

Chapter 11

Long-Lived Assets

Tangible Long-Lived Assets

» (also sometimes referred to as plant assets) are resources that:

- have physical substance.
- are recorded at cost in accordance with the cost principle of accounting.
- the cost consists of all expenditures necessary to acquire the asset and make it ready for its intended use.

Includes

Buildings, equipment, machinery, leasehold improvements, land improvements, land

Cost of Building

When a new building is constructed, its cost consists of:

- the contract price
- architect's fees
- building permits
- excavation costs
- interest costs during the construction period

Cost of Equipment

The cost of equipment consists of the:

- cash purchase price
- sales tax
- freight charges
- insurance during transit paid by the purchaser
- expenditures required in assembling, installing and testing the unit.

In essence, all the costs associated with placing the asset in service (i.e., ready for use)

Land Improvements

The cost of land improvements includes all expenditures necessary to make the improvements ready for their intended use.

For example, the cost of a parking lot would include the amount paid for paving, fencing, and lighting.

The cost of land includes:

- the cash purchase price
- closing costs, such as title and attorney's fees
- real estate brokers' commissions
- accrued property taxes and other liens on the land assumed by the purchaser
- all necessary costs incurred in making land ready for its intended use

Depreciable Assets

Depreciation applies to the following tangible assets:

- Buildings
- Leasehold Improvements
- Equipment
- Land improvements

NOTE: Land is not a depreciable asset, since it does not have a finite useful life

Capitalization Versus Expense

Capitalization is the act of recognizing costs that provide a future economic benefit by setting up an asset account.

Tangible assets whether purchased or self-constructed are almost always recognized

Intangible assets that are acquired are generally recognized. Internally generated (i.e., self-constructed) intangibles (e.g., trained employees) are generally **NOT** recognized.

Depreciation is the rational and systematic process of allocating the cost of a tangible asset over its useful (service) life.

GAAP Versus Economic Values

GAAP fails to accurately reflect economic values of tangible assets because it:

- » Makes incorrect assumptions regarding the pattern of future cash flows from the fixed asset
- » Ignores interest

GAAP fails to accurately reflect economic values of intangible assets because:

- » Self-produced intangibles are not recorded

The balance in the Accumulated Depreciation (a contra asset account) represents the total amount of the asset's cost that has been expensed to date.

Factors in Computing Depreciation

Cost--historical cost of the asset.

Useful life--estimate of the expected productive life, also called service life, of the asset.

Salvage value--an estimate of the asset's value at the end of its useful life.

NOTE: Salvage value is not used for double-declining balance.

The following methods of depreciation are acceptable under generally accepted accounting principles (GAAP):

- Straight-line
- Units-of-Activity
- Declining-Balance
- Sum-of-the-Years'-Digits

Straight-line Method

- » is the most widely used method of depreciation.

Depreciation is the same for each year of the asset's useful life.

Annual depreciation under straight-line method =
 $\frac{\text{cost of the asset minus its salvage value}}{\text{asset's useful life measured in years}}$

Straight-line Method example

On January 1, 2004, Baconovic purchases equipment for \$64,000. The equipment has a useful life of 8 years and a salvage value of \$4,000.

Annual depreciation under the straight-line method is
 $= (\$64,000 - \$4,000) / 8 = \$60,000 / 8 = \$7,500$

Journal Entry:

Depreciation expense	7,500	
Accumulated Depreciation		7,500

Straight-line Method

Assume Baconovic purchases the equipment on April 1, 2004. Depreciation in 2004 under straight-line method is
 $\$7,500 \times (9/12) = \$5,625$

Journal Entry:

Depreciation expense	5,625	
Accumulated depreciation		5,625

An entity can only depreciate an asset for time it was placed in service for that year (i.e., 9 months).

Units-of-Activity Method

Under the units-of-activity method, the life of an asset is expressed in terms of the total units of production or the use expected from the asset.

Depreciation is =
 (Original cost of the asset – salvage value)
 x (Yearly activity or use / Total expected activity)

On January 1, 2004, Baconovic purchases a truck for \$50,000. The truck has a useful life of 80,000 miles and a salvage value of \$5,000. The truck was driven 16,000 miles during 2004.

Depreciation under the units-of-activity method is
 (\$50,000 - \$5,000) x 16,000 / 80,000 = \$ 9,000

Double-Declining Method

On January 1, 2004, Baconovic purchases equipment for \$64,000. The equipment has a useful life of 8 years and a salvage value of \$4,000.

Depreciation under the double-declining method
 for 2004 is (\$64,000 - \$0) x (2/8) = \$16,000
 for 2005 is (\$64,000 - \$16,000) x (2/8) = \$12,000

Sum-of-the-Years'-Digits

On January 1, 2004, Baconovic purchases equipment for \$64,000. The equipment has a useful life of 8 years and a salvage value of \$4,000.

Sum-of-the-Years'-Digits = (8+7+6+5+4+3+2+1) = 36

Depreciation under sum-of-the-years'-digits for
 2004 is (\$64,000 - \$4,000) = 8/36 = \$13,333
 2005 is (\$64,000 - \$4,000) = 7/36 = \$11,167

Declining-Balance Method

The declining-balance method is an accelerated method. Accelerated methods of depreciation result in more depreciation in the early years of an asset's life and less depreciation in the later years of an asset's life than does the straight-line approach.

Depreciation under the double-declining method =
 (original cost - accumulated depreciation)
 x 2 / Asset's useful life in years

Sum-of-the-Years'-Digits

The sum-of-the-years'-digits method is an accelerated method.

As with the double-declining balance method, it will result in more depreciation in the early years of an asset's life and less depreciation in the later years of an asset's life.

Depreciation under the sum-of-the-years'-digits is:
 (Original cost – salvage value)
 X Asset years left / Total asset years

Disposal of Plant Assets

Whether a plant asset is sold, retired, or traded in, the company must determine the book value of the plant asset at the time of disposal.

- Book value is the difference between the cost of the plant asset and the accumulated depreciation to date.
- If disposal occurs mid-year, the depreciation for the fraction of the year to the date of disposal must be recorded.

Sale of Plant Assets

Book Value: Original Cost
 - Accumulated Depreciation
 Book Value of Asset

Gain on Sale: sales proceeds - book value of the asset

On January 1, 2004, Baconovic sells equipment for \$20,000. The original cost of the equipment is \$40,000 and the accumulated depreciation is \$24,000. What is Baconovic's gain or loss?

Sales proceeds	\$20,000
Net book value *	<u>\$16,000</u>
Gain on sale	\$ 4,000

* Net book value is original cost 40,000 minus accumulated depreciation 24,000

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Journal Entry:

Cash	20,000	
Acc. Depreciation	24,000	
Equipment		40,000
Gain		4,000

Asset Impairment

GAAP requires that an entity review its tangible assets and determine if an asset is impaired. An asset might be impaired if:

- The asset's utilization has changed.
- The market value has significantly decreased.
- The entity forecasts losses from the asset's continued use.
- Adverse business conditions affect the asset.
- Self-constructed assets cost significantly more than originally estimated.

Once an entity determines that an impairment might have taken place, it must perform an impairment test.

This test requires that the entity compare the estimated undiscounted future cash flows of the asset to the asset's current book value.

Asset Impairment

If the undiscounted cash flows **EXCEED** the current book value, no impairment exists and no entry is required.

If the undiscounted cash flows **ARE LESS THAN** the current book value, the asset is impaired and a "write-down" is required. This "write-down" will equal:

The difference between the asset's current book value and the present value of the expected future cash flows.

Example: Asset Impairment

On December 31, 2004, Baconovic determines that the undiscounted cash flows are less than the current book value (\$16,000) of the equipment. Baconovic determines that the present value of the future cash flows is \$10,500.

Baconovic must recognize a loss on the value of the equipment by writing the asset down to its present value of \$10,500. The journal entry would be :

Loss on impairment	4,500
Accumulated Depreciation – Equip.	4,500

NOTE: The loss is reflected in the income statement

Analyzing Plant Assets

The three measures by which plant assets are evaluated are:

- Average useful life
- Average age of plant assets
- Asset turnover ratio

Average useful life of assets :

Average cost of plant assets / depreciation expense

Total cost

(i.e. original cost before any accumulated depreciation) of plant assets at the beginning of the period plus total cost of plant assets at the end of the period divided by 2.

Asset Turnover Ratios

Average age of plant assets =
Accumulated depreciation / depreciation expense.

Total asset turnover ratio = net sales / average total assets

Fixed asset turnover ratio =
Net Sales / average fixed assets (PP&E)

Intangible Assets

Intangible assets are rights, privileges, and competitive advantages that result from ownership of long-lived assets that do not possess physical substance. Examples of intangible assets include goodwill and purchased patents.

Intangible assets are recorded at cost and are expensed over the useful life of the intangible asset in a manner similar to depreciation.

The term used to describe how an intangible asset is expensed is called amortization.

Conceptually amortization and depreciation operate the same.

Goodwill

Goodwill represents the value of all favorable attributes that relate to a business enterprise, including exceptional management, desirable location, good customer relations, skilled employees, etc.

When an entire business is purchased, goodwill is the difference between the purchase price of the business and the fair market value of the net assets (assets less liabilities) acquired.

Where in the Balance Sheet Are Long-Lived Assets Presented?

- Tangible assets are shown in the balance sheet under Property, Plant, and Equipment. Sometimes these assets are shown net (original cost minus accumulated depreciation). If shown net, then the firm must disclose accumulated depreciation in the footnotes.
- Intangibles, if material, are shown separately; otherwise they are shown as part of other assets.