

## Exercise E21-6

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|                  |  |               |
|------------------|--|---------------|
| (a) (1) Finished |  | 9,000         |
| + Not Finished   |  | <u>3,000</u>  |
| EUP (M)          |  | <u>12,000</u> |

|                    |       |                |
|--------------------|-------|----------------|
| (2) Finished       |       | 9,000          |
| Not Finished 3,000 | x 60% | = <u>1,800</u> |
| EUP (CC)           |       | <u>10,800</u>  |

|        |                 |   |        |
|--------|-----------------|---|--------|
| (b) M: | <u>\$45,000</u> | = | \$3.75 |
|        | 12,000          |   |        |

|     |                            |   |        |
|-----|----------------------------|---|--------|
| CC: | <u>\$16,200 + \$18,900</u> | = | \$3.25 |
|     | 10,800                     |   |        |

|                 |       |   |        |   |                 |
|-----------------|-------|---|--------|---|-----------------|
| (c)             |       |   |        |   |                 |
| <u>Finished</u> |       |   |        |   |                 |
| M               | 9,000 | x | \$3.75 | = | \$33,750        |
| CC              | 9,000 | x | \$3.25 | = | <u>29,250</u>   |
|                 |       |   |        |   | <u>\$63,000</u> |
|                 |       |   |        | / | 9,000 = \$7     |

|                     |       |   |        |   |                 |
|---------------------|-------|---|--------|---|-----------------|
| <u>Not Finished</u> |       |   |        |   |                 |
| M                   | 3,000 | x | \$3.75 | = | \$11,250        |
| CC                  | 1,800 | x | \$3.25 | = | <u>5,850</u>    |
|                     |       |   |        |   | <u>\$17,100</u> |



## Exercise E21-7

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(a) Determine (1) EUP (M) and (2) EUP (CC):

|     |                |  |  |               |
|-----|----------------|--|--|---------------|
| (1) | Finished       |  |  | 12,000        |
|     | + Not Finished |  |  | <u>3,000</u>  |
|     | EUP (M)        |  |  | <u>15,000</u> |

|     |              |             |   |               |
|-----|--------------|-------------|---|---------------|
| (2) | Finished     |             |   | 12,000        |
|     | Not Finished | 3,000 x 20% | = | <u>600</u>    |
|     | EUP (CC)     |             |   | <u>12,600</u> |

(b) Determine the unit costs of M and CC:

$$\text{M: } \frac{\$33,000}{15,000} = \$2.20$$

$$\text{CC: } \frac{\$27,000 + \$36,000}{12,600} = \$5.00$$

(c) Determine the total and units cost of goods finished (transferred out):

Finished

$$\text{M } 12,000 \times \$2.20 = \$26,400$$

$$\text{CC } 12,000 \times \$5.00 = \underline{60,000}$$

$$\underline{\$86,400} / 12,000 = \$7.20$$

**Exercise E21-7**  
**(continued)**

**(d) Determine and prove the cost of EI (goods in process):**

**W I P -- S**

|                        |                      |              |               |  |
|------------------------|----------------------|--------------|---------------|--|
|                        |                      |              |               |  |
| <b>M</b>               | <b>33,000</b>        | <b>to FG</b> | <b>86,400</b> |  |
| <b>L</b>               | <b>27,000</b>        |              |               |  |
| <b>O</b>               | <b><u>36,000</u></b> |              |               |  |
|                        | <b>96,000</b>        |              |               |  |
| <br><b>bal = 9,600</b> |                      |              |               |  |

**Proof:**

**Not Finished**

|           |              |          |               |          |                       |
|-----------|--------------|----------|---------------|----------|-----------------------|
| <b>M</b>  | <b>3,000</b> | <b>x</b> | <b>\$2.20</b> | <b>=</b> | <b>\$6,600</b>        |
| <b>CC</b> | <b>600</b>   | <b>x</b> | <b>\$5.00</b> | <b>=</b> | <b><u>3,000</u></b>   |
|           |              |          |               |          | <b><u>\$9,600</u></b> |

**Exercise E21-8**  
**page 943**

**(a)**

|                       |                      |                 |                      |                      |
|-----------------------|----------------------|-----------------|----------------------|----------------------|
| <b>Finished</b>       | <b>14,000</b>        | <b>F</b>        |                      | <b>14,000</b>        |
| <b>- Not Finished</b> | <u><b>1,000</b></u>  | <b>NF</b>       | <b>1,000 x 40% =</b> | <u><b>400</b></u>    |
| <b>EUP (M)</b>        | <u><b>15,000</b></u> | <b>EUP (CC)</b> |                      | <u><b>14,400</b></u> |

**(b) Materials:**

$$\frac{\$900,000}{15,000} = \$60$$

**Conversion Costs:**

$$\frac{\$432,000}{14,400} = \$30$$

**(c) Finished**

**M 14,000 x \$60 = \$840,000**

**CC 14,000 x \$30 = 420,000    \$1,260,000 / 14,000 = \$90**

**Exercise E21-8**  
**(continued)**

**Based on this information, make the necessary journal entry.**

|                                   |                  |
|-----------------------------------|------------------|
| <b>Finished Goods</b>             | <b>1,260,000</b> |
| <b>Work in Process - Blending</b> | <b>1,260,000</b> |

**W I P -- B**

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|  |                       |                |          |                |                  |                       |  |                  |  |  |              |                  |
|--|-----------------------|----------------|----------|----------------|------------------|-----------------------|--|------------------|--|--|--------------|------------------|
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>BI</b></td> <td style="text-align: right;"><b>170,000</b></td> </tr> <tr> <td><b>M</b></td> <td style="text-align: right;"><b>800,000</b></td> </tr> <tr> <td><b>L &amp; O</b></td> <td style="text-align: right;"><b><u>362,000</u></b></td> </tr> <tr> <td></td> <td style="text-align: right;"><b>1,332,000</b></td> </tr> </table> | <b>BI</b>             | <b>170,000</b> | <b>M</b> | <b>800,000</b> | <b>L &amp; O</b> | <b><u>362,000</u></b> |  | <b>1,332,000</b> |  | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>to FG</b></td> <td style="text-align: right;"><b>1,260,000</b></td> </tr> </table> | <b>to FG</b> | <b>1,260,000</b> |
| <b>BI</b>  | <b>170,000</b>        |                |          |                |                  |                       |  |                  |  |  |              |                  |
| <b>M</b>   | <b>800,000</b>        |                |          |                |                  |                       |  |                  |  |  |              |                  |
| <b>L &amp; O</b>   | <b><u>362,000</u></b> |                |          |                |                  |                       |  |                  |  |  |              |                  |
|  | <b>1,332,000</b>      |                |          |                |                  |                       |  |                  |  |  |              |                  |
| <b>to FG</b>   | <b>1,260,000</b>      |                |          |                |                  |                       |  |                  |  |  |              |                  |

**bal = 72,000**

**Proof:**

**Not Finished**

|           |              |          |             |          |                               |
|-----------|--------------|----------|-------------|----------|-------------------------------|
| <b>M</b>  | <b>1,000</b> | <b>x</b> | <b>\$60</b> | <b>=</b> | <b>\$60,000</b>               |
| <b>CC</b> | <b>400</b>   | <b>x</b> | <b>\$30</b> | <b>=</b> | <b><u>12,000</u></b>          |
|           |              |          |             |          | <b><u><u>\$72,000</u></u></b> |

**Exercise E21-3**  
**pages 941**

|            |                              |                          |
|------------|------------------------------|--------------------------|
| <b>(a)</b> | <b>Beginning (units)</b>     | <b>400</b>               |
|            | <b>+ Started</b>             | <b><u>1,100</u></b>      |
|            | <b>=</b>                     | <b>1,500</b>             |
|            | <b>- Finished</b>            | <b><u>1,200</u></b>      |
|            | <b>= Ending (in process)</b> | <b><u><u>300</u></u></b> |

|            |                          |                            |
|------------|--------------------------|----------------------------|
| <b>(b)</b> | <b>Finished</b>          | <b>1,200</b>               |
|            | <b>+ Not Finished</b>    | <b><u>300</u></b>          |
|            | <b>= EUP (materials)</b> | <b><u><u>1,500</u></u></b> |

$$\frac{\$2,040 + \$5,160}{1,500 \text{ EUP(M)}} = \$4.80$$

|            |                         |                            |
|------------|-------------------------|----------------------------|
| <b>(c)</b> | <b>Finished</b>         | <b>= 1,200</b>             |
|            | <b>Not Finished 300</b> |                            |
|            | <b>EUP (CC)</b>         | <b>= <u>120</u></b>        |
|            |                         | <b><u><u>1,320</u></u></b> |

|                |                              |                |                 |
|----------------|------------------------------|----------------|-----------------|
| <b>BI - CC</b> | <b>\$1,550</b>               |                |                 |
| <b>DL</b>      | <b>2,740</b>                 |                |                 |
| <b>OH</b>      | <b><u>1,650</u></b>          |                |                 |
|                | <b><u><u>\$5,940</u></u></b> | <b>/ 1,320</b> | <b>= \$4.50</b> |

## Exercise E21-3 (continued)

**(d) Finished**

**M     1,200 x \$4.80 = \$5,760**

**CC    1,200 x \$4.50 = 5,400     \$11,160 / 1,200 = \$9.30**

**(e) Not Finished**

**M        300 x \$4.80 =     \$1,440**

**CC       120 x \$4.50 =       540**

**Ending Inventory               \$1,980**

### Work in Process - Painting

|                        |                     |              |               |
|------------------------|---------------------|--------------|---------------|
| <b>Balance</b>         | <b>3,590</b>        | <b>to FG</b> | <b>11,160</b> |
| <b>M</b>               | <b>5,160</b>        |              |               |
| <b>L</b>               | <b>2,740</b>        |              |               |
| <b>OH</b>              | <b><u>1,650</u></b> |              |               |
|                        | <b>13,140</b>       |              |               |
| <br><b>Bal = 1,980</b> |                     |              |               |

**Exercise E21-11**  
**page 944**

|                       |                      |                 |          |                      |
|-----------------------|----------------------|-----------------|----------|----------------------|
| <b>(a) Finished</b>   | <b>15,000</b>        | <b>F</b>        | <b>=</b> | <b>15,000</b>        |
| <b>+ Not Finished</b> | <u><b>5,000</b></u>  | <b>NF</b>       | <b>=</b> | <u><b>500</b></u>    |
| <b>EUP (M)</b>        | <u><b>20,000</b></u> | <b>EUP (CC)</b> |          | <u><b>15,500</b></u> |

**(b) Materials:**  

$$\frac{\$20,000 + \$177,200}{20,000} = \$9.86$$

**Conversion Costs:**  

$$\frac{\$43,180 + \$359,820}{15,500} = \$26.00$$

**(c) Finished**

|           |                  |                       |                                     |
|-----------|------------------|-----------------------|-------------------------------------|
| <b>M</b>  | 15,000 x \$ 9.86 | <b>\$147,900</b>      |                                     |
| <b>CC</b> | 15,000 x \$26.00 | <u><b>390,000</b></u> | <b>\$537,900 / 15,000 = \$35.86</b> |

**Exercise E21-11**  
**(continued)**

**Make the necessary journal entry for goods completed.**

|                                    |                |                |
|------------------------------------|----------------|----------------|
| <b>Finished Goods</b>              | <b>537,900</b> |                |
| <b>Work in Process - Polishing</b> |                | <b>537,900</b> |

| <b>W I P -- P</b>   |                       |              |                |
|---------------------|-----------------------|--------------|----------------|
| <b>BI</b>           | <b>63,180</b>         | <b>to FG</b> | <b>537,900</b> |
| <b>M</b>            | <b>177,200</b>        |              |                |
| <b>L</b>            | <b>102,680</b>        |              |                |
| <b>O</b>            | <b><u>257,140</u></b> |              |                |
|                     | <b>600,200</b>        |              |                |
| <b>bal = 62,300</b> |                       |              |                |

**Proof:**

| <b><u>Not Finished</u></b> |              |          |                |          |                               |
|----------------------------|--------------|----------|----------------|----------|-------------------------------|
| <b>M</b>                   | <b>5,000</b> | <b>x</b> | <b>\$ 9.86</b> | <b>=</b> | <b>\$49,300</b>               |
| <b>CC</b>                  | <b>500</b>   | <b>x</b> | <b>\$26.00</b> | <b>=</b> | <b><u>13,000</u></b>          |
|                            |              |          |                |          | <b><u><u>\$62,300</u></u></b> |



## Exercise E21-13

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(a) Determine (1) EUP (M) and (2) EUP (CC):

|              | <u>(1) Materials</u> |         | <u>(2) Conv Costs</u> |
|--------------|----------------------|---------|-----------------------|
| Finished     | 49,000               |         | 49,000                |
| Not Finished | <u>26,000</u>        | x 1/5 = | <u>5,200</u>          |
| EUP          | <u>75,000</u>        |         | <u>54,200</u>         |

(b) Determine the unit costs of M and CC:

$$\text{M: } \frac{\$18,000 + \$180,000}{75,000} = \$2.64$$

$$\text{CC: } \frac{\$14,175 + \$94,225}{54,200} = \$2.00$$

$$\text{Total} \quad \underline{\underline{\$4.64}}$$

(c) Determine the total and units cost of goods finished (transferred out):

Alternative 1:

$$49,000 \quad \text{x} \quad \$4.64 \quad = \quad \$227,360$$

**Exercise E21-13**  
**(continued)**

**(c) Determine the total and units cost of goods finished (transferred out):**

**Alternative 2:**

**Finished**

**M     49,000 x \$2.64 = \$129,360**

**CC    49,000 x \$2.00 = 98,000**

**\$227,360 / 49,000 = \$4.64**

**Make a journal entry.**

**Finished Goods (or WIP - Next)**

**227,360**

**Work in Process - W**

**227,360**

**Exercise E21-13**  
**(continued)**

**(d) Determine and prove the cost of EI (goods in process):**

| <b>W I P -- W</b>   |                |              |                |
|---------------------|----------------|--------------|----------------|
| <b>BI</b>           | <b>32,175</b>  | <b>to FG</b> | <b>227,360</b> |
| <b>M</b>            | <b>180,000</b> |              |                |
| <b>L</b>            | <b>32,780</b>  |              |                |
| <b>O</b>            | <b>61,445</b>  |              |                |
|                     | <b>306,400</b> |              |                |
| <b>bal = 79,040</b> |                |              |                |

**Proof:**

**Not Finished**

|           |               |          |               |          |                        |
|-----------|---------------|----------|---------------|----------|------------------------|
| <b>M</b>  | <b>26,000</b> | <b>x</b> | <b>\$2.64</b> | <b>=</b> | <b>\$68,640</b>        |
| <b>CC</b> | <b>5,200</b>  | <b>x</b> | <b>\$2.00</b> | <b>=</b> | <b><u>10,400</u></b>   |
|           |               |          |               |          | <b><u>\$79,040</u></b> |

# Exercise E21-4

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| <u>Date</u> | <u>Account Titles</u>     | <u>Debit</u> | <u>Credit</u> |
|-------------|---------------------------|--------------|---------------|
| 1.          | Raw Materials (Inventory) | 62,500       |               |
|             | Accounts Payable          |              | 62,500        |
|             |                           |              |               |
| 2.          | Factory Labor             | 56,000       |               |
|             | Wages Payable             |              | 56,000        |
|             |                           |              |               |
| 3.          | Manufacturing Overhead    | 70,000       |               |
|             | Accounts Payable          |              | 40,000        |
|             | Cash                      |              | 30,000        |
|             |                           |              |               |
| 4.          | Work in Process–Cutting   | 15,700       |               |
|             | Work in Process–Assembly  | 8,900        |               |
|             | Raw Materials             |              | 24,600        |
|             |                           |              |               |
| 5.          | Work in Process–Cutting   | 29,000       |               |
|             | Work in Process–Assembly  | 27,000       |               |
|             | Factory Labor             |              | 56,000        |

## Exercise E21-4 (continued)

| <u>Date</u> | <u>Account Titles</u>           | <u>Debit</u>   | <u>Credit</u>  |
|-------------|---------------------------------|----------------|----------------|
| <b>6.</b>   | <b>Work in Process–Assembly</b> | <b>25,200</b>  |                |
|             | <b>Work in Process–Assembly</b> | <b>25,800</b>  |                |
|             | <b>Manufacturing Overhead</b>   |                | <b>51,000</b>  |
|             |                                 |                |                |
| <b>7.</b>   | <b>Work in Process–Assembly</b> | <b>67,600</b>  |                |
|             | <b>Work in Process–Cutting</b>  |                | <b>67,600</b>  |
|             |                                 |                |                |
| <b>8.</b>   | <b>Finished Goods</b>           | <b>134,900</b> |                |
|             | <b>Work in Process–Assembly</b> |                | <b>134,900</b> |
|             |                                 |                |                |
| <b>9.</b>   | <b>Cost of Goods Sold</b>       | <b>150,000</b> |                |
|             | <b>Finished Goods</b>           |                | <b>150,000</b> |
|             |                                 |                |                |
|             | <b>Accounts Receivable</b>      | <b>200,000</b> |                |
|             | <b>Sales</b>                    |                | <b>200,000</b> |