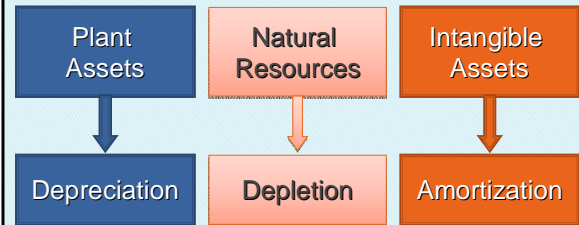


Plant Assets & Intangibles

Chapter 9

Long-lived Assets



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Characteristics of Plant Assets

- ▶ Held for use in business
- ▶ Full cost includes several expenditures
- ▶ Last several years
- ▶ Can be sold or traded in

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Learning Objective 1

Measure the cost of a plant asset

The Cost Principle

Cost of an asset =

Sum of all costs incurred to bring the asset to its intended purpose, less any discounts

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Types of Plant Assets



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Land

- ▶ NOT depreciated
- ▶ What costs would be included in Land?

Land Improvements

- ▶ Subject to depreciation

Buildings

- ▶ What does the cost include?

Machinery and Equipment

- ▶ What does cost include?

Furniture and Fixtures

- ▶ Purchase price (less any discounts)
- ▶ Shipping charges
- ▶ Costs to assemble

Lump Sum Purchase

- ▶ Company purchases a group of plant assets for a single price
- ▶ Assign cost to individual assets based on relative sales values

Short Exercise 9-2

	Fair value	Percent	Allocated cost
Land	\$75,000	50%	\$70,000
Building	\$60,000	40%	\$56,000
Equipment	\$15,000	10%	\$14,000
Total	\$150,000	100%	\$140,000

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Plant Asset Spending

Capital expenditures

- ▶ Debited to an asset account

Expenses

- ▶ Debited to an expense account

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Capitalize or Expense? Impact of Accounting Errors

- ▶ If a capital expenditure is incorrectly recorded as an expense:

Overstates expenses

Understates net income

Understates retained earnings

Understates assets (equipment)

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Learning Objective 2

Account for depreciation

Depreciation

- ▶ Allocation of a plant asset's cost to expense over its useful life
- ▶ Matches expense against revenue generated using the asset

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Causes of Depreciation

- ▶ Wear and tear from use
- ▶ Physical factors
- ▶ Obsolescence

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Depreciation is NOT:

~~PROCESS OF VALUATION~~

~~CASH ON THE SIDE TO REPLACE ASSET~~

Factors in Computing Depreciation

- ▶ Cost
- ▶ Estimated useful life
- ▶ Estimated residual value

Depreciation Methods

Straight-line

Units-of production

Declining-balance

Straight-Line Method

$$\begin{array}{c} (\text{Cost} - \text{residual value}) \times \frac{1}{\text{Life}} \times \frac{\#}{12} \\ = \\ \text{Depreciation expense} \end{array}$$

Book Value

Cost

Accumulated depreciation

Book value

Units-of-Production Method

Depreciation per unit =

$$(\text{Cost} - \text{Residual value}) \times \frac{1}{\text{Life in units}}$$

$$\text{Depreciation expense} = \text{Depreciation per unit} \times \text{activity during the period}$$

Double-Declining-Balance Method

- ▶ Accelerated method
- ▶ Residual value is not in formula

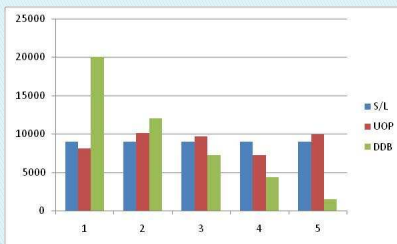
Double-Declining-Balance Method

$$(\text{Cost} - \text{Accumulated depreciation}) \times \frac{2}{\text{Life}} \times \#$$

Depreciation expense

Comparing Depreciation Methods

Cost = \$50,000 Residual value = \$5,000 Life = 5 years or 100,000 units



Which Method is Best for matching?

Straight-line

- For assets that generate revenue over time

Units-of-production

- For assets that depreciate due to wear and tear

Double-declining-balance

- For assets that produce more revenue in their early years

Short Exercise 9-3

Straight-line – 1st year

$$(\text{65,000,000} - \text{5,000,000}) \times \frac{1}{4} \times \frac{12}{12}$$

\$15,000,000 depreciation, 1st year

Short Exercise 9-3 (continued)

Units-of-Production

$$(\text{65,000,000} - \text{5,000,000}) \times \frac{1}{6,000,000 \text{ miles}} = \$10 \text{ per mile}$$

1.3 million miles
 x \$10 per mile
 = **\$13,000,000**
 depreciation expense, 1st year

Short Exercise 9-3 (continued)

Double-declining-balance – 1st year

$$(\$65,000,000 - 0) \times \frac{2}{4} \times \frac{12}{12}$$

\$32,500,000 depreciation expense, 1st year

Short Exercise 9-3 (continued)

Cost	\$65,000,000
Less: Accumulated depreciation	<u>15,000,000</u>
Book value, using straight-line	\$50,000,000

Changes in Useful Life or Residual Value

- ▶ Considered a change in estimate
- ▶ Businesses must report on the reason and effect of the change
- ▶ Remaining asset book value is depreciated over the remaining life

Fully Depreciated Assets

- ▶ Asset has reached the end of its estimated life
- ▶ If still useful, a company will continue to use it
- ▶ Report book value on balance sheet
- ▶ Record no more depreciation
- ▶ Asset never reported below residual value

Learning Objective 3

Record the disposal of an asset by sale or trade

Disposing of a Plant Asset

- ▶ Asset wears out or becomes obsolete.

Accounting for Disposal of Plant Asset

- ▶ Bring depreciation up to date
- ▶ Remove old asset from books
- ▶ Record the value of any cash paid or received
- ▶ Determine difference between total debits and total credits

Accounting for Disposal of Plant Asset – Final Step

- ▶ If asset was traded for a like-kind asset
 - Difference will be recorded as a debit to the new asset account
- ▶ If the asset was sold or exchanged for a dissimilar asset
 - Gain or loss will be recorded

Exercise 9-20

GENERAL JOURNAL				
DATE	DESCRIPTION	REF	DEBIT	CREDIT
8 31	Depreciation expense		2,560	
	Accumulated depreciation			2,560

Year	Depreciation expense	Accumulated depreciation	Book value
			\$16,000
2011	\$6,400	6,400	9,600
2012	2,560	8,960	7,040

Exercise 9-20 (continued)

GENERAL JOURNAL				
DATE	DESCRIPTION	REF	DEBIT	CREDIT
8 31	Cash		7,600	
	Accumulated depreciation		8,960	
	Fixtures			16,000
	Gain on sale of plant assets			560

Year	Depreciation expense	Accumulated depreciation	Book value
			\$16,000
2011	\$6,400	6,400	9,600
2012	2,560	8,960	7,040

Learning Objective 4

Account for natural resources

Natural Resources

- ▶ Plant assets extracted from the natural environment
- ▶ Expensed through depletion using the units of production method
- ▶ Accumulated depletion is a contra-asset account to the natural resource

Depletion

$$\text{Depletion per unit} = \frac{\text{Cost} - \text{Residual value}}{\text{Estimated total units of natural resource}} \times 1$$

Depletion expense = ?

Learning Objective 5

Account for intangible assets

Intangible Assets

- ▶ Non-current assets with no physical form
- ▶ Provide exclusive rights or privileges
- ▶ Expensed through amortization using the straight-line method

Types of Intangibles

Patent

- Exclusive 20-year right to produce & sell an invention

Copyright

- Exclusive right to sell a book, musical work, film, art, software, or intellectual property

Trademarks and brand names

- Represent distinctive products or services

Types of Intangibles

Franchises & licenses

- Allows purchaser to sell goods or services under specific conditions

Goodwill

- Excess of the cost to purchase another company over the market value of its net assets

Goodwill

- ▶ Only recorded when a company purchases another business
- ▶ Not amortized

Research and Development (R&D) Costs

- ▶ Important to several industries, such as pharmaceutical companies
- ▶ Not an intangible

Learning Objective 6

Describe ethical issues related to plant assets

Capitalize or Expense?

Capitalize

- ▶ Results in higher asset value and larger net income
- ▶ If cost provides a future benefit, then capitalize

Expense

- ▶ Results in lower net income
 - Less taxes
- ▶ If cost does not provide a future benefit, then expense

End of Chapter 9