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| --- | --- |
|  | **Job Costing** |
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**Transition Notes**

The five-step decision process continues to be utilized in this chapter. This model is used in decision-making situations involving job costing, such as whether to bid on a job and the amount to bid. This process is illustrated by means of a decision-making example early in the chapter. The authors retain the seven-step approach to job costing, which is the process the company undergoes to develop the job-costing system. In line with the increased managerial emphasis, the use of materials, direct labor, work-in-process, and other subsidiary records is given additional emphasis. Many new problems have been introduced at the end of the chapter, and others have been revised.

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| **Problem Material** **Correlation Chart** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **15th** **Edition** | **14th** **Edition** |  | **15th** **Edition** | **14th** **Edition** |
|  | 16 | 16 |  | 30  | 30  |
|  | 17  | 17  |  | 31 | 31 Revised |
|  | 18 | 18 Revised |  | 32 | 32 Revised |
|  | 19  | 19 Revised |  | 33 | 33 Revised |
|  | 20 | 20 |  | 34 | 34  |
|  | 21 | 21 Revised |  | 35 | 35 Revised |
|  | 22  | 22 Revised |  | 36  | 36 Revised |
|  | 23 | 23 Revised |  | 37 | 37 Revised |
|  | 24 | 24 |  | 38  | 38 Revised |
|  | 25  | 25 Revised |  | 39  | 39 Revised |
|  | 26 | 26 Revised |  | 40  | 40 Revised |
|  | 27 | 27  |  | 41 | 41 Revised |
|  | 28 | 28 Revised |  |  |  |
|  | 29 New | 29 Revised |  |  |  |

**I. LEARNING OBJECTIVES**

1. Describe the building-block concepts of costing systems.
2. Distinguish job costing from process costing.
3. Describe the approaches to evaluating and implementing job-costing systems.
4. Outline the seven-step approach to normal costing.
5. Distinguish actual costing from normal costing.
6. Track the flow of costs in a job-costing system.
7. Dispose of under- or overallocated manufacturing overhead costs at the end of the fiscal year using alternative methods.
8. Understand variations from normal costing.
9. **CHAPTER SYNOPSIS**

Chapter 4 outlines the basics of costing systems by illustrating the accounting for costs in a typical job-costing system. Two new key terms related to costing systems are introduced in this chapter; they are: **cost pool** and **cost-allocation base.**

The chapter distinguishes job-costing systems from process-costing systems. **Job-costing systems** track costs to distinct jobs, whereas **process-costing systems** apply the average cost to each unit of a large batch of identical or similar products. The seven-step process to job costing is outlined, and normal-costing systems using standard costs are compared to actual-costing systems that use actual costs. The total of actual indirect costs often differs from the total of indirect costs applied in standard-costing systems and the chapter illustrates how to account for any underallocation or overallocation of indirect costs at the end of the fiscal period.

**III. Points of Emphasis**

1. If students have not grasped the terminology of cost accounting before beginning this chapter, they are likely to remain in a “catch-up” mode for the rest of the class. Make sure they understand the terminology before proceeding.
2. Walking the students through the documents associated with job costing will help them understand the flow involved in a job-costing system. Relate these documents to the seven steps in a job-costing system. Then tie the seven steps to the journal entries and the flow of costs.
3. Be sure the students grasp the definitions of actual and normal costing.
4. Students should be able to calculate and understand the reasons for a predetermined overhead rate.

**IV. CHAPTER OUTLINE**

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| **LEARNING** **OBJECTIVE** | 1 |
| Describe the building-block concepts of costing systems… the building blocks are cost object, direct costs, indirect costs, cost pools, and cost-allocation bases |
|  |

Because of the complexity of most manufacturing operations, companies need to establish a system to track costs so they can properly determine product costs. Before moving into the details of these systems, the student should have a grasp of cost accounting terminology. From Chapter 2:

* 1. A *cost object* is anything for which a measurement of costs is desired.
	2. The *direct costs of a cost object* are costs that are related to the cost object and can be *traced* to the cost object in an economically feasible manner.
	3. The*indirect costs of a cost object* are costs that cannot be traced to the cost object in a cost-effective manner and are *allocated* to the cost object.
	4. *Cost assignment* is a general term that includes cost tracing (for direct costs) and cost allocation (for indirect costs).
	5. Two new terms related to costing systems are introduced in this chapter; they are cost pool and cost-allocation base.
	+ A **cost pool** is a grouping of individual indirect cost items.
	+ A **cost-allocation base** is a systematic way to link indirect costs to a cost object.

Teaching point. These terms are the building blocks of costing systems. Take time at this point to reinforce the importance and meaning of these terms. Go beyond having the students know the definitions; use illustrations to help them understand the terms operationally.

**Refer to Quiz Question 1**

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| **LEARNING** **OBJECTIVE** | 2 |
| Distinguish job costing… job costing is used to cost a distinct productfrom process costing… process costing is used to cost masses of identical or similar units |
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2.1 Management uses two basic types of costing systems to assign costs to products or services.

* A *job-costing system,* or a *job-order system,* is used by a company that makes a distinct product or service called a job. The product or service is often a single unit. The job is frequently the cost object. Costs are accumulated separately for each job or service.
* A *process-costing system* is used by a company that makes a large number of identical products. Costs are accumulated by department and divided by the number of units produced to determine the cost per unit. It is an average cost of all units produced during the period. The cost object is masses of similar units of a product or service.

Teaching point. Give examples of products or services that would be accounted for under each system. A mechanic’s invoice from a car repair shop is a good illustration of job-order costing, as it has direct materials, direct labor, and overhead sections. Point out that each repair job is different; the repair shop does not perform the same activities on each vehicle brought in for repairs, therefore, it is accounted for under a job-costing system.

As an example of a process system, you can use an inexpensive pen that some students will be using. Point out that the manufacturer makes millions of these. Although they differ in ink color and point size (medium, fine, etc.) the process is the same—the company just uses black instead of blue, fine instead of medium, and the pens are manufactured by the same process at the same cost for each pen.

(Exhibit 4-1 offers examples of job costing and process costing in different sectors.)

**Refer to Quiz Question 2 Exercise 4-16**

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| **LEARNING 3****OBJECTIVE** |
| Describe the approaches to evaluating and implementing job-costing systems… to determine costs of jobs in a timely manner |
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3.1 Managers use the five-step process introduced in Chapter 1 when deciding whether to take on a particular job and how much to bid for the job.

3.2 A very important element of any costing system is the addition of overhead to materials and labor costs. Management can use **actual costing,** tracing direct costs to a cost object by multiplying actual direct cost rates by actual quantities of the direct-cost inputs.

3.3 Although this is an effective way to assign direct costs to jobs, it is very difficult to follow this practice for indirect costs. Managers prefer to calculate indirect costs over a longer period; thus making it impossible to complete the cost accumulation on individual jobs.

3.4 There are two reasons for using longer periods to calculate indirect cost rates. The **numerator reason** reduces the effect of seasonal patterns on the amount of costs. The **denominator effect** reduces the effect of fluctuations in output and therefore quantities of the cost allocation base.

3.5 **Normal costing** is a costing system that (1) traces direct costs to a cost object by using the actual direct-cost rates times the actual quantities of the direct-cost inputs and (2) allocates indirect costs based on the *budgeted* indirect-cost rates times the actual quantities of the cost-allocation bases.

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| **LEARNING** **OBJECTIVE** | 4 |
| Outline the seven-step approach to job costing… the seven-step approach is used to compute direct and indirect costs of a job |
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4.1 A seven-step approach is used to assign costs to an individual job. This approach is used by manufacturers, merchandisers, and companies in the service sector.

**Step 1:** **Identify the Job that Is the Chosen Cost Object.** The **source documents** (original records that support journal entries in an accounting system) such as the **job-cost sheet,** the material-requisition record, and the labor-time record assist managers in gathering information about the costs incurred on a job.

**Step 2:** **Identify the Direct Costs of the Job.** Most manufacturing operations have two direct-cost categories—direct materials and direct manufacturing labor.

Direct materials are ordered by means of a materials requisition. Quantities needed are based upon engineering specifications. As previously indicated, the labor-time record indicates the amount of time an employee spends on a particular job.

**Step 3:** **Select the Cost-Allocation Bases to Use for Allocating Indirect Costs to the Job.** Because these costs cannot be traced to the job, they must be allocated in a systematic manner.

**Step 4:** **Identify the Indirect Costs Associated with Each** **Cost-Allocation Base.** Hopefully, a cause-and-effect relationship can be established between the costs incurred and the cost-allocation base (or cost driver).

**Step 5:** **Compute the Rate per Unit of Each Cost-Allocation Base Used to Allocate Indirect Costs to the Job.** Budgeted manufacturing overhead rate = Budgeted manufacturing overhead costs / Budgeted total quantity of cost allocation base.

**Step 6:** **Compute the Indirect Costs Allocated to the Job.** Multiply the actual quantity of each different allocation base by the indirect cost rate for each allocation base.

**Step 7:** **Compute the Total Cost of the Job by Adding All Direct and Indirect Costs Assigned to the Job.**

(Exhibits 4-2 and 4-3 display sample job-cost records, and Exhibit 4-4 provides an overview of the job-order cost system.)

4.2 With modern technology, managers have much more timely and accurate product cost information, making it easier to manage and control jobs. Electronic Data Interchange (EDI), bar coding, electronic materials-requisition records, and electronic labor-time records are just a few of the innovations that have enhanced job-order cost systems.

**Refer to Quiz Question 3**

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| **LEARNING** **OBJECTIVE** | 5 |
| Distinguish actual costing… actual costing uses actual indirect-cost ratesfrom normal costing… normal costing uses budgeted indirect-cost rates |
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5.1 **Actual costing** is a costing system that traces direct costs to a cost object by using actual direct-cost rates times the actual quantities of the direct-cost inputs. It allocates indirect costs based on the actual indirect-cost rate times the actual quantities of the cost-allocation bases. Normal costing, as described in the last section, allocates indirect costs based on budgeted indirect-cost rates.

5.2 Normal costing is frequently used to enable managers to overcome the problems associated with actual overhead rates encountered in actual costing.

Teaching point. Students frequently do not immediately grasp the difference in actual and normal costing. Emphasize that the only difference in the two is in overhead. Actual costing uses actual overhead whereas normal costing uses predetermined (or budgeted) overhead rates.

(Exhibit 4-5 differentiates actual and normal costing.)

**Refer to Quiz Question 4 Exercises 4-17 and 4-18**

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| **LEARNING** **OBJECTIVE** | 6 |
| Track the flow of costs in a job-costing system… from purchase of materials to sale of finished goods |
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6.1 The flow of costs in a job-costing system can best be observed by tracing the journal entries associated with such a system.

6.2 Recall that manufacturing costs are product costs and that a manufacturer will have three inventory accounts—materials, work-in-process, and finished goods.

6.3 Illustrate the flow of costs by using journal entries and T-accounts.

Teaching point. Get the students engaged in the flow of costs with journal entries, T-accounts, and flow charts drawn on the board. An understanding at this point will go a long way toward helping the student transition to a manufacturing mindset. Exercise 4-25 is a good one to walk through to illustrate this.

6.4 The manufacturing overhead accounts need some explanation here. *Manufacturing overhead control* represents actual manufacturing overhead incurred. These amounts would be an expense in a nonmanufacturing setting. **Manufacturing overhead allocated (applied)** represents the amount of overhead allocated to jobs. Some companies use only a single Manufacturing Overhead account.

6.5 Materials, Work-in-Process, Finished Goods, and Manufacturing Overhead Control all have subsidiary ledgers that provide details about the balance in the general ledger account.

6.6 Note the importance of the job-cost sheet. It is the subsidiary ledger for Work-in-Process and becomes the subsidiary ledger for Finished Goods. When the product is sold, it is the basis for the amount of the journal entry to record COGS.

Teaching point. Recalling that companies use different costs for different purposes, a company could include direct marketing costs and customer-service costs to jobs, as appropriate.

(Exhibits 4-6 through 4-9 display the flow of costs in a job-costing system.)

**Refer to Quiz Questions 5-7 Exercises 4-24 through 4-26**

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| **LEARNING** **OBJECTIVE** | 7 |
| Dispose of under- or overallocated manufacturing overhead costs at the end of the fiscal year using alternative methods… for example, writing off this amount to the Cost of Goods Sold account |
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7.1 Under normal costing there will be a difference in the balances of the Manufacturing Overhead Control and the Manufacturing Overhead Applied accounts. This balance needs to be disposed of at the end of the year.

7.2 If the Control account balance exceeds the Applied account balance, overhead has been underapplied.

7.3 If the Applied account balance exceeds the Control account balance, overhead has been overapplied.

Teaching point. An illustration of a glass of water helps the students visualize this concept. Actual overhead is the water poured into the glass until it is full. When overhead is applied, water is removed from the glass. If any water remains, actual overhead exceeds applied and overhead is underapplied. If there is not enough water, applied overhead exceeds actual and overhead is overapplied.

7.4 There are three approaches to dealing with the under- or overapplied overhead—the adjusted allocation-rate approach, the proration approach, or the write-off to cost-of-goods-sold approach.

* The **adjusted allocation-rate approach** restates all overhead entries in the general and subsidiary ledgers using actual rates rather than budgeted rates. With computerized systems, this approach has become easier to implement. The approach gives the timeliness and convenience of normal costing during the year and the actual amounts at year end for planning purposes.
* The **proration** approach spreads the underallocated or overallocated overhead to Work-in-Process, Finished Goods, and Cost of Goods sold in proportion to the ending balances in these accounts (or based on the total amount of manufacturing overhead allocated to these accounts).

Teaching point. Students will want to include the materials account in this proration. Point out that overhead is being prorated to those accounts that have overhead amounts in them so materials should not receive an allocation.

* The **write-off to cost-of-goods-sold approach** is the simplest. Under this approach the underallocated or overallocated overhead is simply written off to cost of goods sold. This method is acceptable if the amount is immaterial.

Teaching point. In a normal operating situation, the bulk of the adjustment would go to cost of goods sold under the proration approach. Therefore, the total amount of the adjustment must be very large before the amount becomes significant enough to avoid usage of the write-off approach. Illustrate the three methods.

**Refer to Quiz Questions 8 and 9 Problem 4-34**

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| **LEARNING** **OBJECTIVE** | 8 |
| Apply variations from normal costing… variations from normal costing use budgeted direct-cost rates |
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8.1Job costing can also be utilized in service industries with a great deal of success. However, it is most useful when a variation of normal costing is applied.

8.2 Under a variation from normal costing, direct labor costs are assigned to jobs based on predetermined direct labor rates. The approach facilitates costing of jobs as it is often difficult to determine the actual labor cost associated with a particular job as it is completed.

8.3 To implement this variation, calculate a budgeted direct labor rate by dividing budgeted total direct labor costs by the budgeted total direct labor hours. This rate is then applied to specific jobs based on the number of direct labor hours consumed by the job.

**Refer to Quiz Question 10 Problem 4-29**

**V. OTHER RESOURCES**

To download these and other resources, visit the Instructor’s Resource Center [*www.pearsonhighered.com*](http://www.pearsonhighered.com/).

The following exhibits were mentioned in this chapter of the Instructor’s Manual, and have been included in the **PowerPoint Lecture presentation** created specifically for this chapter. You may use the PowerPoint Lecture presentations “as is”, or modify them to suit your individual needs.

Exhibit 4-1 offers examples of job costing and process costing in different sectors.

Exhibits 4-2 and 4-3 display sample job-cost records.

Exhibit 4-4 displays an overview of a typical job-costing system.

Exhibit 4-5 differentiates actual and normal costing.

Exhibits 4-6 through 4-9 display the flow of costs in a job-costing system.

**CHAPTER 4 QUIZ**

1. A cost-allocation base may be any of the following *except* a
2. cost driver.
3. cost pool.
4. way to link indirect costs to a cost object.
5. nonfinancial quantity.
6. A company that manufactures dentures for use by local dentists would use
7. process costing.
8. personal costing.
9. operations costing.
10. job costing.
11. The first step in the seven-step approach to job costing is to
12. select the cost-allocation base to use in assigning indirect costs to the job.
13. identify the direct costs of the job.
14. identify the job that is the chosen cost object.
15. identify the indirect-cost pools associated with the job.
16. Using normal costing rather than actual costing requires that the allocating of indirect manufacturing costs to work-in-process be
17. done on a more timely basis, such as every two weeks rather than every month.
18. journalized only at year end when adjusting entries are normally made.
19. calculated by using the budgeted rate times actual quantity of allocation base.
20. calculated by using the budgeted rate times the budgeted quantity of allocation base.
21. Manufacturing Overhead Control
22. represents actual overhead costs incurred.
23. has a normal debit balance.
24. is a control account with a subsidiary ledger detailing the components of manufacturing overhead.
25. All of the above
26. Which of the following accounts is *not* classified as an asset?
27. Manufacturing Overhead Control
28. Materials Control
29. Work-in-Process Control
30. Finished Goods Control
31. The costs incurred on jobs that are currently in production but are not yet complete would appear in the
32. Materials Control account.
33. Finished Goods Control account.
34. Manufacturing Overhead Control account.
35. Work-in-Process Control account.
36. The Precision Widget Company had the following balances in their accounts at the end of the accounting period:

Work-in-Process $ 5,000

Finished Goods 20,000

Cost of Goods Sold 200,000

If their manufacturing overhead was overallocated by $8,000 and Precision Widget adjusts their accounts using a proration based on total ending balances, the revised ending balance for Cost of Goods Sold would be

a. $192,880.

b. $200,00.

c. $207,120.

d. $208,000.

1. Liberty Box Company calculated an indirect-cost rate of $12.50 per labor hour for fringe benefits for use in their normal costing system. At the end of the year, the actual cost of fringe benefits was $980,000. The total of labor hours worked for the year was the same amount as budgeted, 70,000 hours. If Job #640 required the use of 15 labor hours and the company used the adjusted allocation rate approach, by what amount would the cost of Job #640 change?
2. $560.00
3. $281.25
4. $22.50
5. $20.50
6. If each professional in a service company is paid on an annual salary basis, why might the firm want to use a predetermined or budgeted rate for direct or professional labor?
7. A predetermined or budgeted rate is easier to justify to a client who might question a billing rate.
8. Professional staff persons do not keep accurate records of the jobs on which they work.
9. Professional staff incurs more client costs, such as travel, lodging, and out-of-town meals, while working on a job.
10. Year-end bonuses paid to the professional staff are difficult to trace to individual jobs.

**CHAPTER 4 QUIZ SOLUTIONS**

# 1. b

# 2. d

# 3. c

# 4. c

# 5. d

# 6. a

# 7. d

# 8. a

# 9. c

# 10. d

Quiz Question Calculations

1. Work-in-Process $5,000 / 225,000 2.2% × $8,000 = 176

Finished Goods $20,000 /225,000 8.9% × $8,000 = 712

Cost of Goods Sold $200,000 / 225,000 88.9% × $8,000 = 7,120

200,000 – 7,120 = $192,880

9. 980.000/70,000 = $14.00 (actual rate)

$14,000 – $12.50 = $1.50 excess of actual over budget

1.50 × 15 hours – $22.50 additional cost