

## **Long-Lived Assets**

### **Pratt, Financial Accounting 7e, Chapter 9**

#### Long-Lived Assets:

- Are often a very significant portion of a company's total assets
- Includes all assets that are used in operations and benefit more than one period
- Includes:
  - Property, Plant and Equipment
    - Land
    - Buildings
    - Equipment and Machinery
  - Natural Resource Assets
  - Intangible Assets
- The cost of all Long-Lived Assets that decline in value will through use and/or the passage of time will have their cost allocated to the periods that receive benefit. The allocation process is called amortization generally. It is specifically called:
  - Depreciation – Property, Plant and Equipment
  - Depletion - Natural Resource Assets
  - Amortization – Intangible Asset
- Note that Land and some Intangible Assets are considered to have indefinite lives and are not subject to amortization

## Initial Cost

- General Rule: Record all Long-Lived Assets at the reasonable and necessary cost to place the asset in service
- When assets are self-constructed include all direct costs and also allocated indirect costs including interest
- If assets are acquired in a lump-sum purchase the total purchase price should be allocated to the individual assets based on their relative fair market values
- If an asset is acquired in an exchange for another asset then the fair market value of the asset given or the asset received, whichever is more objectively should be used to value the transaction

## Post Acquisition Cost

- General Rule: Capitalize costs that offer future benefit, expense expenditures that maintain current level of service are expensed
- Betterments – costs to improve the asset
  - Increase useful life
  - Increase quality of output
  - Increase quantity of output
  - Reduce cost of use
- Maintenance – cost to repair or maintain current productivity

## Depreciation

- Depreciation: The systematic and rational allocation of the cost of an asset over its useful life.
- Note: Depreciation is not valuation – it is allocation
- Inputs needed
  - Cost
  - Estimated Useful life
  - Estimated Salvage Value

## Depreciation Methods

Example – Jose Perez purchased machinery for \$315,000. It is estimated that it will have a useful life of 10 years, a salvage value of \$15,000, and that the machine can be used to produce a total of 240,000 units of product.

## Straight Line Method

$$\frac{\text{Cost} - \text{Estimated Salvage Value}}{\text{Estimated Service Life}} = \text{Annual Depreciation Expense}$$

$$\frac{\$315,000 - \$15,000}{10 \text{ years}} = 30,000 \text{ per year}$$

## Double-Declining Balance Method

$$\text{Book Value (Beg)} \times \left( 2 \times \frac{1}{\text{Estimated Useful Life}} \right) = \text{Annual Depreciation Expense}$$

$$315,000 \times 2 \times \frac{1}{10} = 63,000 \text{ (Year 1)}$$

$$252,000 \times 2 \times \frac{1}{10} = 50,400 \text{ (Year 2)}$$

## Activity Method

$$\frac{\text{Cost} - \text{Estimated Salvage Value}}{\text{Total Estimated Activity}} = \text{Depreciation per Unit of Activity}$$

$$\text{Annual Depreciation Expense} = \text{Annual Activity} \times \text{Depreciation per Unit of Activity}$$

$$\frac{\$315,000 - \$15,000}{240,000 \text{ units}} = \$1.25 \text{ per unit}$$

So if in the first year of the asset's life it was used to produce 50,000 units, Depreciation would be 50,000 hours x \$1.25/unit = \$62,500

Changes in estimates (useful life and/or salvage value) are handled prospectively.

## Disposal

When a company no longer needs an asset they can dispose of it by retirement, sale or exchange. At the time of disposal a gain or loss will need to be recorded to reflect the difference between the asset's book value (Cost - Accumulated Depreciation) and its market value, if any.

Example - A machine that cost \$36,000 and had accumulated depreciation of \$30,000 is no longer needed by a company. Record the disposal in each of the following situations:

The machine is retired		
Loss on Retirement	6,000	
Accumulated Depreciation	30,000	
Machine		36,000
The machine is sold for \$8,000		
Cash	8,000	
Accumulated Depreciation	30,000	
Machine		36,000
Gain on Sale		2,000
The machine is sold for \$2,000		
Cash	2,000	
Accumulated Depreciation	30,000	
Loss on Retirement	4,000	
Machine		36,000

## Intangible Assets

Intangible assets are assets that (1) lack physical substance and (2) are not financial instruments

Valuation – intangible assets that are purchased should be recorded at cost. Internally developed intangibles are not recorded as assets.

Amortization – Limited life intangible assets should be amortized over their useful lives, typically using the straight line method. Some intangibles have effectively unlimited (indefinite) lives and are not amortized.

Amortization can be recorded directly with a credit to the asset account or indirectly to an accumulated amortization account.

### Examples:

- Trademark/trade name/website domain names – can be renewed forever so indefinite life
- Customer lists – typically have a limited life
- Copyright – life of the creator plus 70 years
- Franchise rights and license – can be either limited or indefinite life
- Patents – 20 year life
- Goodwill the excess of the purchase price paid over the fair value of the net assets (assets – liabilities) acquired – indefinite life

## Research and Development (R&D) and Other Costs

- R&D costs should be expensed as incurred
- Start up costs should be expensed as incurred
- Initial operating losses should not be capitalized
- Advertising cost should be either expensed as incurred or capitalized and expensed when the advertising first takes place
- Computer software costs are capitalized for internally develop software when the project reaches either proof of concept stage (for software that will be used internally) or commercial viability stage (for software that will be sold or licensed to customers)

## International Accounting

- An important difference between U.S. accounting standards and international standards has to do with the revaluation of Long-Term Assets.
- In the U.S. these assets are recorded at cost and depreciated. If the asset increases in value this increase is not reflected in the books.
- International standards permit Long-Lived Assets to be revalued with the change in value reported in stockholders' equity.