liability results in a reduction in the current period net income equal to the amount of the invoice. As per the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. On the job cost ledger the materials invoice is recorded as a cost with a material cost

TABLE 3-1 Invoice Charged to a Job without Retention

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	10,000.00	Increase (Credit)
430 Current Period Net Income	10,000.00	Decrease (Debit)
Income Statement		
610 Materials	10,000.00	Increase
Profit	10,000.00	Decrease
Job Cost Ledger		
110.01.06120M	10,000.00	Increase

type against the job, phase, and cost code for which the materials were purchased. Subcontract and other types of invoices are handled the same way, except subcontract invoices are recorded as a subcontract cost type and other invoices are recorded as an other cost type.

Example 3-1: Determine the change to the balance sheet, income statement, and job cost ledger of a \$10,000 material invoice for 7/16 OBS charged to cost code 06120 Lumber on Phase 1 of Job Number 110. The company uses the chart of accounts in Figure 2-1.

Solution: The changes are shown in Table 3-1.

INVOICE CHARGED TO A JOB WITH RETENTION

When a material, subcontract, or other cost type invoice that is billable to a construction project—on which the contractor will hold retention from the payment—is received and entered into the accounting system it affects the income statement, balance sheet, and job cost ledger much the same way as an invoice on which the contractor does not hold retention. The key difference is that the retention that will be withheld must be recorded in the accounts payable-retention account. Typically these invoices are from subcontractors; however, they may also be material or other type invoices. For discussion purposes, we look at how a subcontractor's invoice is handled. On the income statement the subcontractor's invoice is recorded as a cost in the subcontract section of the construction costs. The increase in the construction costs decreases the profit on the income statement by the amount of the invoice. On the balance sheet the retained portion of the subcontractor's invoice is recorded in the accounts payable-retention account and the remaining portion of the invoice is recorded in the accounts payable-trade account in the liability section of the balance sheet. These increases in liability result in a reduction in the current period net income equal to the amount of the invoice. As per the relationships previously discussed, the reduction in

TABLE 3-2 Invoice Charged to a Job with Retention

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	9,000.00	Increase (Credit)
311 Accounts Payable-Retention	1,000.00	Increase (Credit)
430 Current Period Net Income	10,000.00	Decrease (Debit)
Income Statement		
630 Subcontract	10,000.00	Increase
Profit	10,000.00	Decrease
Job Cost Ledger		
110.01.15100S	10,000.00	Increase

profit on the income statement is equal to the reduction in the current period net income on the balance sheet. On the job cost ledger the subcontractor's invoice is recorded as a cost with a subcontract cost type against the job, phase, and cost code for which the subcontractor performed the work. If the invoice covers multiple cost codes, the invoice is divided among the appropriate cost codes. Material and other types of invoices are handled the same way, except material invoices are recorded as a material cost type and other invoice are recorded as an other cost type.

Example 3-2: Determine the change to the balance sheet, income statement, and job cost ledger of a \$10,000 subcontractor's invoice for plumbing work charged to cost code 15100 Plumbing on Phase 1 of Job Number 110. When paying the bill the contractor will withhold 10% retention. The company uses the chart of accounts in Figure 2-1.

Solution: The contractor will withhold \$1,000 ($\$10,000 \times 0.10$) as retention until the project is complete. The changes are shown in Table 3-2.

PAYING INVOICES

So far invoices have been entered into the accounting system, but they have not been paid. When invoices are paid cash (an asset) is used to pay the accounts payable (a liability). Payment of an invoice affects the balance sheet by reducing the accounts payable-trade (a liability account) and at the same time reducing the cash account (an asset account). By reducing both an asset account and a liability account by the same amount the relationship between assets and liabilities on the balance sheet is maintained. Because the invoices have already been recorded as costs on the income statement and the job cost ledger, no changes occur on the income statement or job cost ledger.

TABLE 3-3 Paying Invoices

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	19,000.00	Decrease (Credit)
310 Accounts Payable-Trade	19,000.00	Decrease (Debit)

Example 3-3: Determine the changes to the balance sheet that occur when the invoices in Examples 3-1 and 3-2 are paid. The retention will not be released at this time. The company uses the chart of accounts in Figure 2-1.

Solution: The contractor will use a check drawn against the cash account to pay \$10,000 from Example 3-1 and \$9,000 from Example 3-2, for a total of \$19,000. The changes are shown in Table 3-3.

LABOR CHARGED TO A JOB

When an employee's time—whose costs are to be charged to a project—is entered into the accounting system it affects the income statement, balance sheet, and job cost ledger. On the income statement the employee costs—including labor burden—are recorded as a cost in the labor section of the construction costs. The increase in the construction costs decreases the profit on the income statement by the total cost of the employee. On the balance sheet the employee costs will become accrued liabilities. For a company using the chart of accounts in Figure 2-1 the accrued liabilities have been broken down into five accounts: 340 Accrued Payroll, 341 Accrued Payables, 342 Accrued Taxes, 343 Accrued Insurance, and 344 Accrued Vacation. The amount due to the employee—after withholdings and deductions—is recorded in the 340 Accrued Payroll account. Social security taxes, Medicare taxes, FUTA, and SUTA paid by the employer; social security taxes and Medicare taxes paid by the employee; and state and federal withholding taxes withheld from the employee's paycheck are recorded in the 342 Accrued Taxes account. Workers' compensation insurance, liability insurance, and health insurance costs are recorded in the 343 Accrued Insurance account. Because it is unfair to charge an employee's vacation time to the job he or she is working on when the employee takes vacation, funds to pay for the employee's vacation must be accrued throughout the year. These funds are recorded in the 344 Accrued Vacation account. All other benefits would be recorded in the 341 Accrued Payables account. This increase in liability on the balance sheet results in a reduction in the current period net income equal to the total cost of the employee. As per the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. On the job cost ledger the labor cost, including burden, is recorded as a cost with a labor cost type against the job, phase, and cost code for which labor was performed. If the

employee performed work on multiple cost codes, the labor is divided among the appropriate cost codes. The calculation of the burden costs (including social security tax, Medicare tax, FUTA, SUTA, workers' compensation insurance, general liability insurance, health insurance, and retirement) are discussed in Chapter 8.

Example 3-4: Determine the change to the balance sheet, income statement, and job cost ledger of a finish carpenter when his or her time is entered into the accounting system. The finish carpenter is to be paid \$895.90 for a week's work. The employer has the following burden costs: \$55.55 for social security tax, \$12.99 for Medicare, \$26.88 for SUTA, \$7.17 for FUTA, \$8.96 for liability insurance, \$71.67 for workers' compensation, \$24.00 for the health insurance premium, and \$38.00 is set aside for vacation. The employee has the following withheld from his or her check: \$55.55 for social security tax, \$12.99 for Medicare, \$75.25 as federal withholding, \$33.86 for state withholding, and \$76.08 for the employee's part of the health insurance premium. The labor is charged to cost code 06210 Finish Carpentry on Phase 1 of Job Number 112. The company uses the chart of accounts in Figure 2-1.

Solution: The amount payable to the employee is recorded in the 340 Accrued Payroll account on the balance sheet. The amount payable to the employee equals wages less deduction and withholdings taken from wages and is calculated as follows:

$$\begin{aligned} \text{Payable} &= \text{Wages} - \text{Social Security Tax} - \text{Medicare Tax} \\ &\quad - \text{Federal Withholding} - \text{State Withholding} \\ &\quad - \text{Health Insurance} \end{aligned}$$

$$\begin{aligned} \text{Payable} &= \$895.90 - \$55.55 - \$12.99 - \$75.25 \\ &\quad - \$33.86 - \$76.08 \end{aligned}$$

$$\text{Payable} = \$642.17$$

Both the state and federal government taxes are recorded in the 342 Accrued Taxes account on the balance sheet. This includes both taxes paid by the employer and taxes withheld from the employee's check. Find the amount payable to the state government:

$$\text{Payable} = \text{SUTA} + \text{State Withholding} = \$26.88 + \$33.86 = \$60.74$$

Find the amount payable to the federal government:

$$\begin{aligned} \text{Payable} &= \text{Social Security Tax}_{\text{Employer}} + \text{Medicare Tax}_{\text{Employer}} \\ &\quad + \text{FUTA} + \text{Social Security Tax}_{\text{Employee}} \\ &\quad + \text{Medicare Tax}_{\text{Employee}} + \text{Federal Withholding} \end{aligned}$$

$$\begin{aligned} \text{Payable} &= \$55.55 + \$12.99 + \$7.17 + \$55.55 \\ &\quad + \$12.99 + \$75.25 \end{aligned}$$

$$\text{Payable} = \$219.50$$

TABLE 3-4 Labor Charged to a Job

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
340 Accrued Payroll	642.17	Increase (Credit)
342 Accrued Taxes	280.24	Increase (Credit)
343 Accrued Insurance	180.71	Increase (Credit)
344 Accrued Vacation	38.00	Increase (Credit)
430 Current Period Net Income	1,141.12	Decrease (Debit)
Income Statement		
620 Labor	1,141.12	Increase
Profit	1,141.12	Decrease
Job Cost Ledger		
112.01.06210L	1,141.12	Increase

The total amount of taxes is \$280.24 (\$60.74 + \$219.50).

The liability insurance, workers' compensation insurance, and health insurance costs are recorded in the 343 Accrued Insurance account on the balance sheet. Find the amount payable to the health insurance carrier:

$$\begin{aligned} \text{Payable} &= \text{Health Insurance}_{\text{Employer}} + \text{Health Insurance}_{\text{Employee}} \\ \text{Payable} &= \$24.00 + \$76.08 = \$100.08 \end{aligned}$$

Find the total recorded to the 343 Accrued Insurance account:

$$\begin{aligned} \text{Total} &= \text{Liability Insurance} + \text{Workers' Comp.} + \text{Health Insurance} \\ \text{Total} &= \$8.96 + \$71.67 + \$100.08 = \$180.71 \end{aligned}$$

The money set aside for vacation pay is recorded in the 344 Accrued Vacation account on the balance sheet. The changes are shown in Table 3-4.

LABOR CHARGED TO GENERAL OVERHEAD

When an employee's—whose costs are to be charged to general overhead—time is entered into the accounting system, it affects the income statement and balance sheet. Because the employee's time is not charged to a job it does not affect the job cost ledger. On the income statement the employee costs, including labor burden, are recorded as a cost in the general overhead section of the income statement. For a company using the chart of accounts in Figure 2-1 the employees' labor costs are broken down into the following accounts: 820 Employee Wages and Salaries, 821 Employee Benefits, 822 Employee Retirement, 825 Employee Taxes, and 830 Insurance. The total wages—before withholdings and deductions are taken from the employee's check—are recorded in the 820 Employee Wages and Salaries account. The health insurance costs, vacation, and other benefits paid by the employer are recorded in the 821 Employee Benefits account. Retirement

paid by the employer is recorded in the 822 Employee Retirement account. Social security taxes, Medicare taxes, FUTA, and SUTA paid by the employer are recorded in the 825 Employee Taxes account. Workers' compensation insurance and liability insurance are recorded in the 830 Insurance account. Health insurance premiums paid by the employee, social security and Medicare taxes paid by the employee, and state and federal withholding taxes withheld from the employee's paycheck are not recorded because they are costs to the employee and are taken out of the employee's wages. The increase in the overhead costs decreases the profit on the income statement by the cost of the employee, including burden. On the balance sheet the employee costs becomes an accrued liability and is handled the same way the costs for an employee whose costs are charged to a project were handled (see Labor Charged to a Job). The calculation of the burden costs (including social security tax, Medicare tax, FUTA, SUTA, workers' compensation insurance, general liability insurance, health insurance, and retirement) are discussed in Chapter 8.

Example 3-5: Determine the change to the balance sheet, income statement, and job cost ledger of an estimator's time when that time is entered into the accounting system. The estimator is paid \$895.90 each week. The employer has the following burden costs: \$55.55 for social security tax, \$12.99 for Medicare, \$26.88 for SUTA, \$7.17 for FUTA, \$8.96 for liability insurance, \$71.67 for workers' compensation, \$24.00 for the health insurance premium, and \$38.00 is set aside for vacation. The employee has the following amounts withheld from his or her check: \$55.55 for social security tax, \$12.99 for Medicare, \$75.25 as federal withholding, \$33.86 for state withholding, and \$76.08 for the employee's part of the health insurance premium.

Solution: Because this example has the same wages and costs as Example 3-4, the changes to the balance sheet are the same for this example as they are for Example 3-4. The amount recorded in the 820 Employee Wages and Salaries account equals the employee's wages, which is \$895.90.

The amount recorded in the 821 Employee Benefits account equals the employer's portion of the health insurance premium plus the funds set aside for vacation. These costs are calculated as follows:

$$\text{Benefits Cost} = \text{Health Insurance Premium} + \text{Vacation}$$

$$\text{Benefits Cost} = \$24.00 + \$38.00 = \$62.00$$

The state and federal taxes paid by the employer are recorded in the 825 Employee Taxes account. Find the amount of taxes paid by the employer.

$$\text{Taxes} = \text{Social Security Tax} + \text{Medicare Tax} + \text{FUTA} + \text{SUTA}$$

$$\text{Taxes} = \$55.55 + \$12.99 + \$7.17 + \$26.88 = \$102.59$$

TABLE 3-5 Labor Charged to General Overhead

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
340 Accrued Payroll	642.17	Increase (Credit)
342 Accrued Taxes	280.24	Increase (Credit)
343 Accrued Insurance	180.71	Increase (Credit)
344 Accrued Vacation	38.00	Increase (Credit)
430 Current Period Net Income	1,141.12	Decrease (Debit)
Income Statement		
820 Employee Wages and Salaries	895.90	Increase
821 Employee Benefits	62.00	Increase
825 Employee Taxes	102.59	Increase
830 Insurance	80.63	Increase
Profit	1,141.12	Decrease

The liability and workers' compensation insurance paid by the employer are recorded in the 830 Insurance account. Find the amount of liability and workers' compensation insurance paid by the employer.

$$\text{Insurance} = \text{Liability Insurance} + \text{Workers' Comp.}$$

$$\text{Insurance} = \$8.96 + \$71.67 = \$80.63$$

The changes are shown in Table 3-5.

PAYING AN EMPLOYEE'S WAGES

So far we have entered the employee's time into the accounting system, but the employee has yet to be paid. When an employee is paid for the work he or she has performed it affects the balance sheet. When an employee is paid, a company uses cash—an asset—to pay an accrued liability. In the case of a company using the chart of accounts in Figure 2-1 the accrued liability is accrued payroll recorded in the 340 Accrued Payroll account. By reducing both asset accounts and liability accounts by the same amount the relationship between assets and liabilities on the balance sheet is maintained. No changes occur on the income statement or job cost ledger because the employee's costs have already been charged to the income statement and job cost ledger.

Example 3-6: Determine the changes to the balance sheet that occur when the employee in Example 3-4 is paid.

Solution: From Example 3-4, the employee is owed \$642.17. The contractor will use a check drawn against the cash account to pay the employee \$642.17. The changes are shown in Table 3-6.

TABLE 3-6 Paying an Employee's Wages

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	642.17	Decrease (Credit)
340 Accrued Payroll	642.17	Decrease (Debit)

PAYING PAYROLL TAXES

When the employee's costs were entered into the accounting system, a variety of state and federal taxes were set aside that have not yet been paid. When the state and federal taxes are paid, it affects the balance sheet. When taxes are paid, a company uses cash—an asset—to pay an accrued liability. In the case of a company using the chart of accounts in Figure 2-1 the accrued liability is accrued taxes recorded in the 342 Accrued Taxes account. By reducing both an asset account and a liability account by the same amount, the relationship between assets and liabilities on the balance sheet is maintained. No changes occur on the income statement or job cost ledger because the employee's costs have already been charged to the income statement and job cost ledger.

Example 3-7: Determine the changes to the balance sheet that occur when the federal taxes in Example 3-4 are paid.

Solution: From Example 3-4, the company owes \$219.50 in federal taxes on the employee's wages. This includes funds withheld from the employee's paycheck. The contractor uses a check drawn against the cash account to pay the federal government for the federal tax liability of all employees. Included in this amount is \$219.50 for the weekly wages for the employee in Example 3-4. The changes resulting from the single week of wages for the employee in Example 3-4 are shown in Table 3-7.

PAYING FOR BENEFITS

When the employee's time was entered into the accounting system, funds were set aside to pay the health insurance premium for the employee but the premium has yet to be paid. When a company pays for a benefit, such as health insurance,

TABLE 3-7 Paying Payroll Taxes

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	219.50	Decrease (Credit)
342 Accrued Taxes	219.50	Decrease (Debit)

TABLE 3-8 Paying for Benefits

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	433.68	Decrease (Credit)
343 Accrued Insurance	433.68	Decrease (Debit)

it affects the balance sheet. When paying for benefits a company uses cash—an asset—to pay an accrued liability. In the case of a company using the chart of accounts in Figure 2-1 the accrued liability is accrued insurance recorded in the 343 Accrued Insurance account. By reducing both an asset account and a liability account by the same amount, the relationship between assets and liabilities on the balance sheet is maintained. No changes occur on the income statement or job cost ledger because these costs have already been charged to the income statement and job cost ledger.

Example 3-8: Determine the changes to the balance sheet that occur when the monthly health insurance premium for the employee in Example 3-4 is paid. The insurance is paid every month (4.3333 weeks).

Solution: From Example 3-4, the company owes \$100.08 per week. The monthly premium is \$433.68 (\$100.08 per week × 4.3333 weeks per month). Each month the contractor will use a check drawn against the cash account to pay the health insurance premium. The health insurance premium includes the health insurance premiums for all employees. Included in this amount is \$433.68 for the employee in Example 3-4. The changes resulting from paying the health insurance premium for the employee in Example 3-4 are shown in Table 3-8.

VACATION TIME FOR JOBSITE EMPLOYEES

In Example 3-4, when the employee's time was entered into the accounting system, funds were set aside to pay for the employee's vacation time. This was done because it would be unfair to charge all of an employee's vacation to the job he or she was working on when his or her vacation was taken. For example, if an employee worked on a job for one day then took a week's vacation and returned to the job for one day, it would distort the project costs to charge the job for seven days of work when only two days of work had been performed.

When a jobsite employee takes vacation, the employer pays him or her for not working. The cost of this time is paid from funds set aside and charged to the jobs the employee worked on throughout the year. When an employee is paid for vacation time it affects the balance sheet. No costs are incurred because the company has been accruing these costs throughout the year. As a result, no

TABLE 3-9 Vacation Time for Jobsite Employees

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
340 Accrued Payroll	642.17	Increase (Credit)
342 Accrued Taxes	280.24	Increase (Credit)
343 Accrued Insurance	180.71	Increase (Credit)
344 Accrued Vacation	1,103.12	Decrease (Debit)

changes occur on the income statement or job cost ledger. On the balance sheet the employee costs become an accrued liability, the same as they did when we looked at Labor Charged to a Job. This increase in liability on the balance sheet is offset by an equivalent reduction in accrued liability in the form of accrued vacation. For a company using the chart of accounts in Figure 2-1, the company would have an increase in liability recorded in the 340 Accrued Payroll, 342 Accrued Taxes, and 343 Accrued Insurance accounts, which would be offset by a reduction in liability in the 344 Accrued Vacation account. By increasing some liability accounts while decreasing another liability account by the same amount the relationship between assets and liabilities on the balance sheet is maintained.

Example 3-9: Determine the change to the balance sheet when the employee in Example 3-4 is paid for one week's vacation time.

Solution: The change to the 340 Accrued Payroll, 342 Accrued Taxes, and 343 Accrued Insurance accounts are the same as they were in Example 3-4. Money to cover these changes would be paid out of the 344 Accrued Vacation account. Any money set aside from this week's wages for accruing vacation would come from the 344 Accrued Vacation account and would be recorded in the same account that was covering its costs, effectively washing itself out. In this example, there would be an increase in the 344 Accrued Vacation account of \$38.00 to cover the vacation accrued during the week and a decrease from the same account of \$1,141.12 to cover the employee's costs for the week. This creates a net decrease in the 344 Accrued Vacation account of \$1,103.12 ($\$1,141.12 - \38.00). The changes are shown in Table 3-9.

RECORDING OFFICE RENT

When a construction company rents office space for the general office—space that cannot be charged to a job—it is handled differently than it would be if it purchased the office. When a bill for office rent is entered into the accounting system it affects the income statement and the balance sheet. On the income

TABLE 3-10 Recording Office Rent

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	2,000.00	Increase (Credit)
430 Current Period Net Income	2,000.00	Decrease (Debit)
Income Statement		
842 Office Rent	2,000.00	Increase
Profit	2,000.00	Decrease

statement the rent is recorded as a general overhead expense. In the case of a company that uses the chart of accounts in Figure 2-1, the invoice would be recorded to the 842 Office Rent account. This increase in general overhead cost decreases the profit on the income statement by the amount of the invoice. On the balance sheet the invoice is recorded as an account payable-trade in the liability section. This increase in liability results in a reduction in the current period net income equal to the amount of the general overhead invoice. As in the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the cost is part of the general overhead and is not charged to a job, the invoice does not affect the job cost ledger.

Example 3-10: Determine the change to the balance sheet and income statement of a \$2,000 invoice for office rent.

Solution: The changes are shown in Table 3-10.

Should the invoice cover more than one month's rent, the invoice may need to be treated as a prepaid expense. See an accountant for help in determining how to handle this transaction. When the rent invoice is paid, it will have the same effect on the balance sheet as paying any other invoice; namely, reducing both accounts payable-trade while reducing cash.

RECORDING OFFICE DEPRECIATION

When the company owns the general office and cannot bill the cost of the office to the job, the company needs to record the loss in value or depreciation each month. When the loss in value is recorded, it affects the income statement and the balance sheet. On the income statement the depreciation is recorded as a general overhead expense. In the case of a company that uses the chart of accounts in Figure 2-1 the depreciation would be recorded to the 819 Depreciation account. This increase in general overhead cost decreases the profit on the income statement by the amount of the depreciation. On the balance sheet the

TABLE 3-11 Recording Office Depreciation

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
250 Less Acc. Depreciation	2,000.00	Increase (Credit)
430 Current Period Net Income	2,000.00	Decrease (Debit)
Income Statement		
819 Depreciation	2,000.00	Increase
Profit	2,000.00	Decrease

depreciation is recorded in the less accumulated depreciation contra account in the asset section, which is used to offset the value of the fixed assets. The depreciation recorded to the less accumulated depreciation contra account is a credit, even though it increases the accumulated depreciation contra account, because contra accounts behave in the opposite manner from other accounts. This is because the less depreciation account is used to reduce the assets on the asset side of the balance sheet by subtracting its balance from the balance of the total fixed assets account; whereas, all other accounts on the asset side of the balance sheet are used to record (increase) assets. This decrease in assets results in a reduction in the current period net income equal to the amount of the depreciation. As per the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the depreciation is part of the general overhead and is not charged to a job, the depreciation does not affect the job cost ledger.

Example 3-11: Determine the change to the balance sheet and income statement of \$2,000 of office depreciation.

Solution: The changes are shown in Table 3-11.

RECORDING GENERAL OVERHEAD INVOICES

Recording general overhead invoices has the same effect on the income statement and balance sheet as recording office rent, except that they are recorded to the appropriate general overhead category.

Example 3-12: Determine the change of a \$500 telephone bill to the balance sheet and income statement.

Solution: The telephone bill is charged to the 846 Telephone account in the general overhead section of the income statement. The changes are shown in Table 3-12.

TABLE 3-12 Paying General Overhead Invoices

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	500.00	Increase (Credit)
430 Current Period Net Income	500.00	Decrease (Debit)
Income Statement		
846 Telephone	500.00	Increase
Profit	500.00	Decrease

When a general overhead invoice is paid it has the same affect on the balance sheet as paying any other invoice; namely, reducing both accounts payable-trade while reducing cash.

BILLING A CLIENT

In previous examples we have looked at how invoices and labor affected the accounting system. Now it is time to bill the client for these costs. When a company bills a client for work performed it affects the income statement, balance sheet, and the job cost ledger. On the income statement the bill to the client is recorded as revenue. In the case of a company using the chart of accounts in Figure 2-1 the bill is recorded in the 500 Revenue account. The increase in revenue increases the profit on the income statement by the amount of the invoice. The portion of the bill withheld by the client in the form of retention is recorded as an accounts receivable-retention and the remaining portion of the bill is recorded as an account receivable-trade in the asset portion of the balance sheet. This increase in accounts receivable results in an increase in the current period net income equal to the amount of the invoice. As in the relationships previously discussed, the increase in profit on the income statement is equal to the increase in the current period net income on the balance sheet. On the job cost ledger the bill is credited to the job or jobs for which the bill represented. Not all companies track their revenues on the job cost ledger. In such a case, nothing is recorded to the job cost ledger.

Example 3-13: Determine the change to the balance sheet, income statement, and job cost ledger of a \$100,000 bill to a client for Job 120. The client holds 10% retention.

Solution: The client holds \$10,000 ($\$100,000 \times 0.10$) as retention until the project is complete. The changes are shown in Table 3-13.

TABLE 3-13 Billing a Client

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
120 Accounts Receivable-Trade	90,000.00	Increase (Debit)
121 Accounts Receivable-Retention	10,000.00	Increase (Debit)
430 Current Period Net Income	100,000.00	Increase (Credit)
Income Statement		
500 Revenue	100,000.00	Increase
Profit	100,000.00	Increase
Job Cost Ledger		
120 Revenue	100,000.00	Increase

BILLING FOR RETENTION

In the previous example, retention was withheld by the client. When the company has met the requirement for the release of the retention it will need to recognize this in the accounting system. The company does this by sending a bill for the retention to the client. Billing for retention affects the balance sheet by moving the retention from the accounts receivable-retention account to the accounts receivable-trade account. Once the retention has been moved to the accounts receivable-trade account the company may begin tracking and treating it as a collectable invoice. Because the retention has already been recorded as income on the income statement and the job cost ledger, no change is made to either of these ledgers.

Example 3-14: A contractor has completed a construction project on which the client is holding \$10,000 in retention. Determine the changes to the balance sheet when the contractor bills the client for the outstanding retention.

Solution: The changes are shown in Table 3-14.

RECEIVING PAYMENT FROM A CLIENT

Now that the contractor has billed the client, the next step is to see how receiving payment from the client affects the accounting system. When payment is received from the client it affects the balance sheet by changing an account

TABLE 3-14 Billing for Retention

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
120 Accounts Receivable-Trade	10,000.00	Increase (Debit)
121 Accounts Receivable-Retention	10,000.00	Decrease (Credit)

TABLE 3-15 Receiving Payment from a Client

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	90,000.00	Increase (Debit)
120 Accounts Receivable-Trade	90,000.00	Decrease (Credit)

receivable-trade into cash. Because the payment is already recorded as income on the income statement and the job cost ledger when the bill was prepared, no changes are made to either of these ledgers.

Example 3-15: Determine the changes that occur on the balance sheet when the contractor receives payment for the \$90,000.00 bill that was submitted in Example 3-13.

Solution: The changes are shown in Table 3-15.

PURCHASE OF EQUIPMENT WITH A LOAN

When a contractor purchases a piece of equipment or other asset with a loan, the company obtains a new asset with a new liability; therefore, the purchase of the asset affects only the balance sheet. On the balance sheet the cash account is decreased by any down payment the contractor makes. The asset purchased is recorded as a long-term asset in the asset section of the balance sheet. The loan used to purchase the asset is recorded as a long-term liability. If prepaid interest is included in the loan down payment, the prepaid interest may have to be amortized over the life of the loan. The net increase in the assets is offset by an equally large increase in the net liabilities.

Example 3-16: Determine the changes that occur on the balance sheet when the contractor purchases a \$120,000 hydraulic excavator with a \$110,000 loan and a \$10,000 cash down payment.

Solution: The changes are shown in Table 3-16.

TABLE 3-16 Purchase of Equipment with a Loan

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	10,000.00	Decrease (Credit)
220 Construction Equipment	120,000.00	Increase (Debit)
380 Long-Term Liabilities	110,000.00	Increase (Credit)

TABLE 3-17 Loan Payment

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	2,230.40	Decrease (Credit)
380 Long-Term Liabilities	1,497.07	Decrease (Debit)
430 Current Period Net Income	733.33	Decrease (Debit)
Income Statement		
881 Interest Expense	733.33	Increase
Profit	733.33	Decrease

LOAN PAYMENT

When payments on a loan are made, the payments affect the income statement and the balance sheet. On the income statement the interest paid on the loan is recorded as interest expense in the general overhead portion of the income statement. In the case of a company using the chart of accounts in Figure 2-1 it would be recorded in the 881 Interest Expense account. Some companies may charge interest expense to other expenses rather than a general overhead account. The increase in the interest expense decreases the profit on the income statement by the amount of the interest. On the balance sheet the loan payment reduces the cash account by the amount of the payment. The portion of the payment that is used to reduce the principal decreases the long-term liability account. Here the company is using cash—an asset—to reduce the loan principal—a long-term liability. Because of this, the portion of the loan payment used to reduce the principal does not affect the income statement. The portion of the payment that is used to pay the interest on the loan reduces the current period net income on the balance sheet. As per the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet.

Example 3-17: Determine the changes that occur on the balance sheet and income statement when the contractor makes the first payment on the excavator in Example 3-16. The amount of the payment is \$2,230.40, which includes \$1,497.10 in principal and \$733.33 in interest.

Solution: The changes are shown in Table 3-17.

EQUIPMENT DEPRECIATION

As owned equipment is used, the company needs to record the loss in value or depreciation each month. When the loss in value is recorded it affects the income statement, the balance sheet, and the equipment ledger. On the income statement

TABLE 3-18 Equipment Depreciation

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
250 Less Acc. Depreciation	2,000.00	Increase (Credit)
430 Current Period Net Income	2,000.00	Decrease (Debit)
Income Statement		
720 Depreciation	2,000.00	Increase
Profit	2,000.00	Decrease
Equipment Ledger		
Excavator 1-Depreciation	2,000.00	Increase

the depreciation is recorded as an equipment depreciation cost. In the case of a company that uses the chart of accounts in Figure 2-1 the depreciation is recorded in the 720 Depreciation account. This increase in equipment cost decreases the profit on the income statement by the amount of the depreciation. On the balance sheet the depreciation is recorded in the less accumulated depreciation contra account in the asset section, which is used to offset the value of the fixed asset. The depreciation recorded to the less accumulated depreciation contra account is a credit even though it increases the accumulated depreciation contra account, because contra accounts behave in the opposite manner from other accounts. This is because the less depreciation account is used to reduce the assets on the asset side of the balance sheet by subtracting its balance from the balance of the total fixed assets account; whereas, all other accounts on the asset side of the balance sheet are used to record (increase) assets. This decrease in assets results in a reduction in the current period net income equal to the amount of the depreciation. As in the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the equipment has not been charged to a job, the depreciation does not affect the job cost ledger. The depreciation is recorded as a cost to the equipment ledger. This maintains the relationship between the equipment portion of the income statement and the equipment ledger.

Example 3-18: Determine the change to the balance sheet, income statement, and equipment ledger for one month's depreciation for the excavator in Example 3-16. The monthly depreciation is \$2,000.

Solution: The changes are shown in Table 3-18.

LEASED EQUIPMENT WITH AN OPERATING LEASE

When equipment is leased on a month-to-month basis or with an operating lease and the equipment is charged to multiple jobs, the equipment should be charged to the equipment portion of the income statement and then charged out to the

TABLE 3-19 Leased Equipment with an Operating Lease

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	2,500.00	Increase (Credit)
430 Current Period Net Income	2,500.00	Decrease (Debit)
Income Statement		
710 Rent and Lease Payments	2,500.00	Increase
Profit	2,500.00	Decrease
Equipment Ledger		
Excavator 2-Rent and Lease Payments	2,500.00	Increase

jobs that use the equipment. Leasing equipment with an operating lease affects the income statement, balance sheet, and equipment ledger. On the income statement the monthly lease payment is recorded to the equipment portion of the income statement. In the case of a company using the chart of accounts in Figure 2-1, the lease payment would be recorded in the 710 Rent and Lease Payments account. This increase in equipment cost decreases the profit on the income statement by the amount of the lease. On the balance sheet the lease payment is recorded as an account payable-trade. This increase in liability results in a reduction in the current period net income equal to the amount of the lease payment. As per the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the equipment has not been charged to a job, the lease payment does not affect the job cost ledger. The lease payment is recorded as a cost to the equipment ledger. When equipment is rented for a single job it could be treated as an invoice for that job.

Example 3-19: Determine the change to the balance sheet, income statement, and equipment ledger for one month's rent of an excavator. The excavator rents for \$2,500 per month and is used on multiple jobs.

Solution: The changes are shown in Table 3-19.

LEASED EQUIPMENT WITH A CAPITAL LEASE

Capital leases are noncancelable leases that meet at least one of the following conditions: (1) The lease extends for 75 percent or more of the equipment's useful life, (2) ownership transfers at the end of the lease, (3) ownership is likely to transfer at the end of the lease through a purchase option with a heavily discounted price, or (4) the present value of the lease payment at market interest rate exceeds 90% of the fair market value of the equipment. Capital leases look and act much like a loan and are treated similarly to a loan. When a company

TABLE 3-20 Leased Equipment with a Capital Lease

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
260 Capital Leases	120,000.00	Increase (Debit)
350 Capital Lease Payable	120,000.00	Increase (Credit)

takes on a new capital lease it not only obtains an asset that it can use for the life of the lease but also takes on the liability to pay for the leased equipment for the life of the lease. As such when a new capital lease is obtained it is recorded as both an asset and liability on the balance sheet. The amount recorded equals the present value of the capital lease. The calculation of present value is covered in Chapter 15. In the case of a company that uses the chart of accounts in Figure 2-1, the present value of the lease would be recorded in the 260 Capital Leases account on the asset portion of the balance sheet and in the 350 Capital Lease Payable account on the liability portion of the balance sheet. The increase in the assets is offset by the increase in liabilities.

Example 3-20: Determine the changes that occur on the balance sheet when the contractor leases a front-end loader. The lease is considered a capital lease with a present value of \$120,000.00.

Solution: The changes are shown in Table 3-20.

LEASE PAYMENTS ON A CAPITAL LEASE

As lease payments are made on a capital lease the payment must be split into two components: interest on the liability and reduction of the liability. The lease payment affects the income statement and the balance sheet. On the income statement the interest component of the lease must be recorded as an interest expense in the general overhead portion of the income statement. In the case of a company using the chart of accounts in Figure 2-1 it would be recorded in the 881 Interest Expense account. Some companies may charge interest expense to other expenses rather than a general overhead account. The increase in the interest expense decreases the profit on the income statement by the amount of the interest. On the balance sheet the lease payment reduces the cash account by the amount of the payment. The portion of the payment that is used to reduce the liability decreases the capital lease payable account. In the case of a company using the chart of accounts in Figure 2-1 it would be recorded in the 350 Capital Lease Payable account. Here the company is using cash—an asset—to reduce the capital lease payable—a long-term liability. Because of this, the portion of the lease payment used to reduce the capital lease payable does not affect the income statement. The portion of the payment that is used to pay the interest on the liability

TABLE 3-21 Lease Payments on a Capital Lease

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	2,433.17	Decrease (Credit)
350 Capital Lease Payable	1,633.17	Decrease (Debit)
430 Current Period Net Income	800.00	Decrease (Debit)
Income Statement		
881 Interest Expense	800.00	Increase
Profit	800.00	Decrease

reduces the current period net income on the balance sheet. As in the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet.

Example 3-21: Determine the changes that occur on the balance sheet and income statement when the contractor makes the first lease payment on the loader in Example 3-20. The amount of the payment is \$2,433.17, of which \$1,633.17 is used to reduce the capital lease payable and \$800.00 is the interest on the liability.

Solution: The changes are shown in Table 3-21.

AMORTIZATION OF A CAPITAL LEASE

Over time the asset value of a capital lease decreases. As a result, the asset value of the capital lease must be amortized. The amortization of a capital lease behaves much the same as depreciation of an asset. When the amortization of a capital lease is recorded it affects the income statement, the balance sheet, and the equipment ledger. On the income statement the amortization is recorded as equipment lease costs. In the case of a company that uses the chart of accounts in Figure 2-1 the amortization would be recorded in the 710 Rent and Lease Payment account. This increase in equipment cost decreases the profit on the income statement by the amount of the amortization. The amortization reduces the capital lease asset on the balance sheet. Some companies may set up a contra account for capital leases. In the case of a company that uses the chart of accounts in Figure 2-1 the amortization would be recorded against the 260 Capital Lease account. This decrease in assets results in a reduction in the current period net income equal to the amount of the amortization. As in the relationships previously discussed, the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the equipment has not been charged to a job, the amortization does not affect the job cost ledger. The amortization is recorded as a cost to the equipment ledger, thus

TABLE 3-22 Amortization of a Capital Lease

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
260 Capital Leases	2,000.00	Decrease (Credit)
430 Current Period Net Income	2,000.00	Decrease (Debit)
Income Statement		
710 Rent and Lease Payment	2,000.00	Increase
Profit	2,000.00	Decrease
Equipment Ledger		
Loader 1-Rent and Lease Payments	2,000.00	Increase

maintaining the relationship between the income statement and the equipment ledger.

Example 3-22: Determine the change to the balance sheet, income statement, and equipment ledger for one month's amortization for the loader in Example 3-20. The monthly amortization is \$2,000.

Solution: The changes are shown in Table 3-22.

INVOICE FOR EQUIPMENT REPAIRS

When an invoice for equipment repairs is received and entered into the accounting system it affects the income statement, balance sheet, and equipment ledger. On the income statement the invoices are recorded as an equipment cost in the equipment portion of the income statement. In the case of a company that uses the chart of accounts in Figure 2-1 the invoice is recorded to the 730 Repairs and Maintenance account. The increase in the equipment costs decreases the profit on the income statement by the amount of the invoice. On the balance sheet the invoice is recorded as an accounts payable-trade in the liability section. This increase in liability results in a reduction in the current period net income equal to the amount of the invoice. As in the relationships previously discussed the reduction in profit on the income statement is equal to the reduction in the current period net income on the balance sheet. Because the equipment has not been charged to a job, the invoice does not affect the job cost ledger. The invoice is recorded as a cost to the equipment ledger against the piece of equipment that was repaired. Large repairs—such as engine overhauls—may need to be recorded as an asset and depreciated. A company's accountant can help to determine if a repair must be depreciated. Maintenance, fuel, and other equipment invoices are handled in the same manner; however, they may be recorded in a different equipment account on the income statement.

TABLE 3-23 Invoice for Equipment Repairs

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
310 Accounts Payable-Trade	500.00	Increase (Credit)
430 Current Period Net Income	500.00	Decrease (Debit)
Income Statement		
730 Repairs	500.00	Increase
Profit	500.00	Decrease
Equipment Ledger		
Loader 1-Repairs and Maintenance	500.00	Increase

Example 3-23: Determine the change to the balance sheet, income statement, and equipment ledger of a \$500 invoice for repairs to the loader in Example 3-20.

Solution: The changes are shown in Table 3-23.

EQUIPMENT CHARGED TO A JOB

So far costs have been recorded to the equipment section of the income statement, but these costs have not been charged to a job. The goal at the end of the fiscal year is for all equipment costs to be charged to the individual jobs or employees. Equipment charges may be made to jobs based on the number of hours a piece of equipment was operated on a job or based on the number of days a piece of equipment was on a job, whether or not it was operating. Often a time card is kept for each piece of equipment, just as a company would keep a time card for its employees. When equipment is charged to a job it affects the income statement, the job cost ledger, and the equipment ledger. On the income statement the equipment charge is recorded as an equipment cost in the construction cost portion of the income statement. In the case of a company that uses the chart of accounts in Figure 2-1 the charge would be recorded to the 640 Equipment account. The charge is also recorded to the equipment costs charged to a job contra account in the equipment portion of the income statement, which offsets the equipment costs in the same way the depreciation account offsets the fixed assets. In the case of a company that uses the chart of accounts in Figure 2-1 the charge would be recorded to the 799 Equipment Costs Charged to Job account. On the job cost ledger the equipment charge is recorded as a cost with an equipment cost type against the job, phase, and cost code on which the equipment was used. On the equipment ledger the charge is recorded as a cost allocation for the piece of equipment. Because this is just an allocation of a previously recorded cost no changes are required on the balance sheet.

TABLE 3-24 Equipment Charged to a Job

ACCOUNT	CHANGE IN AMOUNT (\$)	
Income Statement		
640 Equipment	5,000.00	Increase
799 Equipment Costs Charged to Jobs	5,000.00	Increase
Job Cost Ledger		
105.01.02100E	5,000.00	Increase
Equipment Ledger		
Excavator 2-Equipment Costs Allocated	5,000.00	Increase

Example 3-24: Determine the change to the income statement, the job cost ledger, and the equipment ledger of a \$5,000 equipment charge to Job 105, Phase 1, cost code 02100 Grading and Excavation.

Solution: The changes are shown in Table 3-24.

EQUIPMENT CHARGED TO AN EMPLOYEE

The IRS requires that employers report an employee's personal use of company vehicles as compensation to the employee. The personal use of a company vehicle includes using the vehicle to commute to and from work. To do this many employers deduct a flat monthly rate for use of the vehicle from the employee's paycheck. Employers who do not want to charge the employee for use of the vehicle often add the monthly rate to the employee's base wages—so that the use of the vehicle is recorded as wages—and then deduct the same monthly rate from the employee's check. The deduction is made after taxes are deducted from the employee's paycheck. By doing this, the monthly charge for the vehicle is recorded as wages and the employee pays taxes on the use of the vehicle.

When equipment is charged to an employee it affects the balance sheet, income statement, and equipment ledger. On the balance sheet the wages due to the employee—which are recorded as an accrued payroll—are decreased by the amount of the deduction. In the case of a company that uses the chart of accounts in Figure 2-1 the charge would reduce the 340 Accrued Payroll account. The reduction in the accrued payroll increases the current period net income by the amount of the deduction. On the income statement the deduction is recorded to the equipment costs charged to the employee's contra account in the equipment portion of the income statement, which account offsets the equipment costs. In the case of a company that uses the chart of accounts in Figure 2-1 the charge would be recorded to the 798 Equipment Costs Charged to Employees account. This charge increases the profit by the amount of the deduction. As per the relationships previously discussed the increase in profit on the income statement is equal to the increase in the current period net income on the balance sheet.

TABLE 3-25 Equipment Charged to an Employee

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
340 Accrued Payroll	50.00	Decrease (Debit)
430 Current Period Income	50.00	Increase (Credit)
Income Statement		
798 Equipment Costs Charged to Employees	50.00	Increase
Profit	50.00	Increase
Equipment Ledger		
Truck 5-Equipment Costs Allocated	50.00	Increase

On the equipment ledger the charge is recorded as a cost allocation for the piece of equipment.

Example 3-25: Determine the change to the balance sheet, income statement, and the equipment ledger of a \$50 deduction from an employee's wages for personal use of a company vehicle.

Solution: The changes are shown in Table 3-25.

SALE OF EQUIPMENT

The last equipment transaction we look at is what happens when a piece of equipment is sold. When the sale of a piece of equipment occurs, an asset—recorded in the fixed asset and less accumulated depreciation accounts—is exchanged for cash. If the asset is sold for more or less than its book value, the gain or loss on the asset must be reported as an income or loss. The sale of equipment affects the balance sheet and if a gain or loss on the asset occurs, it also affects the income statement. On the balance sheet, when an asset is sold, the asset is removed from the fixed asset account and its depreciation is removed from the less accumulated depreciation account. This results in a change in the net fixed asset account equal to the book value of the asset. The depreciation removed to the less accumulated depreciation contra account is a debit even though it decreases the accumulated depreciation contra account, because contra accounts behave in the opposite manner from other accounts. This is because the less depreciation account is used to reduce the assets on the asset side of the balance sheet by subtracting its balance from the balance of the total fixed assets account; whereas, all other accounts on the asset side of the balance sheet are used to record (increase) assets. The sale of the asset increases the cash, note receivable, or other asset account depending on the terms of the sale. If the asset is financed, the sale decreases the note payable or long-term liability associated with paying off the asset's financing. If the asset is sold for a price different from

TABLE 3-26 Sale of Equipment

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
110 Cash	60,000.00	Increase (Debit)
220 Construction Equipment	120,000.00	Decrease (Credit)
250 Less Acc. Depreciation	62,400.00	Decrease (Debit)
430 Current Period Net Income	2,400.00	Increase (Credit)
Income Statement		
910 Other Income	2,400.00	Increase
Profit	2,400.00	Increase

the book value, the gain or loss on the sale will result in an increase or decrease in the current period net income equal to the gain or loss. On the income statement the gain or loss will be recorded as other income or other expense. Gains increase the profit on the income statement by the amount of the gain. Losses decrease the profit on the income statement by the amount of the loss. As per the relationships previously discussed, the reduction or increase in profit on the income statement is equal to the reduction or increase in the current period net income on the balance sheet.

Example 3-26: Determine the change to the balance sheet and income statement of the sale of a crane. The crane was sold for \$60,000 in cash. The crane was purchased for \$120,000 and \$62,400 of depreciation has been taken.

Solution: The book value on the crane is \$57,600 ($\$120,000 - \$62,400$). The gain on the sale is \$2,400 ($\$60,000 - \$57,600$). The changes are shown in Table 3-26.

PURCHASE OF INVENTORY

When a company purchases materials and places them in inventory until they are ready to use them, the company is exchanging a liability (accounts payable) or an asset (cash) for an asset (inventory). When the materials are received they are recorded as an asset in the inventory category. In the case of a company that uses the chart of accounts in Figure 2-1 the cost of the materials would be recorded to the 130 Inventory account. If the materials were purchased on credit, the accounts payable-trade will increase by the amount of the purchase. If the materials were purchased with cash, the cash account would be reduced by the amount of the purchase. No changes are made to the income statement or job cost ledger until the materials are charged to a job.

TABLE 3-27 Purchase of Inventory

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
130 Inventory	5,000.00	Increase (Debit)
310 Accounts Payable-Trade	5,000.00	Increase (Credit)

Example 3-27: Determine the change to the balance sheet from the purchase of \$5,000 of copper wiring on credit for use on future projects. The wiring will be held in inventory until it is needed on a job.

Solution: The changes are shown in Table 3-27.

CHARGING INVENTORY TO A JOB

When inventoried materials are used on a job and subsequently charged to that job, it affects the balance sheet, income statement, and job cost ledger. On the balance sheet, the inventory is reduced by the amount of the purchase price of the materials. Because the same kind of materials may have been purchased at different times and different prices it can be difficult to determine the purchase price of the materials used on the project. Often the price is an assigned price rather than the actual price of the material. Two common methods of assigning prices are the first-in/first-out (FIFO) and last-in/first-out (LIFO) methods. Using the FIFO method, it is assumed that the materials are used in the order that they were purchased, regardless of the actual order of use. Using the LIFO method it is assumed that the most recently purchased materials are used first, again, regardless of the actual order of use. A contractor should consult with a certified public accountant when setting up an inventory system to ensure that he or she complies with all the tax rules covering inventory. The reduction in inventory is accompanied by a reduction in the current period net income. On the income statement and the job cost ledger the material purchased is recorded as if the material had been purchased directly from a supplier (see Invoice Charged to a Job without Retention).

Example 3-28: Determine the change to the balance sheet, income statement, and job cost ledger when \$2,000 of copper wire is billed from inventory to Job Number 172 for use in Phase 2. The wire is cost coded to 16100.

Solution: The changes are shown in Table 3-28.

TABLE 3-28 Charging Inventory to a Job

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
130 Inventory	2,000.00	Decrease (Credit)
430 Current Period Net Income	2,000.00	Decrease (Debit)
Income Statement		
610 Materials	2,000.00	Increase
Profit	2,000.00	Decrease
Job Cost Ledger		
172.01.16100M	2,000.00	Increase

RECORDING CHANGES IN COSTS AND PROFITS IN EXCESS OF BILLINGS

When a company using the percentage-of-completion accounting method has costs and profits in excess of billing it has underbilled the revenue on its construction projects. Because it must recognize the revenues, costs, and profits throughout the project, it needs to recognize the underbilled revenues as revenues although it has not billed the client for them. This increase in revenues increases the company's profits. The underbilled revenues create an asset that is recorded in the current asset portion of the balance sheet, which in turn increases the current period net income. In the case of the company using the chart of accounts in Figure 2-1, the revenues would be recorded to the 500 Revenues account and the asset would be recorded to the 140 Costs and Profits in Excess of Billings account. The amount recorded each month is the difference between last month's underbillings and this month's underbillings. As in the relationships previously discussed, the reduction or increase in profit on the income statement is equal to the reduction or increase in the current period net income on the balance sheet. The calculation of the underbillings or costs and profits in excess of billings is covered in Chapter 4.

Example 3-29: At the end of last month the company's costs and profits in excess of billings was \$10,000. At the end of this month it was \$15,000. Determine the change to the balance sheet and income statement when this change is recorded.

Solution: The change in the cost and profit in excess of billings is an increase of \$5,000 (\$15,000 – \$10,000). The changes are shown in Table 3-29.

TABLE 3-29 Recording Changes in Cost and Profits in Excess of Billings

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
140 Costs and Profits in Excess of Billings	5,000.00	Increase (Debit)
430 Current Period Net Income	5,000.00	Increase (Credit)
Income Statement		
500 Revenue	5,000.00	Increase
Profit	5,000.00	Increase

RECORDING CHANGES IN BILLINGS IN EXCESS OF COSTS AND PROFITS

When a company using the percentage-of-completion accounting method has billings in excess of costs and profits it has overbilled the revenue on its construction projects. The overbilling should not be recognized as profits, yet the company has done so when it billed its projects. To correct this situation, the company must reduce its revenues by the overbilled amount. This decrease in revenues decreases the company's profits. The company also owes its clients for the work it has billed for but has yet to perform, which creates a liability recorded in the current liability portion of the balance sheet. The increase in the liability that results when an overbilling occurs reduces the current period net income. In the case of the company using the chart of accounts in Figure 2-1, the revenues would be recorded to the 500 Revenues account and the liability would be recorded to the 320 Billings in Excess of Costs and Profits account. The amount recorded each month is the difference between last month's overbillings and this month's overbillings. As in the relationships previously discussed, the reduction or increase in profit on the income statement is equal to the reduction or increase in the current period net income on the balance sheet. The calculation of the overbillings or billings in excess of costs and profits is covered in Chapter 4.

Example 3-30: At the end of last month the company's billings in excess of costs and profits was \$10,000. At the end of this month it is \$11,500.

TABLE 3-30 Recording Changes in Billings in Excess of Cost and Profits

ACCOUNT	CHANGE IN AMOUNT (\$)	
Balance Sheet		
320 Billings in Excess of Costs and Profits	1,500.00	Increase (Credit)
430 Current Period Net Income	1,500.00	Decrease (Debit)
Income Statement		
500 Revenue	1,500.00	Decrease
Profit	1,500.00	Decrease

Determine the change to the balance sheet and income statement when this change is recorded.

Solution: The change in the billings in excess of costs and profits is an increase of \$1,500 ($\$11,500 - \$10,000$). The changes are shown in Table 3-30.

CONCLUSION

There are a number of unique transactions that take place in construction accounting that do not occur in other industries. Most of these transactions are a result of the construction industry's focus on job costing, equipment tracking, and accounting for long-term contracts. In this chapter we looked at how accounting transactions affect the general ledger—balance sheet and income statement—as well as the job cost ledger and the equipment ledger, while maintaining the proper balance between these ledgers. Some of the unique transitions that we examined were accruing vacation time for field employees, recording and allocating equipment costs, recording costs and profits in excess of billings, and recording billings in excess of costs and profits.

PROBLEMS

1. The following invoices are being entered into the accounting system. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of entering each of the following invoices:
 - a. A \$5,000 invoice for concrete charged to job cost code 302.01.02620M.
 - b. A \$12,350 invoice from a subcontractor for plumbing charged to job cost code 309.02.15100S. Ten percent retention is withheld from the invoice.
 - c. A \$255 phone bill charged to job cost code 315.01.01800O.
 - d. A \$1,352 bill for office rent.
 - e. A \$112 invoice for office supplies.
 - f. A \$375 invoice for repairs to Backhoe 2.
 - g. A \$563 invoice for nails. The nails will be placed in inventory until they are needed on the jobs, at which time they will be billed to the jobs.

What are the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as a result of all of these invoices?

2. Time cards are being entered into the accounting system for four employees. The costs for Employee 1 are to be billed to job cost code 302.01.01100L. Ten hours of Employee 2 time is to be billed to job cost code 302.01.06110L and the remaining 30 hours are to be billed to job cost code 302.01.06210L.

Employee 3 took vacation this entire week and Employee 4 works in the main office. The employee costs and deductions withheld from the employee's check are shown below. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of entering the employees' time into the accounting system:

	EMPLOYEE (\$)				TOTAL
	1	2	3	4	
Employer's Costs					
Wages	600.00	400.00	350.00	500.00	1,850.00
Social Security	37.20	24.80	21.70	31.00	114.70
Medicare	8.70	5.80	5.08	7.25	26.83
SUTA	18.00	12.00	10.50	15.00	55.50
FUTA	4.80	3.20	2.80	4.00	14.80
Liability Insurance	12.00	8.00	7.00	10.00	37.00
Workers' Comp.	54.00	36.00	31.50	15.00	136.50
Health Insurance	40.00	40.00	40.00	40.00	160.00
Vacation	38.92	29.79	27.51	33.20	129.42
Total	813.62	559.59	496.09	655.45	2,524.75
Employee Deductions					
Social Security	37.20	24.80	21.70	31.00	114.70
Medicare	8.70	5.80	5.08	7.25	26.83
Federal Withholdings	59.85	29.85	22.35	44.85	156.90
State Withholdings	36.00	24.00	21.00	30.00	111.00
Health Insurance	60.00	60.00	60.00	60.00	240.00
Total	201.75	144.45	130.13	173.10	649.43

- Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of paying the employees in Problem 2 for one week's work.
- Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of paying a \$5,000 invoice for concrete charged to job cost code 302.01.02620M, \$2,273.80 for federal employment taxes, and \$1,732 for health insurance. The invoices were previously entered into the accounting system.
- Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of billing a client \$368,264 for Job 313. The bill includes \$249,996 for work performed during the last month and \$118,268 for retention withheld from the previous month's payments. Retention will not be withheld on the \$249,996.

6. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of receiving payment from the owner for the bill in Problem 5.
7. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of purchasing a new loader (Loader 3) to replace an existing loader (Loader 2). The new loader costs \$115,200. The new loader will be paid for by trading in the existing loader for a credit of \$15,200 and the remaining \$100,000 will be financed through the dealership. The existing loader was purchased for \$95,000 and \$83,230 of depreciation had been taken.
8. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of leasing a \$32,000 backhoe (Backhoe 6). The backhoe may be returned to the lessor at any time without penalty. The lease payment is not paid at this time.
9. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of leasing a \$55,000 dump truck (Dump Truck 11). The lease extends for five years at which time the dump truck may be purchased for \$5,000. The present value of the lease is \$55,000.
10. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of paying a \$1,312 loan payment and a \$1,050 capital lease payment. For the loan, \$270 of the payment is interest and for the capital lease \$692 of the payment is used to reduce the capital lease payable.
11. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of recording \$2,500 in office depreciation, \$1,920 in depreciation for Loader 3, and \$917 in amortization on the capital lease for Dump Truck 11.
12. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of billing \$600 for Truck 22 to job cost code 302.01.01100E and \$50 for personal use of Truck 22 to the superintendent of Job 302.
13. Using the chart of accounts in Figure 2-1, determine the changes to the balance sheet, income statement, job cost ledger, and equipment ledger as the result of billing \$200 of nails from inventory to job cost code 302.01.06110M.