## CHAPTER 13

## RESPONSIBILITY ACCOUNTING, SUPPORT DEPARTMENT ALLOCATIONS, AND TRANSFER PRICING

26. a. From HR to Fabricating $[(0.35 \div 0.80) \times \$ 630,000]$

From Admin. to Fabricating $[(0.50 \div 0.90) \times \$ 450,000]$ Total
b. From HR to Finishing $[(0.45 \div 0.80) \times \$ 630,000]$

From Admin. to Finishing $[(0.40 \div 0.90) \times \$ 450,000]$
Total
\$275,625
250,000
\$525,625
\$354,375
200,000
\$554,375
27. Checking:

Administration $(0.30 \div 0.80) \times \$ 540,000$
Human resources $(0.30 \div 0.80) \times \$ 360,000$
Accounting $(0.40 \div 0.80) \times \$ 300,000$
Direct costs
\$ 202,500
135,000
150,000
630,000
\$1,117,500
Savings:
Administration $(0.40 \div 0.80) \times \$ 540,000 \quad \$ 270,000$
Human resources $(0.20 \div 0.80) \times \$ 360,000 \quad 90,000$
Accounting $(0.20 \div 0.80) \times \$ 300,000 \quad 75,000$
Direct costs
337,500
\$772,500
Loans:

| Administration $(0.10 \div 0.80) \times \$ 540,000$ | $\$ 67,500$ |
| :--- | ---: |
| Human resources $(0.30 \div 0.80) \times \$ 360,000$ | 135,000 |
| Accounting $(0.20 \div 0.80) \times \$ 300,000$ | 75,000 |
| Direct costs | $\underline{675,000}$ |
|  | $\underline{\$ 952,500}$ |

28. Administration $(\$ 540,000)$

| Human resources | $(\$ 540,000 \times 0.10)$ | $\$ 54,000$ |
| :--- | :--- | ---: |
| Accounting | $(\$ 540,000 \times 0.10)$ | 54,000 |
| Checking | $(\$ 540,000 \times 0.30)$ | 162,000 |
| Savings | $(\$ 540,000 \times 0.40)$ | 216,000 |
| Loans | $(\$ 540,000 \times 0.10)$ | $\underline{54,000}$ |
|  |  | $\underline{\$ 540,000}$ |


| Human resources $(\$ 360,000+\$ 54,000=\$ 414,000)$ |  |  |
| :--- | ---: | ---: |
| Accounting | $\$ 414,000 \times(0.10 \div 0.90)$ | $\$ 46,000$ |
| Checking | $\$ 414,000 \times(0.30 \div 0.90)$ | 138,000 |
| Savings | $\$ 414,000 \times(0.20 \div 0.90)$ | 92,000 |
| Loans | $\$ 414,000 \times(0.30 \div 0.90)$ | $\underline{138,000}$ |
|  |  | $\underline{\$ 414,000}$ |

Accounting $(\$ 300,000+\$ 54,000+\$ 46,000=\$ 400,000)$
Checking
$\$ 400,000 \times(0.40 \div 0.80) \quad \$ 200,000$

| Savings | $\$ 400,000 \times(0.20 \div 0.80)$ | 100,000 |
| :--- | :--- | :--- |
| Loans | $\$ 400,000 \times(0.20 \div 0.80)$ | $\underline{100,000}$ |
|  |  | $\$ 400,000$ |

Checking: $\quad \$ 630,000+\$ 162,000+\$ 138,000+\$ 200,000=\$ 1,130,000$
Savings: $\quad \$ 337,500+\$ 216,000+\$ 92,000+\$ 100,000=\$ 745,500$
Loans: $\quad \$ 675,000+\$ 54,000+\$ 138,000+\$ 100,000=\$ 967,000$
29. a. Human resources $(\$ 360,000)$

| Administration | $(\$ 360,000 \times 0.10)$ | $\$ 36,000$ |
| :--- | :--- | ---: |
| Maintenance | $(\$ 360,000 \times 0.15)$ | 54,000 |
| Assembly | $(\$ 360,000 \times 0.40)$ | 144,000 |
| Finishing | $(\$ 360,000 \times 0.35)$ | $\underline{126,000}$ |
|  | $\underline{\$ 360,000}$ |  |
| Administration $(\$ 558,000+\$ 36,000=\$ 594,000)$ | $\$ 66,000$ |  |
| Maintenance | $\$ 594,000 \times(0.10 \div 0.90)$ | 330,000 |
| Assembly | $\$ 594,000 \times(0.50 \div 0.90)$ | $\underline{198,000}$ |
| Finishing | $\$ 594,000 \times(0.30 \div 0.90)$ | $\underline{\$ 594,000}$ |

$\begin{array}{ccl}\text { Maintenance }(\$ 170,000+\$ 54,000+\$ 66,000=\$ 290,000) & \\ \text { Assembly } \quad \$ 290,000 \times(0.45 \div 0.80) & \$ 163,125 \\ \text { Finishing } & \$ 290,000 \times(0.35 \div 0.80) & \underline{126,875} \\ & & \underline{\$ 290,000}\end{array}$
b. Assembly:
$(0.40 \times \$ 360,000)+[(0.5 \div 0.9) \times \$ 594,000]+[(0.45 \div 0.8) \times \$ 290,000]=$ $\$ 144,000+\$ 330,000+\$ 163,125=\underline{\$ 637,125}$

Finishing:
$(0.35 \times \$ 360,000)+[(0.3 \div 0.9) \times \$ 594,000]+[(0.35 \div 0.8) \times \$ 290,000]=$ $\$ 126,000+\$ 198,000+\$ 126,875=\underline{\$ 450,875}$
c. The cost allocation is affected by the order in which costs are assigned because the cost allocated from a particular service department depends on the amount of cost allocated to that service department from other service departments. The amount of costs allocated from other service departments depends on the benefits-provided ranking.
52.


Administration costs:
Surgery: $\$ 5,400,000 \times 0.53=\$ 2,862,000$
In-patient: $\$ 5,400,000 \times 0.33=\$ 1,782,000$
Out-patient: $\$ 5,400,000 \times 0.14=\$ 756,000$

Public relations cost:
Surgery: $\$ 1,100,000 \times 0.20=\$ 220,000$
In-patient: $\$ 1,100,000 \times 0.36=\$ 396,000$
Out-patient: $\$ 1,100,000 \times 0.44=\$ 484,000$
Maintenance and janitorial cost:
Surgery: $\$ 1,700,000 \times 0.35=\$ 595,000$
In-patient: $\$ 1,700,000 \times 0.40=\$ 680,000$
Out-patient: $\$ 1,700,000 \times 0.25=\$ 425,000$

|  | Surgery | $\underline{\text { In-Patient }}$ |  | $\underline{\text { Out-Patient }}$ |
| :--- | ---: | ---: | ---: | ---: |
| Administration | $\$ 2,862,000$ | $\$ 1,782,000$ |  | $\$ 756,000$ |
| Public Relations | 220,000 | 396,000 |  | 484,000 |
| Maintenance | 595,000 | $\underline{680,000}$ |  | 425,000 |
| Total | $\underline{\$ 3,677,000}$ | $\underline{\$ 2,858,000}$ | $\underline{\$ 1,665,000}$ |  |

53. a. Administration: $45+210+18=273$

Commercial $=45 \div 273=16 \% ; 0.16 \times \$ 1,500,000=\$ 240,000$
Residential $=210 \div 273=77 \% ; 0.77 \times \$ 1,500,000=\$ 1,155,000$
Property Mgmt. $=18 \div 273=7 \% ; 0.07 \times \$ 1,500,000=\$ 105,000$
Accounting $=\$ 900,000+\$ 1,440,000+\$ 540,000=\$ 2,880,000$
Commercial $=\$ 900,000 \div \$ 2,880,000=31 \% ; 0.31 \times \$ 990,000=\$ 306,900$
Residential $=\$ 1,440,000 \div \$ 2,880,000=50 \% ; 0.50 \times \$ 990,000=\$ 495,000$
Property Mgmt. $=\$ 540,000 \div \$ 2,880,000=19 \% ; 0.19 \times \$ 990,000=\$ 188,100$
Promotion: $\$ 10,000,000+\$ 18,000,000+\$ 2,000,000=\$ 30,000,000$
Commercial $=\$ 10,000,000 \div \$ 30,000,000=33 \% ; 0.33 \times \$ 720,000=\$ 237,600$
Residential $=\$ 18,000,000 \div \$ 30,000,000=60 \% ; 0.60 \times \$ 720,000=\$ 432,000$
Property Mgmt. $=\$ 2,000,000 \div \$ 30,000,000=7 \% ; 0.07 \times \$ 720,000=\$ 50,400$
b.

|  | Om | Res. | Prop. Mgmt. |
| :---: | :---: | :---: | :---: |
| venue | \$ 10,000,000 | \$18,000,000 | \$2,000,000 |
| Direct costs | $(10,490,000)$ | $(9,179,000)$ | $(398,400)$ |
| Allocated costs: |  |  |  |
| Administration | $(240,000)$ | $(1,155,000)$ | $(105,000)$ |
| Accounting | $(306,900)$ | $(495,000)$ | $(188,100)$ |
| Promotion | $(237,600)$ | $(432,000)$ | $(50,400)$ |
| Operating income | \$ $(1,274,500)$ | \$ 6,739,000 | \$1,258,100 |

54. a. Administration costs $(\$ 1,500,000)$

|  | Base | $\underline{\text { Allocation }}$ |
| :--- | ---: | ---: |
| Accounting | $15 \div 300$ | $\$ 5,000$ |
| Promotion | $12 \div 300$ | 60,000 |
| Commercial | $45 \div 300$ | 225,000 |
| Residential | $210 \div 300$ | $1,050,000$ |
| Property Mgmt. | $18 \div 300$ | $\underline{90,000}$ |
| Total (rounded) |  | $\underline{\$ 1,500,000}$ |

Accounting costs $(\$ 990,000+\$ 75,000=\$ 1,065,000)$

## Base

## Allocation

| Promotion | $\$ 720,000 \div \$ 3,600,000$ | $\$ 213,000$ |
| :--- | ---: | ---: |
| Commercial | $\$ 900,000 \div \$ 3,600,000$ | 266,250 |
| Residential | $\$ 1,440,000 \div \$ 3,600,000$ | 426,000 |
| Property Mgmt. | $\$ 540,000 \div \$ 3,600,000$ | $\underline{159,750}$ |
| Total (rounded) |  | $\underline{\$ 1,065,000}$ |

Promotion (\$720,000 $+\$ 60,000+\$ 213,000=\$ 993,000)$

|  | Base | $\underline{\text { Allocation }}$ |
| :--- | ---: | ---: |
| Commercial | $\$ 10,000,000 \div \$ 30,000,000$ | $\$ 331,000$ |
| Residential | $\$ 18,000,000 \div \$ 30,000,000$ | 595,800 |
| Property Mgmt. | $\$ 2,000,000 \div \$ 30,000,000$ | $\underline{66,200}$ |
|  |  | $\underline{\$ 993,000}$ |

Summary of allocations:
Commercial: $\$ 225,000+\$ 266,250+\$ 331,000=\$ 822,250$
Residential: $\$ 1,050,000+\$ 426,000+\$ 595,800=\$ 2,071,800$
Property Mgmt.: $\$ 90,000+\$ 159,750+\$ 66,200=\$ 315,950$
b.

|  | Commercial | Residential | Property Mgmt |
| :---: | :---: | :---: | :---: |
| Revenues | \$ 10,000,000 | \$18,000,000 | \$2,000,000 |
| Direct costs | $(10,490,000)$ | $(9,179,000)$ | $(398,400)$ |
| Indirect costs | $(822,250)$ | $(2,071,800)$ | $(315,950)$ |
| Income | \$ $(1,312,250)$ | \$ 6,749,200 | \$1,285,650 |

The Property Management Department is the most profitable with a return on revenues of 64.3 percent.
55. a. Personnel: $72+48=120$

Residential $=72 \div 120=60 \% ; 0.60 \times \$ 140,000=\$ 84,000$
Commercial $=48 \div 120=40 \% ; 0.40 \times \$ 140,000=\$ 56,000$
Administration: $\$ 480,000+\$ 800,000=\$ 1,280,000$
Residential $=\$ 480,000 \div \$ 1,280,000=37.5 \% ; 0.375 \times \$ 180,000=\$ 67,500$
Commercial $=\$ 800,000 \div \$ 1,280,000=62.5 \% ; 0.625 \times \$ 180,000=\$ 112,500$
Total support costs allocated to Residential $=\$ 84,000+\$ 67,500=\$ 151,500$
Total support costs allocated to Commercial $=\$ 56,000+\$ 112,500=\$ 168,500$
b.

| \# of Empl. | $\frac{\text { \% }}{20}$ | $\underline{\text { Direct Costs }}$ | $\underline{\text { \% }}$ |
| :---: | :---: | :---: | :---: |
| 30 | $20 \%$ |  |  |
| 72 | $48 \%$ | $\$ 480,000$ | $37.5 \%$ |
| $\frac{48}{150}$ | $32 \%$ | 800,000 | $62.5 \%$ |

Personnel $=\$ 140,000$ of costs
Administration $=0.20 \times \$ 140,000=\$ 28,000$
Residential $=0.48 \times \$ 140,000=\$ 67,200$
Commercial $=0.32 \times \$ 140,000=\$ 44,800$
Administration $=\$ 180,000+\$ 28,000=\$ 208,000$ of costs
Residential $=0.375 \times \$ 208,000=\$ 78,000$
Commercial $=0.625 \times \$ 208,000=\$ 130,000$
Total support costs allocated to Residential $=\$ 67,200+\$ 78,000=\$ 145,200$

Total support costs allocated to Commercial $=\$ 44,800+\$ 130,000=\$ 174,800$
c. (1) Direct Method

Residential $=\$ 480,000+\$ 151,500=\$ 631,500 ; \$ 631,500 \div 60,000=\$ 10.53$
Commercial $=\$ 800,000+\$ 168,500=\$ 968,500 ; \$ 968,500 \div 570,000=\$ 1.70$
(2) Step Method

Residential $=\$ 480,000+\$ 145,200=\$ 625,200 ; \$ 625,200 \div 60,000=\$ 10.42$
Commercial $=\$ 800,000+\$ 174,800=\$ 974,800 ; \$ 974,800 \div 570,000=\$ 1.71$

