

Introduction to Long-Term Assets

Long Term Opperating Assets

NORM'S INC.
BALANCE SHEET
12/31/X1

ASSETS:	
Current Assets:	
Cash	\$ xxx
Accounts Receivable	xxx
Less: Allowance for Uncollectible Accounts Receivable	(xxx)
Inventory (FIFO, LIFO, MWA)	xxx
Prepaid Expenses	xxx
	<u> </u>
Long-Term Assets:	
?	xxx
Total Assets	\$ xxx

LIABILITIES & OWNERS' EQUITY:	
Current Liabilities:	
Accounts Payable	\$ xxx
Salaries and Wages Payable	xxx
Payroll Taxes Payable	xxx
Sales Taxes Payable	xxx
	<u> </u>
Long-Term Liabilities:	
?	xxx
Owners' Equity:	
Capital Stock	xxx
Retained Earnings	xxx
Total Liabilities and Equity	\$ xxx

Capitalized Costs vs. Expenses

Example: 100 pencils are purchased at a cost of \$10 (\$.10/ea.):

Pencils (Office Supplies)	10	
Cash		10

As each pencil is used up:

Pencil Expense	.10	
Pencils		.10

Capitalizing an Expenditure

Alternative accounting approach:

Pencil Expense	10	
Cash		10

Expensing an Expenditure

Long-Term Assets Non-Current Assets Operating Assets Capital Assets

1. **Property, Plant and Equipment** - includes land, improvements, buildings, machinery and equipment with an expected useful life longer than one year.
2. **Intangible Assets** - includes patents, trademarks, copyrights, franchise rights, and goodwill with expected future benefit in excess of one year.
3. **Natural resources** - includes oil wells, mineral deposits, timber tracts, etc. with expected future benefits in excess of one year.

Basic Accounting for Operating Assets

1. Recording the acquisition of the asset.
2. Allocating the cost of the asset to expense over its useful life.
3. Recording any repairs or improvements to the asset.
4. Recording the sale or disposal of the asset.

Acquisition of an Asset

1. Recording the acquisition of an operating asset:

GAAP requires all direct or incidental costs incurred in acquiring an asset and preparing it for its original intended use to be capitalized as part of the cost of the asset.

Example: Assume a delivery truck is purchased on **1/1/X4** for **\$60,000** paying **\$20,000** in cash and executing a note payable for the balance. In addition, **\$1,800** is paid in sales taxes along with **\$1,200** in shipping and prep costs and **\$2,000** for a customized paint job.

Truck	60,000	
Cash		20,000
Note Payable		40,000
Truck	5,000	
Cash		5,000

Allocation of the Cost of an Asset (expense over useful life)

2. Allocation of the cost of an asset to expense over its useful life.

Expense	xxx	
Asset		xxx

Terms: Depreciation Expense (Property, Plant and Equipment)

Amortization Expense (Intangibles)

Depletion Expense (Natural Resources)

Why is allocation of an operating asset's cost over time necessary?

The Matching Principle

The FASB no longer uses the term Matching Principle but rather Expense Recognition Principle. The meaning is the same so when you hear and see the term "Matching Principle" used through the lessons, simply think "Expense Recognition Principle."

Example: Assuming the truck purchased in the previous example has an estimated useful life of 6 years with an estimated salvage value at the end of those six years of \$5,000, calculate and then prepare the required adjusting entry at 12/31/X4 for depreciation expense for the year using the straight-line method.

$$\begin{aligned} \text{Straight-Line} &= \frac{\text{Cost} - \text{Salvage Value}}{\# \text{years of useful life}} \\ &= \frac{\$65,000 - \$5,000}{6} \\ &= \$10,000 \text{ per year} \end{aligned}$$

12/31/X4 Adjusting Entry:

Depreciation Expense	10,000	
Accumulated Depreciation		10,000

Accumulated Depreciation is a Contra-Asset Account

Balance Sheet

Long-Term Assets:

Truck	\$65,000
Accumulated Depreciation	(10,000)
Book Value	\$55,000

Balance Sheet

Long-Term Assets:

Truck	\$55,000
-------	----------

Why use a contra-asset account rather than reduce the asset directly?

What would be the Book Value of the truck at the end of 'X5'?

Truck	\$65,000
Less: Accumulated Depreciation	(20,000)
Book Value	\$45,000

Accumulated Depreciation	
	10,000 12/31/X4
	10,000 12/31/X5
	20,000

What would be the Book Value of the truck at the end of the 6th year of ownership?

Truck	\$65,000
Accumulated Depreciation	(60,000)
Book Value	\$ 5,000

Modify the example's truck purchase from date 1/1/X4 to 4/1/X4 and prepare the adjusting entry for depreciation at 12/31/X4:

$$\$10,000 \times 9/12 = \$7,500$$

Depreciation Expense:

Yr 1	\$ 7,500
2	10,000
3	10,000
4	10,000
5	10,000
6	10,000
7	2,500
	\$60,000

Units of Production Method of Calculating Depreciation

Example: Using the same information for the truck with a capital cost of \$65,000 and assuming that instead of an estimated useful life of 6 years, the truck's usefulness is estimated at 100,000 total miles. Now if the truck is actually driven 13,000 miles in 20X4 then the total amount of 'X4' depreciation expense to be recorded will be:

$$\$.60/\text{mile} = \frac{\$65,000 - \$5,000}{100,000 \text{ miles}}$$

$$\$.60 \times 13,000 = \$ 7,800$$

Depreciation Expense	7,800	
Accumulated Depreciation		7,800

Allocation of the Cost of an Asset (expense over useful life)

General Ledger		Equipment Subsidiary Ledger	Accumulated Depreciation Subsidiary Ledger
Equipment		Truck #1	Accum. Depr.-Truck #1
XX		XX	XX
XX		XX	XX
XX		Truck #2	Accum. Depr.-Truck #2
XX		XX	XX
XX		XX	XX
Truck #3		Truck #3	Accum. Depr.-Truck #3
XX		XX	XX
XX		XX	XX
Accumulated Depreciation		Truck #4	Accum. Depr.-Truck #4
XX		XX	XX
XX		XX	XX
XX		Truck #5	Accum. Depr.-Truck #5
XX		XX	XX
XX		XX	XX

Repairs, Maintenance and Improvements of Assets

3. Recording of any repairs, maintenance, or improvements to operating assets.

GAAP requires any costs incurred in normal recurring repairs and maintenance of property, plant or equipment to be expensed in the period incurred.

Example: A tuneup and oil change on the truck costing \$250 is paid in cash.

Repair and Maintenance Expense	250	250
Cash		

GAAP requires any costs incurred in improvements to property, plant or equipment to be capitalized as an increase in the original cost of the asset. Improvements are costs that significantly increase the original productivity of an asset or extend the useful life beyond what was originally estimated.

Example: In 20X7 the truck's engine gives out and is replaced in a complete overhaul costing \$7,000. It is expected that this overhaul will increase the estimated useful life four years beyond what was originally estimated.

Truck	7,000
Cash	7,000

Revised Capitalized Cost:

Original Cost	\$ 65,000
Cost of Improvement	<u>7,000</u>
	<u>72,000</u>

Revised Useful Life:

Original Life	6 Years
Increase due to Improvement	<u>4 Years</u>
	10 Years (7 Years Remaining)

Revised Book Value:

Revised Capitalized Cost	\$ 72,000
Less: Accumulated Depreciation	<u>(30,000)</u>
	\$ 42,000

Sale or Disposal of Asset

4. Recording the sale or disposal of the asset:

Upon sale or disposal of an asset, the book value of the asset must be removed from the accounting records. The difference between the sales price and the book value of the asset will generate a gain or loss on the sale.

Example: Assume the truck purchased in the previous example at **1/1/X4** with a capitalized cost of **\$65,000** is depreciated on a straight-line basis and no improvements have been made to date. If the truck is sold or disposed of at **1/1/X6**, prepare the journal entry to record the sale or disposal under the following three separate scenarios:

1. Truck sold for \$47,000 cash.

Cash	47,000	
Accumulated Depreciation	20,000	
Truck		65,000
Gain on Sale of Truck		2,000
Truck		Accumulated Depreciation
65,000		10,000
		10,000
65,000		20,000
		0
0		0

Alternative calculation of the gain:

$$\text{Sale Price} - \text{Book Value} = \text{Gain or Loss}$$

$$\$47,000 - \$45,000 = \$2,000$$

What kind of account is "Gain on Sale"?

Norm's Inc. Income Statement for the year ending 12/31/X1		
Sales Revenues	\$ xxx	
Less: Sales Discounts	(xxx)	
Sales Returns and Allowances	(xxx)	
Net Sales Revenues	xxx	
Less: Cost of Goods Sold	(xxx)	
Gross Margin	xxx	
Less: Operating Expenses		
Salaries Expense	(xxx)	
Payroll Tax Expense	(xxx)	
Utility Expense	(xxx)	
Property Tax Expense	(xxx)	
Operating Income	xxx	
Other Revenues and Expenses		
Interest Revenue	xxx	
Interest Expense	(xxx)	
✓ Gain on Sale of Equipment	xxx	
Income before inc. tax	xxx	
Income Tax Expense	(xxx)	
Net Income/Loss	\$ xxx	

2. Truck sold for \$40,000 cash.

Cash	40,000	
Accumulated Depreciation	20,000	
Loss on sale of Truck	5,000	
Truck		65,000

Alternative calculation of Loss:

$$\text{Sale Price} - \text{Book Value} = \text{Gain or Loss}$$

$$\$40,000 - \$45,000 = (\$ 5,000)$$

What kind of account is "Loss on Sale"?

3. Truck disposed of with a hauling fee of \$500.

Accumulated Depreciation	20,000	
Loss on Disposal of Truck	45,500	
Truck		65,000
Cash		500

$$\text{Sales Price} - \text{Book Value} = \text{Loss on Disposal}$$

$$\$0 - \$45,000 = (\$45,000)$$

Practice Problems: Long-Term Assets

Problem: Accounting for Equipment

John's Delivery Company purchased a used delivery truck for **\$20,000** cash on **5/1/X4**. Additional costs incurred at the time of purchase and paid in cash were **\$1,200** of sales tax. John had the truck painted for **\$1,000** and the engine over-hauled for **\$1,800** prior to its initial use.

- Prepare the journal entry(ies) to record all of the costs to be capitalized as part of the cost of the asset (truck).
- Prepare the **12/31/X4** and **12/31/X5** adjusting entries to record the **20X4** and **20X5** depreciation expense on the truck using straight-line depreciation and estimating a **7** year useful life with a **\$3,000** salvage value. (Remember that depreciation in **20X4** should be for a partial year.)

Problem: Accounting for Equipment

- Calculate the truck's book value at **12/31/X6** if an appraisal shows that the truck could be sold for **\$14,000**.
- Prepare the journal entry to record the payment of **\$250** for an engine tune-up and oil change and, **\$750** for a new set of tires in **20X6**.
- What would have been the amount of depreciation in the first year given the units of production method? Estimated use of 60,000 miles with 0 salvage value. Actual use in the first year is 10,000 miles.

Solution: Accounting for Equipment

A.	Truck	20,000	
	Cash		20,000
	Truck	4,000	
	Cash		4,000

Other Capitalized Costs:

Sales Tax	\$1,200
Paint	1,000
Engine Overhaul	1,800
	\$4,000

Solution: Accounting for Equipment

B. Depreciation Calculation:

$$\frac{24,000 - 3,000}{7} = \$3,000 \text{ per year}$$

$$20X4: \$3,000 \times 8/12 = \$2,000$$

12/31/X4:

Depreciation Expense	\$2,000
Accumulated Depreciation	\$2,000

12/31/X5:

Depreciation Expense	\$3,000
Accumulated Depreciation	\$3,000

Solution: Accounting for Equipment

C. Book Value at 12/31/X6

Accumulated Depreciation		
	2,000	12/31/X4
	3,000	12/31/X5
	3,000	12/31/X6
	8,000	12/31/X6
		Balance

Book Value:	Truck's Original Cost	\$24,000
	Less: Accumulated Depreciation	\$8,000
		\$16,000

D. Repair & Maintenance

Repair and Maintenance Expense	1,000	
Cash		1,000

Solution: Accounting for Equipment

$$\frac{\$24,000 - 0}{60,000} = \$.40 \text{ per mile}$$

$$10,000 \times \$.40 = \$4,000 \text{ depreciation}$$

Practice Problems: Long-Term Assets

Problem: Sales/Disposal of Assets

Prepare the journal entry to record the **12/31/X6** sale or disposal of the truck described in Problem #32 under the following scenarios:

- A. The truck is sold for **\$17,000** cash.
- B. The truck is sold for **\$10,000** cash.
- C. The truck is no longer operable and is hauled to an auto/truck junk yard at a cost of **\$200**.

Solution: Sales/Disposal of Assets

A.	Cash	17,000		
	Accumulated Depreciation	8,000		
	Truck		24,000	
	Gain on Sale		1,000	

	Truck	Accum. Depreciation		
24,000			2,000	X4
			3,000	X5
			3,000	X6
12/31/X6 24,000	24,000	8,000	8,000	12/31/X6
	0		0	

Gain/Loss on Sale:

Sales Price	\$17,000
Less: Book Value	(16,000)
Gain on Sale	\$1,000

Solution: Sales/Disposal of Assets

B.	Loss on Sale	6,000		
	Cash	10,000		
	Accumulated Depreciation	8,000		
	Truck		24,000	

Gain/Loss on Sale:

Sales Price	\$10,000
Less: Book Value	(16,000)
Loss on Sale	(\$6,000)

C.	Loss on Disposal	16,200		
	Accumulated Depreciation	8,000		
	Truck		24,000	
	Cash		200	

Intangible Assets

Intangible Assets

Most intangible assets represent rights that have future benefit, such as:

Trademark: The right to use a name, logo, picture, sound or any other distinguishing symbol. Trademark rights can be sold or licensed to others.

Patent: An exclusive right to use an invention or discovery in the production and sale of goods or services. This right is issued by the Federal government for a 20 year term. A patent can be sold or its use can be licensed.

Franchise Rights: An exclusive right to sell a certain product or service within a designated geographic area. These rights are usually purchased from an existing business and the terms of the rights are governed by contract.

Copyrights: Exclusive rights that protect the works of authors and other creative persons or businesses against copying or unauthorized use. Copyrights can be sold or licensed to others.

What do you suppose is Coca-Cola's most valuable asset?

Intangible assets are reflected on the balance sheet only if there is an identifiable historical cost attributable to it.

Trademarks are recorded as an asset only when rights are purchased.

Patents are recorded as an asset if patent rights are purchased. Internally developed patents are recorded only to the extent of filing fees and legal costs in application.

Under GAAP, research and development costs are to be expensed when incurred even if such costs may contribute to a patentable discovery.

Intangible assets are reflected on the balance sheet only if there is an identifiable historical cost attributable to it.

- Franchise rights are recorded at their contract cost in purchasing rights.
- Copyrights are recorded only when purchased.

Any legal fees and court costs incurred in the successful defense of any of these rights should be capitalized to the asset.

Any capitalized costs of intangibles reflected on the balance sheet must be allocated to expense over its life.

Allocation of the cost of an intangible over its useful life is referred to as amortization. In most cases the life is established by contract or law. Amortization is traditionally calculated on a straight-line basis with no salvage value and recorded with the following entry:

Amortization Expense	XXX
Accumulated Amortization	XXX

Contra Asset Account

For example:

Assume a patent with a remaining legal life of 5 years is purchased at a cost of \$50,000 cash. The entry to record the purchase would be:

Patent	50,000	
Cash		50,000

$$\frac{\$50,000}{5 \text{ years}} = \$10,000 \text{ per year}$$

The entry to record this amortization would be:

Amortization Expense	10,000	
Accumulated Amortization		10,000

What would be the book value of the patent at the end of the 2nd year?

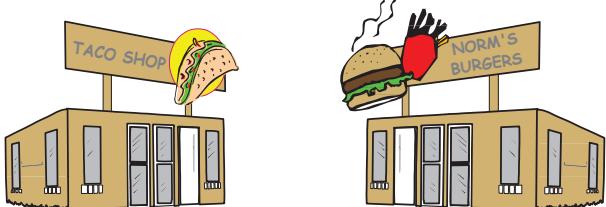
Cost	50,000
Less: Accumulated	
Amortization	(20,000)

Goodwill

Goodwill

Goodwill exists if the business is actually worth more than the value of its assets less liabilities.

- Goodwill is recorded as an asset only when a business is purchased.
- The amount to be recorded is the excess price paid in the purchase of a business above the fair market value of the assets purchased less any liabilities assumed.



Assets:	\$335,000
Liabilities:	(25,000)
Owners' Equity:	<u>310,000</u>
Net income this year:	\$30,000

Assets:	\$335,000
Liabilities:	(25,000)
Owners' Equity:	<u>310,000</u>
Net income this year:	\$150,000

Example: Assume that the Taco Shop is purchased for \$500,000 cash and the assumption of the business liabilities. The current fair market value of the assets purchased and liabilities assumed are as follows:

Inventory	\$ 10,000
Land	50,000
Building	200,000
Fixtures and Equipment	75,000
	<u>\$ 335,000</u>
Accounts Payable	(25,000)
Net Assets Purchased	<u>\$ 310,000</u>
Purchase Price	<u>\$ 500,000</u>
Goodwill Purchased	<u>\$ 190,000</u>

Entry to record restaurant purchase:

Inventory	10,000
Land	50,000
Building	200,000
Fixtures and Equipment	75,000
Goodwill	190,000
Accounts Payable	25,000
Cash	500,000



How should goodwill be subsequently accounted for?

In the past GAAP required goodwill to be amortized to expense over an estimated life not to exceed 40 years.

Current rules now require an annual comparison of recorded goodwill to its current fair market value. The fair market value refers to the excess price, above the current value of assets less liabilities, that would be paid today if the business unit were available for purchase.

If the amount of goodwill has increased from one year to the next, no gain is reported. If, on the other hand, the amount of goodwill has decreased, a loss is to be recorded in the income statement and the reduction reflected in the goodwill amount on the balance sheet.

Conservatism prevails.

Natural Resources and Practice Questions

Natural Resources

Recorded at their historical cost:

Oil Rights/Well	10,000,000	
Cash		10,000,000

Example: If geological studies indicate that the oil well has approximately **20 million barrels** in reserve, then depletion expense would be calculated at:

$$\$10 \text{ million}/20 \text{ million barrels} = \$.50 \text{ per barrel.}$$

500,000 barrels are extracted and sold in the current year:

$$500,000 \times \$.50 = \$250,000 \text{ depletion expense}$$

Depletion Expense	250,000	
Accumulated Depletion		250,000

Problems: Questions

Indicate whether the following statements are true or false.

- A. Intangible assets are not reflected on the balance sheet because they have no physical substance and cannot be sold.
- B. Costs of research and development resulting in a patented technology should be capitalized as part of the cost of the patent and amortized over a 17 year life.
- C. Amortization of intangibles and depletion of natural resources are both cost allocations to expense required under the matching principle.
- D. Goodwill is only recorded on the books of a company that purchases another company.
- E. Depletion of natural resources is typically calculated based on a units of production approach.

Problems: Questions

- A. Intangible assets are not reflected on the balance sheet because they have no physical substance and cannot be sold. **False**
- B. Costs of research and development resulting in a patented technology should be capitalized as part of the cost of the patent and amortized over a 17 year life. **False**
- C. Amortization of intangibles and depletion of natural resources are both cost allocations to expense required under the matching principle. **True**
- D. Goodwill is only recorded on the books of a company that purchases another company. **True**
- E. Depletion of natural resources is typically calculated based on a units of production approach. **True**