

A decorative background pattern of light blue circuit board traces and nodes is visible on the left side of the image.

# CHAPTER 5

## ACCOUNTS OF OVERHEADS

# INTRODUCTION

- The total cost of production of any product is made up of direct expenses and indirect expenses. The costs of material used and labour expended are included in direct expenses. In addition, certain other items of expenses are also treated as direct expenses. Together they make up the Prime Cost of the product. There are other expenses which cannot be directly charged or allocated to the unit of a product. Such expenses are to be apportioned and allocated to cost unit on some suitable basis. They are called indirect expenses or overheads.
- Overheads include cost of indirect material, indirect wages and other indirect expenses. Such expenses are not identifiable with a unit of product. They are incurred for the common benefit of all the units produced. Hence they must be included in the total cost and must be apportioned to various cost centres which are benefited by them. Ultimately they have to be absorbed to a unit of product or a job. The Institute has defined Overhead as ,” The aggregate of indirect material, indirect wages and indirect expenses.”

# GENERAL PRINCIPLES FOR OVERHEADS

• For determining whether an expense is to be treated as overhead or not, the following principles must be considered.

- Are to be Apportioned
- Treating some Direct Expenses as Indirect
- Principle of benefit and responsibility
- Expenses of Capital nature
- Expenses not related to cost
- When an expense treated as overhead

# CLASSIFICATION OF OVERHEADS

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### (A) FUNCTIONAL

- (1) Factory Overheads
- (2) Office or Administrative Overheads
- (3) Selling and Distribution Overheads

### (B) ELEMENTWISE

- (1) Indirect Materials
- (2) Indirect Labour
- (3) Other Overheads

### (C) BEHAVIOUR-WISE

- (1) Fixed Expenses
- (2) Variable Expenses
- (3) Semi-Variable Expenses

# APPORTIONMENT OF OVERHEADS OVER VARIOUS DEPARTMENTS

- The expenses collected under suitable heading must be ultimately absorbed in the cost of production of units produced. The overheads, common to all departments, must first be distributed among those departments in proportion to the benefits received by them on some suitable basis. This distribution of overheads among departments is known as “Apportionment”. It is also known as ‘Departmentalization of Overheads.’
- For example, The expense of factory canteen must be distributed among all the departments and the suitable basis for such distribution would be the number of workers employed in each department.
- The second stage will be the distribution of departmental overheads among the cost units on some suitable basis. If this distribution is suitably made, each unit of product will be charged with the proper share of overheads and the total cost per unit of output so obtained will contain a share of overhead. This process of distribution among cost units is called “Absorption” or “Recovery” of Overheads.

# BASES OF APPORTIONMENT

Overhead	Basis of Apportionment
1. Rent and rates 2. Lighting 3. Canteen expenses, Supervisor's salary, Labour welfare expenses etc.	Floor space occupied Number of light points or Floor area occupied Number of workers
4. Insurance Premium 5. Indirect wages 6. Power	Capital value of assets Direct wages of each department Meter reading or Horse Power of machine or kilowatt Hours
7. Technical director's fees	Time devoted by them to each department
8. Employees' State Insurance Contribution	Direct wages
9. Work Manager's Salary	Direct labour hours or time devoted by him
10. Depreciation of Plant	Capital value as per Plant Register
11. General Expenses	Direct wages of each department

May Rs. 11,400 and June Rs. 14,100.]

6. Bharat Company is having four departments : A, B and C are producing departments and D is a service department. The actual cost for a period of one month are as under :

Indirect expenses	Rs.
Rent	1,000
Plant Repairs	2,200
Depreciation	1,200
Lighting	900
Supervision expenses	220
Insurance premium of plant	3,000
Power	1,000
	<u>1,800</u>
	<u>11,320</u>

The following data is also available in respect of four departments :

	A	B	C	D
Area occupied-square ft.	250	150	100	50
Number of workers	24	16	12	8
Value of plant	Rs. 24,000	18,000	12,000	6,000
Direct wages	Rs. 8,000	6,000	4,000	2,000
Actual power used	Rs. 800	400	400	200

Apportion the costs to the various departments on the suitable basis.

• **Solution:**

Statement Showing Apportionment of Overheads

Overheads	Basis	Total	Production Dept.			Service Dept.
			A	B	C	D
Indirect Exp.	Direct Wages (4 : 3 : 2 : 1)	1,000	400	300	200	100
Rent	Area occupied (5 : 3 : 2 : 1)	2,200	1,000	600	400	200
Plant Repairs	Value of plant (4 : 3 : 2 : 1)	1,200	480	360	240	120
Depreciation	Value of plant (4 : 3 : 2 : 1)	900	360	270	180	90
Lighting	Area occupied (5 : 3 : 2 : 1)	220	100	60	40	20
Supervision Exp.	No. of workers (6 : 4 : 3 : 2)	3,000	1,200	800	600	400
Insurance Prem.	Value of plant (4 : 3 : 2 : 1)	1,000	400	300	200	100
Power	Actual power (4 : 2 : 2 : 1)	1,800	800	400	400	200
Direct Wages	Service Department (given)	2,000	--	--	--	2,000
<b>TOTAL</b>	<b>-----</b>	<b>13,320</b>	<b>4,740</b>	<b>3,090</b>	<b>2,260</b>	<b>3,230</b>



8. The following details are of Anand Ltd. Mention the allocation of overhead expenses with proper basis of allocation. Prepare allocation sheet.

Particulars	Production dept.			Service dept.	
	A	B	C	D	E
Direct Wages (Rs.)	5,000	7,000	8,000	2,000	3,000
Direct Material (Rs.)	3,000	4,000	4,000	2,000	2,000
Electricity (kilo wat.)	5,000	4,000	3,000	2,000	2,000
Number of workers	300	300	200	100	100
Assets value Rs.	75,000	50,000	25,000	15,000	10,000
Space occupied (square meter)	450	450	300	150	150

Combined expenses were as under :

Motive Power	Rs. 800	Workers Welfare Exp.	Rs. 2,700
Lighting	200	Workers Contribution in E.S.I.	1,250
Supervision	2,500	Canteen exp.	300
Indirect materials	1,500	Rent and taxes	500
Repairing maintenance	3,500		

Exp. of Service Dept. D allocate in proportion of direct wages and exp. of Service Dept. E allocate in proportion 6 : 3 : 1 among Production Dept. A, B, C.

• **Solution:**

Statement Showing Apportionment of Overheads

Overheads	Basis	Total	Production Dept.			Service Dept.	
			A	B	C	D	E
Motive power	Electricity (5 : 4 : 3 : 2 : 2)	800	250	200	150	100	100
Lighting	Space occupied (3:3:2:1:1)	200	60	60	40	20	20
Supervision	No. of workers (3:3:2:1:1)	2,500	750	750	500	250	250
Indirect materials	Direct material (3:4:4:2:2)	1,500	300	400	400	200	200
Repairing	Assets value (15:10:5:3:2)	3,500	1,500	1,000	500	300	200
Workers W. Exp.	No. of workers (3:3:2:1:1)	2,700	810	810	540	270	270
W. C. in E.S.I.	Direct wages (5:7:8:2:3)	1,250	250	350	400	100	150
Canteen Exp.	No. of workers (3:3:2:1:1)	300	90	90	60	30	30
Rent and Taxes	Space occupied (3:3:2:1:1)	500	150	150	100	50	50
Direct Wages	Service Department (given)	5,000	--	--	--	2,000	3,000
Direct Material	Service Department (given)	4,000	--	--	--	2,000	2,000
<b>TOTAL</b>	<b>-----</b>	<b>22,250</b>	<b>4,160</b>	<b>3,810</b>	<b>2,690</b>	<b>5,320</b>	<b>6,270</b>

## Statement Showing Apportionment of Service Department Expenses

Particulars	Production Dept.			Service Dept.	
	A	B	C	D	E
Total Expenses as per above statement	4,160	3,810	2,690	5,320	6,270
Add: Distribution of Exp. of D in the ratio of direct wages (5 : 7 : 8 : 2 : 3)	--	--	--	(5,320)	--
	1,064	1,490	1,702	426	638
Add: Distribution of Exp. of D in the ratio of direct wages (5 : 7 : 8 : 2 : 3)	--	--	--	(426)	--
	85	119	137	34	51
Add: Distribution of Exp. of D in the ratio of direct wages (5 : 7 : 8 : 2 : 3)	--	--	--	(34)	--
	7	11	12	--	4
Total Exp. after distribution of exp. of D	5,316	5,430	4,541	--	6,963
Add: Distribution of Exp. of E in the 6 : 3 : 1 ratio	4,178	2,089	696	--	(6,963)
<b>TOTAL Exp. after allocating Service dept. Exp.</b>	<b>9,494</b>	<b>7,519</b>	<b>5,237</b>	<b>--</b>	<b>--</b>

7. In one company there are three production departments and two service departments. The following figures are available from its books :

Rent and Rates	Rs. 5,000	General lighting	Rs. 600
Indirect Labour	Rs. 1,500	Power	Rs. 1,500
Depreciation on Machine	Rs. 10,000	Misc expenses	Rs. 10,000

The following was additional information :

	Production Depts.			Service Depts.		
	A	B	C	D	E	Total
Area occupied (Sq.Mtrs.)	2,000	2,500	3,000	2,000	500	10,000
Light Points	10	15	20	10	5	60
Direct Labour (Rs.)	3,000	2,000	3,000	1,500	500	10,000
Horse Power of Machines	60	30	50	10	—	150
Cost of Machines (Rs.)	60,000	80,000	1,00,000	5,000	5,000	2,50,000
Hours Worked	6,226	4,028	4,066	—	—	

The expenses of Service Departments are allocated as under :

	A	B	C	D	E
D	20%	30%	40%	—	10%
E	40%	20%	30%	10%	—

If an item is costing Rs. 50 for Raw-Materials. Rs. 30 for Wages and if it takes, 4, 5 and 3 hours each of Depts. A, B and C for completion, then calculate its cost price.

• **Solution:**

Statement Showing Apportionment of Overheads

Overheads	Basis	Total	Production Dept.			Service Dept.	
			A	B	C	D	E
Rent and Taxes	Area occupied (4:5:6:4:1)	5,000	1,000	1,250	1,500	1,000	250
Indirect labour	Direct labour (6:4:6:3:1)	1,500	450	300	450	225	75
Dep. on machine	Cost (12 : 16 : 20 : 1 : 1)	10,000	2,400	3,200	4,000	200	200
General lighting	Light points (2:3:4:2:1)	600	100	150	200	100	50
Power	Horse power (6:3:5:1:0)	1,500	600	300	500	100	--
Misc. Expenses	Direct labour (6:4:6:3:1)	10,000	3,000	2,000	3,000	1,500	500
Direct labour	Service Dept. (Given)	2,000	--	--	--	1,500	500
<b>TOTAL</b>	-----	<b>30,600</b>	<b>7,550</b>	<b>7,200</b>	<b>9,650</b>	<b>4,625</b>	<b>1,575</b>

## Statement Showing Apportionment of Service Department Expenses

Particulars	Production Dept.			Service Dept.	
	A	B	C	D	E
Total Expenses as per above statement	7,550	7,200	9,650	4,625	1,575
Add: Distribution of Exp. of D in 20%, 30%, 40% and 10%	925	1,388	1,850	(4,625)	462
	<b>8,475</b>	<b>8,588</b>	<b>11,500</b>	--	<b>2,037</b>
Add: Distribution of Exp. of E in 40%, 20%, 30% and 10%	815	407	611	204	(2,037)
	<b>9,290</b>	<b>8,995</b>	<b>12,111</b>	<b>204</b>	--
Add: Distribution of Exp. of D in 20%, 30%, 40% and 10%	41	61	82	(204)	20
	<b>9,331</b>	<b>9,056</b>	<b>12,193</b>	--	<b>20</b>
Add: Distribution of Exp. of E in 40%, 20%, 30% and 10%	9	4	7	--	(20)
<b>TOTAL Exp. after allocating Service dept. Exp.</b>	<b>9,340</b>	<b>9,060</b>	<b>12,200</b>	--	--
<b>÷ Hours Worked</b>	<b>6,226</b>	<b>4,028</b>	<b>4,066</b>	--	--
<b>Overhead Rate Per Hour</b>	<b>1.50</b>	<b>2.25</b>	<b>3.00</b>	--	--

- Total Cost Price:

Raw Material	₹ 50.00
+ Wages	₹ 30.00
+ Overheads of Production Dept.	

Hours × Rate per hour

Dept. A	4	×	1.50	= ₹ 6.00	
Dept. B	5	×	2.25	= ₹ 11.25	
Dept. C	3	×	3.00	= ₹ 9.00	₹ 26.25

**Total Cost ₹ 106.25**