

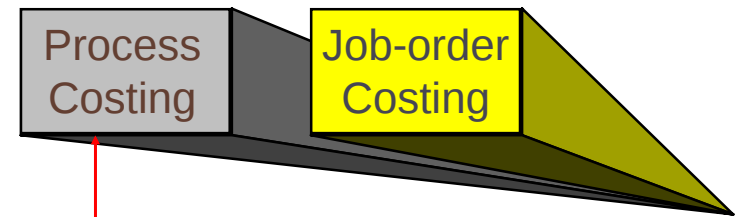


Job-Order Costing

Chapter 8

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Types of Product Costing Systems



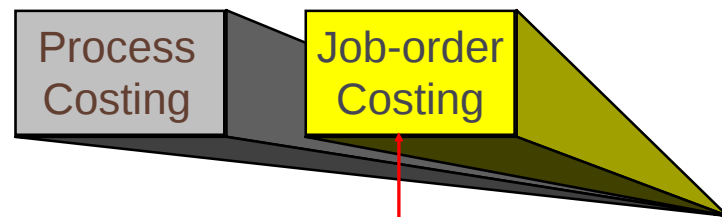
- ❖ A company produces many units of a single product.
- ❖ One unit of product is indistinguishable from other units of product.
- ❖ The identical nature of each unit of product enables assigning the same average cost per unit.

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Types of Product Costing Systems



- ❖ Many different products are produced each period.
- ❖ Products are manufactured to order.
- ❖ The unique nature of each order requires tracing or allocating costs to each job, and maintaining cost records for each job.

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Comparing Process and Job-Order Costing

	Job-Order	Process
Number of jobs worked	Many	Single Product
Cost accumulated by	Individual Job	Department or Process
Average cost computed by	Job	Department or Process

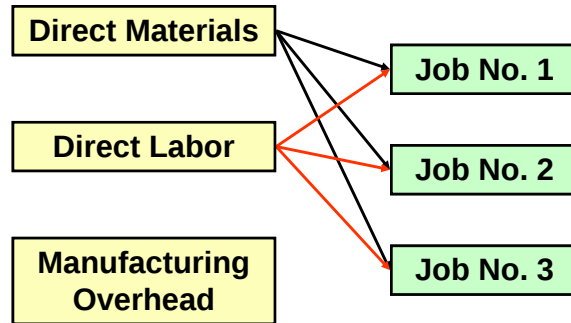


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Job-Order Costing – An Overview



Charge direct material and direct labor costs to each job as work is performed.

The Job Cost Sheet



PearCo Job Cost Sheet							
Job Number <u>A - 143</u>				Date Initiated <u>3-4-09</u>			
Department <u>B3</u>				Date Completed _____			
Item <u>Wooden cargo crate</u>				Units Completed _____			
Direct Materials		Direct Labor			Manufacturing Overhead		
Req. No.	Amount	Ticket	Hours	Amount	Hours	Rate	Amount
Cost Summary					Units Shipped		
Direct Materials					Date	Number	Balance
Direct Labor							
Manufacturing Overhead							
Total Cost							
Unit Product Cost							

Measuring Direct Materials Cost



PearCo Materials Requisition Form			
Requisition No. <u>X7 - 6890</u>		Date <u>3-4-09</u>	
Job No. <u>A - 143</u>			
Department <u>B3</u>			
Description	Quantity	Unit Cost	Total Cost
2 x 4, 12 feet	12	\$ 3.00	\$ 36.00
1 x 6, 12 feet	20	4.00	80.00
			\$ 116.00
Authorized Signature <u>Will E. Delite</u>			

Measuring Direct Labor Costs



PearCo Employee Time Ticket					
Time Ticket No. <u>36</u>		Date <u>3/5/2009</u>			
Employee <u>J. M. Skilled</u>		Station <u>42</u>			
Starting Time	Ending Time	Hours Completed	Hourly Rate	Amount	Job No.
0800	1600	8.00	\$ 11.00	\$ 88.00	A-143
Totals		8.00	\$ 11.00	\$ 88.00	A-143
Supervisor <u>C. M. Workman</u>					

Why Use an Allocation Base?

Manufacturing overhead is applied to jobs that are in process. An allocation base, such as direct labor hours, direct labor dollars, or machine hours, is used to assign manufacturing overhead to individual jobs.

We use an allocation base because:

1. It is impossible or difficult to trace overhead costs to particular jobs.
2. Manufacturing overhead consists of many different items ranging from the grease used in machines to production manager's salary.
3. Many types of manufacturing overhead costs are fixed even though output fluctuates during the period.

Manufacturing Overhead Application

The predetermined overhead rate (**POHR**) used to apply overhead to jobs is determined before the period begins.

$$\text{POHR} = \frac{\text{Estimated total manufacturing overhead cost for the coming period}}{\text{Estimated total units in the allocation base for the coming period}}$$

Ideally, the allocation base is a **cost driver** that causes overhead.

The Need for a POHR

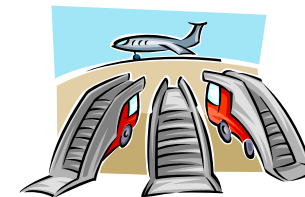
Using a predetermined rate makes it possible to estimate total job costs sooner.



Actual overhead for the period is not known until the end of the period.

Determining Predetermined Overhead Rates

Predetermined overhead rates are calculated using a three-step process.



1
Estimate the level of production for the period.

2
Estimate total amount of the allocation base for the period.

3
Estimate total manufacturing overhead costs.

$$\text{POHR} = \text{3} \div \text{2}$$

Application of Manufacturing Overhead

Based on **estimates**, and determined before the period begins.



$$\text{Overhead applied} = \text{POHR} \times \text{Actual activity}$$

Actual amount of allocation is based upon the actual level of activity (normal costing system).

Overhead Application Rate



$$\text{POHR} = \frac{\text{Estimated total manufacturing overhead cost for the coming period}}{\text{Estimated total units in the allocation base for the coming period}}$$

$$\text{POHR} = \frac{\$640,000}{160,000 \text{ direct labor hours (DLH)}}$$

$$\text{POHR} = \$4.00 \text{ per DLH}$$

For each direct labor hour worked on a particular job, \$4.00 of factory overhead will be applied to that job.

Interpreting the Average Unit Cost

The average unit cost should not be interpreted as the costs that would actually be incurred if an additional unit was produced.

Fixed overhead would not change if another unit was produced, so the incremental cost of another unit is something less than \$118.



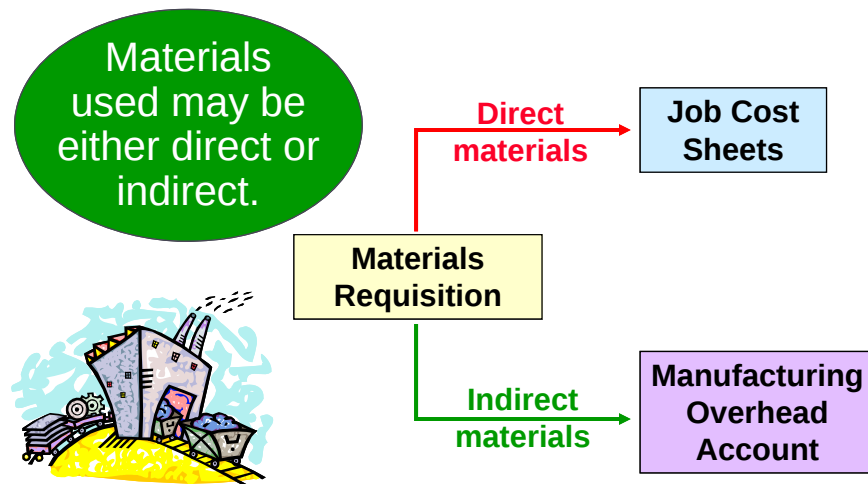
Job-Order Costing Document Flow Summary

A sales order is the basis of issuing a production order.

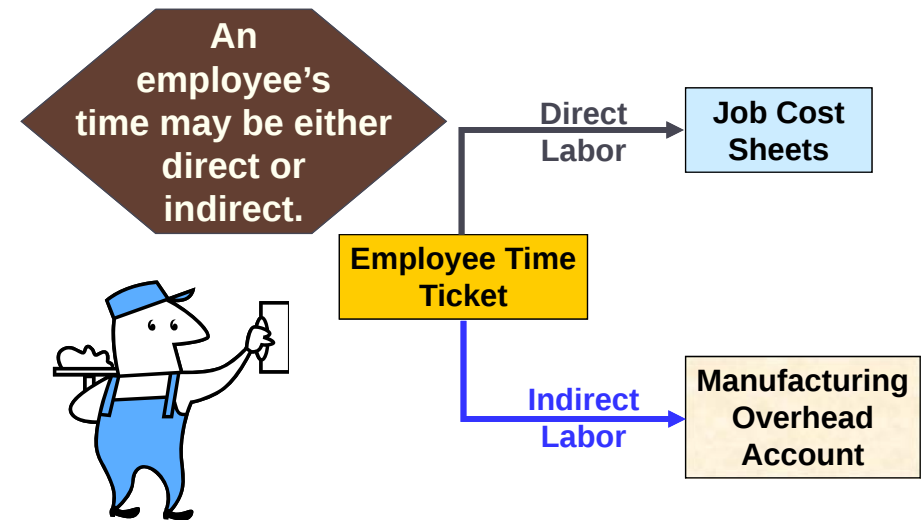


A production order initiates work on a job.

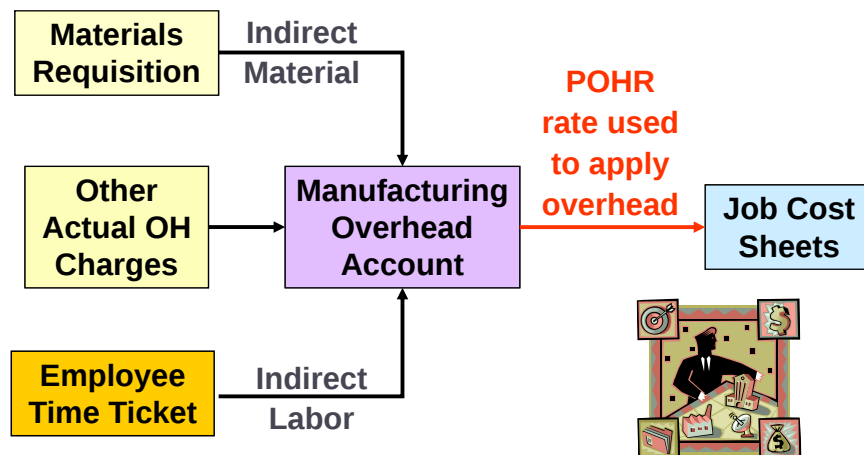
Job-Order Costing Document Flow Summary



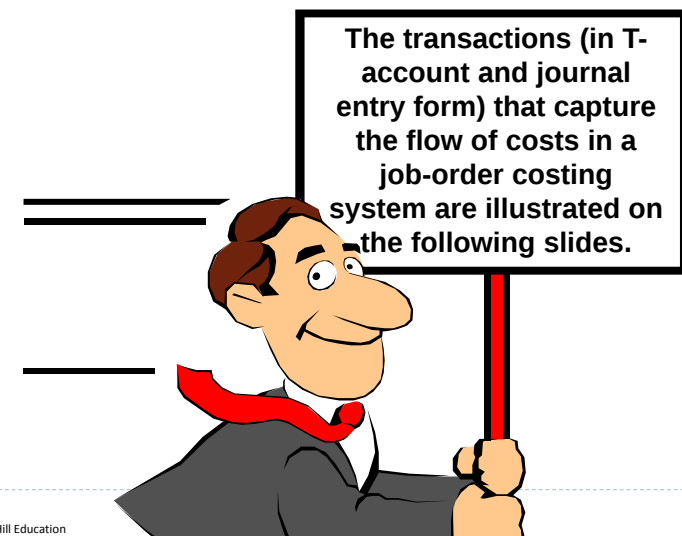
Job-Order Costing Document Flow Summary



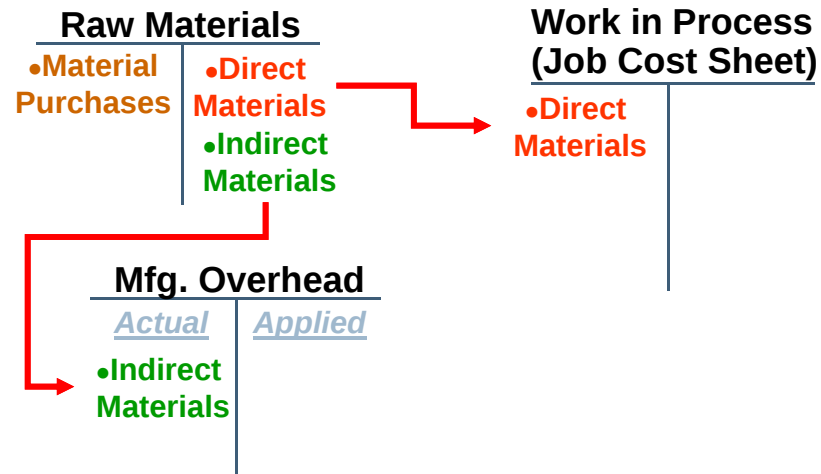
Job-Order Costing Document Flow Summary



Job-Order Costing: The Flow of Costs



The Purchase and Issue of Raw Materials



Cost Flows – Material Purchases

Raw material purchases are recorded in an inventory account.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Raw Materials		XXXXX	
	Accounts Payable			XXXXX

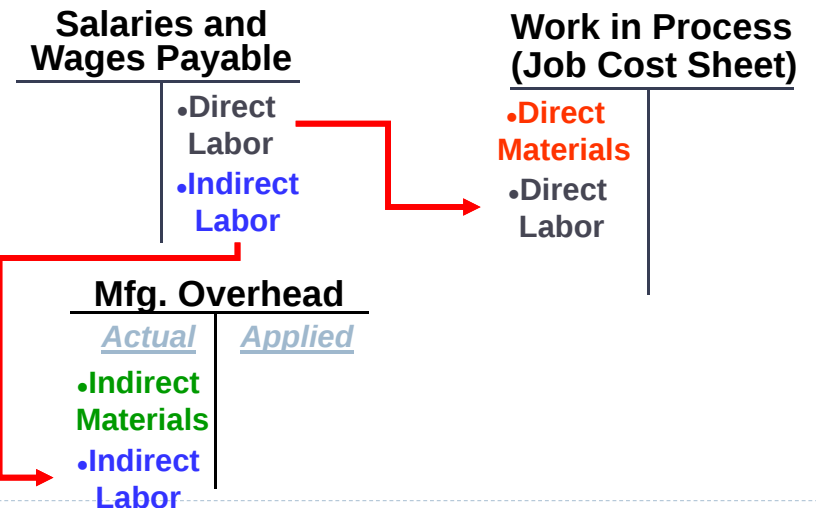
Cost Flows – Material Usage

Direct materials issued to a job increase Work in Process and decrease Raw Materials. Indirect materials used are charged to Manufacturing Overhead and also decrease Raw Materials.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Work in Process		XXXXX	
	Manufacturing Overhead		XXXXX	
	Raw Materials			XXXXX

The Recording of Labor Costs



The Recording of Labor Costs

The cost of direct labor incurred increases Work in Process and the cost of indirect labor increases Manufacturing Overhead.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Work in Process		XXXXX	
	Manufacturing Overhead		XXXXX	
	Salaries and Wages Payable			XXXXXX

Recording Actual Manufacturing Overhead

Salaries and Wages Payable

- Direct Labor
- Indirect Labor

Work in Process (Job Cost Sheet)

- Direct Materials
- Direct Labor

Mfg. Overhead

- | Actual | Applied |
|---------------------|---------|
| •Indirect Materials | |
| •Indirect Labor | |
| •Other Overhead | |

Recording Actual Manufacturing Overhead

In addition to indirect materials and indirect labor, other manufacturing overhead costs are charged to the Manufacturing Overhead account as they are incurred.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Manufacturing Overhead		XXXXX	
	Accounts Payable			XXXXXX
	Property Taxes Payable			XXXXXX
	Prepaid Insurance			XXXXXX
	Accumulated Depreciation			XXXXXX

Applying Manufacturing Overhead

Salaries and Wages Payable

- Direct Labor
- Indirect Labor

Work in Process (Job Cost Sheet)

- Direct Materials
- Direct Labor
- Overhead Applied

Mfg. Overhead

- | Actual | Applied |
|---------------------|--------------------------------------|
| •Indirect Materials | |
| •Indirect Labor | |
| •Other Overhead | |
| | •Overhead Applied to Work in Process |

If actual and applied manufacturing overhead are not equal, a year-end adjustment is required.

Applying Manufacturing Overhead

Work in Process is increased when Manufacturing Overhead is applied to jobs.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Work in Process		XXXXX	
	Manufacturing Overhead			XXXXX

Accounting for Nonmanufacturing Cost

Nonmanufacturing costs are not assigned to individual jobs; rather, they are expensed in the period incurred.

Examples:

1. Salary expense of employees who work in a marketing, selling, or administrative capacity.
2. Advertising expenses are expensed in the period incurred.

Accounting for Nonmanufacturing Cost

Nonmanufacturing costs (period expenses) are charged to expense as they are incurred.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Salaries Expense		XXXXX	
	Salaries Payable			XXXXX
	Advertising Expense		XXXXX	
	Accounts Payable			XXXXX

Transferring Completed Units

Work in Process (Job Cost Sheet)

- Direct Materials
- Direct Labor
- Overhead Applied

•Cost of Goods Mfd.

Finished Goods

•Cost of Goods Mfd.



Transferring Completed Units

As jobs are completed, the Cost of Goods Manufactured is transferred to Finished Goods from Work in Process.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Finished Goods		XXXXX	
	Work in Process			XXXXX

Transferring Units Sold

Work in Process (Job Cost Sheet)

- Direct Materials
- Direct Labor
- Overhead Applied

•Cost of Goods Mfd.

Finished Goods

•Cost of Goods Mfd.

•Cost of Goods Sold

Cost of Goods Sold

•Cost of Goods Sold

Transferring Units Sold

When finished goods are sold, two entries are required: (1) to record the sale, and (2) to record the Cost of Goods Sold.

GENERAL JOURNAL

Date	Description	Post. Ref.	Debit	Credit
	Accounts Receivable		XXXXX	
	Sales			XXXXX
	Cost of Goods Sold		XXXXX	
	Finished Goods			XXXXX

Problems of Overhead Application

The difference between the overhead cost applied to Work in Process and the actual overhead costs of a period is referred to as either underapplied or overapplied overhead.

Underapplied overhead exists when the amount of overhead applied to jobs during the period using the predetermined overhead rate is *less than* the total amount of overhead actually incurred during the period.

Overapplied overhead exists when the amount of overhead applied to jobs during the period using the predetermined overhead rate is *greater than* the total amount of overhead actually incurred during the period.

Overhead Application Example



PearCo's **actual overhead** for the year was **\$650,000** with a total of **170,000** direct labor hours worked on jobs.

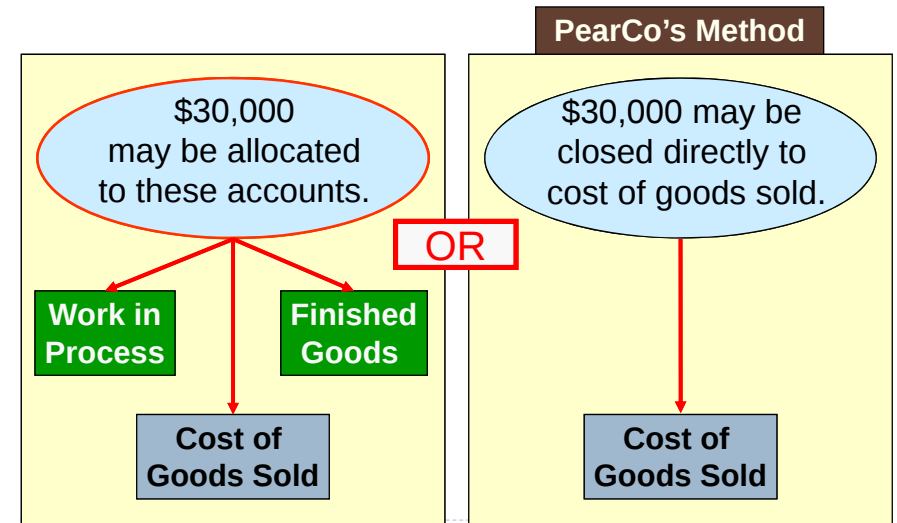
How much total overhead was applied to PearCo's jobs during the year? Use PearCo's predetermined overhead rate of \$4.00 per direct labor hour.

Overhead Applied During the Period

Applied Overhead = POHR × Actual Direct Labor Hours

Applied Overhead = \$4.00 per DLH × 170,000 DLH = **\$680,000**

Disposition of Under- or Overapplied Overhead



Disposition of Under- or Overapplied Overhead



PearCo's Cost of Goods Sold		PearCo's Mfg. Overhead	
Unadjusted Balance		Actual overhead costs	Overhead applied to jobs
		\$650,000	\$680,000
	\$30,000	\$30,000	
Adjusted Balance			\$30,000 overapplied

Allocating Under- or Overapplied Overhead Between Accounts



Assume the overhead applied in ending Work in Process Inventory, ending Finished Goods Inventory, and Cost of Goods Sold is shown below:

	Amount
Work in process	\$ 68,000
Finished Goods	204,000
Cost of Goods Sold	408,000
Total	<u>\$ 680,000</u>

Overapplied and Underapplied Manufacturing Overhead - Summary

	PearCo's Method	
If Manufacturing Overhead is . . .	<u>Alternative 1</u> Close to Cost of Goods Sold	<u>Alternative 2</u> Allocation
UNDERAPPLIED (Applied OH is less than actual OH)	INCREASE Cost of Goods Sold	INCREASE Work in Process Finished Goods Cost of Goods Sold
OVERAPPLIED (Applied OH is greater than actual OH)	DECREASE Cost of Goods Sold	DECREASE Work in Process Finished Goods Cost of Goods Sold
More accurate but more complex to compute.		

Multiple Predetermined Overhead Rates

To this point, we have assumed that there is a single predetermined overhead rate called a plantwide overhead rate.

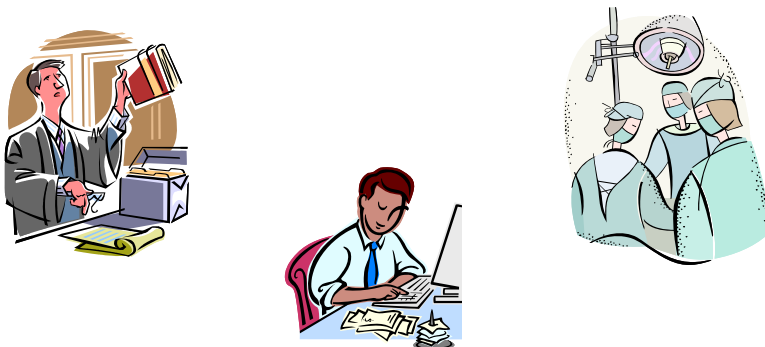
Large companies often use multiple predetermined overhead rates.

May be more complex but . . .

May be more accurate because it reflects differences across departments.

Job-Order Costing in Service Companies

Job-order costing is used in many different types of service companies.



The Use of Information Technology

Technology plays an important part in many job-order cost systems. When combined with *Electronic Data Interchange (EDI)* or a web-based programming language called *Extensible Markup Language (XML)*, bar coding eliminates the inefficiencies and inaccuracies associated with manual clerical processes.

