# *Managerial Accounting 6th edition Wild Solutions Manual*

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# Chapter 2

# Job Order Costing and Analysis

## QUESTIONS

1. Factory overhead is not identified with specific units (jobs) or batches (job lots). Therefore, to assign costs, estimates of the relation between factory overhead cost and job or job lot are necessary. Since managers need timely cost information, we need to estimate a predetermined overhead rate to use in applying estimated overhead to jobs. This estimated amount also helps job order companies determine prices on a timely basis.
2. Several other factors (allocation bases) are possible and reasonable. These common factors often include direct materials or machine hours.
3. The job order cost sheet captures information on cost and quantity of direct material and direct labor, and on the amount of factory overhead applied to the respective job or job lot. Management and employees use this information to monitor costs during production and to estimate total cost of production.
4. Each job is assigned a subsidiary ledger account. This account serves as the "posting account" (accumulates all increases and decreases) during production for direct material, direct labor, and applied factory overhead. The collection of job cost sheets for all of the jobs in process make up a subsidiary ledger controlled by the Work in Process Inventory account in the general ledger.

   When a job is finished, its job cost sheet is completed and moved from the file of jobs in process to the file of finished jobs awaiting delivery to customers. This latter file acts as a subsidiary ledger controlled by the Finished Goods Inventory account. In this way, management and employees can obtain the costs, direct and indirect, associated with any job or job lot at any time.
5. A debit (increase) to Work in Process Inventory for direct materials, a debit (increase) to Factory Overhead for indirect materials, and a credit (decrease) to Raw Materials Inventory.
6. The materials requisition slip is designed to track the movement of materials from raw materials to production. It also serves as an internal control document because without the slip the inventory department should not release inventory to production.
7. The time ticket is used to record how much time an employee spends on each job. Time tickets are also used to determine the amount of overhead to charge to jobs when overhead is based on direct labor.
8. Debits (increases) to factory overhead are the recording of actual overhead costs, such as indirect materials, indirect labor, factory rent, and factory insurance. Credits (decreases) represent the allocation of factory overhead to jobs or job lots.

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9. **Assuming that the overapplied or underapplied overhead is immaterial, it is closed to the Cost of Goods Sold account.**

10. **This production run should be accounted for as a job lot (batch). Although individual iPhones could be viewed as individual jobs, the costs of tracking this detailed information would outweigh the benefits. Determining the cost of the batch should provide management and employees with sufficient information about this product for all decision making purposes.**

11. **A predetermined factory overhead rate must be calculated for at least two reasons: (1) Not all costs are known in advance, yet estimated overhead costs must be applied to products during the current period. (2) A predetermined rate is used to spread indirect costs to products and/or services throughout an accounting period, where overhead costs are not incurred uniformly throughout the period and production may not be uniform throughout the period. For instance, property taxes on the factory building of $20,000 may be paid in July, but some of that $20,000 must be allocated to all items produced during the year, January through December. A *predetermined* rate is necessary, because we must estimate the rate at the beginning of the year, based on estimated costs and activity, before the period begins.**

12. **Each patient in a hospital can be viewed as a "job." In this case, a job order cost sheet would be used to capture cost of direct materials (supplies, medicine, and so forth), direct labor, and hospital overhead.**

13. **Each of the 30 luxury motorcycles will likely be accounted for as an individual job. Although similar in many respects, each would have custom features that would impact costs. As the luxury motorcycles are shipped to dealers each will have a separate invoice detailing the cost associated with producing that motorcycle. Also, the price of a custom-made motorcycle is probably large enough (in the area of $20,000 to $50,000) that each would be accounted for individually.**

14. **Sprint employees can use job cost sheets to accumulate the costs (e.g. materials, labor, and overhead) used on each job. Managers can use this job cost information to monitor whether Sprint is meeting its target costs and producing reasonable profits. This information can be used to adjust the prices of certain services and/or cease providing certain services if the costs cannot be controlled to yield a reasonable profit.**

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# QUICK STUDIES

## Quick Study 2-1 (5 minutes)

**Manufactured as a job:** 3, 4, 6

**Manufactured as a job lot:** 1, 2, 5

## Quick Study 2-2 (10 minutes)

| | | |
|---|---|---|
| Finished Goods Inventory | 10,500 | |
| Work in Process Inventory | | 10,500 |
| *Transfer cost of completed job to Fin. Goods.* | | |
| Cost of Goods Sold | 10,500 | |
| Finished Goods Inventory | | 10,500 |
| *Transfer cost of delivered job to COGS.* | | |
| Cash | 14,900 | |
| Sales | | 14,900 |
| *Record sales price of delivered job.* | | |

## Quick Study 2-3 (10 minutes)

| | | | | | |
|---|---|---|---|---|---|
| 1. | A | 3. | B | 5. | E |
| 2. | D | 4. | C | | |

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## Quick Study 2-4 (15 minutes)

| | | |
|---|---|---|
| Raw Materials Inventory ..... | 50,000 | |
| Cash ..... | | 50,000 |
| *Record raw material purchases.* | | |
| Factory Overhead ..... | 12,000 | |
| Raw Materials Inventory ..... | | 12,000 |
| *Record indirect materials used in production.* | | |
| Work in Process Inventory ..... | 32,000 | |
| Raw Materials Inventory ..... | | 32,000 |
| *Record direct materials used in production.* | | |

## Quick Study 2-5 (10 minutes)

| | | |
|---|---|---|
| Work in Process Inventory ..... | 140,000 | |
| Factory Wages Payable ..... | | 140,000 |
| *Record direct labor.* | | |
| Factory Overhead ..... | 40,000 | |
| Factory Wages Payable ..... | | 40,000 |
| *Record indirect labor.* | | |

## Quick Study 2-6 (10 minutes)

1. Factory overhead, $117,000 / Direct labor, $468,000 = 25%
2. Factory overhead, $117,000 / Direct materials, $390,000 = 30%

## Quick Study 2-7 (10 minutes)

$$\text{Rate} = \frac{\text{Estimated overhead costs}}{\text{Estimated machine hours}} = \frac{\$560{,}000}{1{,}400} = \$400 \text{ per machine hour}$$

Amount applied to Job 65A = 13 x $400 = $5,200

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## Quick Study 2-8 (5 minutes)

$$\text{Rate} = \frac{\text{Estimated overhead costs}}{\text{Estimated direct materials}} = \frac{\$1{,}170{,}000}{\$900{,}000} = 130\%$$

## Quick Study 2-9 (10 minutes)

| Overhead Applied | |
|---|---|
| Job 1 ($5,000 x 40%) ..... | $2,000 |
| Job 2 ($7,000 x 40%) ..... | 2,800 |
| Job 3 ($1,500 x 40%) ..... | 600 |

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**Quick Study 2-10 (10 minutes)**

**1.**

| JOB COST SHEET<br>Job 1 | |
|---|---|
| Direct materials | $ 5,000 |
| Direct labor | 9,000 |
| Factory overhead (From QS 15-9) | 2,000 |
| Total | $16,000 |

| JOB COST SHEET<br>Job 2 | |
|---|---|
| Direct materials | $ 7,000 |
| Direct labor | 4,000 |
| Factory overhead (From QS 15-9) | 2,800 |
| Total | $13,800 |

| JOB COST SHEET<br>Job 3 | |
|---|---|
| Direct materials | $1,500 |
| Direct labor | 3,000 |
| Factory overhead (From QS 15-9) | 600 |
| Total | $5,100 |

**2. The balance in the Work in the Process Inventory account equals $21,100, the sum of the total costs on the job cost sheets for the jobs that remain unfinished at the end of the period (Job 1 and Job 3).**

**3. The balance in the Finished Goods Inventory account equals $13,800, the total costs on the job cost sheet for the job (Job 2) that is finished (but not yet sold) at the end of the period.**

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## Quick Study 2-11 (15 minutes)

| | | |
|---|---|---|
| **Cost of Goods Sold** ..... | **50,000** | |
| **Factory Overhead*** ..... | | **50,000** |

***Assign underapplied overhead.***

| Factory Overhead | | | |
|---|---|---|---|
| OH Incurred | 950,000 | OH Applied | 900,000 |
| Underapplied | 50,000 | | |

## Quick Study 2-12 (5 minutes)

| | | |
|---|---|---|
| **Factory Overhead** ..... | **22,000** | |
| **Cost of Goods Sold*** ..... | | **22,000** |

***Assign overapplied overhead.***

| Factory Overhead | | | |
|---|---|---|---|
| OH Incurred | 624,000 | OH Applied | 646,000 |
| | | Overapplied | 22,000 |

## Quick Study 2-13 (10 minutes)

| JOB COST SHEET | |
|---|---|
| **Direct labor ($50 x 200)** ..... | **$10,000** |
| **Factory overhead ($65 x 200)** ..... | **13,000** |
| **Total cost** ..... | **$23,000** |

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## Quick Study 2-14 (10 minutes)

| | | |
|---|---|---|
| **Services in Process Inventory*** ..... | **3,250** | |
| **Service Wages Payable**..... | | **3,250** |
| ***Record direct labor.*** | | |
| ***65 x $50** | | |

| | | |
|---|---|---|
| **Services in Process Inventory**** ..... | **2,600** | |
| **Factory Overhead** ..... | | **2,600** |
| ***Record overhead.*** | | |
| ****65 x $40** | | |

## Quick Study 2-15 (5 minutes)

**Since each car is custom-ordered, Porsche produces in jobs rather in job lots (production of more than one unit of a custom product).**

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# EXERCISES

## Exercise 2-1 (10 minutes)

| | | | | | |
|---|---|---|---|---|---|
| 1. | C | 3. | E | 5. | A |
| 2. | D | 4. | B | | |

## Exercise 2-2 (15 minutes)

| JOB COST SHEET: Job 9-1005 | | |
|---|---|---|
| **Direct materials** | | |
| Q-4698 | $1,250 | |
| Q-4725 | 1,000 | $2,250 |
| **Direct labor** | | |
| W-3393 | 600 | |
| W-3479 | 450 | |
| W-3559 | 300 | 1,350 |
| **Overhead** ($1,350 X 110%) | | 1,485 |
| **Total cost** | | $5,085 |

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**Exercise 2-3 (25 minutes)**

1. **The cost of direct materials requisitioned in the month equals the total direct materials costs accumulated on the three jobs less the amount of direct materials cost assigned to Job 102 in May:**

| | | |
|---|---|---|
| Job 102 | $15,000 | |
| Less prior costs | (6,000) | $ 9,000 |
| Job 103 | | 33,000 |
| Job 104 | | 27,000 |
| Total materials used (requisitioned) | | $69,000 |

2. **Direct labor cost incurred in the month equals the total direct labor costs accumulated on the three jobs less the amount of direct labor cost assigned to Job 102 in May:**

| | | |
|---|---|---|
| Job 102 | $8,000 | |
| Less prior costs | (1,800) | $ 6,200 |
| Job 103 | | 14,200 |
| Job 104 | | 21,000 |
| Total direct labor | | $41,400 |

3. **The predetermined overhead rate equals the ratio of the amount of overhead assigned to jobs divided by the amount of direct labor cost assigned to them. Since the same rate is used for all jobs started and completed within a month, the ratio for any one job equals the rate that was applied. This table shows the ratio for jobs 102 and 104:**

| | Job 102 | Job 104 |
|---|---|---|
| Overhead | $ 4,000 | $10,500 |
| Direct labor | 8,000 | 21,000 |
| Ratio | 50% | 50% |

4. **The cost transferred to finished goods in June equals the total costs of the two completed jobs for the month, which are Jobs 102 and 103:**

| | Job 102 | Job 103 | Total |
|---|---|---|---|
| Direct materials | $15,000 | $33,000 | $48,000 |
| Direct labor | 8,000 | 14,200 | 22,200 |
| Overhead | 4,000 | 7,100 | 11,100 |
| Total transferred cost | $27,000 | $54,300 | $81,300 |

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## Exercise 2-4 (15 minutes)

| | | | |
|---|---|---|---|
| 1. | Raw Materials Inventory | 76,200 | |
| | Accounts Payable | | 76,200 |
| | *Record materials purchases.* | | |
| 2. | Work in Process Inventory | 48,000 | |
| | Raw Materials Inventory | | 48,000 |
| | *Assign costs of direct materials used.* | | |
| 3. | Work in Process Inventory | 15,350 | |
| | Factory Wages Payable | | 15,350 |
| | *Record direct labor used in production.* | | |
| 4. | Work in Process Inventory | 18,420 | |
| | Factory Overhead | | 18,420 |
| | *Apply overhead to jobs.* | | |

## Exercise 2-5 (20 minutes)

1.

| | | | |
|---|---|---|---|
| a. | Work in Process Inventory | 9,500 | |
| | Raw Materials Inventory | | 9,500 |
| | *Record direct materials used.* | | |
| b. | Work in Process Inventory | 8,000 | |
| | Factory Wages Payable | | 8,000 |
| | *Record direct labor used.* | | |
| c. | Work in Process Inventory | 6,400 | |
| | Factory Overhead | | 6,400 |
| | *Apply overhead at 80% of direct labor cost.* | | |
| d. | Cost of Goods Sold* | 16,000 | |
| | Finished Goods Inventory | | 16,000 |
| | *Record cost of sale of job 120.* | | |
| e. | Accounts Receivable | 22,000 | |
| | Sales | | 22,000 |
| | *Record sale of job 120.* | | |

*Total of direct materials, direct labor, and overhead applied to this job in June ($11,040) and July ($4,960).

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**Exercise 2-5 (continued)**

2. **The balance in Work in Process Inventory at the end of July ($6,280) equals the total cost reported on the job cost sheet for Job 122, the only job still in process at the end of the month. The balance in Finished Goods Inventory ($12,660) equals the total cost reported on the job cost sheet for Job 121, the only job finished but not sold by the end of the month.**

| | Job 121 | Job 122 |
|---|---|---|
| Direct materials ..... | $ 6,000 | $2,500 |
| Direct labor ..... | 3,700 | 2,100 |
| Overhead ..... | 2,960 | 1,680 |
| Total cost ..... | $12,660 | $6,280 |

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## Exercise 2-6 (25 minutes)

| | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 90,000 | |
| | Accounts Payable | | 90,000 |
| | *Record materials purchases.* | | |
| b. | Work in Process Inventory | 36,500 | |
| | Raw Materials Inventory | | 36,500 |
| | *Assign costs of direct materials used.* | | |
| | Factory Overhead | 19,200 | |
| | Raw Materials Inventory | | 19,200 |
| | *Record indirect materials.* | | |
| c. | Work in Process Inventory | 38,000 | |
| | Factory Overhead | 12,000 | |
| | Cash | | 50,000 |
| | *Record payroll costs paid.* | | |
| d. | Factory Overhead | 11,475 | |
| | Cash | | 11,475 |
| | *Record other factory overhead paid.* | | |
| e. | Work in Process Inventory | 47,500 | |
| | Factory Overhead | | 47,500 |
| | *Apply overhead to jobs at the rate of 125% of direct labor cost.* | | |
| f. | Finished Goods Inventory | 56,800 | |
| | Work in Process Inventory | | 56,800 |
| | *Record jobs completed.* | | |
| g. | Cost of Goods Sold | 56,800 | |
| | Finished Goods Inventory | | 56,800 |
| | *Record cost of sale of job.* | | |
| | Accounts Receivable | 82,000 | |
| | Sales | | 82,000 |
| | *Record sale of job.* | | |

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## Exercise 2-7 (30 minutes)

**1. Cost of direct materials used**

| | |
|---|---|
| Beginning raw materials inventory | $ 43,000 |
| Plus purchases | 210,000 |
| Raw materials available | 253,000 |
| Less ending raw materials inventory | (52,000) |
| Total raw materials used | 201,000 |
| Less indirect materials used | (15,000) |
| Cost of direct materials used | $186,000 |

| Raw Materials Inventory | | | |
|---|---|---|---|
| Beg. balance | 43,000 | | |
| Purchases | 210,000 | | |
| Available for use | 253,000 | | |
| | | Direct materials | 186,000 |
| | | Indirect materials | 15,000 |
| Ending balance | 52,000 | | |

**2. Cost of direct labor used**

| | |
|---|---|
| Total factory payroll | $345,000 |
| Less indirect labor | (80,000) |
| Cost of direct labor used | $265,000 |

**3. Cost of goods manufactured**

| | |
|---|---|
| Beginning work in process inventory | $ 10,200 |
| Plus direct materials | 186,000 |
| Plus direct labor | 265,000 |
| Plus overhead applied (70% of direct labor cost) | 185,500 |
| Total cost of work in process | 646,700 |
| Less ending work in process inventory | (21,300) |
| Cost of goods manufactured | $625,400 |

| Work in Process Inventory | | | |
|---|---|---|---|
| Beg. balance | 10,200 | | |
| Direct materials | 186,000 | | |
| Direct labor | 265,000 | | |
| OH applied | 185,500 | | |
| Available | 646,700 | | |
| | | COGM | 625,400 |
| Ending Inventory | 21,300 | | |

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## Exercise 2-7 (*continued*)

**4. Cost of goods sold**

| | |
|---|---|
| Beginning finished goods inventory | $ 63,000 |
| Plus cost of goods manufactured | 625,400 |
| Less ending finished goods inventory | (35,600) |
| Cost of goods sold | $ 652,800 |

| Finished Goods Inventory | | | |
|---|---|---|---|
| Beg. balance | 63,000 | | |
| COGM | 625,400 | | |
| Available for sale | 688,400 | | |
| | | Cost of goods sold | 652,800 |
| Ending balance | 35,600 | | |

**5. Gross profit**

| | |
|---|---|
| Sales | $1,400,000 |
| Cost of goods sold | (652,800) |
| Gross profit | $ 747,200 |

**6. Actual overhead incurred**

| | |
|---|---|
| Indirect materials | $ 15,000 |
| Indirect labor | 80,000 |
| Other overhead costs | 120,000 |
| Total actual overhead incurred | 215,000 |
| Overhead applied | 185,500 |
| Underapplied overhead | $ 29,500 |

| Factory Overhead | | | |
|---|---|---|---|
| Indirect materials | 15,000 | | |
| Indirect labor | 80,000 | | |
| Other overhead | 120,000 | | |
| Total actual OH | 215,000 | | |
| | | OH applied | 185,500 |
| Underapplied OH | 29,500 | | |

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## Exercise 2-8 (10 minutes)

| | | | |
|---|---|---|---|
| 1. | Raw Materials Inventory | 210,000 | |
| | Cash | | 210,000 |
| | *Record materials purchases.* | | |
| 2. | Work in Process Inventory | 186,000 | |
| | Raw Materials Inventory | | 186,000 |
| | *Assign direct materials to jobs.* | | |
| 3. | Factory Overhead | 15,000 | |
| | Raw Materials Inventory | | 15,000 |
| | *Record indirect materials used.* | | |

## Exercise 2-9 (10 minutes)

| | | | |
|---|---|---|---|
| 1. | Work in Process Inventory | 265,000 | |
| | Factory Wages Payable | | 265,000 |
| | *Record direct labor used.* | | |
| 2. | Factory Overhead | 80,000 | |
| | Factory Wages Payable | | 80,000 |
| | *Record indirect labor used.* | | |
| 3. | Factory Wages Payable | 345,000 | |
| | Cash | | 345,000 |
| | *Record payment of payroll.* | | |

## Exercise 2-10 (10 minutes)

| | | | |
|---|---|---|---|
| 1. | Factory Overhead | 120,000 | |
| | Other Accounts | | 120,000 |
| | *Record other factory overhead.* | | |
| 2. | Work in Process Inventory | 185,500 | |
| | Factory Overhead | | 185,500 |
| | *Apply overhead to jobs.* | | |
| | *Computed as: 70% Predetermined overhead rate x direct labor of $265,000* | | |

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## Exercise 2-11 (15 minutes)

1.

$$\text{Rate} = \frac{\text{Estimated overhead costs}}{\text{Estimated direct labor}} = \frac{\$747{,}500}{\$575{,}000} = \underline{\underline{130\%}}$$

2.

| | |
|---|---|
| Direct materials | $15,350 |
| Direct labor | 3,200 |
| Factory overhead ($3,200 x 130%) | 4,160 |
| Total cost of Job No. 13-56 | $22,710 |

## Exercise 2-12 (20 minutes)

1. $$\text{Rate} = \frac{\text{Overhead costs}}{\text{Direct material costs}} = \frac{\$600{,}000}{\$1{,}500{,}000} = \underline{\underline{40\%}}$$

2.

| | |
|---|---|
| Total cost of job in process (given) | $ 50,000 |
| Less materials cost of job in process (given) | (30,000) |
| Less overhead applied (30,000 x 40%) | (12,000) |
| Direct labor cost | $ 8,000 |

## Exercise 2-13 (10 minutes)

| Factory Overhead | | | |
|---|---|---|---|
| Actual OH | 215,000 | OH applied | 185,500 |
| Underapplied | 29,500 | | |

| | | |
|---|---|---|
| Cost of Goods Sold | 29,500 | |
| Factory Overhead | | 29,500 |

Allocate (close) underapplied overhead to cost of goods sold. *Applied overhead equals $265,000 x 70% = $185,500. Actual overhead = $215,000, computed as $15,000 + $80,000 + $120,000.*

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## Exercise 2-14 (15 minutes)

| Factory Overhead - Storm | | | |
|---|---|---|---|
| Indirect materials | 22,000 | | |
| Indirect labor | 46,000 | | |
| Other overhead | 17,000 | | |
| Total actual OH | 85,000 | | |
| | | OH applied | 88,200 |
| | | Overapplied OH | 3,200 |

| | | |
|---|---|---|
| **Factory Overhead** | **3,200** | |
| **Cost of Goods Sold** | | **3,200** |

***Close overapplied overhead for Storm.***

| Factory Overhead - Valle | | | |
|---|---|---|---|
| Indirect materials | 12,500 | | |
| Indirect labor | 46,500 | | |
| Other overhead | 47,000 | | |
| Total actual OH | 106,000 | | |
| | | OH applied | 105,200 |
| Underapplied OH | 800 | | |

| | | |
|---|---|---|
| **Cost of Goods Sold** | **800** | |
| **Factory Overhead** | | **800** |

***Close underapplied overhead for Valle.***

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## Exercise 2-15 (35 minutes)

1. **Predetermined overhead rate**

| | |
|---|---|
| Estimated overhead costs | $750,000 |
| Estimated direct material costs | $625,000 |
| Rate (Overhead/Direct material) | 120% |

2. & 3.

| Factory Overhead | | | |
|---|---|---|---|
| Incurred | 830,000 | Applied* | 822,000 |
| Underapplied | 8,000 | | |

*Overhead applied to jobs = 120% x $685,000 = $822,000

4.

| | | | |
|---|---|---|---|
| Dec. 31 | Cost of Goods Sold | 8,000 | |
| | Factory Overhead | | 8,000 |
| | *Close underapplied overhead.* | | |

## Exercise 2-16 (25 minutes)

1. **Predetermined overhead rate**

| | |
|---|---|
| Estimated overhead costs | $1,680,000 |
| Estimated direct labor costs | $ 480,000 |
| Rate ($1,680,000/$480,000) | 350% |

2. & 3.

| Overhead | | | |
|---|---|---|---|
| Incurred | 1,652,000 | Applied* | 1,662,500 |
| | | Overapplied | 10,500 |

*Overhead applied to jobs = 350% x $475,000 = $1,662,500

4.

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 10,500 | |
| | Cost of Goods Sold | | 10,500 |
| | *Close overapplied overhead.* | | |

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**Exercise 2-17 (30 minutes)**

1. **Overhead rate = Total overhead costs / Total direct labor costs**

   **= $1,800,000 / $3,000,000 = 60%**

2.

| | |
|---|---|
| Total cost of work in process inventory..... | $ 71,000 |
| Deduct: Direct labor ..... | (20,000) |
| Deduct: Factory overhead ($20,000 x 60%)..... | (12,000) |
| Direct materials..... | $ 39,000 |

3.

| | |
|---|---|
| Total cost of finished goods inventory ..... | $490,000 |
| Deduct: Direct materials ..... | (250,000) |
| Direct labor and factory overhead costs..... | $240,000 |

**We also know that the total of direct labor costs (*X*) and factory overhead costs (0.6*X*) equals $240,000. Thus, to get the individual amounts we need to solve: [*X* + 0.6*X* = $240,000]. The solution is:**

**Direct labor costs = $150,000**

**Factory overhead costs = $150,000 x 0.6 = $90,000**

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**Exercise 2-18 (35 minutes)**

1. **Estimated cost of the architectural job**

| Labor type | Estimated hours | Hourly rate | Total cost |
|---|---|---|---|
| Architects | 150 | $300 | $ 45,000 |
| Staff | 300 | 75 | 22,500 |
| Clerical | 500 | 20 | 10,000 |
| Total labor cost | | | 77,500 |
| Overhead applied 175% of direct labor cost | | | 135,625 |
| Total estimated cost | | | $213,125 |

2. **Frey should first determine an estimated selling price, based on its cost and desired profit for this job.**

| | |
|---|---|
| Total estimated cost | $213,125 |
| Desired profit | 80,000 |
| Estimated selling price | $293,125 |

This $293,125 price may or may not be its bid. It must consider past experiences and competition. It might make the bid at the low end of what it believes the competition will bid. By bidding at about $285,000, the profit on the job will only be $71,875 ($285,000 – $213,125). While this may allow Frey to get the job, it must consider several other factors. Among them:

a. How accurate are its estimates of costs? If costs are understated, the bid may be too low. This will cause profits to be lower than anticipated. If costs are overestimated, it may bid too high and lose the job.

b. How accurate is the estimate of the competition's probable bidding range? If it has underestimated the low end, it may be unnecessarily underbidding. If it has overestimated the low end, it may lose the job.

c. Is it willing to meet the expected low bid of the competition? In the example above, would it be acceptable to earn only $71,875 on this job (about a 25% gross profit ratio), rather than the normal $80,000 (about a 27% gross profit ratio)? Can it earn a better profit on another job?

There is no exact answer to these questions, but Frey must consider these and other factors before it submits the bid.

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## Exercise 2-19 (15 minutes)

| | | | |
|---|---|---|---|
| (1) | Services in Process Inventory* ..... | 9,900 | |
| | Service Salaries Payable ..... | | 9,900 |
| | *Record direct labor.* | | |
| | *(5 x $500) + (12 x $200) + (100 x $50) | | |
| | Services in Process Inventory** ..... | 4,950 | |
| | Services Overhead ..... | | 4,950 |
| | *Apply overhead.* | | |
| | **$9,900 x 50% | | |
| (2) | | 14,850 | |
| | Cost of Services Provided ..... | | |
| | Services in Process Inventory ..... | | 14,850 |
| | *Record cost of services.* | | |

## Exercise 2-20 (15 minutes)

| | | | |
|---|---|---|---|
| (1) | Raw Materials Inventory ..... | 3,108 | |
| | Accounts Payable..... | | 3,108 |
| | *Record raw material purchases.* | | |
| | Work in Process Inventory* ..... | 3,106 | |
| | Raw Materials Inventory ..... | | 3,106 |
| | *Record raw materials used in production.* | | |

* The amount of raw materials used in production is computed from the Raw Materials Inventory account. Beginning balance plus purchases minus ending balance equals raw materials used in production, or (in millions), €83 + €3,108 - €85 = €3,106.

(2) The amount of materials purchased is almost equal to the amount of materials used in production. This means the company holds very little inventory of raw materials, consistent with lean manufacturing.

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# PROBLEM SET A

**Problem 2-1A (80 minutes)**

***Part 1 Total manufacturing costs and the costs assigned to each job***

| | 306 | 307 | 308 | April Total |
|---|---|---|---|---|
| **From March** | | | | |
| Direct materials | $ 29,000 | $ 35,000 | | |
| Direct labor | 20,000 | 18,000 | | |
| Applied overhead* | 10,000 | 9,000 | | |
| Beginning work in process | 59,000 | 62,000 | | $ 121,000 |
| **For April** | | | | |
| Direct materials | 135,000 | 220,000 | $100,000 | 455,000 |
| Direct labor | 85,000 | 150,000 | 105,000 | 340,000 |
| Applied overhead* | 42,500 | 75,000 | 52,500 | 170,000 |
| Total costs added in April | 262,500 | 445,000 | 257,500 | 965,000 |
| Total costs | $321,500 | $507,000 | $257,500 | $1,086,000 |

*Equals 50% of direct labor cost.

***Part 2 Journal entries for April***

| | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 500,000 | |
| | Accounts Payable | | 500,000 |
| | *Record materials purchases.* | | |
| b. | Work in Process Inventory | 455,000 | |
| | Raw Materials Inventory | | 455,000 |
| | *Assign direct materials to jobs.* | | |
| c. | Work in Process Inventory | 340,000 | |
| | Cash | | 340,000 |
| | *Record direct labor.* | | |
| d. | Factory Overhead | 23,000 | |
| | Cash | | 23,000 |
| | *Record indirect labor.* | | |
| e. | Work in Process Inventory | 170,000 | |
| | Factory Overhead | | 170,000 |
| | *Apply overhead to jobs.* | | |

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## Problem 2-1A (*continued*)

**f.** [continued from prior page]

| | | |
|---|---|---|
| Factory Overhead | 50,000 | |
| Raw Materials Inventory | | 50,000 |
| *Record indirect materials.* | | |
| Factory Overhead | 19,000 | |
| Cash | | 19,000 |
| *Record factory utilities.* | | |
| Factory Overhead | 51,000 | |
| Accumulated Depreciation—Factory Equip | | 51,000 |
| *Record other factory overhead.* | | |
| Factory Overhead | 32,000 | |
| Cash | | 32,000 |
| *Record factory rent.* | | |
| **g.** Finished Goods Inventory (306 & 307) | 828,500 | |
| Work in Process Inventory | | 828,500 |
| *Record jobs completed ($321,500 + $507,000).* | | |
| **h.** Cost of Goods Sold (306) | 321,500 | |
| Finished Goods Inventory | | 321,500 |
| *Record cost of sale of job.* | | |
| **i.** Cash | 635,000 | |
| Sales | | 635,000 |
| *Record sale of job.* | | |
| **j.** Cost of Goods Sold | 5,000 | |
| Factory Overhead* | | 5,000 |
| *Assign underapplied overhead.* | | |

| | | |
|---|---|---|
| *Overhead applied to jobs | | $170,000 |
| Overhead incurred | | |
| Indirect materials | $50,000 | |
| Indirect labor | 23,000 | |
| Factory rent | 32,000 | |
| Factory utilities | 19,000 | |
| Factory equip. depreciation | 51,000 | 175,000 |
| Underapplied overhead | | $ 5,000 |

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**Problem 2-1A** ***(Continued)***

***Part 3***

| MARCELINO COMPANY<br>Schedule of Cost of Goods Manufactured<br>For Month Ended April 30 | |
|---|---|
| Direct materials used | $ 455,000 |
| Direct labor used | 340,000 |
| Factory overhead applied | 170,000 |
| Total manufacturing costs | 965,000 |
| Add work in process March 31 (Jobs 306 & 307) | 121,000 |
| Total cost of work in process | 1,086,000 |
| Deduct work in process, April 30 (Job 308) | (257,500) |
| Cost of goods manufactured | $ 828,500 |

***Part 4***

**Gross profit on the income statement for the month ended April 30**

| | |
|---|---|
| Sales | $ 635,000 |
| Cost of goods sold ($321,500 + $5,000) | (326,500) |
| Gross profit | $ 308,500 |

**Presentation of inventories on the April 30 balance sheet**

| | |
|---|---|
| Inventories | |
| Raw materials | $ 75,000* |
| Work in process (Job 308) | 257,500 |
| Finished goods (Job 307) | 507,000 |
| Total inventories | $ 839,500 |

| | |
|---|---|
| * Beginning raw materials inventory | $ 80,000 |
| Purchases | 500,000 |
| Direct materials used | (455,000) |
| Indirect materials used | (50,000) |
| Ending raw materials inventory | $ 75,000 |

***Part 5***

**Overhead is underapplied by $5,000, meaning that individual jobs or batches of jobs are under-costed. Thus, profits at the job (and batch) level are overstated.**

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## Problem 2-2A (75 minutes)

### *Part 1*

**a.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 28,800 | |
| | Raw Materials Inventory | | 28,800 |
| | *Record direct materials costs for Jobs 402 and 404 ($10,200 + 18,600).* | | |

**b.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 59,800 | |
| | Factory Wages Payable | | 59,800 |
| | *Record direct labor costs for Jobs 402 and 404 ($36,000 + $23,800).* | | |

**c.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 119,600 | |
| | Factory Overhead | | 119,600 |
| | *Allocate overhead to Jobs 402 and 404 at 200% of direct labor cost assigned.* | | |

**d.**

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 5,600 | |
| | Raw Materials Inventory | | 5,600 |
| | *Add cost of indirect materials to actual factory overhead.* | | |

**e.**

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 8,200 | |
| | Factory Wages Payable | | 8,200 |
| | *Accrue indirect labor and assign it to actual factory overhead.* | | |

### *Part 2*

**Revised Factory Overhead account**

| | | |
|---|---|---|
| Ending balance from trial balance | $115,000 | debit |
| Applied to Jobs 402 and 404 | (119,600) | credit |
| Additional indirect materials | 5,600 | debit |
| Additional indirect labor | 8,200 | debit |
| Underapplied overhead | $ 9,200 | debit |

| | | | |
|---|---|---|---|
| Dec. 31 | Cost of Goods Sold | 9,200 | |
| | Factory Overhead | | 9,200 |
| | *Close underapplied overhead.* | | |

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**Problem 2-2A (*continued*)**

***Part 3***

| BERGAMO BAY COMPANY<br>Trial Balance<br>December 31, 2017 | Debit | Credit |
|---|---|---|
| Cash | $170,000 | |
| Accounts receivable | 75,000 | |
| Raw materials inventory* | 45,600 | |
| Work in process inventory** | 208,200 | |
| Finished goods inventory | 15,000 | |
| Prepaid rent | 3,000 | |
| Accounts payable | | $ 17,000 |
| Factory wages payable | | 68,000 |
| Notes payable | | 25,000 |
| Common stock | | 50,000 |
| Retained earnings | | 271,000 |
| Sales | | 373,000 |
| Cost of goods sold ($218,000 + $9,200) | 227,200 | |
| Factory overhead | 0 | |
| Operating expenses | 60,000 | |
| Totals | $804,000 | $804,000 |

* Raw materials inventory

| | |
|---|---|
| Balance per trial balance | $80,000 |
| Less: Amounts recorded for Jobs 402 and 404 | (28,800) |
| Less: Indirect materials | (5,600) |
| Ending balance | $45,600 |

** Work in process inventory

| | Job 402 | Job 404 | Total |
|---|---|---|---|
| Direct materials | $ 10,200 | $18,600 | $ 28,800 |
| Direct labor | 36,000 | 23,800 | 59,800 |
| Overhead | 72,000 | 47,600 | 119,600 |
| Total cost | $118,200 | $90,000 | $208,200 |

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**Problem 2-2A (*continued*)**

***Part 4***

| BERGAMO BAY COMPANY<br>Income Statement<br>For Year Ended December 31, 2017 | |
|---|---|
| Sales | $373,000 |
| Cost of goods sold | (227,200) |
| Gross profit | 145,800 |
| Operating expenses | (60,000) |
| Net income | $ 85,800 |

| BERGAMO BAY COMPANY<br>Balance Sheet<br>December 31, 2017 | | |
|---|---|---|
| Assets | | |
| Cash | | $170,000 |
| Accounts receivable | | 75,000 |
| Inventories | | |
| Raw materials inventory | $ 45,600 | |
| Work in process inventory | 208,200 | |
| Finished goods inventory | 15,000 | 268,800 |
| Prepaid rent | | 3,000 |
| Total assets | | $516,800 |
| Liabilities and equity | | |
| Accounts payable | | $ 17,000 |
| Factory wages payable | | 68,000 |
| Notes payable | | 25,000 |
| Total liabilities | | 110,000 |
| Common stock | | 50,000 |
| Retained earnings ($271,000 + $85,800) | | 356,800 |
| Total stockholders' equity | | 406,800 |
| Total liabilities and equity | | $516,800 |

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**Problem 2-2A (*concluded*)**

***Part 5***

**This $5,600 error would cause the costs for Job 404 to be understated. Since Job 404 is in process at the end of the period, work in process inventory and total assets would both be understated on the balance sheet. In addition, the over- or underapplied overhead would change by $5,600. That is, if overhead is underapplied by, say, $9,200, this amount would decrease by $5,600 when the error is corrected. Since underapplied overhead is charged directly to cost of goods sold, then cost of goods sold would decrease by $5,600 and net income would increase by $5,600—yielding a $5,600 increase in retained earnings on the balance sheet.**

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## Problem 2-3A (70 minutes)

### *Part 1*

**JOB COST SHEETS**

| Job No. 136 | |
|---|---|
| Materials..... | $ 48,000 |
| Labor ..... | 12,000 |
| Overhead..... | 24,000 |
| Total cost ..... | $ 84,000 |

| Job No. 138 | |
|---|---|
| Materials..... | $ 19,200 |
| Labor ..... | 37,500 |
| Overhead..... | 75,000 |
| Total cost ..... | $131,700 |

| Job No. 137 | |
|---|---|
| Materials..... | $ 32,000 |
| Labor ..... | 10,500 |
| Overhead..... | 21,000 |
| Total cost ..... | $ 63,500 |

| Job No. 139 | |
|---|---|
| Materials..... | $ 22,400 |
| Labor ..... | 39,000 |
| Overhead..... | 78,000 |
| Total cost ..... | $139,400 |

| Job No. 140 | |
|---|---|
| Materials..... | $ 6,400 |
| Labor ..... | 3,000 |
| Overhead..... | 6,000 |
| Total cost ..... | $ 15,400 |

### *Part 2*

| | | | |
|---|---|---|---|
| a. | Raw Materials Inventory ..... | 200,000 | |
| | Accounts Payable ..... | | 200,000 |
| | *Record materials purchases.* | | |
| b. | Work in Process Inventory ..... | 128,000 | |
| | Factory Overhead ..... | 19,500 | |
| | Raw Materials Inventory ..... | | 147,500 |
| | *Record direct & indirect materials.* | | |
| c. | Factory Overhead ..... | 15,000 | |
| | Cash ..... | | 15,000 |
| | *Record other factory overhead.* | | |

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## Problem 2-3A *(Continued)*

[continued from prior page]

| | | | |
|---|---|---|---|
| d. | Work in Process Inventory | 102,000 | |
| | Factory Overhead | 24,000 | |
| | Cash | | 126,000 |
| | *Record direct & indirect labor.* | | |
| e. | Work in Process Inventory | 177,000 | |
| | Factory Overhead | | 177,000 |
| | *Apply overhead to jobs [($12,000 + $37,500 + $39,000) x 200%].* | | |
| f. | Finished Goods Inventory | 355,100 | |
| | Work in Process Inventory | | 355,100 |
| | *Record completion of jobs ($84,000 + $131,700 + $139,400).* | | |
| g. | Accounts Receivable | 525,000 | |
| | Sales | | 525,000 |
| | *Record sales on account.* | | |
| | Cost of Goods Sold | 215,700 | |
| | Finished Goods Inventory | | 215,700 |
| | *Record cost of sales ($84,000 + $131,700).* | | |
| h. | Factory Overhead | 149,500 | |
| | Accum. Depreciation—Factory Building | | 68,000 |
| | Accum. Depreciation—Factory Equipment | | 36,500 |
| | Prepaid Insurance | | 10,000 |
| | Property Taxes Payable | | 35,000 |
| | *Record other factory overhead.* | | |
| i. | Work in Process Inventory | 27,000 | |
| | Factory Overhead | | 27,000 |
| | *Apply overhead to jobs [($10,500 + $3,000) x 200%].* | | |

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## Problem 2-3A *(Continued)*

### *Part 3*

**GENERAL LEDGER ACCOUNTS**

**Raw Materials Inventory**

| | | | |
|---|---|---|---|
| (a) | 200,000 | (b) | 147,500 |
| Bal. | 52,500 | | |

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| (b) | 128,000 | (f) | 355,100 |
| (d) | 102,000 | | |
| (e) | 177,000 | | |
| (i) | 27,000 | | |
| Bal. | 78,900 | | |

**Factory Overhead**

| | | | |
|---|---|---|---|
| (b) | 19,500 | (e) | 177,000 |
| (c) | 15,000 | (i) | 27,000 |
| (d) | 24,000 | | |
| (h) | 149,500 | | |
| Bal. | 4,000 | | |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| (f) | 355,100 | (g) | 215,700 |
| Bal. | 139,400 | | |

**Cost of Goods Sold**

| | | | |
|---|---|---|---|
| (g) | 215,700 | | |
| Bal. | 215,700 | | |

### *Part 4*

**Reports of Job Costs***

**Work in Process Inventory**

| | |
|---|---|
| Job 137 | $ 63,500 |
| Job 140 | 15,400 |
| Balance | $ 78,900 |

**Finished Goods Inventory**

| | |
|---|---|
| Job 139 | $139,400 |
| Balance | $139,400 |

**Cost of Goods Sold**

| | |
|---|---|
| Job 136 | $ 84,000 |
| Job 138 | 131,700 |
| Balance | $215,700 |

***Individual totals reconcile with general ledger account balances in part 3.**

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## Problem 2-4A (35 minutes)

### *Part 1*

**a. Predetermined overhead rate**

$$\frac{\text{Estimated overhead costs}}{\text{Estimated direct labor cost}} = \frac{\$1{,}500{,}000}{[50 \times 2{,}000 \times \$25]} = \frac{\$1{,}500{,}000}{\$2{,}500{,}000} = \underline{\underline{60\%}}$$

**b. Overhead costs charged to jobs**

| Job No. | Direct Labor | Applied Overhead (60%) |
|---|---|---|
| 201 | $ 604,000 | $ 362,400 |
| 202 | 563,000 | 337,800 |
| 203 | 298,000 | 178,800 |
| 204 | 716,000 | 429,600 |
| 205 | 314,000 | 188,400 |
| 206 | 17,000 | 10,200 |
| Total | $2,512,000 | $1,507,200 |

**c. Overapplied or underapplied overhead determination**

| | |
|---|---|
| Actual overhead cost | $1,520,000 |
| Less applied overhead cost | 1,507,200 |
| Underapplied overhead | $ 12,800 |

### *Part 2*

| | | | |
|---|---|---|---|
| Dec. 31 | Cost of Goods Sold | 12,800 | |
| | Factory Overhead | | 12,800 |
| | *Assign underapplied overhead.* | | |

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## Problem 2-5A (80 minutes)

**JOB COST SHEET**

Customer's Name: Worldwide Company  Job No. 102

| | Direct Materials | | Direct Labor | | Overhead Costs Applied | | |
|---|---|---|---|---|---|---|---|
| Date | Requisition Number | Amount | Time Ticket Number | Amount | Date | Rate | Amount |
| | #35 | 33,750 | #1-10 | 90,000 | May --- | 80% | 72,000 |
| | #36 | 12,960 | | | | | |
| | Total | 46,710 | Total | 90,000 | | | |

SUMMARY OF COSTS

| | |
|---|---|
| Dir. Materials | 46,710 |
| Dir. Labor | 90,000 |
| Overhead | 72,000 |
| Total cost of Job | 208,710 |

*FINISHED*

**JOB COST SHEET**

Customer's Name: Reuben Company  Job No. 103

| | Direct Materials | | Direct Labor | | Overhead Costs Applied | | |
|---|---|---|---|---|---|---|---|
| Date | Requisition Number | Amount | Time Ticket Number | Amount | Date | Rate | Amount |
| | #37 | 17,500 | #11-30 | 65,000 | May --- | 80% | 52,000 |
| | #38 | 6,840 | | | | | |
| | Total | | Total | | | | |

SUMMARY OF COSTS

| | |
|---|---|
| Dir. Materials | |
| Dir. Labor | |
| Overhead | |
| Total cost of Job | |

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## Problem 2-5A *(Continued)*

**MATERIALS LEDGER CARD**

**Item** Material M

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| May 1 | | | | | | | | | 200 | 250 | 50,000 |
| | #426 | 250 | 250 | 62,500 | | | | | 450 | 250 | 112,500 |
| | | | | | #35 | 135 | 250 | 33,750 | 315 | 250 | 78,750 |
| | | | | | #37 | 70 | 250 | 17,500 | 245 | 250 | 61,250 |

**MATERIALS LEDGER CARD**

**Item** Material R

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| May 1 | | | | | | | | | 95 | 180 | 17,100 |
| | #427 | 90 | 180 | 16,200 | | | | | 185 | 180 | 33,300 |
| | | | | | #36 | 72 | 180 | 12,960 | 113 | 180 | 20,340 |
| | | | | | #38 | 38 | 180 | 6,840 | 75 | 180 | 13,500 |

**MATERIALS LEDGER CARD**

**Item** Paint

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| May 1 | | | | | | | | | 55 | 75 | 4,125 |
| | | | | | #39 | 15 | 75 | 1,125 | 40 | 75 | 3,000 |
| | | | | | | | | | | | |

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**Problem 2-5A** ***(Continued)***

| GENERAL JOURNAL | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 78,700 | |
| | Accounts Payable | | 78,700 |
| | *Record materials purchases ($62,500+$16,200).* | | |
| d. | Work in Process Inventory* | 155,000 | |
| | Factory Overhead | 19,250 | |
| | Cash | | 174,250 |
| | *Record direct & indirect labor.* | | |
| | **($90,000 + 65,000)* | | |
| | Factory Overhead | 102,000 | |
| | Cash | | 102,000 |
| | *Record other factory overhead.* | | |
| e. | Finished Goods Inventory | 208,710 | |
| | Work in Process | | 208,710 |
| | *Record completion of jobs.* | | |
| f. | Accounts Receivable | 400,000 | |
| | Sales | | 400,000 |
| | *Record sales on account.* | | |
| | Cost of Goods Sold | 208,710 | |
| | Finished Goods Inventory | | 208,710 |
| | *Record cost of sales.* | | |
| h. | Work in Process Inventory* | 71,050 | |
| | Factory Overhead | 1,125 | |
| | Raw Materials Inventory | | 72,175 |
| | *Record direct & indirect materials.* | | |
| | **($33,750 + $12,960 + $17,500 + $6,840)* | | |
| i. | Work in Process Inventory | 124,000 | |
| | Factory Overhead | | 124,000 |
| | *Apply overhead ($72,000 + 52,000).* | | |

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**Problem 2-5A** ***(Continued)***

**j. The ending balance in the Factory Overhead account is computed as:**

| | |
|---|---|
| **Actual Factory Overhead** | |
| **Miscellaneous overhead** | **$102,000** |
| **Indirect materials** | **1,125** |
| **Indirect labor** | **19,250** |
| **Total actual factory overhead** | **122,375** |
| **Factory overhead applied** | **124,000** |
| **Overapplied overhead** | **$ (1,625)** |

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# PROBLEM SET B

**Problem 2-1B (80 minutes)**

***Part 1***

**Total manufacturing costs and the costs assigned to each job**

| | 114 | 115 | 116 | Sept. Total |
|---|---|---|---|---|
| From August | | | | |
| Direct materials | $ 14,000 | $ 18,000 | | |
| Direct labor | 18,000 | 16,000 | | |
| Applied overhead* | 9,000 | 8,000 | | |
| Beginning work In process | 41,000 | 42,000 | | $ 83,000 |
| For September | | | | |
| Direct materials | 100,000 | 170,000 | $ 80,000 | 350,000 |
| Direct labor | 30,000 | 68,000 | 120,000 | 218,000 |
| Applied overhead* | 15,000 | 34,000 | 60,000 | 109,000 |
| Total costs added in September | 145,000 | 272,000 | 260,000 | 677,000 |
| Total costs | $186,000 | $314,000 | $260,000 | $760,000 |

*Equals 50% of direct labor cost.

***Part 2 Journal entries for September***

| | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 400,000 | |
| | Accounts Payable | | 400,000 |
| | *Record materials purchases.* | | |
| b. | Work in Process Inventory | 350,000 | |
| | Raw Materials Inventory | | 350,000 |
| | *Assign direct materials to jobs.* | | |
| c. | Work in Process Inventory | 218,000 | |
| | Cash | | 218,000 |
| | *Record and pay direct labor.* | | |
| d. | Factory Overhead | 14,000 | |
| | Cash | | 14,000 |
| | *Record and pay indirect labor.* | | |
| e. | Work in Process Inventory | 109,000 | |
| | Factory Overhead | | 109,000 |
| | *Apply overhead to jobs.* | | |

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## Problem 2-1B *(Continued)*

**f.** **[continued from prior page]**

| | | | |
|---|---|---|---|
| | Factory Overhead | 20,000 | |
| | Cash | | 20,000 |
| | *Record other factory overhead (rent).* | | |
| | Factory Overhead | 12,000 | |
| | Cash | | 12,000 |
| | *Record other factory overhead (utilities).* | | |
| | Factory Overhead | 30,000 | |
| | Accum. Depreciation—Factory Equip | | 30,000 |
| | *Record other factory overhead (depreciation).* | | |
| | Factory Overhead | 30,000 | |
| | Raw Materials Inventory | | 30,000 |
| | *Record indirect materials.* | | |
| g. | Finished Goods Inventory | 500,000 | |
| | Work in Process Inventory | | 500,000 |
| | *Record jobs completed ($186,000 + $314,000).* | | |
| h. | Cost of Goods Sold | 186,000 | |
| | Finished Goods Inventory | | 186,000 |
| | *Record cost of sale of job.* | | |
| i. | Cash | 380,000 | |
| | Sales | | 380,000 |
| | *Record sale of job.* | | |
| j. | Factory Overhead* | 3,000 | |
| | Cost of Goods Sold | | 3,000 |
| | *Assign overapplied overhead.* | | |

| | | |
|---|---|---|
| *Overhead applied to jobs | | $109,000 |
| Overhead incurred | | |
| Indirect materials | $30,000 | |
| Indirect labor | 14,000 | |
| Factory rent | 20,000 | |
| Factory utilities | 12,000 | |
| Factory equip. depreciation | 30,000 | 106,000 |
| Overapplied overhead | | $ 3,000 |

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**Problem 2-1B** ***(Continued)***

***Part 3***

| PEREZ MFG.<br>Schedule of Cost of Goods Manufactured<br>For Month Ended September 30 | |
|---|---|
| Direct materials used | $350,000 |
| Direct labor used | 218,000 |
| Factory overhead applied | 109,000 |
| Total manufacturing costs | 677,000 |
| Add work in process August 31 (Jobs 114 & 115) | 83,000 |
| Total cost of work in process | 760,000 |
| Deduct work in process, September 30 (Job 116) | (260,000) |
| Cost of goods manufactured | $500,000 |

***Part 4***

**Gross profit on the income statement for the month ended September 30**

| | |
|---|---|
| Sales | $380,000 |
| Cost of goods sold ($186,000 - $3,000) | (183,000) |
| Gross profit | $197,000 |

**Presentation of inventories on the September 30 balance sheet**

| | |
|---|---|
| Inventories | |
| Raw materials | $170,000* |
| Work in process (Job 116) | 260,000 |
| Finished goods (Job 115) | 314,000 |
| Total inventories | $744,000 |

| | |
|---|---|
| * Beginning raw materials inventory | $150,000 |
| Purchases | 400,000 |
| Direct materials used | (350,000) |
| Indirect materials used | (30,000) |
| Ending raw materials inventory | $170,000 |

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**Problem 2-1B** ***(Concluded)***

***Part 5***

**Overhead is overapplied by $3,000, meaning that individual jobs or batches are over-costed. Thus, profits at the job (and batch) level are understated.**

**Problem 2-2B (75 minutes)**

***Part 1***

**a.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 12,200 | |
| | Raw Materials Inventory | | 12,200 |
| | *Record direct materials costs for Jobs 603 and 604 ($4,600 + $7,600).* | | |

**b.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 13,000 | |
| | Factory Wages Payable | | 13,000 |
| | *Record direct labor costs for Jobs 603 and 604 ($5,000 + $8,000).* | | |

**c.**

| | | | |
|---|---|---|---|
| Dec. 31 | Work in Process Inventory | 26,000 | |
| | Factory Overhead | | 26,000 |
| | *Allocate overhead to Jobs 603 and 604 at 200% of direct labor cost assigned to them.* | | |

**d.**

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 2,100 | |
| | Raw Materials Inventory | | 2,100 |
| | *Record cost of indirect materials.* | | |

**e.**

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 3,000 | |
| | Factory Wages Payable | | 3,000 |
| | *Accrue cost of indirect labor.* | | |

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**Problem 2-2B (*Continued*)**

***Part 2***

| Revised Factory Overhead account | | |
|---|---|---|
| Ending balance from trial balance | $27,000 | Debit |
| Applied to Jobs 603 and 604 | (26,000) | Credit |
| Additional indirect materials | 2,100 | Debit |
| Additional indirect labor | 3,000 | Debit |
| Underapplied overhead | $ 6,100 | Debit |

| | | | |
|---|---|---|---|
| Dec. 31 | Cost of Goods Sold | 6,100 | |
| | Factory Overhead | | 6,100 |
| | *To remove $6,100 of underapplied overhead from the Factory Overhead account and add it to cost of goods sold.* | | |

***Part 3***

**CAVALLO MFG.**
**Trial Balance**
**December 31, 2017**

| | Debit | Credit |
|---|---|---|
| Cash | $ 64,000 | |
| Accounts receivable | 42,000 | |
| Raw materials inventory* | 11,700 | |
| Work in process inventory** | 51,200 | |
| Finished goods inventory | 9,000 | |
| Prepaid rent | 3,000 | |
| Accounts payable | | $ 10,500 |
| Factory wages payable | | 16,000 |
| Notes payable | | 13,500 |
| Common stock | | 30,000 |
| Retained earnings | | 87,000 |
| Sales | | 180,000 |
| Cost of goods sold*** | 111,100 | |
| Factory overhead | 0 | |
| Operating expenses | 45,000 | |
| Totals | $337,000 | $337,000 |

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## Problem 2-2B *(Continued)*

### *Part 3* (*Concluded)*

* Raw materials inventory

| | |
|---|---|
| Balance per trial balance | $26,000 |
| Less: Amounts recorded for Jobs 603 and 604 | (12,200) |
| Less: Indirect materials | (2,100) |
| Ending balance | $11,700 |

** Work in process inventory

| | Job 603 | Job 604 | Total |
|---|---|---|---|
| Direct materials | $ 4,600 | $ 7,600 | $12,200 |
| Direct labor | 5,000 | 8,000 | 13,000 |
| Overhead | 10,000 | 16,000 | 26,000 |
| Total cost | $19,600 | $31,600 | $51,200 |

*** $105,000 + $6,100 = $111,100

### *Part 4*

**CAVALLO MFG.**
**Income Statement**
**For Year Ended December 31, 2017**

| | |
|---|---|
| Sales | $ 180,000 |
| Cost of goods sold | (111,100) |
| Gross profit | 68,900 |
| Operating expenses | (45,000) |
| Net income | $ 23,900 |

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**Problem 2-2B** ***(Concluded)***

***Part 4 (Concluded)***

| CAVALLO MFG.<br>Balance Sheet<br>December 31, 2017 | | |
|---|---|---|
| **Assets** | | |
| Cash | | $ 64,000 |
| Accounts receivable | | 42,000 |
| Inventories | | |
| Raw materials inventory | $11,700 | |
| Work in process inventory | 51,200 | |
| Finished goods inventory | 9,000 | 71,900 |
| Prepaid rent | | 3,000 |
| Total assets | | $180,900 |
| **Liabilities and equity** | | |
| Accounts payable | | $ 10,500 |
| Factory wages payable | | 16,000 |
| Notes payable | | 13,500 |
| Total liabilities | | 40,000 |
| Common stock | | 30,000 |
| Retained earnings ($87,000 + $23,900) | | 110,900 |
| Total stockholders' equity | | 140,900 |
| Total liabilities and equity | | $180,900 |

***Part 5***

The $2,100 error would cause the costs for Job 604 to be understated. Since Job 604 is in process at the end of the period, work in process inventory and total assets would both be understated on the balance sheet. In addition the over- or underapplied overhead would change by $2,100. That is, if overhead is underapplied by, say, $6,100, that amount would decrease by $2,100, yielding $4,000 in underapplied overhead. Any under- or overapplied overhead is charged directly to cost of goods sold, so correcting the error would cause cost of goods sold to decrease and net income to increase by $2,100—yielding a $2,100 increase in retained earnings.

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## Problem 2-3B (70 minutes)

***Part 1***

### JOB COST SHEETS

| Job No. 487 | |
|---|---|
| Materials..... | $30,000 |
| Labor ..... | 8,000 |
| Overhead..... | 16,000 |
| Total cost ..... | $54,000 |

| Job No. 488 | |
|---|---|
| Materials..... | $20,000 |
| Labor ..... | 7,000 |
| Overhead..... | 14,000 |
| Total cost ..... | $41,000 |

| Job No. 489 | |
|---|---|
| Materials..... | $12,000 |
| Labor ..... | 25,000 |
| Overhead..... | 50,000 |
| Total cost ..... | $87,000 |

| Job No. 490 | |
|---|---|
| Materials..... | $14,000 |
| Labor ..... | 26,000 |
| Overhead..... | 52,000 |
| Total cost ..... | $92,000 |

| Job No. 491 | |
|---|---|
| Materials..... | $ 4,000 |
| Labor ..... | 2,000 |
| Overhead..... | 4,000 |
| Total cost ..... | $10,000 |

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## Problem 2-3B (*Concluded*)

### *Part 2*

| | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 125,000 | |
| | Accounts Payable | | 125,000 |
| | *Record materials purchases.* | | |
| b. | Work in Process Inventory | 80,000 | |
| | Factory Overhead | 12,000 | |
| | Raw Materials Inventory | | 92,000 |
| | *Record direct & indirect materials.* | | |
| c. | Factory Overhead | 11,000 | |
| | Cash | | 11,000 |
| | *Record other factory overhead.* | | |
| d. | Work in Process Inventory | 68,000 | |
| | Factory Overhead | 16,000 | |
| | Cash | | 84,000 |
| | *Record direct & indirect labor.* | | |
| e. | Work in Process Inventory | 118,000 | |
| | Factory Overhead | | 118,000 |
| | *Apply overhead to jobs [($8,000 + $25,000 + $26,000) x 200%].* | | |
| f. | Finished Goods Inventory | 233,000 | |
| | Work in Process Inventory | | 233,000 |
| | *Record completion of jobs ($54,000 + $87,000 + $92,000).* | | |

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## Problem 2-3B *(Continued)*

**[continued from prior page]**

| | | | |
|---|---|---|---|
| **g.** | **Accounts Receivable** | **340,000** | |
| | **Sales** | | **340,000** |
| | ***Record sales on account.*** | | |
| | **Cost of Goods Sold** | **141,000** | |
| | **Finished Goods Inventory** | | **141,000** |
| | ***Record cost of sales ($54,000 + $87,000).*** | | |
| **h.** | **Factory Overhead** | **96,000** | |
| | **Accum. Depreciation—Factory Building** | | **37,000** |
| | **Accum. Depreciation—Factory Equipment** | | **21,000** |
| | **Prepaid Insurance** | | **7,000** |
| | **Property Taxes Payable** | | **31,000** |
| | ***Record other factory overhead.*** | | |
| **i.** | **Work in Process Inventory** | **18,000** | |
| | **Factory Overhead** | | **18,000** |
| | ***Apply overhead to jobs [($7,000 + $2,000) x 200%].*** | | |

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## Problem 2-3B *(Continued)*

### *Part 3*

**GENERAL LEDGER ACCOUNTS**

**Raw Materials Inventory**

| | | | |
|---|---|---|---|
| (a) | 125,000 | (b) | 92,000 |
| Bal. | 33,000 | | |

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| (b) | 80,000 | (f) | 233,000 |
| (d) | 68,000 | | |
| (e) | 118,000 | | |
| (i) | 18,000 | | |
| Bal. | 51,000 | | |

**Factory Overhead**

| | | | |
|---|---|---|---|
| (b) | 12,000 | (e) | 118,000 |
| (c) | 11,000 | (i) | 18,000 |
| (d) | 16,000 | | |
| (h) | 96,000 | | |
| | | Bal. | 1,000 |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| (f) | 233,000 | (g) | 141,000 |
| Bal. | 92,000 | | |

**Cost of Goods Sold**

| | | | |
|---|---|---|---|
| (g) | 141,000 | | |
| Bal. | 141,000 | | |

### *Part 4*

**Reports of Job Costs***

**Work in Process Inventory**

| | |
|---|---|
| Job 488 | $ 41,000 |
| Job 491 | 10,000 |
| Balance | $ 51,000 |

**Finished Goods Inventory**

| | |
|---|---|
| Job 490 | $ 92,000 |
| Balance | $ 92,000 |

**Cost of Goods Sold**

| | |
|---|---|
| Job 487 | $ 54,000 |
| Job 489 | 87,000 |
| Balance | $141,000 |

*Individual totals reconcile with account balances shown in part 3.

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## Problem 2-4B (35 minutes)

### *Part 1*

**a. Predetermined overhead rate**

$$\frac{\text{Estimated overhead costs}}{\text{Estimated direct labor cost}} = \frac{\$750{,}000}{[50 \times 2{,}000 \times \$15]} = \frac{\$750{,}000}{\$1{,}500{,}000} = \underline{\underline{50\%}}$$

**b. Overhead costs charged to jobs**

| Job No. | Direct Labor | Applied Overhead (50%) |
|---|---|---|
| 625 | $ 354,000 | $177,000 |
| 626 | 330,000 | 165,000 |
| 627 | 175,000 | 87,500 |
| 628 | 420,000 | 210,000 |
| 629 | 184,000 | 92,000 |
| 630 | 10,000 | 5,000 |
| Total | $1,473,000 | $736,500 |

**c. Overapplied or underapplied overhead determination**

| | |
|---|---|
| Actual overhead cost | $725,000 |
| Less applied overhead cost | 736,500 |
| Overapplied overhead | $ (11,500) |

### *Part 2*

| | | | |
|---|---|---|---|
| Dec. 31 | Factory Overhead | 11,500 | |
| | Cost of Goods Sold | | 11,500 |
| | *To assign overapplied overhead.* | | |

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## Problem 2-5B (90 minutes)

**JOB COST SHEET**

Customer's Name: Encinita Company  Job No. 450

| | Direct Materials | | Direct Labor | | Overhead Costs Applied | | |
|---|---|---|---|---|---|---|---|
| Date | Requisition Number | Amount | Time Ticket Number | Amount | Date | Rate | Amount |
| | #223 | 16,000 | #1-10 | 40,000 | June -- | 70% | 28,000 |
| | #224 | 9,600 | | | | | |
| | Total | 25,600 | Total | 40,000 | | | |

SUMMARY OF COSTS

| | |
|---|---|
| Dir. Materials ..... | 25,600 |
| Dir. Labor..... | 40,000 |
| Overhead ..... | 28,000 |
| Total Cost of Job ... | 93,600 |

*FINISHED*

**JOB COST SHEET**

Customer's Name: Fargo, Inc.  Job No. 451

| | Direct Materials | | Direct Labor | | Overhead Costs Applied | | |
|---|---|---|---|---|---|---|---|
| Date | Requisition Number | Amount | Time Ticket Number | Amount | Date | Rate | Amount |
| | #225 | 8,000 | #11-20 | 32,000 | June-- | 70% | 22,400 |
| | #226 | 4,800 | | | | | |
| | Total | | Total | | | | |

SUMMARY OF COSTS

| | |
|---|---|
| Dir. Materials ..... | |
| Dir. Labor..... | |
| Overhead ..... | |
| Total cost of Job .... | |

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## Problem 2-5B *(Continued)*

**MATERIALS LEDGER CARD**

**Item** Material M

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| June 1 | | | | | | | | | 120 | 200 | 24,000 |
| | #20 | 150 | 200 | 30,000 | | | | | 270 | 200 | 54,000 |
| | | | | | #223 | 80 | 200 | 16,000 | 190 | 200 | 38,000 |
| | | | | | #225 | 40 | 200 | 8,000 | 150 | 200 | 30,000 |

**MATERIALS LEDGER CARD**

**Item** Material R

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| June 1 | | | | | | | | | 80 | 160 | 12,800 |
| | #21 | 70 | 160 | 11,200 | | | | | 150 | 160 | 24,000 |
| | | | | | #224 | 60 | 160 | 9,600 | 90 | 160 | 14,400 |
| | | | | | #226 | 30 | 160 | 4,800 | 60 | 160 | 9,600 |

**MATERIALS LEDGER CARD**

**Item** Paint

| Received | | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report | Units | Unit Price | Total Price | Requi-sition | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| June 1 | | | | | | | | | 44 | 72 | 3,168 |
| | | | | | #227 | 12 | 72 | 864 | 32 | 72 | 2,304 |
| | | | | | | | | | | | |

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**Problem 2-5B *(Continued)***

| GENERAL JOURNAL | | | |
|---|---|---|---|
| a. | Raw Materials Inventory | 41,200 | |
| | Accounts Payable | | 41,200 |
| | *Record materials purchases ($30,000+$11,200).* | | |
| d. | Work in Process Inventory* | 72,000 | |
| | Factory Overhead | 12,000 | |
| | Cash | | 84,000 |
| | *Record direct & indirect labor.* | | |
| | **($40,000 + $32,000)* | | |
| | Factory Overhead | 36,800 | |
| | Cash | | 36,800 |
| | *Record other factory overhead.* | | |
| e. | Finished Goods Inventory | 93,600 | |
| | Work in Process Inventory | | 93,600 |
| | *Record completion of jobs.* | | |
| f. | Accounts Receivable | 290,000 | |
| | Sales | | 290,000 |
| | *Record sales on account.* | | |
| | Cost of Goods Sold | 93,600 | |
| | Finished Goods Inventory | | 93,600 |
| | *Record cost of sales.* | | |
| h. | Work in Process Inventory* | 38,400 | |
| | Factory Overhead | 864 | |
| | Raw Materials Inventory | | 39,264 |
| | *Record direct & indirect materials.* | | |
| | **($16,000 + $8,000 + $9,600 + $4,800)* | | |
| i. | Work in Process Inventory | 50,400 | |
| | Factory Overhead | | 50,400 |
| | *Apply overhead ($28,000 + $22,400).* | | |

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**Problem 2-5B *(Continued)***

**j. The ending balance in Factory Overhead is computed as:**

| | |
|---|---|
| **Actual Factory Overhead** | |
| **Miscellaneous overhead** ..... | **$36,800** |
| **Indirect materials** ..... | **864** |
| **Indirect labor** ..... | **12,000** |
| **Total actual factory overhead** ..... | **49,664** |
| **Factory overhead applied** ..... | **50,400** |
| **Overapplied overhead** ..... | **$ (736)** |

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# SERIAL PROBLEM— SP 2

**Serial Problem—SP 15, Business Solutions (40 minutes)**

1. The cost of direct materials requisitioned in the month equals the total direct materials costs accumulated on the three jobs less the amount of direct materials cost assigned to Job 602 in May:

| | | |
|---|---|---|
| Job 602 | $1,500 | |
| Less prior costs | (600) | $ 900 |
| Job 603 | | 3,300 |
| Job 604 | | 2,700 |
| Total materials used (requisitioned) | | $6,900 |

2. Direct labor cost incurred in the month equals the total direct labor costs accumulated on the three jobs less the amount of direct labor cost assigned to Job 602 in May:

| | | |
|---|---|---|
| Job 602 | $ 800 | |
| Less prior costs | (180) | $ 620 |
| Job 603 | | 1,420 |
| Job 604 | | 2,100 |
| Total direct labor | | $4,140 |

3. The predetermined overhead rate equals the ratio between the amount of overhead assigned to the jobs divided by the amount of direct labor cost assigned to them. Since the rate is assumed constant during the year in this problem, and the same rate is used for all jobs within a month, the ratio for any one of them equals the rate that was applied. This table shows the ratio for jobs 602 and 604:

| | Job 602 | Job 604 |
|---|---|---|
| Overhead | $ 400 | $1,050 |
| Direct labor | 800 | 2,100 |
| Predetermined overhead rate | 50% | 50% |

4. The cost transferred to finished goods in June equals the total costs of the two completed jobs for the month, which are Jobs 602 and 603:

| | Job 602 | Job 603 | Total |
|---|---|---|---|
| Direct materials | $1,500 | $3,300 | $4,800 |
| Direct labor | 800 | 1,420 | 2,220 |
| Overhead | 400 | 710 | 1,110 |
| Total transferred cost | $2,700 | $5,430 | $8,130 |

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## Reporting in Action — BTN 2-1

1. **Actual inventory changes and operating cash flow effects as found on the cash flow statement (amounts are in $millions)**

| Apple | Current Year | One Year Prior | Two Years Prior |
|---|---|---|---|
| Inventory change ..... | Increase | Increase | Increase |
| Operating cash flow effect from inventory change ..... | Decrease of $238 | Decrease of $76 | Decrease of $973 |

2. **A successful JIT system should reduce inventory levels. This reduction in inventory should increase operating cash flows. In the solution of part 1, notice that decreases in inventory yield increases in operating cash flow, while increases in inventory yield decreases in operating cash flow. The decreases in inventory from a JIT system should free up additional resources that could be directed toward paying off debt or expanding operations for even greater returns. This should increase operating income. In addition, losses from obsolete or damaged inventory should decline, also increasing operating income.**

3. **This is a one-time occurrence of a release of cash. However, this one-time adjustment can yield a recurring impact on returns if such freed up resources are directed into productive assets. Moreover, this adjustment should not reverse provided the JIT inventory system can maintain the reduced inventory levels.**

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## Comparative Analysis — BTN 2-2

1.

| Apple ($millions) | Current Year | One Year Prior | Two Years Prior |
|---|---|---|---|
| Gross margin..... | $93,626 | $70,537 | $64,304 |
| Net sales ..... | $233,715 | $182,795 | $170,910 |
| Gross margin ratio..... | 0.401 | 0.386 | 0.376 |

2.

| Google ($millions) | Current Year | One Year Prior | Two Years Prior |
|---|---|---|---|
| Gross margin* ..... | $46,825 | $40,310 | $33,526 |
| Net sales ..... | $74,989 | $66,001 | $55,519 |
| Gross margin ratio..... | 0.624 | 0.611 | 0.604 |

*Computed as Revenues – Cost of Revenues

3. For both Apple and Google, gross margin ratios increased in the current and prior year relative to their amounts two years prior. This indicates both companies are successfully controlling costs as sales increase.

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## Ethics Challenge — BTN 2-3

**Instructor note: This problem is designed to illustrate why the accounting professional must be aware of management's and employees' biases when working with and relying on accounting estimates and data.**

**MEMORANDUM**

**TO:**
**FROM:**
**DATE:**
**SUBJECT:**

**<u>Suggested content outline</u>**

**The obvious concern is that management is allocating more overhead to government jobs compared to open market bid contracts. There is no obvious reason for such behavior other than a profit motive.**

**Specifically, by allocating more overhead to government jobs, profits on government jobs will increase in relation to cost. Conversely, private market jobs will show greater profits because more overhead is allocated to government jobs and less to private jobs.**

**This type of abuse in overhead allocation is a real problem in practice.**

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## Communicating in Practice — BTN 2-4

**Student notes should include but not be limited to the following points:**

1. **You recommend replacing the general accounting (periodic inventory) system with a cost accounting (perpetual inventory) system—specifically a job order cost accounting system. Cost accounting systems provide product cost information as products are manufactured whereas the current system does not. The new system would yield more timely information for pricing goods for sale. A job order system is particularly appropriate for the kinds of goods this business produces—goods made-to-order or stock items produced at varying points in time. A job order system is also appropriate for this type of discontinuous production of goods. Finally, the new system has the potential to reduce inventory levels—with possible implementation of a JIT system—that will free up funds to be devoted elsewhere.**

2. **This new system would require use of many different documents to control the acquisition, use, and availability of materials. It also requires documents for allocation of labor and overhead costs, and for finished goods that are sold and unsold. The chapter illustrates many of these source documents for a cost accounting system. You might also suggest that these documents could/should be implemented in an "online" (paperless) manner to further facilitate information and inventory management.**

3. **The focal point of the new system is the job cost sheet, which is used to accumulate and tally costs of goods as produced for each specific job order and job lot. You could prepare a sample and explain and illustrate how the system determines unit costs as production is completed.**

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## Taking It to the Net — BTN 2-5

**Instructor note: There is no single solution to this assignment.**

**The Website [amsi.com] provides details about what its job costing software can provide to users. After careful examination, students can write a report to the CEO, which may include the following points:**

- **Features of the software (including the tools it offers)**
- **Reports that can be generated using the software**
- **Benefits of the software—pricing, cost control, inventory management, general ledger package, accounts payable and receivable, etc.**

## Teamwork in Action — BTN 2-6

1. **A medical clinic can be considered as appropriate for a job order cost accounting system. This is because each patient is unique in many ways, such as the type/location of the illness (skin, heart, lung, etc.), health condition (some may have diabetes or high blood pressure whereas others may be free of such conditions), and other personal characteristics (age, gender, weight, etc.). Also, different patients have different emotional frames of mind that impact diagnosis and treatment.**

2. **In light of the differences identified in part 1, the doctors will consider the individual characteristics of every patient in determining the type and extent of treatment to be provided, the extent of counseling required, and so forth. Each individual patient will therefore "consume" resources in varying quantities resulting in different costs. This would suggest a job order cost accounting system as an appropriate monitoring and control system.**

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## Entrepreneurial Decision — BTN 2-7

1. A job cost sheet for a service company would likely not contain many costs for direct materials. Often, service providers simply include materials in their overhead costs. A manufacturing company converts raw materials into finished goods, thus its job cost sheet would accumulate and track costs of direct materials for each job.

2. Examples of direct labor and overhead costs for Neha Assar include:

   Direct Labor: Wages/salaries of part-time mehndi artists.

   Overhead: Neha's overhead costs likely include the cost of supplies (henna paste, applicators, rhinestones), insurance, licenses and permits, and travel costs.

## Hitting the Road — BTN 2-8

1. The framework for the job cost sheet should follow that in the third exhibit in the chapter. This includes the descriptions for: company name, date, quantity, etc. In addition, the direct costs should include subcontract work, such as electrical and plumbing. The response for overhead will likely vary. The key is that any overhead allocation pattern be logical. In the building business, square footage, lot size, labor time, cost of materials, a straight average, or a combination may be utilized to allocate overhead.
2. Results of the comparison of job cost sheets to a builder's actual job cost sheets depend on the builder chosen and the format used. Instructors often find it useful to have students/teams report findings to the class.

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## Global Decision — BTN 2-9

1. Actual inventory amounts and changes. Apple's amounts are in $millions and Samsung's amounts are in millions of Korean won.

| Apple ($millions) | Balance, Current Year | Balance, Prior Year | Change in Inventory |
|---|---|---|---|
| Inventory..... | $2,349 | $2,111 | $238 Increase |
| Operating cash flow effect from inventory change ..... | | | Decrease of $238 |

| Samsung (₩millions) | Balance, Current Year | Balance, Prior Year | Change in Inventory |
|---|---|---|---|
| Inventory..... | ₩18,811,794 | ₩17,317,504 | ₩1,494,290 Increase |
| Operating cash flow effect from inventory change ..... | | | Decrease ₩1,494,290 |

2. A successful JIT system should reduce inventory levels. This reduction in inventory should increase operating cash flows. In the solution of part 1, notice that increases in inventory yield decreases in operating cash flow; thus, decreases in inventory will yield increases in operating cash flow. The decreases in inventory from a JIT system should free up additional resources that could be directed toward paying off debt or expanding operations for even greater returns. This should also increase operating income. In addition, losses from obsolete or damaged inventory should decline, also increasing operating income.

3. We cannot definitively determine which company of the two would benefit the most from JIT implementation. The benefit of JIT would depend on the efficiencies gained from the implementation, which might vary by company. Also, we cannot directly compare changes expressed in U.S. dollars with those expressed in Korean won. We would have to translate U.S. dollars into Korean won (or vice versa) to be able to determine which company has experienced the largest changes in inventory over the past few years.

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# CHAPTER 2
# JOB ORDER COSTING AND ANALYSIS

## Related Assignment Materials

| *Student Learning Objectives* | *Questions* | *Quick Studies** | *Exercises** | *Problems** | *Beyond the Numbers* |
|---|---|---|---|---|---|
| **Conceptual objectives:** | | | | | |
| C1. Describe important features of job order production. | 10, 11, 12, 13 | 2-1, 2-14 | 2-1 | | 2-1, 2-2, 2-4, 2-5, 2-6, 2-7, 2-9 |
| C2. Explain job cost sheets and how they are used in job order costing. | 3, 4 | 2-2 | 2-2, 2-3 | 2-1 | 2-4, 2-7, 2-8 |
| **Analytical objectives:** | | | | | |
| A1 Apply job order costing in pricing services. | 2, 14 | 2-13 | 2-18 | | |
| **Procedural objectives:** | | | | | |
| P1. Describe and record the flow of materials costs in job order cost accounting. | 5, 6 | 2-3, 2-4, 2-10 | 2-4, 2-5, 2-6, 2-7, 2-8, 2-13, 2-19 | 2-1, 2-2, 2-3, 2-5, SP GL, ES | 2-8 |
| P2. Describe and record the flow of labor costs in job order costing. | 7 | 2-3, 2-5, 2-10 2-12 | 2-4, 2-5, 2-6, 2-7, 2-9 | 2-1, 2-2, 2-3, 2-5, SP, GL, ES | 2-8 |
| P3. Describe and record the flow of overhead costs in job order costing. | 1, 2, 8, 11 | 2-3, 2-6, 2-7, 2-8, 2-9, 2-10, | 2-4, 2-5, 2-6, 2-7, 2-10, 2-11, 2-12, 2-15, 2-16, 2-17 | 2-1, 2-2, 2-3, 2-4, 2-5, SP, GL | 2-3, 2-8 |
| P4. Determine adjustments for overapplied and underapplied factory overhead. | 9 | 2-11, 2-12 | 2-6, 2-7, 2-13, 2-14, 2-15, 2-16 | 2-1, 2-2, 2-4, 2-5, GL | |

***See additional information on next page that pertains to these quick studies, exercises and problems.***
***SP refers to the Serial Problem***
***GL refers to the General Ledger Problems***
***ES refers to Excel Simulations***

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## Additional Information on Related Assignment Material

### Connect

Available on the instructor's course-specific website) repeats all numerical Quick Studies, all Exercises and Problems Set A. ***Connect*** also provides algorithmic versions for Quick Study, Exercises and Problems. It allows instructors to monitor, promote, and assess student learning. It can be used in practice, homework, or exam mode**.**

### Connect Insight

The first and only analytics tool of its kind, Connect Insight is a series of visual data displays that are each framed by an intuitive question and provide at-a-glance information regarding how an instructor's class is performing. Connect Insight is available through Connect titles.

**The Serial Problem (SP)** for *Success Systems* continues in this chapter.

### General Ledger

Assignable within Connect, General Ledger (GL) problems offer students the ability to see how transactions post from the general journal all the way through the financial statements. Critical thinking and analysis components are added to each GL problem to ensure understanding of the entire process. GL problems are auto-graded and provide instant feedback to the student.

### Excel Simulations

Assignable within Connect, Excel Simulations allow students to practice their Excel skills—such as basic formulas and formatting—within the context of accounting. These questions feature animated, narrated Help and Show Me tutorials (when enabled). Excel Simulations are auto-graded and provide instant feedback to the student.

## Synopsis of Chapter Revision

- NEW opener—Neha Assar and entrepreneurial assignment.
- Simplified discussion of cost accounting systems.
- Simplified direct material and direct labor cost flows and entries.
- Added time period information to graphic on 4-step overhead process.
- Simplified discussion of recording overhead costs.
- Added journal entry for depreciation expense on equipment in NTK 2-5.
- Revised exhibits for postings of direct materials, direct labor, and overhead to general ledger accounts and job cost sheets.
- Added section on using job cost sheet for managerial decisions.
- Added entries for transfers of costs to Finished Goods Inventory and to COGS.
- Expanded discussion of job order costing for service firms.
- New exhibit and cost flows for service firms.
- Expanded Sustainability section, including USPS and Neha Assar examples.
- New NTK on using the job cost sheet.
- Added new Quick Study and new Exercise on costing for service firms.

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## Chapter Outline

I. Job Order Costing
   A. Cost accounting system
      1. Accumulates manufacturing costs and assigns them to products and services.
      2. Provides timely information about inventories and costs helpful in managers' efforts to control costs and determine selling prices.
      3. Two basic types of cost accounting systems are *job order* cost accounting and *process* cost accounting.
         a.. Job Order Production—producing products or providing services individually designed to meet the needs of a specific customer (special orders).
            i. The production activities for a customized product is called a *job*
            ii. A *job lot* involves producing more than one unit of a unique product.
         b. Process Operations
            i. Mass production of products in a continuous flow of steps.
            ii. Designed to mass produce large quantities of identical products. Covered in Chapter 3.
   B. Production Activities in Job Order Costing
      an overview of job order production activity and cost flows is shown in Exhibit 2.2
      1. Cost Flows:
         a. Because they are product costs, manufacturing costs flow through inventory accounts (Raw Materials Inventory, Work in Process Inventory, Finished Goods Inventory) until the goods are sold.
         b. While a job is being produced, costs are accumulated in *Work in Process Inventory*.
         *c*. When the goods are completed, the accumulated costs are transferred to from Work in Process to *Finished Goods Inventory.*
         d. When the Finished goods are delivered to the customer, the accumulated costs are transferred from Finished Goods inventory to Cost of Goods Sold

## Notes

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## Chapter Outline

## Notes

2. Job Cost Sheet—separate record maintained for each job used to record costs.
   a. Classifies costs as direct materials, direct labor, or overhead.
   b. Used by managers to monitor costs incurred to date and to predict and control costs to complete each job.
   c. Accumulated job costs are kept in the *Work in Process Inventory* while goods are being produced.
   d. Job cost sheets filed for all of the jobs in process make up a subsidiary ledger controlled by the Work in Process Inventory account in the general ledger.
   e. The balance in Work in Process at any point in time is the sum of the costs on the job cost sheets that are not yet completed.
   f. Finished job cost sheets—moved from jobs in process file to finished jobs file (subsidiary ledger controlled by Finished Goods Inventory) awaiting delivery to customers.

**II. Materials and Labor Cost Flows**

1. Cost Flows and Documents—the three cost components and documents used to account for them are:
   Materials Cost Flows and Documents
   a. *Receiving report*—Source document used to record the quantity and cost of items received. Materials purchased are used as a debit to Raw Materials Inventory and a credit to Accounts Payable.
   b. *Materials ledger cards* (or electronic files)—perpetual records that are updated each time units are purchased and each time units are issued for use in production. Serves as the subsidiary ledger for the Raw Materials Inventory account.
2. Materials Purchases – includes direct and indirect materials. Updates to individual materials ledger cards. Debit Raw Materials Inventory to increase.
3. Materials Use (Requisition)
   a. *Materials Requisition*—document identifying the type and quantity of material needed in production. Job number is also identified on direct materials requisitions.
   b. *Job Cost Sheet*—accumulates the cost of direct materials (from materials ledger card) as they are placed into production on a job. Recorded as a debit to Goods in Process Inventory and a credit to Raw Materials Inventory.

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## Chapter Outline

## Notes

4. Labor Cost Flows and Documents
   a. Time tickets - used by employees to record hours worked. Used to determine total labor costs for pay period. They indicate how much time employees spent on each job and are used to assign (direct) labor costs to specific jobs and (indirect) to overhead. Direct labor costs are debited to Work in Process Inventory and credited to Factory Wages Payable.
   b. *Job Cost Sheets*—accumulates the cost of direct labor (from time tickets and related entry) as these costs are incurred.
5. Overhead Cost Flows and Reports
   a. Overhead costs can't be traced to individual jobs. The accounting for overhead follows a 4-step process shown in Exhibit 19.11. Managers must first estimate total overhead for the coming period. We can't wait until the end of the period to apply overhead costs to jobs because job order costing using perpetual inventory which require up to date costs. The estimated overhead cost is needed to estimate the job's total costs before complete.
   b. Step 1: Set Predetermined Overhead Rate
      i. Requires an estimated of total overhead cost and an allocation factory such as total direct labor, total labor hours, or total machine hours.
      ii. Predetermined Overhead rate = Estimated overhead costs divided by estimated activity based
      iii. The allocation case should have a cause and effect relation between the base and the overhead costs.
   c. Step 2: Apply Estimated Overhead to Specific Jobs
      i. Predetermined overhead rate times actual activity where the activity is the allocation base such as direct labor cost, direct labor hours, machine hours.
      ii. The entry to record the applied overhead is a debit to work in process inventory and a credit to factory overhead.
      iii. The overhead is allocated to each job based on the resource the job used (rate x actual activity).
      iv. At this point, estimated (allocated) overhead is posted to the general ledger accounts (Work in Process and Factory Overhead) and to the individual job cost sheets.

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## Chapter Outline

## Notes

d. Step 3: Record Actual Overhead costs
   i. Actual factory overhead costs include indirect materials, indirect labor, supplies, utilities, adjusting entries for depreciation on factory assets, etc.
   ii. Indirect materials ledger cards in factory overhead ledger—accumulates indirect material costs as they are placed into production. This subsidiary ledger is controlled by the Factory Overhead account in the general ledger. Use of indirect materials is recorded as a debit to Factory overhead and a credit to Raw Materials Inventory
   iii. Indirect labor card in Factory Overhead Ledger—accumulates indirect labor costs (from time tickets and related entry). Entry to record indirect labor costs debits Factory Overhead and credits Factory Wages Payable.
   iv. Other sources include vouchers authorizing payments for items such as supplies or utilities and adjusting entries for costs such as depreciation. Debit Factory Overhead and Credit the other accounts such as Cash, Accounts Payable, Accumulated Depreciation, etc.

e. Step 4: Adjusting Factory Overhead—
   i. Factory Overhead T-Account
      a) The debit side shows the actual amount of factory overhead incurred during the period based on bills received.
      b) The credit side shows the amount applied during the period that was an estimate based on the predetermined overhead rate.
      c) A debit balance in the FOH account indicated less was applied than incurred; an underapplied FOH amount.
      d) A credit balance in the FOH account indicates more was applied than incurred; an overapplied FOH amount.
   ii. Underapplied and Overapplied Overhead
      a) Factory Overhead debit balance (underapplied amount) is credited (closed) and debited (charged) to Cost of Goods Sold.
      b) Factory Overhead credit balance (overapplied amount) is debited (closed) and credited to Cost of Goods Sold.

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## Chapter Outline

## Notes

4. Summary of Cost Flows—Summary journal entries are used to record cost flows as follows:
   a. Into (debit) Raw Materials Inventory as acquired.
   b. From (credit) Raw Materials Inventory to (debit) Work In Process Inventory (direct materials) and (debit) Factory Overhead (indirect materials) as good are requisitioned. Direct material costs also accumulated on Job Cost Sheets.
   c. Into (debit) Work In Process Inventory (direct labor) and (debit) Factory Overhead (indirect labor) as labor costs are analyzed. Direct labor costs also accumulated on Job Cost Sheets.
   e. Into (debit) Factory Overhead as other overhead costs are incurred.
   f. From (credit) Factory Overhead and into (debit) Work In Process as overhead costs are applied using overhead rate.
   g. From (credit) Work In Process Inventory to (debit) Finished Goods Inventory as jobs are completed. Full cost from Job Cost Sheets.
   h. From (credit) Finished Goods Inventory to (debit) Cost of Goods Sold as goods are sold.
   i. Any under or over applied factory overhead cost is accounted for in an adjustment to Cost of Goods Sold and Factory Overhead
5. Schedule of Cost of Goods Manufactured
   a. Similar to statement covered in chapter 1.
   b. Key difference: total manufacturing costs include *overhead applied* rather than actual overhead costs.

**III. Decision Analysis—Pricing for Services**

A. Service providers also use job order costing.

B. Procedure to determine:
   1. Determine direct labor costs
   2. Determine the overhead based on predetermined rate(s).
   3. Combine labor and overhead to obtain cost of job.

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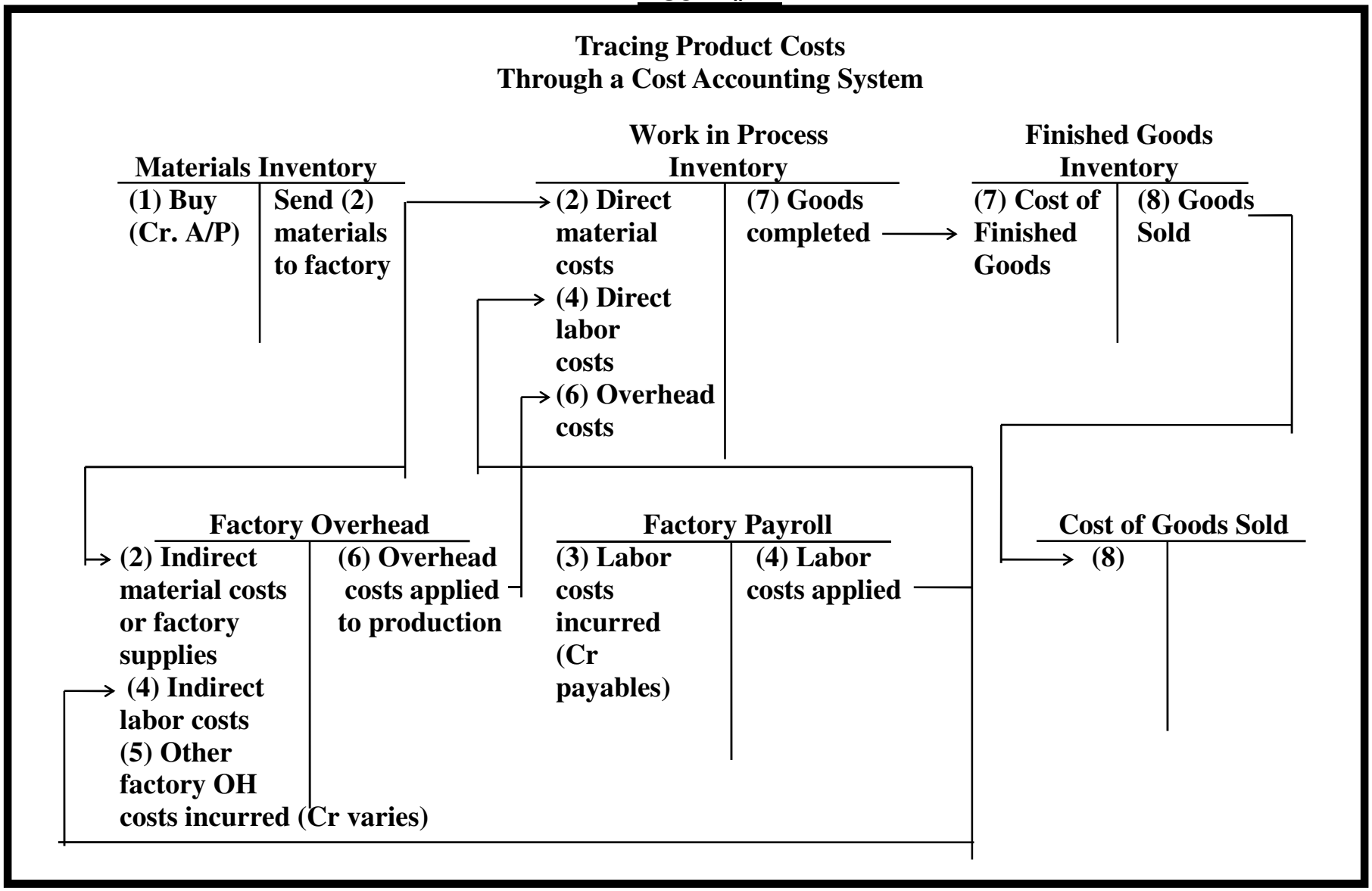
**VISUAL #2-1**

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## VISUAL #2-2

### Job Cost Sheet

Customer Build We Must, Inc. — Job No. 114
Product Bracket-H3 — Date Promised 10/1
Quantity 200 — Dates: Started 9/1 Completed 9/20

| Direct Material | | Direct Labor | | | Cost Summary | |
|---|---|---|---|---|---|---|
| Mat'l. Req'n. No. | Amount | Payroll Summary Dated | Dept. | Amount | Direct Material | $ 900.00 |
| | | | | | Direct Labor | 600.00 |
| 667 | $ 340.00 | 9/2 | A | $ 70.00 | | |
| 673 | 180.00 | 9/9 | A | 240.00 | Factory Overhead (applied at): | |
| 691 | 200.00 | 9/16 | B | 190.00 | | |
| 623 | 180.00 | 9/23 | B | 100.00 | | |
| | | | | | 150% of direct labor cost | 900.00 |
| Totals | $ 900.00 | | | $ 600.00 | Total Cost | $2,400.00 |
| | | | | | Units Finished | 200 |
| | | | | | Unit Cost | $12.00 |

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## Chapter 2 Alternate Demo Problem

**The following information is the Work in Process and Factory Overhead Accounts for Superior Company:**

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| Beg Inv. | 302,000 | | |
| Direct Materials | 280,000 | | |
| Direct Labor | 120,000 | | |
| Overhead Applied | 96,000 | | |
| | | Costs transferred to Finished Goods Inv. | 548,000 |
| End Inv. | 250,000 | | |

**Factory Overhead**

| | | | |
|---|---|---|---|
| Actual Overhead | 98,000 | 96,000 | Applied Overhead |

***Required:***

1. **Prepare a manufacturing statement for Superior Company for 2017.**
2. **Prepare the entry to adjust for under or over applied overhead.**

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Managerial Accounting 6th edition Wild Solutions Manual

## Chapter 2 Solution: Alternate Demo Problem

### SUPERIOR MANUFACTURING COMPANY
### Manufacturing Statement
### For Year Ended December 31, 2017

| | | |
|---|---|---|
| Direct materials used ..... | $280,000 | |
| Direct labor ..... | 120,000 | |
| Factory Overhead Applied..... | 96,000 | |
| Total manufacturing costs ..... | 496,000 | |
| Work in Process Inventory 1/1/17……. | 302,000 | $302,000 |
| Total goods in process during the year ..... | 800,000 | |
| Work in process inventory, 12/31/17 ..... | 250,000 | |
| Cost of goods manufactured ..... | | |
| | $548,000 | |

**Adjusting entry for under or over-applied overhead**

| Factory Overhead | | | |
|---|---|---|---|
| Actual Overhead | 98,000 | 96,000 | Applied Overhead |
| Under applied | 2,000 | | |

| | | | |
|---|---|---|---|
| Dec 31 | Cost of Goods Sold | 2,000 | |
| | Factory Overhead | | 2,000 |
| | *To adjust for under applied overhead costs* | | |

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Managerial Accounting 6th edition Wild Solutions Manual

# Chapter 2 – Job Order Costing and Analysis

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# Exercise 2-3 page 69

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As of the end of June, the job cost sheets at Racing Wheels, Inc., show the following total costs accumulated on three custom jobs.

| | Job 102 | Job 103 | Job 104 |
|---|---|---|---|
| Direct materials | $15,000 | $33,000 | $27,000 |
| Direct labor | 8,000 | 14,200 | 21,000 |
| Overhead | 4,000 | 7,100 | 10,500 |

Job 102 was started in production in May and the following costs were assigned to it in May: direct materials, $6,000; direct labor, $1,800; and overhead, $900. Jobs 103 and 104 are started in June. Overhead cost is applied with a predetermined rate based on direct labor cost. Jobs 102 and 103 are finished in June, and Job 104 is expected to be finished in July. No raw materials are used indirectly in June. Using this information, answer the following questions. (Assume this company's predetermined overhead rate did not change across these months).

Complete the given below table to calculate the cost of the raw materials requisitioned and direct labor cost incurred during June for each of the three jobs.

| Direct Materials | | | |
|---|---|---|---|
| Job | May | June | Total |
| 102 | $6,000 | $9,000 | $15,000 |
| 103 | | 33,000 | 33,000 |
| 104 | | 27,000 | 27,000 |

| Direct Labor | | | |
|---|---|---|---|
| Job | May | June | Total |
| 102 | $1,800 | $6,200 | $8,000 |
| 103 | | 14,200 | 14,200 |
| 104 | | 21,000 | 21,000 |

What predetermined overhead rate is used during June for Job 102?

$$\frac{\text{Overhead costs}}{\text{Direct labor costs}} \quad \frac{\$4{,}000}{\$8{,}000} \quad 50\%$$

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As of the end of June, the job cost sheets at Racing Wheels, Inc., show the following total costs accumulated on three custom jobs.

| | Job 102 | Job 103 | Job 104 |
|---|---|---|---|
| Direct materials | $15,000 | $33,000 | $27,000 |
| Direct labor | 8,000 | 14,200 | 21,000 |
| Overhead | 4,000 | 7,100 | 10,500 |

Job 102 was started in production in May and the following costs were assigned to it in May: direct materials, $6,000; direct labor, $1,800; and overhead, $900. Jobs 103 and 104 are started in June. Overhead cost is applied with a predetermined rate based on direct labor cost. Jobs 102 and 103 are finished in June, and Job 104 is expected to be finished in July. No raw materials are used indirectly in June. Using this information, answer the following questions. (Assume this company's predetermined overhead rate did not change across these months).

How much total cost is transferred to finished goods during June?

| | |
|---|---|
| Job 102 ($15,000 + $8,000 + $4,000) | $27,000 |
| Job 103 ($33,000 + $14,200 + $7,100) | 54,300 |
| Total | $81,300 |

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As of the end of June, the job cost sheets at Racing Wheels, Inc., show the following total costs accumulated on three custom jobs.

| | Job 102 | Job 103 | Job 104 |
|---|---|---|---|
| Direct materials | $29,000 | $81,000 | $65,000 |
| Direct labor | 23,000 | 49,000 | 33,000 |
| Overhead | 11,040 | 23,520 | 15,840 |

Job 102 was started in production in May and the following costs were assigned to it in May: direct materials, $13,000; direct labor, $5,000; and overhead, $2,400. Jobs 103 and 104 are started in June. Overhead cost is applied with a predetermined rate based on direct labor cost. Jobs 102 and 103 are finished in June, and Job 104 is expected to be finished in July. No raw materials are used indirectly in June. (Assume this company's predetermined overhead rate did not change across these months).

Calculate the cost of the raw materials requisitioned and direct labor cost incurred during June for each of the three jobs.

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As of the end of June, the job cost sheets at Racing Wheels, Inc., show the following total costs accumulated on three custom jobs.

| | Job 102 | Job 103 | Job 104 |
|---|---|---|---|
| Direct materials | $29,000 | $81,000 | $65,000 |
| Direct labor | 23,000 | 49,000 | 33,000 |
| Overhead | 11,040 | 23,520 | 15,840 |

Job 102 was started in production in May and the following costs were assigned to it in May: direct materials, $13,000; direct labor, $5,000; and overhead, $2,400. Jobs 103 and 104 are started in June. Overhead cost is applied with a predetermined rate based on direct labor cost. Jobs 102 and 103 are finished in June, and Job 104 is expected to be finished in July. No raw materials are used indirectly in June. (Assume this company's predetermined overhead rate did not change across these months).

| Direct Materials | | | |
|---|---|---|---|
| Job | May | June | Total |
| 102 | $13,000 | $16,000 | $29,000 |
| 103 | | 81,000 | 81,000 |
| 104 | | 65,000 | 65,000 |

| Direct Labor | | | |
|---|---|---|---|
| Job | May | June | Total |
| 102 | $5,000 | $18,000 | $23,000 |
| 103 | | 49,000 | 49,000 |
| 104 | | 33,000 | 33,000 |

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As of the end of June, the job cost sheets at Racing Wheels, Inc., show the following total costs accumulated on three custom jobs.

| | Job 102 | Job 103 | Job 104 |
|---|---|---|---|
| Direct materials | $29,000 | $81,000 | $65,000 |
| Direct labor | 23,000 | 49,000 | 33,000 |
| Overhead | 11,040 | 23,520 | 15,840 |

Job 102 was started in production in May and the following costs were assigned to it in May: direct materials, $13,000; direct labor, $5,000; and overhead, $2,400. Jobs 103 and 104 are started in June. Overhead cost is applied with a predetermined rate based on direct labor cost. Jobs 102 and 103 are finished in June, and Job 104 is expected to be finished in July. No raw materials are used indirectly in June. (Assume this company's predetermined overhead rate did not change across these months).

What predetermined overhead rate is used during June for Job 102?

| | | |
|---|---|---|
| Overhead costs | $11,040 | 48% |
| Direct labor costs | $23,000 | |

How much total cost is transferred to finished goods during June?

| | |
|---|---|
| Job 102 ($29,000 + $23,000 + $11,040) | $63,040 |
| Job 103 ($81,000 + $49,000 + $23,520) | 153,520 |
| Total | $216,560 |

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# Exercise 2-4 page 69

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Starr Company reports the following information for August.

| | |
|---|---|
| Raw materials purchased on account | $76,200 |
| Direct materials used in production | $48,000 |
| Direct labor incurred, but not yet paid | $15,350 |
| Overhead rate | 120% of direct labor cost |

Prepare journal entries to record the following events.
1. Raw materials purchased.
2. Direct materials used in production.
3. Direct labor used in production, but not yet paid.
4. Applied overhead.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Raw materials inventory | 76,200 | |
| | Accounts payable | | 76,200 |
| | | | |
| 2) | Work in process inventory | 48,000 | |
| | Raw materials inventory | | 48,000 |
| | | | |
| 3) | Work in process inventory | 15,350 | |
| | Factory payroll payable | | 15,350 |
| | | | |
| 4) | Work in process inventory | 18,420 | |
| | Factory overhead | | 18,420 |
| | | | |

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Starr Company reports the following information for August.

| | |
|---|---|
| Raw materials purchased on account | $80,000 |
| Direct materials used in production | $60,000 |
| Direct labor incurred, but not yet paid | $15,000 |
| Overhead rate | 110% of direct labor cost |

Prepare journal entries to record the following events.
1. Raw materials purchased.
2. Direct materials used in production.
3. Direct labor used in production, but not yet paid.
4. Applied overhead.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Raw materials inventory | 80,000 | |
| | Accounts payable | | 80,000 |
| | | | |
| 2) | Work in process inventory | 60,000 | |
| | Raw materials inventory | | 60,000 |
| | | | |
| 3) | Work in process inventory | 15,000 | |
| | Factory payroll payable | | 15,000 |
| | | | |
| 4) | Work in process inventory | 16,500 | |
| | Factory overhead | | 16,500 |
| | | | |

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# Exercise 2-5 page 69

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $6,000, direct labor of $2,800, and applied overhead of $2,240. Custom Cabinetry applies overhead at the rate of 80% of direct labor cost. During July, Job 120 is sold (on account) for $22,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $1,000 | $6,000 | $2,500 | $9,500 |
| Direct labor | 2,200 | 3,700 | 2,100 | 8,000 |
| Overhead applied | 1,760 | 2,960 | 1,680 | 6,400 |
| Total | $4,960 | $12,660 | $6,280 | $23,900 |

1. Prepare journal entries for the following in July.
   a. Direct materials used in production.
   b. Direct labor used in production, but not yet paid.
   c. Overhead applied.
   d. The sale of Job 120.
   e. Cost of goods sold for Job 120.
2. Compute the July 31 balances of the Work in Process Inventory and the Finished Goods Inventory general ledger accounts.

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $6,000, direct labor of $2,800, and applied overhead of $2,240. Custom Cabinetry applies overhead at the rate of 80% of direct labor cost. During July, Job 120 is sold (on account) for $22,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $1,000 | $6,000 | $2,500 | $9,500 |
| Direct labor | 2,200 | 3,700 | 2,100 | 8,000 |
| Overhead applied | 1,760 | 2,960 | 1,680 | 6,400 |
| Total | $4,960 | $12,660 | $6,280 | $23,900 |

1. Prepare journal entries for the following in July.
   a. Direct materials used in production.
   b. Direct labor used in production, but not yet paid.
   c. Overhead applied.
   d. The sale of Job 120.
   e. Cost of goods sold for Job 120.

| | General Journal | Debit | Credit |
|---|---|---|---|
| a) | Work in process inventory | 9,500 | |
| | Raw materials inventory | | 9,500 |
| | | | |
| b) | Work in process inventory | 8,000 | |
| | Factory payroll payable | | 8,000 |
| | | | |
| c) | Work in process inventory | 6,400 | |
| | Factory overhead | | 6,400 |
| | | | |
| d) | Accounts receivable | 22,000 | |
| | Sales | | 22,000 |
| | | | |
| e) | Cost of goods sold (Job 120 BI $11,040 + $4,960) | 16,000 | |
| | Finished goods inventory | | 16,000 |
| | | | |

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $6,000, direct labor of $2,800, and applied overhead of $2,240. Custom Cabinetry applies overhead at the rate of 80% of direct labor cost. During July, Job 120 is sold (on account) for $22,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $1,000 | $6,000 | $2,500 | $9,500 |
| Direct labor | 2,200 | 3,700 | 2,100 | 8,000 |
| Overhead applied | 1,760 | 2,960 | 1,680 | 6,400 |
| Total | $4,960 | $12,660 | $6,280 | $23,900 |

2. Compute the July 31 balances of the Work in Process Inventory and the Finished Goods Inventory general ledger accounts.

| Work in Process Inventory | | | |
|---|---|---|---|
| Beg. Inv | 11,040 | | |
| DM | 9,500 | | |
| DL | 8,000 | | |
| OH applied | 6,400 | | |
| Avail for Mfg | 34,940 | | |
| | | Job 120 | 16,000 |
| | | Job 121 | 12,660 |
| End. Inv (Job 122) | 6,280 | | |

| Finished Goods Inventory | | | |
|---|---|---|---|
| Beg. Inv | 0 | | |
| Job 120 | 16,000 | | |
| Job 121 | 12,660 | | |
| Avail for Sale | 28,660 | | |
| | | Job 120 | 16,000 |
| End. Inv (Job 121) | 12,660 | | |

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $3,000, direct labor of $4,000, and applied overhead of $2,800. Custom Cabinetry applies overhead at the rate of 70% of direct labor cost. During July, Job 120 is sold (on account) for $20,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $2,000 | $7,000 | $4,000 | $13,000 |
| Direct labor | 1,400 | 5,000 | 2,600 | 9,000 |
| Overhead applied | 980 | 3,500 | 1,820 | 6,300 |
| Total | $4,380 | $15,500 | $8,420 | $28,300 |

1. Prepare journal entries for the following in July.
   a. Direct materials used in production.
   b. Direct labor used in production, but not yet paid.
   c. Overhead applied.
   d. The sale of Job 120.
   e. Cost of goods sold for Job 120.
2. Compute the July 31 balances of the Work in Process Inventory and the Finished Goods Inventory general ledger accounts.

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $3,000, direct labor of $4,000, and applied overhead of $2,800. Custom Cabinetry applies overhead at the rate of 70% of direct labor cost. During July, Job 120 is sold (on account) for $20,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $2,000 | $7,000 | $4,000 | $13,000 |
| Direct labor | 1,400 | 5,000 | 2,600 | 9,000 |
| Overhead applied | 980 | 3,500 | 1,820 | 6,300 |
| Total | $4,380 | $15,500 | $8,420 | $28,300 |

1. Prepare journal entries for the following in July.
   a. Direct materials used in production.
   b. Direct labor used in production, but not yet paid.
   c. Overhead applied.
   d. The sale of Job 120.
   e. Cost of goods sold for Job 120.

| | General Journal | Debit | Credit |
|---|---|---|---|
| a) | Work in process inventory | 13,000 | |
| | Raw materials inventory | | 13,000 |
| | | | |
| b) | Work in process inventory | 9,000 | |
| | Factory payroll payable | | 9,000 |
| | | | |
| c) | Work in process inventory | 6,300 | |
| | Factory overhead | | 6,300 |
| | | | |
| d) | Accounts receivable | 20,000 | |
| | Sales | | 20,000 |
| | | | |
| e) | Cost of goods sold (Job 120 BI $9,800 + $4,380) | 14,180 | |
| | Finished goods inventory | | 14,180 |
| | | | |

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Custom Cabinetry has one job in process (Job 120) as of June 30; at that time, its job cost sheet reports direct materials of $3,000, direct labor of $4,000, and applied overhead of $2,800. Custom Cabinetry applies overhead at the rate of 70% of direct labor cost. During July, Job 120 is sold (on account) for $20,000. Job 121 is started and completed, and Job 122 is started and still in process at the end of the month. Custom Cabinetry incurs the following costs during July.

| July Product Costs | Job 120 | Job 121 | Job 122 | Total |
|---|---|---|---|---|
| Direct materials | $2,000 | $7,000 | $4,000 | $13,000 |
| Direct labor | 1,400 | 5,000 | 2,600 | 9,000 |
| Overhead applied | 980 | 3,500 | 1,820 | 6,300 |
| Total | $4,380 | $15,500 | $8,420 | $28,300 |

2. Compute the July 31 balances of the Work in Process Inventory and the Finished Goods Inventory general ledger accounts.

| Work in Process Inventory | | | |
|---|---|---|---|
| Beg. Inv | 9,800 | | |
| DM | 13,000 | | |
| DL | 9,000 | | |
| OH applied | 6,300 | | |
| Avail for Mfg | 38,100 | | |
| | | Job 120 | 14,180 |
| | | Job 121 | 15,500 |
| End. Inv (Job 122) | 8,420 | | |

| Finished Goods Inventory | | | |
|---|---|---|---|
| Beg. Inv | 0 | | |
| Job 120 | 14,180 | | |
| Job 121 | 15,500 | | |
| Avail for Sale | 29,680 | | |
| | | Job 120 | 14,180 |
| End. Inv (Job 121) | 15,500 | | |

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# Exercise 2-6 page 70

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Prepare summary journal entries to record the following transactions and events a through h for a company in its first month of operations.

a. Raw materials purchased on account, $90,000.
b. Direct materials used in production, $36,500. Indirect materials used in production, $19,200.
c. Paid cash for factory payroll, $50,000. Of this total, $38,000 is for direct labor and $12,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $11,475.
e. Applied overhead at the rate of 125 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $56,800.
g. Sold jobs on account for $82,000. The jobs had a cost of $56,800.

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a. Raw materials purchased on account, $90,000.
b. Direct materials used in production, $36,500. Indirect materials used in production, $19,200.
c. Paid cash for factory payroll, $50,000. Of this total, $38,000 is for direct labor and $12,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $11,475.
e. Applied overhead at the rate of 125 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $56,800.
g. Sold jobs on account for $82,000. The jobs had a cost of $56,800.

| | General Journal | Debit | Credit |
|---|---|---|---|
| a) | Raw materials inventory | 90,000 | |
| | Accounts payable | | 90,000 |
| | | | |
| b-1) | Work in process inventory | 36,500 | |
| | Raw materials inventory | | 36,500 |
| | | | |
| b-2) | Factory overhead | 19,200 | |
| | Raw materials inventory | | 19,200 |
| | | | |
| c) | Work in process inventory | 38,000 | |
| | Factory overhead | 12,000 | |
| | Cash | | 50,000 |
| | | | |

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a. Raw materials purchased on account, $90,000.
b. Direct materials used in production, $36,500. Indirect materials used in production, $19,200.
c. Paid cash for factory payroll, $50,000. Of this total, $38,000 is for direct labor and $12,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $11,475.
e. Applied overhead at the rate of 125 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $56,800.
g. Sold jobs on account for $82,000. The jobs had a cost of $56,800.

| | General Journal | Debit | Credit |
|---|---|---|---|
| d) | Factory overhead | 11,475 | |
| | Cash | | 11,475 |
| | | | |
| e) | Work in process inventory ($38,000 x 125%) | 47,500 | |
| | Factory overhead | | 47,500 |
| | | | |
| f) | Finished goods inventory | 56,800 | |
| | Work in process inventory | | 56,800 |
| | | | |
| g) | Accounts receivable | 82,000 | |
| | Sales | | 82,000 |
| | | | |
| g-1) | Cost of goods sold | 56,800 | |
| | Finished goods inventory | | 56,800 |
| | | | |

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Prepare summary journal entries to record the following transactions and events a through g for a company in its first month of operations.

a. Raw materials purchased on account, $96,000.
b. Direct materials used in production, $54,000. Indirect materials used in production, $13,000.
c. Paid cash for factory payroll, $47,000. Of this total, $38,000 is for direct labor and $9,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $19,000.
e. Applied overhead at the rate of 120 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $123,800.
g. Sold jobs on account for $173,000. The jobs had a cost of $123,800.

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a. Raw materials purchased on account, $96,000.
b. Direct materials used in production, $54,000. Indirect materials used in production, $13,000.
c. Paid cash for factory payroll, $47,000. Of this total, $38,000 is for direct labor and $9,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $19,000.
e. Applied overhead at the rate of 120 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $123,800.
g. Sold jobs on account for $173,000. The jobs had a cost of $123,800.

| | General Journal | Debit | Credit |
|---|---|---|---|
| a) | Raw materials inventory | 96,000 | |
| | Accounts payable | | 96,000 |
| | | | |
| b-1) | Work in process inventory | 54,000 | |
| | Raw materials inventory | | 54,000 |
| | | | |
| b-2) | Factory overhead | 13,000 | |
| | Raw materials inventory | | 13,000 |
| | | | |
| c) | Work in process inventory | 38,000 | |
| | Factory overhead | 9,000 | |
| | Cash | | 47,000 |
| | | | |

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a. Raw materials purchased on account, $96,000.
b. Direct materials used in production, $54,000. Indirect materials used in production, $13,000.
c. Paid cash for factory payroll, $47,000. Of this total, $38,000 is for direct labor and $9,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $19,000.
e. Applied overhead at the rate of 120 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $123,800.
g. Sold jobs on account for $173,000. The jobs had a cost of $123,800.

| | General Journal | Debit | Credit |
|---|---|---|---|
| d) | Factory overhead | 19,000 | |
| | Cash | | 19,000 |
| | | | |
| e) | Work in process inventory ($38,000 x 120%) | 45,600 | |
| | Factory overhead | | 45,600 |
| | | | |
| f) | Finished goods inventory | 123,800 | |
| | Work in process inventory | | 123,800 |
| | | | |
| g) | Accounts receivable | 173,000 | |
| | Sales | | 173,000 |
| | | | |
| g-1) | Cost of goods sold | 123,800 | |
| | Finished goods inventory | | 123,800 |
| | | | |

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a. Raw materials purchased on account, $96,000.
b. Direct materials used in production, $54,000. Indirect materials used in production, $13,000.
c. Paid cash for factory payroll, $47,000. Of this total, $38,000 is for direct labor and $9,000 is for indirect labor.
d. Paid cash for other actual overhead costs, $19,000.
e. Applied overhead at the rate of 120 percent of direct labor cost.
f. Transferred cost of jobs completed to finished goods, $123,800.
g. Sold jobs on account for $173,000. The jobs had a cost of $123,800.
h. Close underapplied or overapplied overhead to cost of goods sold.

| Factory Overhead | | | |
|---|---|---|---|
| Ind. Mtls. | 13,000 | | |
| Ind. Lbr. | 9,000 | | |
| Other OH | 19,000 | | |
| | | OH Applied | 45,600 |
| | | Overapplied OH | 4,600 |

| | General Journal | Debit | Credit |
|---|---|---|---|
| h) | Factory overhead | 4,600 | |
| | Cost of goods sold | | 4,600 |
| | | | |

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# Exercise 2-7 page 70

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

Compute the following amounts for the month of May using T-accounts.

1) Cost of direct materials used
2) Cost of direct labor used
3) Cost of goods manufactured
4) Cost of goods sold
5) Gross profit
6) Overapplied or underapplied overhead

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |

**Activities and information for May:**

| | |
|---|---|
| Raw materials purchases (paid with cash) | 210,000 |
| Factory payroll (paid with cash) | 345,000 |
| Factory overhead | |
| Indirect materials | 15,000 |
| Indirect labor | 80,000 |
| Other overhead costs | 120,000 |
| Sales (received in cash) | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | 70% |

**Raw Materials (RM)**

| | | | |
|---|---|---|---|
| RM - April 30 | 43,000 | | |
| RM Purch | 210,000 | | |
| | | 15,000 | Ind. Mtls. |
| | | 186,000 | DM used |
| RM - May 31 | 52,000 | | |

**Work in Process (WIP)**

| | | | |
|---|---|---|---|
| WIP - April 30 | 10,200 | | |
| DM used | 186,000 | | |
| DL Used | 265,000 | | |
| OH applied | 185,500 | | |
| | | 625,400 | CofGM |
| WIP - May 31 | 21,300 | | |

**Factory Payroll Payable**

| | | | |
|---|---|---|---|
| Factory PR paid | 345,000 | | |
| | | 80,000 | Ind. Labor |
| | | 265,000 | DL Used |

**Finished Goods (FG)**

| | | | |
|---|---|---|---|
| FG - April 30 | 63,000 | | |
| CofGM | 625,400 | | |
| | | 652,800 | CofGS |
| FG - May 31 | 35,600 | | |

**Factory Overhead**

| | | | |
|---|---|---|---|
| Ind. Mtls. | 15,000 | | |
| Ind. Labor | 80,000 | | |
| Other OH | 120,000 | | |
| | | 185,500 | OH applied ($265,000 x 70%) |
| Underapplied OH | 29,500 | | |

**Income Statement (partial)**

| | |
|---|---|
| Sales | $1,400,000 |
| Cost of Goods Sold | (652,800) |
| Gross profit | $747,200 |

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on direct labor cost | | 55% |

Compute the following amounts for the month of May using T-accounts.

1) Cost of direct materials used
2) Cost of direct labor used
3) Cost of goods manufactured
4) Cost of goods sold
5) Gross profit
6) Overapplied or underapplied overhead

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| Inventories | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |

**Activities and information for May:**

| | |
|---|---|
| Raw materials purchases (paid with cash) | $197,000 |
| Factory payroll (paid with cash) | 177,000 |
| Factory overhead | |
| Indirect materials | 29,600 |
| Indirect labor | 26,600 |
| Other overhead costs | 41,600 |
| Sales (received in cash) | 930,000 |
| Predetermined overhead rate based on direct labor cost | 55% |

**Raw Materials (RM)**

| | | | |
|---|---|---|---|
| RM - April 30 | 47,000 | | |
| RM Purch | 197,000 | | |
| | | 29,600 | Ind. mtls. |
| | | 176,400 | DM used |
| RM - May 31 | 38,000 | | |

**Work in Process (WIP)**

| | | | |
|---|---|---|---|
| WIP - April 30 | 10,800 | | |
| DM used | 176,400 | | |
| DL used | 150,400 | | |
| OH applied | 82,720 | | |
| | | 398,720 | CofGM |
| WIP - May 31 | 21,600 | | |

**Factory Payroll Payable**

| | | | |
|---|---|---|---|
| Total PR paid | 177,000 | | |
| | | 26,600 | Ind. labor |
| | | 150,400 | DL used |

**Finished Goods (FG)**

| | | | |
|---|---|---|---|
| FG - April 30 | 56,000 | | |
| CofGM | 398,720 | | |
| | | 420,520 | CofGS |
| FG - May 31 | 34,200 | | |

**Factory Overhead**

| | | | |
|---|---|---|---|
| Ind. mtls. | 29,600 | | |
| Ind. labor | 26,600 | | |
| Other OH | 41,600 | | |
| | | 82,720 | OH applied ($150,400 x 55%) |

**Income Statement (partial)**

| | |
|---|---|
| Sales | $930,000 |
| Cost of Goods Sold | (420,520) |
| Gross profit | $509,480 |

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Exercise 2-7 page 70 Alternate

| | | |
|---|---|---|
| 1) Cost of direct materials used. | $176,400 | |
| 2) Cost of direct labor used. | 150,400 | |
| 3) Cost of goods manufactured. | 398,720 | |
| 4) Cost of goods sold (Ignore any overapplied or underapplied overhead) | 420,520 | |
| 5) Gross profit. | 509,480 | |
| 6) Over (under) applied overhead. | 15,080 | Underapplied |

| Raw Materials (RM) | | | |
|---|---|---|---|
| RM - April 30 | 47,000 | | |
| RM Purch | 197,000 | | |
| | | 29,600 | Ind. mtls. |
| | | 176,400 | DM used |
| RM - May 31 | 38,000 | | |

| Work in Process (WIP) | | | |
|---|---|---|---|
| WIP - April 30 | 10,800 | | |
| DM used | 176,400 | | |
| DL used | 150,400 | | |
| OH applied | 82,720 | | |
| | | 398,720 | CofGM |
| WIP - May 31 | 21,600 | | |

| Factory Payroll Payable | | | |
|---|---|---|---|
| Total PR paid | 177,000 | | |
| | | 26,600 | Ind. labor |
| | | 150,400 | DL used |
| | | | |

| Finished Goods (FG) | | | |
|---|---|---|---|
| FG - April 30 | 56,000 | | |
| CofGM | 398,720 | | |
| | | 420,520 | CofGS |
| FG - May 31 | 34,200 | | |

| Factory Overhead | | | |
|---|---|---|---|
| Ind. mtls. | 29,600 | | |
| Ind. labor | 26,600 | | |
| Other OH | 41,600 | | |
| | | 82,720 | OH applied |
| Underapplied | 15,080 | | |

| Income Statement (partial) | |
|---|---|
| Sales | $930,000 |
| Cost of Goods Sold | (420,520) |
| Gross profit | $509,480 |

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# Exercise 2-8 page 70

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

Prepare journal entries for the following events for the month of May.

1) Raw materials purchases for cash.
2) Direct materials usage.
3) Indirect materials usage.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

| Raw Materials (RM) | | | |
|---|---|---|---|
| RM - April 30 | 43,000 | | |
| RM Purch | 210,000 | | |
| | | 15,000 | Ind. Mtls. |
| | | 186,000 | DM used |
| RM - May 31 | 52,000 | | |

1) Raw materials purchases for cash.
2) Direct materials usage.
3) Indirect materials usage.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Raw materials inventory | 210,000 | |
| | Cash | | 210,000 |
| | | | |
| 2) | Work in process inventory | 186,000 | |
| | Raw materials inventory | | 186,000 |
| | | | |
| 3) | Factory overhead | 15,000 | |
| | Raw materials inventory | | 15,000 |
| | | | |

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on direct labor cost | | 55% |

Prepare journal entries for the following events for the month of May.

1) Raw materials purchases for cash.
2) Direct materials usage.
3) Indirect materials usage.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate | | 55% |

1) Raw materials purchases for cash.
2) Direct materials usage.
3) Indirect materials usage.

| Raw Materials (RM) | | | |
|---|---|---|---|
| RM - April 30 | 47,000 | | |
| RM Purch | 197,000 | | |
| | | 29,600 | Ind. Mtls. |
| | | 176,400 | DM used |
| RM - May 31 | 38,000 | | |

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Raw materials inventory | 197,000 | |
| | Cash | | 197,000 |
| | | | |
| 2) | Work in process inventory | 176,400 | |
| | Raw materials inventory | | 176,400 |
| | | | |
| 3) | Factory overhead | 29,600 | |
| | Raw materials inventory | | 29,600 |
| | | | |

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# Exercise 2-9 page 70

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

Prepare journal entries for the following events for the month of May.

1) Direct labor usage.
2) Indirect labor usage.
3) Total payroll paid in cash.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

| Factory Payroll Payable | | | |
|---|---|---|---|
| | | 265,000 | DL Used |
| | | 80,000 | Ind. Labor |
| Total PR paid | 345,000 | | |
| | | - 0 - | |

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Work in process inventory | 265,000 | |
| | Factory payroll payable | | 265,000 |
| | | | |
| 2) | Factory overhead | 80,000 | |
| | Factory payroll payable | | 80,000 |
| | | | |
| 3) | Factory payroll payable | 345,000 | |
| | Cash | | 345,000 |
| | | | |

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | **April 30** | **May 31** |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on direct labor cost | | 55% |

Prepare journal entries for the following events for the month of May.

1) Direct labor usage.
2) Indirect labor usage.
3) Total payroll paid in cash.

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| Inventories | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate | | 55% |

| Factory Payroll Payable | |
|---|---|
| | 150,400 DL Used |
| | 26,600 Ind. Labor |
| Total PR paid 177,000 | |
| | - 0 - |

1) Direct labor usage. ($177,000 - $26,600)
2) Indirect labor usage.
3) Total payroll paid in cash.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Work in process inventory | 150,400 | |
| | Factory payroll payable | | 150,400 |
| | | | |
| 2) | Factory overhead | 26,600 | |
| | Factory payroll payable | | 26,600 |
| | | | |
| 3) | Factory payroll payable | 177,000 | |
| | Cash | | 177,000 |
| | | | |

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# Exercise 2-10 page 70

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

Prepare journal entries for the following events for the month of May.

1) Factory overhead excluding indirect materials and indirect labor (record credit to Other Accounts).
2) Application of overhead to work in process.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

| Factory Overhead | | | |
|---|---|---|---|
| Ind. Mtls. | 15,000 | | |
| Ind. Labor | 80,000 | | |
| Other OH | 120,000 | | |
| | | 185,500 | OH applied |
| Underapplied OH | 29,500 | | |

| | |
|---|---|
| Total Factory payroll | $345,000 |
| Indirect labor | 80,000 |
| Direct labor | $265,000 |

Prepare journal entries for the following events for the month of May.

1) Factory overhead excluding indirect materials and indirect labor (record credit to Other Accounts).
2) Application of overhead to work in process.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Factory overhead | 120,000 | |
| | Other accounts | | 120,000 |
| | | | |
| 2) | Work in process inventory ($265,000 x 70%) | 185,500 | |
| | Factory overhead | | 185,500 |
| | | | |

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on direct labor cost | | 55% |

Prepare journal entries for the following events for the month of May.

1) Factory overhead excluding indirect materials and indirect labor (record credit to Other Accounts).
2) Application of overhead to work in process.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on DL cost | | 55% |

| Factory Overhead | | | |
|---|---|---|---|
| Ind. Mtls. | 29,600 | | |
| Ind. Labor | 26,600 | | |
| Other OH | 41,600 | | |
| | | 82,720 | OH applied |
| Underapplied OH | 15,080 | | |

| | |
|---|---|
| Total Factory payroll | $177,000 |
| Indirect labor | 26,600 |
| Direct labor | $150,400 |

1) Factory overhead excluding indirect materials and indirect labor (record credit to Other Accounts).
2) Application of overhead to work in process.

| | General Journal | Debit | Credit |
|---|---|---|---|
| 1) | Factory overhead | 41,600 | |
| | Other accounts | | 41,600 |
| | | | |
| 2) | Work in process inventory ($150,400 DL x 55%) | 82,720 | |
| | Factory overhead | | 82,720 |
| | | | |

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# Exercise 2-11 page 71

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In December 2016, Shire Computer's management establishes the 2017 predetermined overhead rate based on direct labor cost. The information used in setting this rate includes estimates that the company will incur $747,500 of overhead costs and $575,000 of direct labor cost in year 2017. During March 2017, Shire began and completed Job No. 13-56.

1) What is the predetermined overhead rate for 2017?

| | | |
|---|---|---|
| Overhead costs | $747,500 | 130% |
| Direct labor costs | $575,000 | |

2) Use the information on the following job cost sheet to determine the total cost of Job 13-56.

**JOB COST SHEET**

Customer's Name Keiser Co. Job No. 13-56
Job Description 5 plasma monitors - 61 inch

| | Direct Materials | | Direct Labor | | OH Costs Applied | |
|---|---|---|---|---|---|---|
| Date | Req. No. | Amount | Time-Ticket | Amount | Rate | Amount |
| Mar. 8 | 4-129 | $5,000 | T-306 | $700 | | |
| Mar. 11 | 4-142 | 7,020 | T-307 | 1,250 | | |
| Mar. 18 | 4-167 | 3,330 | T-308 | 1,250 | | |
| | | $15,350 | | $3,200 | 130% | $4,160 |

| | |
|---|---|
| Direct Materials | $15,350 |
| Direct Labor | 3,200 |
| OH Costs Applied | 4,160 |
| Total cost of Job 13-56 | $22,710 |

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In December 2016, Shire Computer's management establishes the 2017 predetermined overhead rate based on direct labor cost. The information used in setting this rate includes estimates that the company will incur $734,400 of overhead costs and $510,000 of direct labor cost in year 2017. During March 2017, Shire began and completed Job No. 13-56.

1) What is the predetermined overhead rate for 2017?

| | | |
|---|---|---|
| Estimated Overhead costs | $734,400 | 144% |
| Estmated Direct labor costs | $510,000 | |

2) Use the information on the following job cost sheet to determine the total cost of the job.

**JOB COST SHEET**

Customer's Name Keiser Co. Job No. 13-56
Job Description 5 plasma monitors - 61 inch

| | Direct Materials | | Direct Labor | | OH Costs Applied | |
|---|---|---|---|---|---|---|
| Date | Req. No. | Amount | Time-Ticket No. | Amount | Rate | Amount |
| Mar. 8 | 4-129 | $5,000 | T-306 | $600 | | |
| Mar. 11 | 4-142 | 6,750 | T-307 | 8,100 | | |
| Mar. 18 | 4-167 | 3,000 | T-308 | 3,600 | | |
| | | $14,750 | | $12,300 | 144% | $17,712 |

| | |
|---|---|
| Direct Materials | $14,750 |
| Direct Labor | 12,300 |
| OH Costs Applied | 17,712 |
| Total cost of Job 13-56 | $44,762 |

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# Exercise 2-12 page 71

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Lorenzo Company uses a job order cost accounting system that charges overhead to jobs on the basis of direct material cost. At year-end, the Work in Process Inventory account shows the following.

| Date | Explanation | Debit | Credit | Balance |
|---|---|---|---|---|
| Dec. 31 | Direct materials cost | 1,500,000 | | 1,500,000 |
| 31 | Direct labor cost | 300,000 | | 1,800,000 |
| 31 | Overhead costs | 600,000 | | 2,400,000 |
| 31 | To finished goods | | 2,350,000 | 50,000 |

1) Determine the overhead rate used (based on direct material cost).

$$\frac{\text{Overhead costs}}{\text{Direct material costs}} \quad \frac{\$600{,}000}{\$1{,}500{,}000} \qquad \text{40\% of Direct material costs}$$

2) Only one job remained in the work in process inventory at December 31, 2017. Its direct materials cost is $30,000. How much direct labor cost and overhead cost are assigned to it?

Direct Materials + Direct Labor + OH Applied = $50,000
DM + DL + 40% DM = $50,000
$30,000 + DL + (40% x $30,000) = $50,000
$30,000 + DL + $12,000 = $50,000
DL = $8,000

| | |
|---|---|
| Direct Materials | $30,000 |
| Direct Labor | 8,000 |
| Applied OH (40% of $30,000) | 12,000 |
| Total cost of job | $50,000 |

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Lorenzo Company uses a job order cost accounting system that charges overhead to jobs on the basis of direct material cost. At year-end, the Work in Process Inventory account shows the following.

| | Explanation | Debit | Credit | Balance |
|---|---|---|---|---|
| Dec. 31 | Direct materials cost | 1,300,000 | | 1,300,000 |
| 31 | Direct labor cost | 260,000 | | 1,560,000 |
| 31 | Overhead costs | 650,000 | | 2,210,000 |
| 31 | To finished goods | | 2,145,000 | 65,000 |

1) Determine the overhead rate used (based on direct material cost).

| | | |
|---|---|---|
| Overhead costs | $650,000 | 50% of Direct material costs |
| Direct material costs | $1,300,000 | |

2) Only one job remained in the work in process inventory at December 31, 2017. Its direct materials cost is $30,000. How much direct labor cost and overhead cost are assigned to it?

Direct Materials + Direct Labor + OH Applied = $65,000
DM + DL + 50% DM = $65,000
$30,000 + DL + (50% x $30,000) = $65,000
$30,000 + DL + $15,000 = $65,000
DL = $20,000

| | |
|---|---|
| Direct Materials | $30,000 |
| Direct Labor | 20,000 |
| Applied OH (50% of $30,000) | 15,000 |
| | $65,000 |

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# Exercise 2-13 page 71

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

Prepare the journal entry to close overapplied or underapplied overhead to Cost of Goods Sold.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $43,000 | $52,000 |
| Work in process | 10,200 | 21,300 |
| Finished goods | 63,000 | 35,600 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 210,000 |
| Factory payroll (paid with cash) | | 345,000 |
| Factory overhead | | |
| Indirect materials | | 15,000 |
| Indirect labor | | 80,000 |
| Other overhead costs | | 120,000 |
| Sales (received in cash) | | 1,400,000 |
| Predetermined overhead rate based on direct labor cost | | 70% |

| Factory Overhead | | | |
|---|---|---|---|
| Ind. Mtls. | 15,000 | | |
| Ind. Labor | 80,000 | | |
| Other OH | 120,000 | | |
| | | 185,500 | OH applied |
| Underapplied OH | 29,500 | | |

| | |
|---|---|
| Total Factory payroll | $345,000 |
| Indirect labor | 80,000 |
| Direct labor | $265,000 |

$265,000 x 70% = $185,500 OH Applied

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 29,500 | |
| Factory Overhead | | 29,500 |
| | | |

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The following information is available for Lock-Tite Company, which produces special-order security products and uses a job order cost accounting system.

| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on direct labor cost | | 55% |

Prepare the journal entry to close overapplied or underapplied overhead to Cost of Goods Sold.

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| **Inventories** | April 30 | May 31 |
|---|---|---|
| Raw materials | $47,000 | $38,000 |
| Work in process | 10,800 | 21,600 |
| Finished goods | 56,000 | 34,200 |
| **Activities and information for May:** | | |
| Raw materials purchases (paid with cash) | | 197,000 |
| Factory payroll (paid with cash) | | 177,000 |
| Factory overhead | | |
| Indirect materials | | 29,600 |
| Indirect labor | | 26,600 |
| Other overhead costs | | 41,600 |
| Sales (received in cash) | | 930,000 |
| Predetermined overhead rate based on DL cost | | 55% |

| Factory Overhead | | | |
|---|---|---|---|
| Ind. Mtls. | 29,600 | | |
| Ind. Labor | 26,600 | | |
| Other OH | 41,600 | | |
| | | 82,720 | OH applied |
| Underapplied OH | 15,080 | | |

| | |
|---|---|
| Total Factory payroll | $177,000 |
| Indirect labor | 26,600 |
| Direct labor | $150,400 |

$150,400 x 55% = $82,720 OH applied

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 15,080 | |
| Factory Overhead | | 15,080 |
| | | |

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# Exercise 2-14 page 71

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| | Storm Concert Promotions | Valle Home Builders |
|---|---|---|
| Actual indirect materials costs | $22,000 | $12,500 |
| Actual indirect labor costs | 46,000 | 46,500 |
| Other overhead costs | 17,000 | 47,000 |
| Overhead applied | 88,200 | 105,200 |

Record the journal entry to close over- or underapplied factory overhead to Cost of Goods Sold for each of the two companies.

| Factory Overhead | | | |
|---|---|---|---|
| Actual Ind. Mtls. | 22,000 | | |
| Actual Ind. Lbr. | 46,000 | | |
| Other OH costs | 17,000 | | |
| | | OH applied | 88,200 |
| | | Overapplied OH | 3,200 |

| General Journal | Debit | Credit |
|---|---|---|
| Factory Overhead | 3,200 | |
| Cost of Goods Sold | | 3,200 |
| | | |

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| | Storm Concert Promotions | Valle Home Builders |
|---|---|---|
| Actual indirect materials costs | $22,000 | $12,500 |
| Actual indirect labor costs | 46,000 | 46,500 |
| Other overhead costs | 17,000 | 47,000 |
| Overhead applied | 88,200 | 105,200 |

Record the journal entry to close over- or underapplied factory overhead to Cost of Goods Sold for each of the two companies.

| Factory Overhead | | | |
|---|---|---|---|
| Actual Ind. Mtls. | 12,500 | | |
| Actual Ind. Lbr. | 46,500 | | |
| Other OH costs | 47,000 | | |
| | | OH applied | 105,200 |
| Underapplied OH | 800 | | |

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 800 | |
| Factory Overhead | | 800 |
| | | |

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| | Storm Concert Promotions | Valle Home Builders |
|---|---|---|
| Actual indirect materials costs | $11,600 | $7,300 |
| Actual indirect labor costs | 55,400 | 45,600 |
| Other overhead costs | 17,000 | 49,900 |
| Overhead applied | 91,200 | 97,500 |

Record the journal entry to close over- or underapplied factory overhead to Cost of Goods Sold for each of the two companies.

| Factory Overhead | | | |
|---|---|---|---|
| Actual Ind. Mtls. | 11,600 | | |
| Actual Ind. Lbr. | 55,400 | | |
| Other OH costs | 17,000 | | |
| | | OH applied | 91,200 |
| | | Overapplied OH | 7,200 |
| OH incurred | 84,000 | | |

| General Journal | Debit | Credit |
|---|---|---|
| Factory Overhead | 7,200 | |
| Cost of Goods Sold | | 7,200 |
| | | |

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| | Storm Concert Promotions | Valle Home Builders |
|---|---|---|
| Actual indirect materials costs | $11,600 | $7,300 |
| Actual indirect labor costs | 55,400 | 45,600 |
| Other overhead costs | 17,000 | 49,900 |
| Overhead applied | 91,200 | 97,500 |

Record the journal entry to close over- or underapplied factory overhead to Cost of Goods Sold for each of the two companies.

| Factory Overhead | | | |
|---|---|---|---|
| Actual Ind. Mtls. | 7,300 | | |
| Actual Inc. Lbr. | 45,600 | | |
| Other OH costs | 49,900 | | |
| | | OH applied | 97,500 |
| Underapplied OH | 5,300 | | |

OH incurred 102,800

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 5,300 | |
| Factory Overhead | | 5,300 |
| | | |

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# Exercise 2-15 page 72

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In December 2016, Custom Mfg. established its predetermined overhead rate for jobs produced during year 2017 by using the following cost predictions: overhead costs, $750,000, and direct material costs, $625,000. At year end 2017, the company's records show that actual overhead costs for the year are $830,000. Actual direct material cost had been assigned to jobs as follows.

| | |
|---|---|
| Jobs completed and sold | $513,750 |
| Jobs in finished goods inventory | 102,750 |
| Jobs in work in process | 68,500 |
| Total actual direct material cost | $685,000 |

Determine the overhead rate used (based on direct material cost).

| | | |
|---|---|---|
| Estimated Overhead Costs | $750,000 | 120% of Direct Material cost |
| Estimated Direct Material Cost | $625,000 | |

**Set up the Factory overhead T-account and enter the overhead costs incurred and the amounts applied to jobs during the year using the predetermined overhead rate.** Determine whether overhead is overapplied or underapplied (and the amount) during the year.

| Factory Overhead | | | | |
|---|---|---|---|---|
| Actual OH Incurred | 830,000 | | | |
| | | OH Applied | 822,000 | ($685,000 x 120%) |
| Underapplied OH | 8,000 | | | |

Prepare the adjusting entry to allocate any over- or underapplied overhead to Cost of Goods Sold.

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 8,000 | |
| Factory Overhead | | 8,000 |

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In December 2016, Custom Mfg. established its predetermined overhead rate for jobs produced during year 2017 by using the following cost predictions: overhead costs, $1,240,000, and direct material costs, $400,000. At year end 2017, the company's records show that actual overhead costs for the year are $1,640,000. Actual direct material cost had been assigned to jobs as follows.

| | | |
|---|---|---|
| Jobs completed and sold | $400,000 | |
| Jobs in finished goods inventory | 78,000 | |
| Jobs in work in process | 42,000 | |
| Total actual direct material cost | $520,000 | x 310% = $1,612,000 applied |

The predetermined overhead rate is based on estimated costs and activities.

| | | |
|---|---|---|
| Estimated Overhead Costs | $1,240,000 | 310% of Direct Material cost |
| Estimated Direct Material Cost | $400,000 | |

**Set up the Factory overhead T-account and enter the overhead costs incurred and the amounts applied to jobs during the year using the predetermined overhead rate.** Determine whether overhead is overapplied or underapplied (and the amount) during the year.

| Factory Overhead | | | |
|---|---|---|---|
| Actual OH | 1,640,000 | OH Applied | 1,612,000 |
| Underapplied OH | 28,000 | | |

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In December 2016, Custom Mfg. established its predetermined overhead rate for jobs produced during year 2017 by using the following cost predictions: overhead costs, $1,240,000, and direct material costs, $400,000. At year end 2017, the company's records show that actual overhead costs for the year are $1,640,000. Actual direct material cost had been assigned to jobs as follows.

| | | |
|---|---|---|
| Jobs completed and sold | $400,000 | |
| Jobs in finished goods inventory | 78,000 | |
| Jobs in work in process | 42,000 | |
| Total actual direct material cost | $520,000 | x 310% = $1,612,000 applied |

| | | |
|---|---|---|
| Estimated Overhead Costs | $1,240,000 | 310% of Direct Material cost |
| Estimated Direct Material Cost | $400,000 | |

| Factory Overhead | | | |
|---|---|---|---|
| Actual OH | 1,640,000 | | |
| | | OH Applied | 1,612,000 |
| Underapplied OH | 28,000 | | |

Prepare the adjusting entry to allocate any over- or underapplied overhead to Cost of Goods Sold.

| General Journal | Debit | Credit |
|---|---|---|
| Cost of Goods Sold | 28,000 | |
| Factory Overhead | | 28,000 |
| | | |

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# Exercise 2-16 page 72

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In December 2016, Infodeo established its predetermined overhead rate for movies produced during year 2017 by using the following cost predictions: overhead costs, $1,680,000, and direct labor costs, $480,000. At year end 2017, the company's records show that actual overhead costs for the year are $1,652,000. Actual direct labor cost had been assigned to jobs as follows.

| | |
|---|---|
| Movies completed and released | $400,000 |
| Movies still in production | 50,000 |
| Total actual direct labor cost | $475,000 |

Determine the overhead rate used (based on direct labor cost).

$$\frac{\text{Budgeted Overhead Costs}}{\text{Budgeted Direct Labor Cost}} \quad \frac{\$1{,}680{,}000}{\$480{,}000} \qquad 350\% \text{ of Direct Labor cost}$$

Set up a T-account for Factory overhead. Enter the overhead costs incurred and the amounts applied to movies during the year using the predetermined overhead rate and determine whether overhead is overapplied or underapplied (and the amount) during the year.

| Factory Overhead | | | | |
|---|---|---|---|---|
| Actual OH | 1,652,000 | | | |
| | | OH Applied | 1,662,500 | ($475,000 x 350%) |
| | | Overapplied OH | 10,500 | |

Prepare the adjusting entry to allocate any over- or underapplied overhead to Cost of Goods Sold.

| General Journal | Debit | Credit |
|---|---|---|
| Factory Overhead | 10,500 | |
| Cost of Goods Sold | | 10,500 |
| | | |

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In December 2016, Infodeo established its predetermined overhead rate for movies produced during year 2017 by using the following cost predictions: overhead costs, $2,592,000, and direct labor costs, $480,000. At year end 2017, the company's records show that actual overhead costs for the year are $3,560,000. Actual direct labor cost had been assigned to jobs as follows.

| | |
|---|---|
| Movies completed and released | $600,000 |
| Movies still in production | 72,000 |
| Total actual direct labor cost | $672,000 |

The predetermined overhead rate is based on budgeted costs and activities.

| | | |
|---|---|---|
| Budgeted Overhead Costs | $2,592,000 | 540% of Direct Labor cost |
| Budgeted Direct Labor Cost | $480,000 | |

Set up a T-account for Factory overhead. Enter the overhead costs incurred and the amounts applied to movies during the year using the predetermined overhead rate and determine whether overhead is overapplied or underapplied (and the amount) during the year.

| Factory Overhead | | | | |
|---|---|---|---|---|
| Actual OH | 3,560,000 | OH Applied | 3,628,800 | = $672,000 Direct Labor x 540% |
| | | Overapplied OH | 68,800 | |

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In December 2016, Infodeo established its predetermined overhead rate for movies produced during year 2017 by using the following cost predictions: overhead costs, $2,592,000, and direct labor costs, $480,000. At year end 2017, the company's records show that actual overhead costs for the year are $3,560,000. Actual direct labor cost had been assigned to jobs as follows.

| | |
|---|---|
| Movies completed and released | $600,000 |
| Movies still in production | 72,000 |
| Total actual direct labor cost | $672,000 |

| | | |
|---|---|---|
| Budgeted Overhead Costs | $2,592,000 | 540% of Direct Labor cost |
| Budgeted Direct Labor Cost | $480,000 | |

| Factory Overhead | | | | |
|---|---|---|---|---|
| Actual OH | 3,560,000 | OH Applied | 3,628,800 | = $672,000 Direct Labor x 540% |
| | | Overapplied OH | 68,800 | |

Prepare the adjusting entry to allocate any over- or underapplied overhead to Cost of Goods Sold.

| General Journal | Debit | Credit |
|---|---|---|
| Factory Overhead | 68,800 | |
| Cost of Goods Sold | | 68,800 |
| | | |

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# Exercise 2-17 page 72

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Moonrise Bakery applies factory overhead based on direct labor costs. The company incurred the following costs during 2017: direct materials costs, $650,000; direct labor costs, $3,000,000; and factory overhead costs applied, $1,800,000.

1. Determine the company's predetermined overhead rate for 2017.
2. Assuming that the company's $71,000 ending Work in Process Inventory account for 2017 had $20,000 of direct labor costs, determine the inventory's direct materials costs.
3. Assuming that the company's $490,000 ending Finished Goods Inventory account for 2017 had $250,000 of direct materials costs, determine the inventory's direct labor costs and its overhead costs.

| Work in Process Inventory | | | |
|---|---|---|---|
| DM Used | 650,000 | | |
| DL Used | 3,000,000 | | |
| Fact OH | 1,800,000 | | |
| Total | 5,450,000 | | |
| | | CofGM | 5,379,000 |
| End WIP | 71,000 | | |

DL + OH applied = $240,000
DL + .6 DL = $240,000
1.6DL = $240,000
DL = $150,000

| | | |
|---|---|---|
| Applied Overhead | $1,800,000 | = 60% of Direct Labor Cost |
| Direct Labor Used | $3,000,000 | |

| | |
|---|---|
| Direct Materials | $39,000 |
| Direct Labor | 20,000 |
| OH Applied | $20,000 x .6 = 12,000 |
| Ending WIP | $71,000 |

| | |
|---|---|
| Direct Materials | $250,000 |
| Direct Labor | $240,000 / 1.6 = 150,000 |
| OH Applied | $150,000 x .6 = 90,000 |
| Ending FG | $490,000 |

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Moonrise Bakery applies factory overhead based on direct labor costs. The company incurred the following costs during 2017: direct materials costs, $700,000; direct labor costs, $2,000,000; and factory overhead costs applied, $1,400,000.

1. Determine the company's predetermined overhead rate for 2017.
2. Assuming that the company's $100,000 ending Work in Process Inventory account for 2017 had $40,000 of direct labor costs, determine the inventory's direct materials costs.
3. Assuming that the company's $500,000 ending Finished Goods Inventory account for 2017 had $140,000 of direct materials costs, determine the inventory's direct labor costs and its overhead costs.

| Work in Process Inventory | | | |
|---|---|---|---|
| DM Used | 700,000 | | |
| DL Used | 2,000,000 | | |
| Fact OH | 1,400,000 | | |
| Total | 4,100,000 | | |
| | | CofGM | 4,000,000 |
| End WIP | 100,000 | | |

DL + OH applied = $340,000
DL + .7 DL = $340,000
1.7DL = $340,000
DL = $200,000

| | |
|---|---|
| Applied Overhead | $1,400,000 |
| Direct Labor Used | $2,000,000 |

= 70% of Direct Labor Cost

| | |
|---|---|
| Direct Materials | $32,000 |
| Direct Labor | 40,000 |
| OH Applied | $40,000 x .7 = 28,000 |
| Ending WIP | $100,000 |

| | |
|---|---|
| Direct Materials | $160,000 |
| Direct Labor | $340,000 / 1.7 = 200,000 |
| OH Applied | $200,000 x .7 = 140,000 |
| Ending FG | $500,000 |

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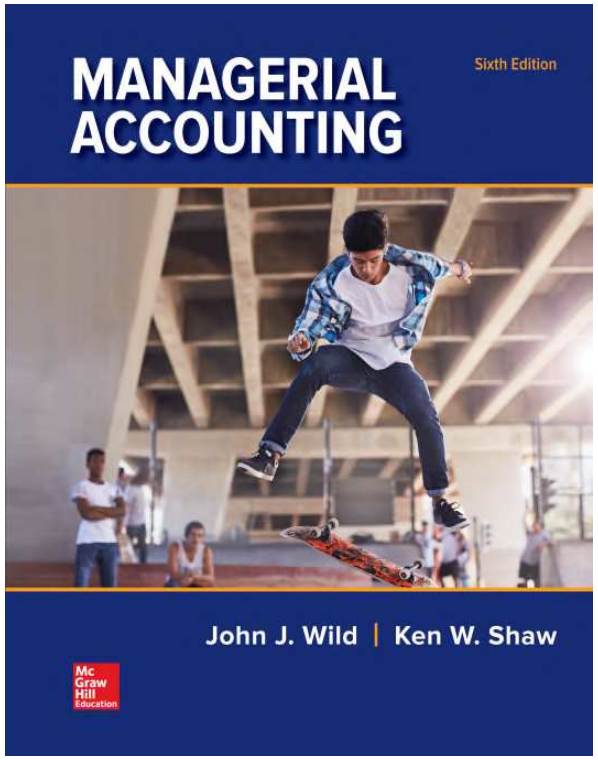
# Job Order Costing and Analysis

Chapter 2




**Wild, Shaw, and Chiappetta**

**Managerial Accounting**

**6th Edition**

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# Chapter 2 Learning Objectives

**CONCEPTUAL**

**C1** Describe important features of job order production.

**C2** Explain job cost sheets and how they are used in job order costing.

**ANALYTICAL**

**A1** Apply job order costing in pricing services.

**PROCEDURAL**

**P1** Describe and record the flow of materials costs in job order costing.

**P2** Describe and record the flow of labor costs in job order costing.

**P3** Describe and record the flow of overhead costs in job order costing.

**P4** Determine adjustments for overapplied and underapplied factory overhead.

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# Learning Objective

C1:
Describe important features of job order production.

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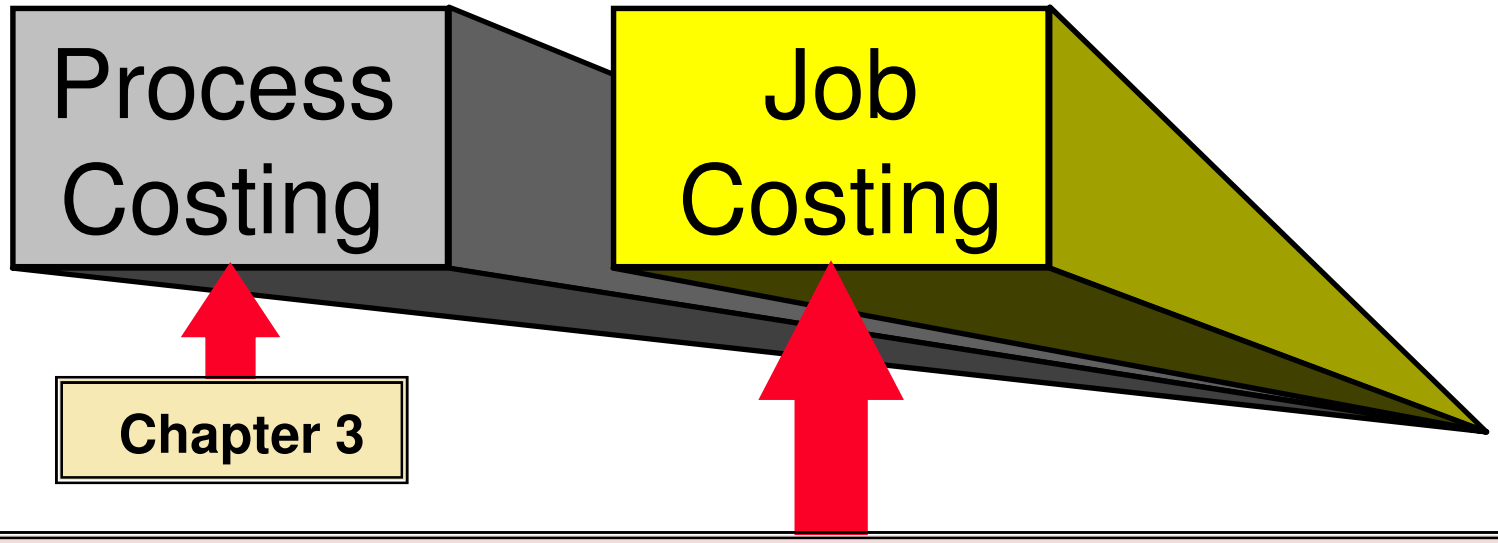
# Cost Accounting Systems




- **Used for production of large, unique, or high-cost items.**
- **Built to order rather than mass produced.**
- **Many costs can be directly traced to each job.**

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**Learning Objective C1:** Describe important features of job order production.

# Job Order Production

Exhibit 2.1

| Job Order Operations | Process Operations |
|---|---|
| • Custom orders<br>• Heterogeneous products and services<br>• Low production volume<br>• High product flexibility<br>• Low to medium standardization | • Repetitive procedures<br>• Homogeneous products and services<br>• High production volume<br>• Low product flexibility<br>• High standardization |

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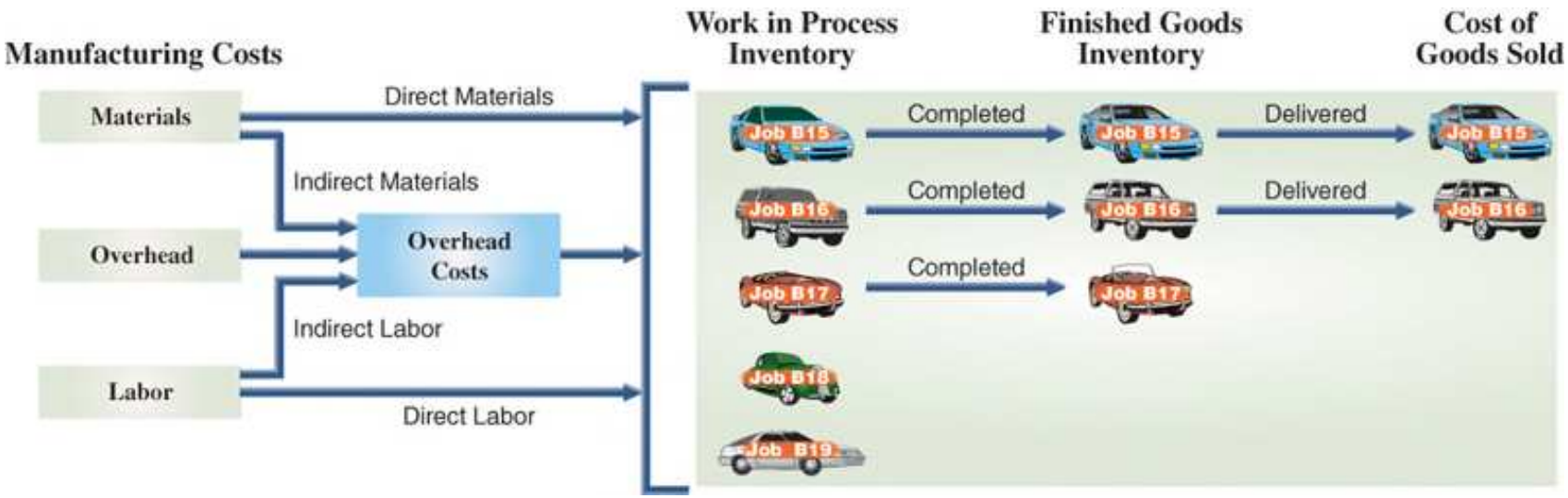
**Learning Objective C1:** Describe important features of job order production.

# Production Activities in Job Order Costing

Exhibit 2.2

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**Learning Objective C1:** Describe important features of job order production.

# Cost Flows

Manufacturing costs flow:

1. Raw materials – direct and indirect materials
2. Work in process – job is being produced
3. Finished goods – completed goods
4. Cost of goods sold – goods which are sold

Subsidiary records store information about the manufacturing costs for each individual job.

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**Learning Objective C1:** Describe important features of job order production.

# Learning Objective

C2:
Explain job cost sheets and how they are used in job order costing.

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# Job Cost Sheet

Exhibit 2.3

Job Cost Sheet

File Edit Go To Window Help

**Road Warriors, Los Angeles, California** — **JOB COST SHEET**

| | | | |
|---|---|---|---|
| Customer's Name | Carroll Connor | Job No. | B15 |
| Address | 1542 High Point Dr. | City & State | Malibu, California |
| Job Description | Level 1 Alarm System on Ford Expedition | | |
| Date promised | March 15 | Date started | March 3 |
| Date completed | March 11 | | |

| Direct Materials | | | Direct Labor | | | Overhead | | |
|---|---|---|---|---|---|---|---|---|
| Date | Requisition | Cost | Date | Time Ticket | Cost | Date | Rate | Cost |
| 3/3/2017 | R-4698 | 100.00 | 3/3/2017 | L-3393 | 120.00 | 3/11/2017 | 160% of Direct Labor Cost | 1,600.00 |
| 3/7/2017 | R-4705 | 225.00 | 3/4/2017 | L-3422 | 150.00 | | | |
| 3/9/2017 | R-4725 | 180.00 | 3/5/2017 | L-3456 | 180.00 | | | |
| 3/10/2017 | R-4777 | 95.00 | 3/8/2017 | L-3479 | 60.00 | | | |
| | | | 3/9/2017 | L-3501 | 90.00 | | | |
| | | | 3/10/2017 | L-3535 | 240.00 | | | |
| | | | 3/11/2017 | L-3559 | 160.00 | | | |
| | Total | 600.00 | | Total | 1,000.00 | | Total | 1,600.00 |

**REMARKS:** Completed job on March 11, and shipped to customer on March 15. Met all specifications and requirements.

**SUMMARY:**

| | |
|---|---|
| Materials | 600.00 |
| Labor | 1,000.00 |
| Overhead | 1,600.00 |
| Total cost | 3,200.00 |

**Signed:** *C. Luther, Supervisor*

**Learning Objective C2:** Explain job cost sheets and how they are used in job order costing.

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# NEED-TO-KNOW 2-1

A manufacturer's job cost sheet reports direct materials of $1,200 and direct labor of $250 for printing 200 T-shirts for a bikers' reunion. Estimated overhead is computed as 140% of direct labor costs.

| Work in Process Inventory | | |
|---|---|---|
| DM used | 1,200 | |
| DL Used | 250 | |
| Fact OH | 350 | |
| Total | 1,800 | |

1. What is the estimated overhead cost for this job? $250 Direct labor x 140% = $350
2. What is the total cost per T-shirt for this job? $1,800 total cost of job / 200 T-shirts = $9 per shirt
3. What journal entry does the manufacturer make upon completion of this job to transfer costs from work in process to finished goods?

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Finished Goods Inventory | 1,800 | |
| | Work in Process Inventory | | 1,800 |

**Learning Objective P1:** Describe and record the flow of materials costs in job order costing.

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# Learning Objective

P1:
Describe and record the flow of materials costs in job order costing.

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# Materials and Labor Cost Flows

- Materials received recorded in a receiving report
- Receiving report – materials source document
- Materials ledger cards –updated when materials are purchased and issued for use in production.

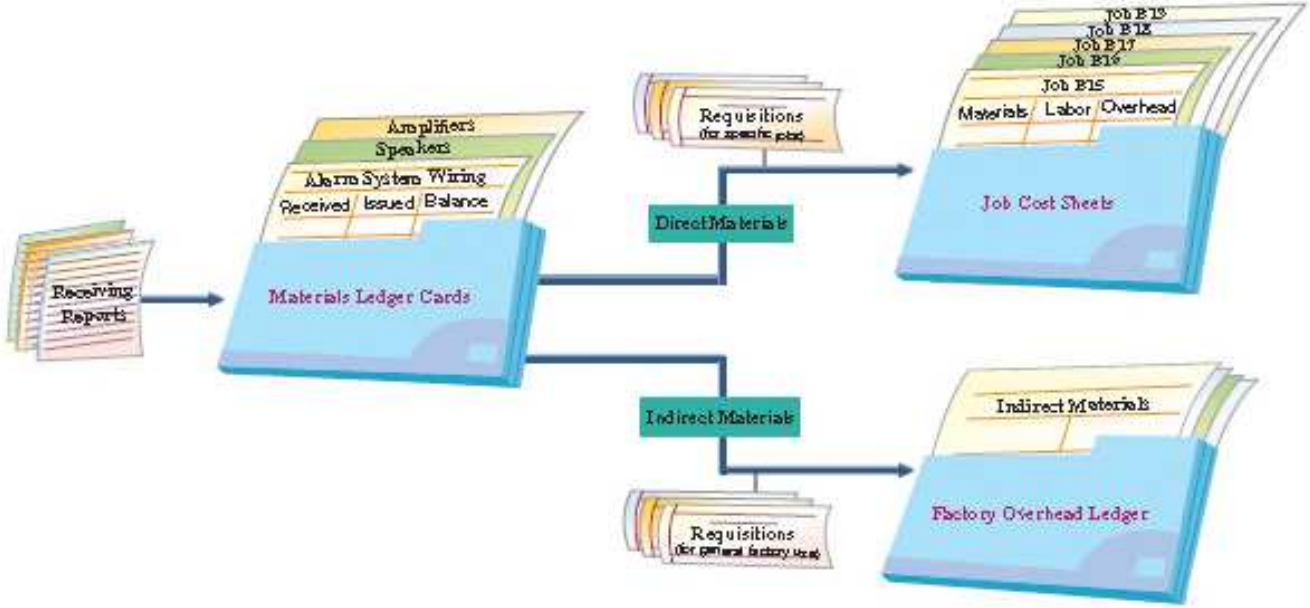


**Exhibit 2.4**

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**Learning Objective C1:** Describe important features of job order production.

# Materials Ledger Card

Exhibit 2.5

## MATERIALS LEDGER CARD

Road Warriors
Los Angeles, California

| | | | | | |
|---|---|---|---|---|---|
| Item | Alarm system wiring | Stock No. | M–347 | Location in Storeroom | Bin 137 |
| Maximum quantity | 5 units | Minimum quantity | 1 unit | Quantity to reorder | 2 units |

| | Received | | | | Issued | | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Receiving Report Number | Units | Unit Price | Total Price | Requi-sition Number | Units | Unit Price | Total Price | Units | Unit Price | Total Price |
| | | | | | | | | | 1 | 225.00 | 225.00 |
| 3/4/2017 | C-7117 | 2 | 225.00 | 450.00 | | | | | 3 | 225.00 | 675.00 |
| 3/7/2017 | | | | | R–4705 | 1 | 225.00 | 225.00 | 2 | 225.00 | 450.00 |

**Learning Objective P1:** Describe and record the flow of materials costs in job order costing.

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# Materials Requisition

**Exhibit 2.6**

**Road Warriors**
Los Angeles, California

**MATERIALS REQUISITION** No. R–4705

| | | | |
|---|---|---|---|
| Job No. | B15 | Date | 3/7/2017 |
| Material Stock No. | M–347 | Material Description | Alarm system wiring |
| Quantity Requested | 1 | Requested By | C. Luther |
| Quantity Provided | 1 | Date Provided | 3/7/2017 |
| Filled By | M. Bateman | Material Received By | C. Luther |
| Remarks | | | |

**Learning Objective P1:** Describe and record the flow of materials costs in job order costing.

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# Materials Requisition

| | |
|---|---|
| **Direct materials—requisitioned for specific jobs** | |
| Job B15 | $ 600 |
| Job B16 | 300 |
| Job B17 | 500 |
| Job B18 | 150 |
| Job B19 | 250 |
| **Total direct materials** | **$1,800** |
| Indirect materials—requisitioned for general factory use | 550 |
| Total | $ 2,350 |

| | | | |
|---|---|---|---|
| Mar. 7 | Work in Process Inventory | 1,800 | |
| | Raw Materials Inventory | | 1,800 |
| | *To record use of direct materials.* | | |

**Learning Objective P1:** Describe and record the flow of materials costs in job order costing.

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# NEED-TO-KNOW 2-2

A manufacturing company purchased $1,200 of materials (on account) for use in production. The company used $200 of direct materials on Job 1 and $350 of direct materials on Job 2. Prepare journal entries to record the above transactions.

| | General Journal | Debit | Credit |
|---|---|---|---|
| Purchase | Raw Materials Inventory | 1,200 | |
| | Accounts Payable | | 1,200 |
| | | | |
| Use - DM | Work in Process Inventory | 550 | |
| | Raw Materials Inventory | | 550 |

| Raw Materials Inventory | | | |
|---|---|---|---|
| Beg. Inv. | XXX | | |
| Purchases | 1,200 | | |
| | | Direct Material | 550 |

| Work in Process Inventory | | | |
|---|---|---|---|
| Beg. Inv. | | | |
| Direct Materials | 550 | | |
| Direct Labor | | | |
| Factory OH | | | |

| Job 1 | |
|---|---|
| Direct Materials | 200 |
| Direct Labor | |
| Factory OH | |

| Job 2 | |
|---|---|
| Direct Materials | 350 |
| Direct Labor | |
| Factory OH | |

**Learning Objective P1:** Describe and record the flow of materials costs in job order costing.

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# Learning Objective

P2:

Describe and record the flow of labor costs in job order costing.

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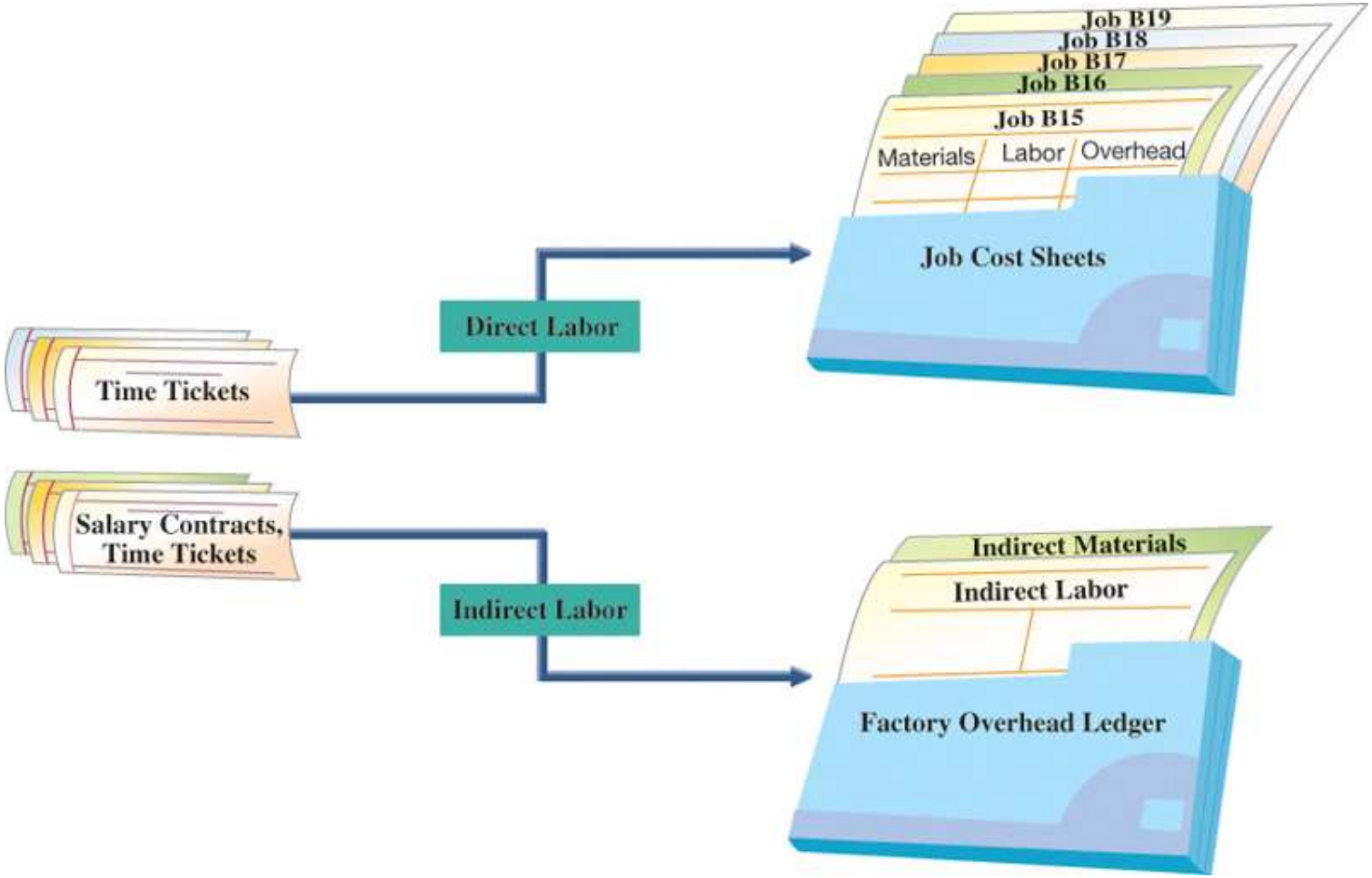
# Labor Cost Flows

Exhibit 2.8




**Learning Objective P2:** Describe and record the flow of labor costs in job order costing.

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# Labor Time Ticket

Exhibit 2.9

**Road Warriors**
Los Angeles, California

No. L–3479

**TIME TICKET**

Date March 8 20 17

| Employee Name | Employee Number | Job No. |
|---|---|---|
| T. Zeller | 3969 | B15 |

**TIME AND RATE INFORMATION:**

| Start Time | Finish Time | Elapsed Time | Hourly Rate |
|---|---|---|---|
| 9:00 | 12:00 | 3.0 | $20.00 |
| Approved By C. Luther | | Total Cost | $60.00 |

**Remarks**

**Learning Objective P2:** Describe and record the flow of labor costs in job order costing.

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# Labor Time Ticket

| Direct labor—traceable to specific jobs | |
|---|---|
| Job B15 . . . . . | $ 1,000 |
| Job B16 . . . . . | 800 |
| Job B17 . . . . . | 1,100 |
| Job B18 . . . . . | 700 |
| Job B19 . . . . . | 600 |
| **Total direct labor . . . . . .** | **$4,200** |
| Indirect labor . . . . . | 1,100 |
| Total . . . . . | $ 5,300 |

| | | | |
|---|---|---|---|
| Mar. 31 | Work in Process Inventory . . . . . | 4,200 | |
| | Factory Wages Payable. . . . . | | 4,200 |

**Learning Objective P2:** Describe and record the flow of labor costs in job order costing.

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# NEED-TO-KNOW 2-3

A manufacturing company used $5,400 of direct labor in production activities in May. Of this amount, $3,100 of direct labor was used on Job A1 and $2,300 of direct labor was used on Job A2. Prepare the journal entry to record direct labor used.

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Work in Process Inventory | 5,400 | |
| | Factory Wages Payable | | 5,400 |
| | | | |

| Work in Process Inventory | | |
|---|---|---|
| Beginning Inv. | | |
| Direct Materials | | |
| Direct Labor | 5,400 | |
| Factory OH | | |

| Factory Wages Payable | |
|---|---|
| | 5,400 |

| Job A1 | |
|---|---|
| Direct Materials | |
| Direct Labor | 3,100 |
| Factory OH | |

| Job A2 | |
|---|---|
| Direct Materials | |
| Direct Labor | 2,300 |
| Factory OH | |

**Learning Objective P2:** Describe and record the flow of labor costs in job order costing.

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# Learning Objective

P3:
Describe and record the flow of overhead costs in job order costing.

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# Overhead Cost Flows and Reports

**Exhibit 2.11**

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Set Predetermined Overhead Rate

Road Warriors uses a predetermined overhead rate (POHR) based on direct labor cost to apply overhead to jobs.

Exhibit 2.12

$$\text{Predetermined overhead rate} = \frac{\text{Estimated overhead costs}}{\text{Estimated activity base}}$$

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Predetermined Overhead Rate

| | | | |
|---|---|---|---|
| Mar. 31 | Work in Process Inventory | 6,720 | |
| | Factory Overhead | | 6,720 |
| | *To apply overhead at 160% of direct labor.* | | |

**Exhibit 2.13**

| Job | Direct Labor Cost | Predetermined Overhead Rate* | Applied Overhead |
|---|---|---|---|
| B15 | $1,000 | 1.6 | $1,600 |
| B16 | 800 | 1.6 | 1,280 |
| B17 | 1,100 | 1.6 | 1,760 |
| B18 | 700 | 1.6 | 1,120 |
| B19 | 600 | 1.6 | 960 |
| Total | $4,200 | | $6,720 |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# NEED-TO-KNOW 2-4

A manufacturing company estimates it will incur $240,000 of overhead costs in the next year. The company allocates overhead using machine hours, and estimates it will use 1,600 machine hours in the next year. During the month of June, the company used 80 machine hours on Job 1 and 70 machine hours on Job 2.

1. Compute the predetermined overhead rate to be used to apply overhead during the year.

$$\textbf{Predetermined Overhead Rate} = \frac{\textbf{Estimated Overhead Costs}}{\textbf{Estimated Activity Base}} \quad \frac{\$240{,}000}{1{,}600 \text{ machine hours}}$$

= $150 per machine hour

2. Determine how much overhead should be applied to Job 1 and to Job 2 for June.

| | Machine Hours Used | x Predetermined OH rate | = OH Applied |
|---|---|---|---|
| Job 1 | 80 hours | x $150 per hour | = $12,000 OH applied |
| Job 2 | 70 hours | x $150 per hour | = $10,500 OH applied |
| Total | 150 hours | x $150 per hour | = $22,500 OH applied |

3. Prepare the journal entry to record overhead applied for June.

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Work in Process Inventory | 22,500 | |
| | Factory Overhead | | 22,500 |
| | | | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Record Actual Overhead

Indirect Material
Indirect Labor
Other

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.



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# Record Indirect Materials Used

| | | | |
|---|---|---|---|
| Mar. 31 | Factory Overhead | 550 | |
| | Raw Materials Inventory | | 550 |
| | *To record indirect materials used during the month.* | | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Record Indirect Labor Used

| | | | |
|---|---|---|---|
| Mar. 31 | Factory Overhead | 1,100 | |
| | Factory Wages Payable | | 1,100 |
| | *To record indirect labor used during the month.* | | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Record Other Overhead Costs

| | | | |
|---|---|---|---|
| Mar. 31 | Factory Overhead | 5,270 | |
| | Accumulated Depreciation—Factory Equipment | | 2,400 |
| | Rent Payable | | 1,620 |
| | Utilities Payable | | 250 |
| | Prepaid Insurance | | 1,000 |
| | *To record actual overhead costs for the month.* | | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# NEED-TO-KNOW 2-5

A manufacturing company used $400 of indirect materials and $2,000 of indirect labor during the month. The company also incurred $1,200 of depreciation on factory equipment, $500 of depreciation on office equipment, and $300 of factory utilities. Prepare the necessary journal entries.

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Factory Overhead | 3,900 | |
| | Raw Materials Inventory | | 400 |
| | Factory Wages Payable | | 2,000 |
| | Accumulated Depreciation - Factory Equipment | | 1,200 |
| | Utilities Payable | | 300 |
| | | | |

| Factory Overhead | | |
|---|---|---|
| **Actual OH Incurred** | | **OH Applied to Production** |
| Ind. Materials | 400 | |
| Ind. Labor | 2,000 | |
| Fact. Deprec. | 1,200 | |
| Fact. Utilities | 300 | |
| | 3,900 | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# NEED-TO-KNOW 2-5

A manufacturing company used $400 of indirect materials and $2,000 of indirect labor during the month. The company also incurred $1,200 of depreciation on factory equipment, $500 of depreciation on office equipment, and $300 of factory utilities. Prepare the necessary journal entries.

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Depreciation expense | 500 | |
| | Accumulated Depreciation - Office Equipment | | 500 |
| | | | |
| | | | |
| | | | |
| | | | |

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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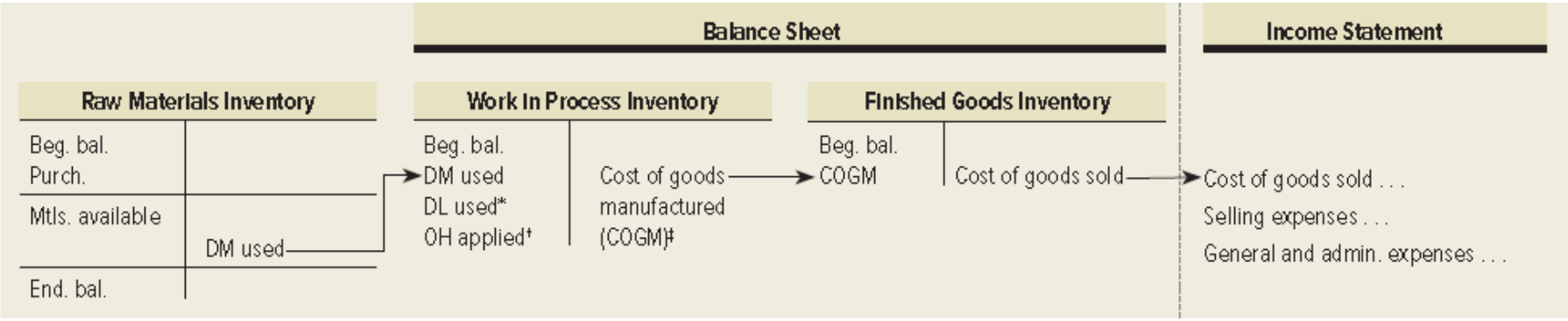
# Summary of Cost Flows

**Exhibit 2.15**




* From time tickets. † Predetermined overhead rate × Actual amount of activity base used. ‡ Reported on schedule of cost of goods manufactured.

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Summary of Cost Flows

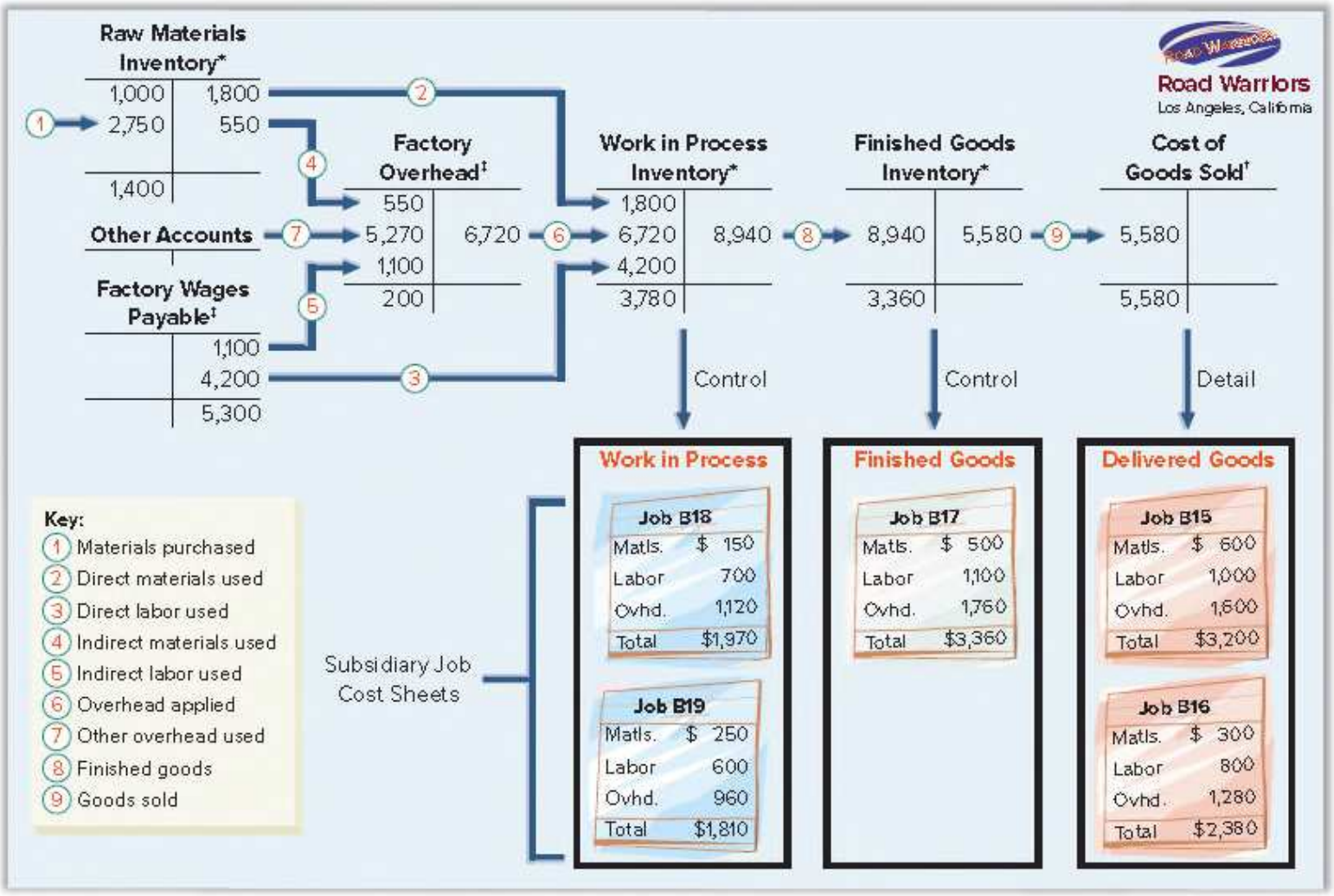


Exhibit 2.16

* The ending balances in the inventory accounts are reported on the balance sheet.
† The Cost of Goods Sold balance is reported on the income statement.
‡ Factory Overhead is considered a temporary account; when these costs are applied to jobs, its balance is reduced.

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Summary of Cost Flows

**Exhibit 2.17**

| | | | |
|---|---|---|---|
| ① | Raw Materials Inventory | 2,750 | |
| | Accounts Payable | | 2,750 |
| | *Acquired raw materials.* | | |
| ② | Work in Process Inventory | 1,800 | |
| | Raw Materials Inventory | | 1,800 |
| | *Assign costs of direct materials used.* | | |
| ③ | Work in Process Inventory | 4,200 | |
| | Factory Wages Payable | | 4,200 |
| | *Assign costs of direct labor used.* | | |
| ④ | Factory Overhead | 550 | |
| | Raw Materials Inventory | | 550 |
| | *Record use of indirect materials.* | | |
| ⑤ | Factory Overhead | 1,100 | |
| | Factory Wages Payable | | 1,100 |
| | *Record indirect labor costs.* | | |
| ⑥ | Work in Process Inventory | 6,720 | |
| | Factory Overhead | | 6,720 |
| | *Apply overhead at 160% of direct labor.* | | |
| ⑦ | Factory Overhead | 5,270 | |
| | Cash (and other accounts) | | 5,270 |
| | *Record factory overhead costs such as insurance, utilities, rent, and depreciation.* | | |
| ⑧ | Finished Goods Inventory | 8,940 | |
| | Work in Process Inventory | | 8,940 |
| | *Record completion of Jobs B15, B16, and B17.* | | |
| ⑨ | Cost of Goods Sold | 5,580 | |
| | Finished Goods Inventory | | 5,580 |
| | *Record cost of goods sold for Jobs B15 and B16.* | | |
| ⑩ | Accounts Receivable | 7,780 | |
| | Sales | | 7,780 |
| | *Record sale of Jobs B15 and B16.* | | |

* Exhibit 19.17 provides summary journal entries. *Actual* overhead is debited to Factory Overhead. *Applied* overhead is credited to Factory Overhead.

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Schedule of Cost of Goods Manufactured

Exhibit 2.18

**ROAD WARRIORS**
**Schedule of Cost of Goods Manufactured**
**For the Month of March, 2017**

| | |
|---|---|
| Direct materials used | $ 1,800 |
| Direct labor used | 4,200 |
| Factory overhead applied* | 6,720 |
| Total manufacturing costs | $12,720 |
| Add: Work in process, March 1, 2017 | 0 |
| Total cost of work in process | 12,720 |
| Less: Work in process, March 31, 2017 | 3,780 |
| Cost of goods manufactured | $ 8,940 |

* Actual overhead = $6,920. Overhead is $200 underapplied.

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# Adjust Factory Overhead

Exhibit 2.19

| Factory Overhead | |
|---|---|
| Actual amounts | Applied amounts |

Exhibit 2.20

| Overhead Costs | Factory Overhead Balance Is | Overhead Is | Journal Entry Required | | |
|---|---|---|---|---|---|
| Actual > Applied | Debit | Underapplied | Cost of Goods Sold . . . . . | # | |
| | | | Factory Overhead . . . . . | | # |
| Actual < Applied | Credit | Overapplied | Factory Overhead . . . . . | # | |
| | | | Cost of Goods Sold . . . . | | # |

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**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

# Learning Objective

P4:
Determine adjustments for overapplied and underapplied factory overhead.

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# Adjust Underapplied or Overapplied Overhead

| | | | |
|---|---|---|---|
| Dec. 31 | Cost of Goods Sold | 480 | |
| | Factory Overhead | | 480 |
| | *To adjust for underapplied overhead costs.* | | |

**Learning Objective P4:** Determine adjustments for overapplied and underapplied factory overhead.

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# NEED-TO-KNOW 2-6

A manufacturing company applied $300,000 of overhead to its jobs during the year. For the independent scenarios below, prepare the journal entry to adjust over- or underapplied overhead. Assume the adjustment amounts are not material.

1. Actual overhead costs incurred during the year equal $305,000.

| Factory Overhead | |
|---|---|
| **Actual OH Incurred** | **OH Applied to Production** |
| 305,000 | 300,000 |
| Underapplied OH 5,000 | |

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Cost of Goods Sold | 5,000 | |
| | Factory Overhead | | 5,000 |
| | | | |

**Learning Objective P4:** Determine adjustments for overapplied and underapplied factory overhead.

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# NEED-TO-KNOW 2-6

A manufacturing company applied $300,000 of overhead to its jobs during the year. For the independent scenarios below, prepare the journal entry to adjust over- or underapplied overhead. Assume the adjustment amounts are not material.

2. Actual overhead costs incurred during the year equal $298,500.

| Factory Overhead | | |
|---|---|---|
| **Actual OH Incurred** | **OH Applied to Production** | |
| 298,500 | | 300,000 |
| | Overapplied | 1,500 |

| | General Journal | Debit | Credit |
|---|---|---|---|
| | Factory Overhead | 1,500 | |
| | Cost of Goods Sold | | 1,500 |
| | | | |

**Learning Objective P4:** Determine adjustments for overapplied and underapplied factory overhead.

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# Learning Objective

A1:
Apply job order costing in pricing services.

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# Pricing for Services

- Service providers also use job order costing.
- Cost for each individual job are track separately.
- Total costs include labor and overhead.

**Learning Objective P3:** Describe and record the flow of overhead costs in job order costing.

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# End of Chapter 2

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