Third Grade

The Principles of Cost Accounting (2)

Lecture 7

Allocation of Support-Department Costs, Common Costs, and Revenues

15

Week (7) Lecture 7

21 March 2020

Allocating Costs of Multiple Support Departments

- Robinson allocates the $1,120,000 of total budgeted manufacturing overhead costs to the Machining and Assembly Departments in three steps.

Step A: Trace or Allocate each Cost to Various Support and Operating Departments.

Step B: Allocate Plant Administration Costs to Other Support Departments and Operating Departments.

Step C: Allocate Engineering and Production Control and Materials Management Costs to the Machining and Assembly Operating Departments.

By one of three costs allocation methods:

1) Direct Method,

2) Step-down Method , and

3) Reciprocal Method

- **Last week, step A , B and C were explained**
- **Today we will focus on Direct** cost allocation **Method**

There are three methods of allocating budgeted overhead costs from the support departments to the Machining Department and the Assembly Department:

- *Direct*,
- *Step-down*,
- R*eciprocal*.

we use budgeted costs and budgeted hours.

Why?

- Because our goal is to determine the budgeted costs of the operating departments (Machining and Assembly) after Robinson allocates the budgeted costs of the support departments (Materials Management and Engineering and Production Control) to the operating departments.
- To simplify the explanation and to focus on concepts, we use the single-rate method to allocate the costs of each support department.
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Direct Method

- Notes:
- The **direct method** allocates **each** support-department's budgeted costs to operating departments **only**.
- The direct method does **not** allocate **support** department costs to **other support** departments.
- The base used to allocate Engineering and Production Control costs to the operating departments is the **budgeted engineering salaries** in the operating departments: $60,000 + $24,000 = $84,000.
- This amount excludes the $36,000 of budgeted engineering salaries representing services to be provided by Engineering and Production Control to Materials Management.

Allocating Engineering and Production Control costs to the operating departments

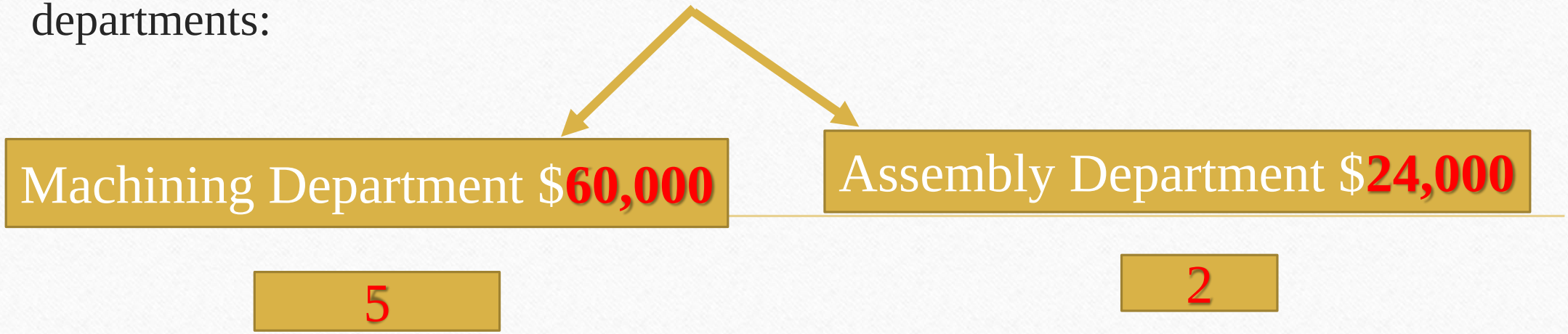
	Support Departments			Operating Departments		
Step A	**Plant Administration Department (1)**	**Engineering and Production Control Department (2)**	**Materials Management Department (3)**	**Machining Department (4)**	**Assembly Department (5)**	**Total (6)**
Plant manager's salary	$ 92,000					$ 92,000
Supervision salaries (traced to each department)		$ 48,000	$ 40,000	$ 52,000	$ 60,000	200,000
Engineering salaries (traced to each department)		110,000	36,000	60,000	24,000	230,000
Depreciation and maintenance (traced to each department)		39,000	55,000	79,000	20,000	193,000
Indirect materials (traced to each department)		20,000	12,000	11,000	7,000	50,000
Indirect labor (traced to each department)		43,000	77,000	37,000	38,000	195,000
Rent, utilities, and insurance (allocated to each department based on square feet area; $8[1] × 1,000; 2,000; 3,000; 8,000; 6,000 sq. ft.)	8,000	16,000	24,000	64,000	48,000	160,000
Total	$ 100,000	$276,000	$244,000	$303,000	$197,000	$1,120,000
Step B						
Allocation of plant administration costs 0.50[2] × $48,000; $40,000; $52,000; $60,000	(100,000)	24,000	20,000	26,000	30,000	
	$ 0	$300,000	$264,000	$329,000	$227,000	

Base of Allocation

- The base used to allocate Engineering and Production Control costs to the operating departments is the **budgeted engineering salaries** in the operating departments: only $60,000 + $24,000
- This amount excludes the $**36,000** of budgeted engineering salaries representing services to be provided by Engineering and Production Control to Materials Management.

1		Support Departments			Operating Departments		
2	Step A	Plant Administration Department (1)	Engineering and Production Control Department (2)	Materials Management Department (3)	Machining Department (4)	Assembly Department (5)	Total (6)
5	Engineering salaries (traced to each department)		110,000	36,000	60,000	24,000	230,000

- Calculating the based on **budgeted engineering salaries** in the operating departments:



As a result, the budgeted cost of the Engineering and Production Control Department of $300,000 is allocated to:

the Machining Department is allocated **5/7** X $300,000 = $214,286 and the Assembly Department is allocated **2/7** X $300,000 = $85,714.

Allocating Materials Management Department **costs to the operating departments**

	Support Departments			Operating Departments		
Step A	**Plant Administration Department (1)**	**Engineering and Production Control Department (2)**	**Materials Management Department (3)**	**Machining Department (4)**	**Assembly Department (5)**	**Total (6)**
Plant manager's salary	$ 92,000					$ 92,000
Supervision salaries (traced to each department)		$ 48,000	$ 40,000	$ 52,000	$ 60,000	200,000
Engineering salaries (traced to each department)		110,000	36,000	60,000	24,000	230,000
Depreciation and maintenance (traced to each department)		39,000	55,000	79,000	20,000	193,000
Indirect materials (traced to each department)		20,000	12,000	11,000	7,000	50,000
Indirect labor (traced to each department)		43,000	77,000	37,000	38,000	195,000
Rent, utilities, and insurance (allocated to each department based on square feet area; $8[1] × 1,000; 2,000; 3,000; 8,000; 6,000 sq. ft.)	8,000	16,000	24,000	64,000	48,000	160,000
Total	$ 100,000	$276,000	$244,000	$303,000	$197,000	$1,120,000
Step B						
Allocation of plant administration costs 0.50[2] × $48,000; $40,000; $52,000; $60,000	(100,000)	24,000	20,000	26,000	30,000	
	$ 0	$300,000	$264,000	$329,000	$227,000	

- Similarly, the **base** used for allocating the budgeted cost of the Materials Management Department to the operating departments is **800** + **2,800** = **3,600** budgeted materials-handling labor-hours.

- We **excludes** the **400** hours of budgeted **materials-handling** labor-hours provided by Materials Management to Engineering and **Production** Control.

Support departments

Materials Management

Engineering and Production Control

400 hrs of materials-handling labor services

Operating departments

Machining

Is budgeted to provide **800** hrs of materials-handling labor services

Assembly

2,800 hrs of materials-handling labor services

Allocating the material management Department on operating departments

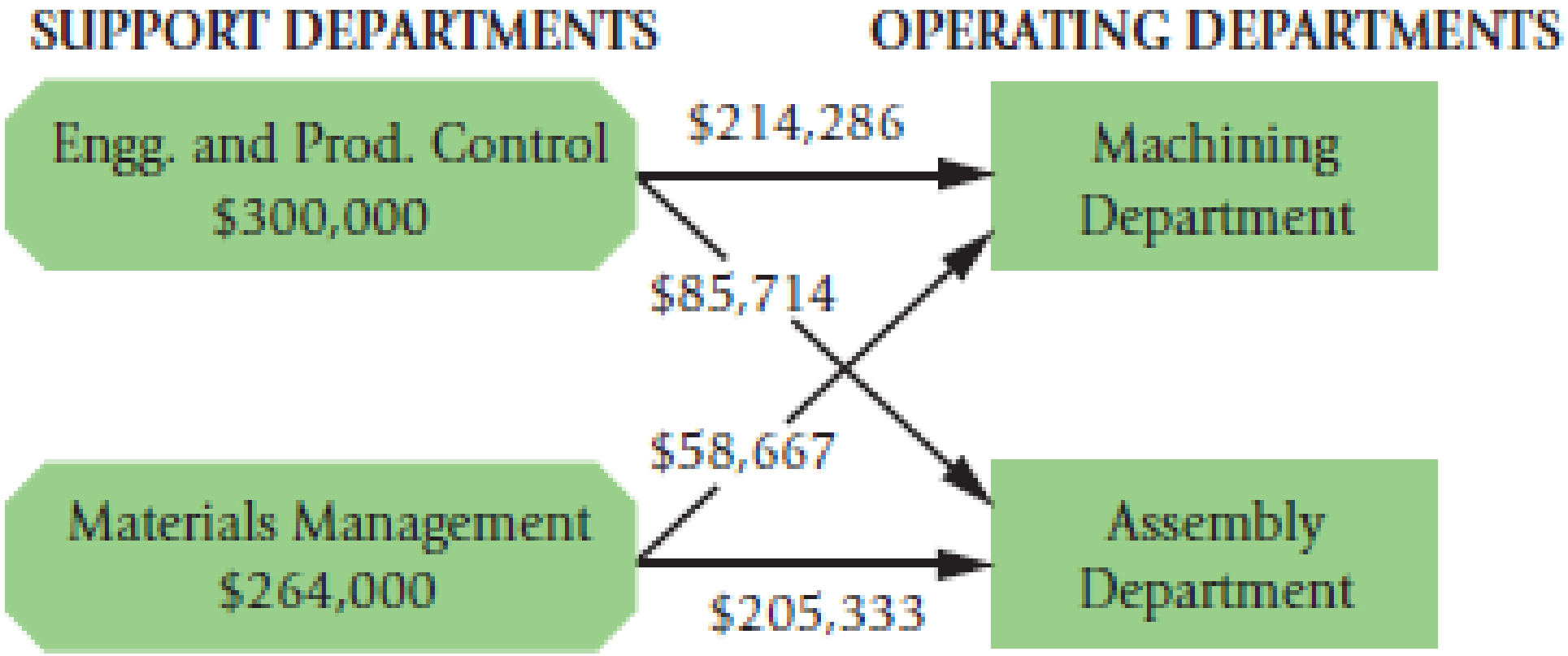
- Allocating the cost of material management department on:

The **Machining** Department= 800 hr/ 3600 × $264,000 = $**58,666**

- Allocating the cost of material management department on:

The **assembly** Department= 2800 hr/ 3600 × $264,000 = $**205,333**

Summary of Cost Allocation Direct Method



	A	B	C	D	E	F	G
1		SUPPORT DEPARTMENTS			OPERATING DEPARTMENTS		
2		Engineering and Production Control	Materials Management		Machining	Assembly	Total
3	Budgeted overhead costs						
4	before any interdepartment cost allocations	$300,000	$264,000		$329,000	$227,000	$1,120,000
5	Allocation of Engg. And Prod. Control (5/7, 2/7)[a]	(300,000)			214,286	85,714	
6	Allocation of Materials Management (2/9, 7/9)[b]		(264,000)		58,667	205,333	
7							
8	Total budgeted overhead of operating departments	$ 0	$ 0		$601,953	$518,047	$1,120,000
9							
10	[a] Base is ($60,000 + $24,000), or $84,000; $60,000 ÷ $84,000 = 5/7; $24,000 ÷ $84,000 = 2/7.						
11	[b] Base is (800 + 2,800), or 3,600 hours; 800 ÷ 3,600 = 2/9; 2,800 ÷ 3,600 = 7/9.						

Advantages and disadvantages of Direct Method

Advantages

Most managers adopt the **direct** method because it is **simple** and **easy** to use.

Managers do **not** need to **predict** the usage of **support** department **services** by other **support** departments.

Disadvantages

A **disadvantage** of the direct method is that it **ignores** information about **reciprocal** services provided among support departments and can therefore lead to **inaccurate estimates** of the cost of **operating** departments.

Second approach (***Step-down*** *Method)* **partially recognizes** the services provided among support departments.

Next lecture (8) focuses on

(Step-down Method)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end