

# Chapter 11 Operational Assets: Utilization and Impairment

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## QUESTIONS FOR REVIEW OF KEY TOPICS

### Question 11-1

The terms depreciation, depletion, and amortization all refer to the process of allocating the cost of an operational asset to periods of use. The only difference between the terms is that they refer to different types of operational assets; depreciation for plant and equipment, depletion for natural resources, and amortization for intangibles.

### Question 11-2

The term depreciation often is confused with a decline in value or worth of an asset. Depreciation is not measured as decline in value from one period to the next. Instead, it involves the distribution of the cost of an asset, less any anticipated residual value, over the asset's estimated useful life in a systematic and rational manner that attempts to match revenues with the use of the asset.

### Question 11-3

The process of cost allocation for operational assets requires that three factors be established at the time the asset is put into use. These factors are:

1. Service (useful) life — The estimated use that the company expects to receive from the asset.
2. Allocation base — The value of the usefulness that is expected to be consumed.
3. Allocation method — The pattern in which the usefulness is expected to be consumed.

### Question 11-4

Physical life provides the upper bound for service life. Physical life will vary according to the purpose for which the asset is acquired and the environment in which it is operated. Service life may be less than physical life for several reasons. For example, the expected rate of technological changes may shorten service life. Management intent also may shorten the period of an asset's usefulness below its physical life. For instance, a company may have a policy of using its delivery trucks for a three-year period before trading the trucks for new models.

### Question 11-5

The total amount of depreciation to be recorded during an asset's service life is called its depreciable base. This amount is the difference between the initial value of the asset at its acquisition (its cost) and its residual value. Residual or salvage value is the amount the company expects to receive for the asset at the end of its service life less any anticipated disposal costs.

## *Answers to Questions (continued)*

### **Question 11-6**

Activity-based allocation methods estimate service life in terms of some measure of productivity. Periodic depreciation or depletion is then determined based on the actual productivity generated by the asset during the period. Time-based allocation methods estimate service life in years. Periodic depreciation or amortization is then determined based on the passage of time.

### **Question 11-7**

The straight-line depreciation method allocates an equal amount of depreciable base to each year of an asset's service life. Accelerated depreciation methods allocate higher portions of depreciable base to the early years of the asset's life and lower amounts of depreciable base to later years. Total depreciation is the same by either approach.

### **Question 11-8**

Theoretically, the use of activity-based depreciation methods would provide a better matching of revenues and expenses. Clearly, the productivity of a plant asset is more closely associated with the benefits provided by that asset than the mere passage of time. However, activity-based methods quite often are either infeasible or too costly to use. For example, buildings do not have an identifiable measure of productivity. For assets such as machinery, there may be an identifiable measure of productivity, such as machine hours or units produced, but it is more costly to determine the amount each period than it is to simply measure the passage of time. For these reasons, most companies use time-based depreciation methods.

### **Question 11-9**

Companies might use the straight-line method because they consider that the benefits derived from the majority of plant assets are realized approximately evenly over these assets' useful lives. It also is the easiest method to understand and apply. The effect on net income also could explain why so many companies prefer the straight-line method to the accelerated methods. Straight line produces a higher net income in the early years of an asset's life. Net income can affect bonuses paid to management, or debt agreements with lenders. Income taxes are not a factor in determining the depreciation method because a company is not required to use the same depreciation method for both financial reporting and income tax purposes.

### **Question 11-10**

The group approach to aggregation is applied to a collection of depreciable assets that share similar service lives and other attributes. For example, group depreciation could be used for fleets of vehicles or collections of machinery. The composite approach to aggregation is applied to dissimilar operating assets, such as all of the depreciable assets in one manufacturing plant. Individual assets in the composite may have diverse service lives. Both approaches are similar in that they involve applying a single straight-line rate based on the average service lives of the assets in the group or composite.

## *Answers to Questions (continued)*

### **Question 11-11**

The allocation of the cost of a natural resource to periods of use is called depletion. The process otherwise is identical to depreciation. The activity-based units-of-production method is the predominant method used to calculate depletion, not the time-based straight-line method.

### **Question 11-12**

The amortization of intangible assets is based on the same concepts as depreciation and depletion. The capitalized cost of an intangible asset that has a finite useful life must be allocated to the periods the company expects the asset to contribute to its revenue generating activities. Intangibles, though, generally have no residual values, so the amortizable base is simply cost. Also, intangibles possess no physical life to provide an upper bound to service life. However, most intangibles have a legal or contractual life that limits useful life. Intangible assets that have indefinite useful lives, including goodwill, are not amortized.

### **Question 11-13**

A company can calculate depreciation based on the actual number of days or months the asset was used during the year. A common simplifying convention is to record one-half of a full year's expense in the years of acquisition and disposal. This is known as the half-year convention. The modified half-year convention records a full year's expense when the asset is acquired in the first half of the year or sold in the second half. No expense is recorded when the asset is acquired in the second half of the year or sold in the first half.

### **Question 11-14**

A change in the service life of an operational asset is accounted for as a change in an estimate. The change is accounted for prospectively by simply depreciating the remaining depreciable base of the asset (book value at date of change less estimated residual value) over the revised remaining service life.

### **Question 11-15**

A change in depreciation method is accounted for as a change in accounting principle. The cumulative after-tax effect on prior years' income is reported in the income statement in the year of the change. The cumulative effect is the difference between retained earnings at the beginning of the year of the change as reported, and the beginning-of-year retained earnings that would have resulted if the new accounting method had been used in all prior years. In addition, the effect of the change on income before extraordinary items, net income, and related per-share amounts, if material, should be reported for the current period and on a pro forma (as if) basis for the financial statements of all prior periods included with the current financial statements.

## *Answers to Questions (concluded)*

### **Question 11-16**

If a material error is discovered in an accounting period subsequent to the period in which the error is made, previous years' financial statements that were incorrect as a result of the error are retroactively restated to reflect the correction. Any account balances that are incorrect as a result of the error are corrected by journal entry. If retained earnings is one of the incorrect accounts, the correction is reported as a prior period adjustment to the beginning balance in the statement of shareholders' equity. In addition, a disclosure note is needed to describe the nature of the error and the impact of its correction on net income, income before extraordinary item, and earnings per share.

### **Question 11-17**

An impairment in the value of an operational asset results when there has been a significant decline in value below carrying value (book value). For tangible operational assets and intangibles with finite useful lives, GAAP require an entity to recognize an impairment loss only when the undiscounted sum of estimated future cash flows from an asset is less than the asset's book value. The loss recognized is the amount by which the book value exceeds the fair value of the asset or group of assets when the fair value is readily determinable. If fair value is not determinable, it must be estimated. One method of estimating fair value is to compute the present value of estimated future cash flows from the asset or group of assets.

For intangible operational assets other than goodwill, if book value exceeds fair value, an impairment loss is recognized for the differences. For goodwill, an impairment loss is indicated if the fair value of the reporting unit is less than its book value. A goodwill impairment loss is measured as the excess of book value of goodwill over its "implied" fair value.

For operational assets held for sale, if book value exceeds fair value, an impairment loss is recognized for the difference.

### **Question 11-18**

Repairs and maintenance are expenditures made to *maintain* a given level of benefits provided by the asset and do not *increase* future benefits. Expenditures for these activities should be expensed in the period incurred.

Additions involve adding a new major component to an existing asset. These expenditures usually are capitalized.

Improvements are expenditures for the replacement of a major component of an operational asset. The costs of improvements usually are capitalized.

Rearrangements are expenditures to restructure an operational asset without addition, replacement, or improvement. The objective is to create a new capability for the asset and not necessarily to extend useful life. The costs of material rearrangements should be capitalized if they clearly increase future benefits.

**Exercise 11-2****1. Straight-line:**

$$\frac{\$115,000 - 5,000}{10 \text{ years}} = \$11,000 \text{ per year}$$

**2. Sum-of-the-years' digits:**

Sum-of-the-digits is  $\{[10(10 + 1)] \div 2\} = 55$

2003	\$110,000	x 10/55	=	\$20,000
2004	\$110,000	x 9/55	=	18,000

**3. Double-declining balance:**

Straight-line rate is 10%  $(1 \div 10 \text{ years}) \times 2 = 20\%$  DDB rate

2003	\$115,000	x 20%	=	\$23,000
2004	(\$115,000 - 23,000)	x 20%	=	\$18,400

**4. One hundred fifty percent declining balance:**

Straight-line rate is 10%  $(1 \div 10 \text{ years}) \times 1.5 = 15\%$  rate

2003	\$115,000	x 15%	=	\$17,250
2004	(\$115,000 - 17,250)	x 15%	=	\$14,663

**5. Units-of-production:**

$$\frac{\$115,000 - 5,000}{220,000 \text{ units}} = \$0.50 \text{ per unit depreciation rate}$$

2003	30,000 units	x \$0.50	=	\$15,000
2004	25,000 units	x \$0.50	=	\$12,500

**Exercise 11-3****1. Straight-line:**

$$\frac{\$115,000 - 5,000}{10 \text{ years}} = \$11,000 \text{ per year}$$

$$\begin{array}{lcl} 2003 & \$11,000 \times 3/12 & = & \$ 2,750 \\ 2004 & \$11,000 \times 12/12 & = & \$11,000 \end{array}$$

## 2. Sum-of-the-years' digits:

Sum-of-the-digits is  $\{[10(10 + 1)]/2\} = 55$

$$\begin{array}{lcl} 2003 & \$110,000 \times 10/55 \times 3/12 & = & \underline{\$ 5,000} \\ 2004 & \$110,000 \times 10/55 \times 9/12 & = & \$15,000 \\ & + \$110,000 \times 9/55 \times 3/12 & = & \underline{4,500} \\ & & & \underline{\$19,500} \end{array}$$

## 3. Double-declining balance:

Straight-line rate is  $10\% (1 \div 10 \text{ years}) \times 2 = 20\% \text{ DDB rate}$

$$\begin{array}{lcl} 2003 & \$115,000 \times 20\% \times 3/12 & = & \underline{\$5,750} \\ 2004 & \$115,000 \times 20\% \times 9/12 & = & \$17,250 \\ & + (\$115,000 - 23,000) \times 20\% \times 3/12 & = & \underline{4,600} \\ & & & \underline{\$21,850} \end{array}$$

or,

$$2004 \quad (\$115,000 - 5,750) \times 20\% = \underline{\$21,850}$$

## 4. One hundred fifty percent declining balance:

Straight-line rate is  $10\% (1 \div 10 \text{ years}) \times 1.5 = 15\% \text{ rate}$

$$\begin{array}{lcl} 2003 & \$115,000 \times 15\% \times 3/12 & = & \underline{\$ 4,313} \\ 2004 & \$115,000 \times 15\% \times 9/12 & = & \$12,937 \\ & + (\$115,000 - 17,250) \times 15\% \times 3/12 & = & \underline{3,666} \\ & & & \underline{\$16,603} \end{array}$$

Or,

$$2004 \quad (\$115,000 - 4,313) \times 15\% = \underline{\$16,603}$$

## 5. Units-of-production:

$$\frac{\$115,000 - 5,000}{220,000 \text{ units}} = \$0.50 \text{ per unit depreciation rate}$$

$$\begin{array}{lcl} 2003 & 10,000 \text{ units} \times \$0.50 & = & \$ 5,000 \\ 2004 & 25,000 \text{ units} \times \$0.50 & = & \$12,500 \end{array}$$

**Exercise 11-6**

1. b
2. b
3. b
4. a

**Exercise 11-7**

**Requirement 1**

Asset	Cost	Residual Value	Depreciable Base	Estimated Life(yrs.)	Depreciation per Year (straight line)
Stoves	\$15,000	\$3,000	\$12,000	6	\$2,000
Refrigerators	10,000	1,000	9,000	5	1,800
Dishwashers	<u>8,000</u>	<u>500</u>	<u>7,500</u>	4	<u>1,875</u>
Totals	<u>\$33,000</u>	<u>\$4,500</u>	<u>\$28,500</u>		<u>\$5,675</u>

$$\text{Group depreciation rate} = \frac{\$5,675}{\$33,000} = 17.2\% \text{ (rounded)}$$

$$\text{Group life} = \frac{\$28,500}{\$5,675} = 5.02 \text{ years (rounded)}$$

**Requirement 2**

To record the purchase of new refrigerators.

Refrigerators .....	2,700	
Cash.....		2,700

To record the sale of old refrigerators.

Cash .....	200	
Accumulated depreciation (difference) .....	1,300	
Refrigerators .....		1,500

**Exercise 11-8**

**Requirement 1**

**Cost of the equipment:**

Purchase price	\$135,000
Freight charges	1,000
Installation charges	<u>4,000</u>
	<u>\$140,000</u>

Straight-line rate of 12.5% ( $1 \div 8$  years)  $\times 2 = 25\%$  DDB rate.

<b>Year</b>	<b>Book Value Beginning of Year</b>	<b>X</b>	<b>Depreciation Rate per Year</b>	<b>=</b>	<b>Depreciation</b>	<b>Book Value End of Year</b>
2003	\$140,000		25%		\$ 35,000	\$105,000
2004	105,000		25%		26,250	78,750
2005	78,750		25%		19,688	59,062
2006	59,062		25%		14,766	44,296
2007	44,296		*		3,574	40,722
2008	40,722		*		3,574	37,148
2009	37,148		*		3,574	33,574
2010	33,574		*		<u>3,574</u>	30,000
Total					<u>\$110,000</u>	

\* Switch to straight-line in 2007:

*Straight-line depreciation:*

$$\frac{\$44,296 - 30,000}{4 \text{ years}} = \$3,574 \text{ per year}$$
**Requirement 2**

For plant and equipment used in the manufacture of a product, depreciation is a product cost and is included in the cost of inventory. Eventually, when the product is sold, depreciation will be included in cost of goods sold.

## Exercise 11-9

### Requirement 1

$$\begin{aligned} \text{Depletion per ton} &= \frac{\$3,600,000}{900,000 \text{ tons}} = \$4.00 \text{ per ton} \\ \\ \text{2003 depletion} &= \$4.00 \times 220,000 \text{ tons} = \mathbf{\$880,000} \end{aligned}$$

### Requirement 2

Depletion is part of product cost and is included in the cost of the inventory of coal, just as the depreciation on manufacturing equipment is included in inventory cost. The depletion is then included in cost of goods sold in the income statement when the coal is sold.

## Exercise 11-11

### Requirement 1

- a. To record the purchase of a patent.

<b>January 1, 2001</b>		
Patent .....	600,000	
Cash .....		600,000

To record amortization on the patent.

<b>December 31, 2001 and 2002</b>		
Amortization expense ( $\$600,000 \div 10 \text{ years}$ ) .....	60,000	
Patent .....		60,000

- b. To record the purchase of a franchise.

<b>2003</b>		
Franchise .....	500,000	
Cash .....		500,000

- c. To record research and development expenses.

**2003**

Research and development expense .....	380,000	
Cash.....		380,000

**Year-end adjusting entries****Patent:** To record amortization on the patent.**December 31, 2003**

Amortization expense ( <b>determined below</b> ) .....	96,000	
Patent .....		96,000

**Calculation of annual amortization after the estimate change:**

(\$ in thousands)

	\$600	Cost
\$60		Old annual amortization (\$600 ÷ 10 years)
<u>x 2 years</u>	<u>120</u>	Amortization to date (2001-2002)
	480	Unamortized cost (balance in the patent account)
	<u>÷ 5</u>	Estimated remaining life
	\$ 96	New annual amortization

**Franchise:** To record amortization of franchise.**December 31, 2003**

Amortization expense ( <b>\$500,000 ÷ 10 years</b> ).....	50,000	
Franchise.....		50,000

**Requirement 2***Intangible assets:*

Patent	\$384,000	[1]
Franchise	<u>450,000</u>	[2]
Total intangibles	<u>\$834,000</u>	

[1] \$480,000 - 96,000

[2] \$500,000 - 50,000

### Exercise 11-13

	(\$ in millions)
Amortization expense (determined below) .....	5
Patent .....	5

#### Calculation of annual amortization after the estimate change:

	\$ in millions)		
	\$18		Cost
\$2			Old annual amortization (\$18 ÷ 9 years)
x 4 years	<u>8</u>		Amortization to date (1999-2002)
	10		Unamortized cost (balance in the patent account)
	<u>÷ 2</u>		Estimated remaining life (6 years – 4 years)
	\$ 5		New annual amortization

### Exercise 11-18

#### Requirement 1

Book value	\$6.2 million
Fair value	<u>3.5 million</u>
Impairment loss	<u><u>2.7 million</u></u>

#### Requirement 2

Because the undiscounted sum of future cash flows of \$6.5 million exceeds book value of \$6.2 million, there is no impairment loss.

### Exercise 11-19

#### Requirement 1

##### Determination of implied goodwill:

Fair value of Centerpoint, Inc.	\$220 million
Fair value of Centerpoint's net assets (excluding goodwill)	<u>200 million</u>
Implied value of goodwill	<u><u>\$ 20 million</u></u>

##### Measurement of impairment loss:

Book value of goodwill	\$50 million
Implied value of goodwill	<u>20 million</u>
Impairment loss	<u><u>\$30 million</u></u>

#### Requirement 2

Because the fair value of the reporting unit, \$270 million, exceeds book value, \$250 million, there is no impairment loss.

**Exercise 11-20**

- 1. To record the replacement of the heating system.

Accumulated depreciation - building .....	300,000	
Cash.....		300,000

- 2. To record the addition to the building.

Building .....	750,000	
Cash.....		750,000

- 3. To expense annual maintenance costs.

Maintenance expense.....	12,000	
Cash.....		12,000

- 4. To capitalize rearrangement costs.

Machinery .....	50,000	
Cash.....		50,000

**Exercise 11-22**

- 1. d
- 2. b
- 3. b
- 4. a

**Exercise 11-23**

**List A**

**List B**

- |  |   |
|--|---|
| <u>g</u> 1. Depreciation                   | a. Cost allocation for natural resource.                |
| <u>d</u> 2. Service life                   | b. Accounted for prospectively.                         |
| <u>f</u> 3. Depreciable base               | c. When there has been a significant                    |
|  | decline in value.                                       |
| <u>e</u> 4. Activity-based method          | d. The amount of use expected from an operational       |
|  | asset.  |
| <u>m</u> 5. Time-based method              | e. Estimates service life in units of output.           |
| <u>h</u> 6. Double-declining balance       | f. Cost less residual value.                            |
| <u>j</u> 7. Group method                   | g. Cost allocation for plant and equipment.             |
| <u>k</u> 8. Composite method               | h. Does not subtract residual value from cost.          |
| <u>a</u> 9. Depletion                      | i. Requires the cumulative effect to be reported in the |
|  | income statement.                                       |
| <u>l</u> 10. Amortization                  | j. Aggregates assets that are similar.                  |
| <u>b</u> 11. Change in useful life         | k. Aggregates assets that are physically unified.       |
| <u>i</u> 12. Change in depreciation method | l. Cost allocation for an intangible asset.             |
| <u>c</u> 13. Write-down of asset           | m. Estimates service life in years.                     |

**Exercise 11-24**

**Requirement 1**

To record the acquisition of small tools.

<b>2001</b>		
Small tools .....	8,000	
Cash.....		8,000

To record additional small tool acquisitions.

<b>2003</b>		
Small tools .....	2,500	
Cash.....		2,500

To record the sale/depreciation of small tools.

<b>2003</b>		
Cash .....	250	
Depreciation expense ( <b>difference</b> ).....	1,750	
Small tools .....		2,000

**Requirement 2**

To record the acquisition of small tools.

<b>2001</b>		
Small tools .....	8,000	
Cash.....		8,000

To record the replacement/depreciation of small tools.

<b>2003</b>		
Depreciation expense .....	2,500	
Cash.....		2,500

To record the sale of small tools.

<b>2003</b>		
Cash .....	250	
Depreciation expense .....		250

## Problem 11-2

### Requirement 1

**Cord Company**  
**ANALYSIS OF CHANGES IN PLANT ASSETS**  
**For the Year Ending December 31, 2003**

	<b>Balance 12/31/02</b>	<b>Increase</b>	<b>Decrease</b>	<b>Balance 12/31/03</b>
Land	\$ 175,000	\$ 312,500 [1]	\$ --	\$ 487,500
Land improvements	--	192,000	--	192,000
Buildings	1,500,000	937,500 [1]	--	2,437,500
Machinery and equipment	1,125,000	385,000 [2]	17,000	1,493,000
Automobiles and trucks	172,000	12,500	24,000	160,500
Leasehold improvements	<u>216,000</u>	<u>--</u>	<u>--</u>	<u>216,000</u>
	<u>\$3,188,000</u>	<u>\$1,839,500</u>	<u>\$41,000</u>	<u>\$4,986,500</u>

### Explanations of Amounts:

- [1] Plant facility acquired from King 1/6/03 — allocation to Land and Building:  
 Fair value — 25,000 shares of Cord common  
 stock at \$50 market price \$1,250,000

Allocation in proportion to appraised values at date of exchange:

	<b>Amount</b>	<b>% of Total</b>
Land	\$187,500	25
Building	<u>562,500</u>	<u>75</u>
	<u>\$750,000</u>	<u>100</u>

Land	\$1,250,000 x 25% =	\$ 312,500
Building	\$1,250,000 x 75% =	<u>937,500</u>
		<u>\$1,250,000</u>

- [2] Machinery and equipment purchased 7/1/03:
- |                        |                  |
|------------------------|------------------|
| Invoice cost           | \$325,000        |
| Delivery cost          | 10,000           |
| Installation cost      | <u>50,000</u>    |
| Total acquisition cost | <u>\$385,000</u> |

**Problem 11-2 (continued)**

**Requirement 2**

**Cord Company**  
**DEPRECIATION AND AMORTIZATION EXPENSE**  
**For the Year Ended December 31, 2003**

**Land Improvements:**

Cost	\$192,000	
Straight-line rate (1 ÷ 12 years)	<u>x 8 1/3%</u>	
Annual depreciation	16,000	
Depreciation on land improvements for 2003: (3/25 to 12/31/03)	<u>x 3/4</u>	<u>\$ 12,000</u>

**Buildings:**

Book value, 1/1/03 (\$1,500,000 - 328,900)	\$1,171,100	
Building acquired 1/6/03	<u>937,500</u>	
Total amount subject to depreciation	2,108,600	
150% declining balance rate: (1 ÷ 25 years = 4% x 1.5)	<u>x 6%</u>	<u>126,516</u>

**Machinery and equipment:**

Balance, 1/1/03	\$1,125,000	
Straight-line rate (1 ÷ 10 years)	<u>x 10%</u>	112,500
Purchased on 7/1/03	385,000	
Depreciation for one-half year	<u>x 5%</u>	<u>19,250</u>
Depreciation on machinery and equipment for 2003		<u>131,750</u>

**Automobiles and trucks:**

Book value, 1/1/03 (\$172,000 - 100,325)	\$71,675	
Deduct 1/1/03 book value of truck sold on 9/30 (\$9,100 + 2,650)	<u>(11,750)</u>	
Amount subject to depreciation	59,925	
150% declining balance rate: (1 ÷ 5 years = 20% x 1.5)	<u>x 30%</u>	17,978
Automobile purchased 8/30/03	12,500	
Depreciation for 2003 (30% x 4/12)	<u>x 10%</u>	1,250
Truck sold on 9/30/03 - depreciation (given)		<u>2,650</u>
Depreciation on automobiles and trucks		<u>21,878</u>

**Problem 11-2 (concluded)**

**Leasehold improvements:**

Book value, 1/1/03 (\$216,000 - 108,000)	\$108,000
Amortization period (1/1/03 to 12/31/07)	<u>÷ 5 years</u>
Amortization of leasehold improvements for 2003	<u>21,600</u>
Total depreciation and amortization expense for 2003	<u><b>\$313,744</b></u>

**Ethics Case 11-11**

**Requirement 1**

*2003 expense using CEO's approach:*

\$4,200,000	\$42,000,000	Cost
<u>x 2 years</u>	<u>8,400,000</u>	Old annual depreciation (\$42,000,000 ÷ 10 years)
	33,600,000	Depreciation to date (2001-2002)
	<u>÷ 3</u>	Book value
	\$11,200,000	Estimated remaining life (2003-2005)
		New annual depreciation

2003 income would include only depreciation expense of \$11,200,000.

*2003 expense using Heather's approach:*

\$4,200,000	\$42,000,000	Cost
<u>x 2 years</u>	<u>8,400,000</u>	Old annual depreciation (\$42,000,000 ÷ 10 years)
	33,600,000	Depreciation to date (2001-2002)
	<u>12,900,000</u>	Book value
	20,700,000	Write-down
	<u>÷ 3</u>	New depreciable base
	\$ 6,900,000	Estimated remaining life (2003-2005)
		New annual depreciation

2003 income would include depreciation expense of \$6,900,000 and an asset write-down of \$12,900,000 for a total income reduction of \$19,800,000.

Using Heather's approach, 2003's before tax income would be lower by \$8,600,000 (\$19,800,000 - 11,200,000).

## ***Case 11-11 (concluded)***

### **Requirement 2**

Discussion should include these elements.

#### **Facts:**

SFAS 144 provides guidance for recording impairment losses on partial write-downs of operational assets remaining in use. Assets should be written down if there has been a significant impairment of value such as in decreased product demand and full recovery of book value through use or resale is not expected. Although the decision and computation to record an impairment loss often is very subjective and difficult to measure, Heather is able to estimate an equipment impairment of \$12,900,000, presumably using the best information available. The simple revision in service life approach is clearly an effort to enhance net income on the part of the CEO.

#### **Ethical Dilemma:**

Is Heather's obligation to challenge the questionable application of revision in service life more important than her obligation to her boss and to the company's effort to reflect a favorable net income?

#### **Who is affected?**

Heather  
CEO and other managers  
Other employees  
Shareholders  
Potential shareholders  
Creditors  
Company auditors

## Judgment Case 11-12

### Requirement 1

By changing its depreciation method, a company can shift reported income between periods. For example, a shift from an accelerated method to the straight-line method increases income in the year of the change. However, in some future period or periods, income will be lower than it would have been if the change had not been made.

This is not an effective way to manage earnings because the effect on income of switching from one method to another must be disclosed.

### Requirement 2

A company can manage earnings by changing the estimated useful lives of depreciable assets. For example, reducing useful lives causes a decrease in income in one or more years including the year of the change, and increases income in some future years.

This is not an effective way to manage earnings because the effect on income of changing useful lives, if material, must be disclosed.

### Requirement 3

One possible approach to answering this question is to assume a company overstates its impairment loss. For example, assume that the book value of depreciable assets is \$20 million. The fair value of these assets is estimated to be \$13 million, indicating an impairment loss of \$7 million. If these assets are written down to \$8 million, the company has effectively shifted \$5 million in pre-tax income from the current period to future periods. By writing down the assets to \$8 million instead of \$13 million, future depreciation is \$5 million less than it would have been with a more appropriate write-down.