

CHAPTER- 2

PLANT ASSETS AND INTANGIBLE ASSETS

Classifications of long-lived assets typically found on a balance sheet are:

- ⇒ Property, plant, and Equipment
- ⇒ Investments - Long terms assets acquired for resale in the normal course of business operation
- ⇒ Intangibles - are used in the operation of the business, but have no physical substance eg. Patent, Goodwill,

Fixed (plant) Assets – are tangible long-lived resources that are used in the operation of the business & are not intended for sale to customers.

Unique features of fixed (plant) assets are:

- Long lived - useful for longer than a year, and permanent in nature
- For use - Not for sale
- Tangible - can be seen & founded, they have physical existence.

It is important for a business enterprise to:

- Keep the assets in good operating condition
- Replace worn out or outdated facilities
- Expand its productive resources as needed

Plant assets are often subdivided in to four classes:

- a. Land - such as building site
- b. Buildings - such as stores, offices, factories and warehouses
- c. Equipment - such as stores check out counters, cash registers, coolers, office furniture, machinery & Trucks
- d. Land improvement – expenditures for improvements that are neither as permanent as the land nor directly associated with the building may be set apart in a land improvement account and depreciated according to their different life spans. E.g.- drive ways, parking lots, fences
- e. Natural resources - a site acquired for the purpose of extracting or removing some valuable resource such as oil, minerals, or timber is classified as a natural resource, not as land

Determining the cost of plant assets

Plant assets are recorded at cost in accordance with the cost principle of accounting. Cost consists of all expenditures necessary to acquire the asset & make it ready for its intended use. For example the purchase, price, freight costs paid by the purchaser & installation costs are all considered part of the cost of factor machinery. Thus, all reasonable & necessary costs incurred to get an asset in position & condition ready for use may be included as part of the cost of the asset.

Some of the common acquisition costs for property, plant and equipment assets are:

Land - is an asset that is considered to have unlimited useful life. It includes costs such as, Purchase price, sales taxes, permits from government agencies broker's commissions, title fees, surveying fees, real estate tax, razing or removing unwanted buildings less any salvage, grading & leveling, paving a public street bordering the land.

Building - costs of Architect's fees, Engineer's fees, insurance costs incurred during construction,

interest on money borrowed to finance construction, sales taxes, modifying for use, walk way to & around the building.

Machinery & equip - Sales taxes, freight, installation, repairs (purchase of used equip), insurance while in- transit, assembly, modifying for use, testing for use.

Land improvement - Cost of trees & shrubs, fences, outdoor lighting, paved parking areas and soon.

To illustrate, assume ABC Co. orders a machine at a list price of Br. 10,000 with terms of 2/10, 2/30, sales tax of Br. 588 must be paid, as well as fright charges of Br. 1,250. Transportation form the rail road station to the factory costs Br. 150 & installation labor amounts, to Br. 400. One employee with a salary of Br. 800 operates the machine and the salary paid for the first month of operation was Br. 800. Cost of maintenance materials needed during the first month of operation was Br.25. Repair cost of Br. 2,000 was paid for damage occurred during unpacking and installing.

List price of the Machine	10,000	
Less cash discount (2% x Br. 10,000)	<u>200</u>	
Net cash price		9,800
Sales tax	588	
Freight	1,250	
Transportation	150	
Installation labor	<u>400</u>	
Cost of machine	Br. <u>12,188.00</u>	

The salary of employee is not part of the acquisition cost because it is incurred after the machine become operational.

The acquisition of the machine is then recorded as follows:

Machinery	12,188	
Salary expense.	800	
Maintenance expense.	25	
Loss due to employee negligence	2,000	
Cash		15,013
(To record the acquisition of a machine)		

Costs not necessary for getting a fixed asset ready for use don't increase the asset's usefulness. Such costs should not be included as part of the asset's total cost.

- Mistake in installation eg. Repair cost incurred which is not covered under insurance
Uninsured theft
- Damage during unpacking & installing
- Fines for not obtaining proper permits from government agencies

These costs of such items should be debited to an expense not to the asset account

Lump-sum acquisition

A *lump-sum purchase* occurs when more than one type of assets is acquired in a single transaction. The lamp-sum purchase price then must be allocated equitably to the individual components. The most common method of allocation is based on the relative fair market value of the individual assets.

To illustrate, assume Delta Co. acquired Land, Building & Machinery from ABC Co. for Br. 1,000,000.

A professional appraiser valued each of the assets at the appraised fair mkt. Prices: Land, Br. 800,000; Building Br. 560,000 & Machinery Br. 240,000. The Br. 1,000,000 is allocated among the assets as follows:

Asset	Appraised Fair Market value	Percent of Total Appraised Value	Purchase Price	Cost Allocated to Assets
Land	Br. 800,000.	Br.800, 000 / 1, 600,000. = 50%	50% x 1,000,000.	Br. 500,000.
Building	560,000.	560, 000 / 1, 600,000. = 35%	35% x 1, 000,000.	350,000.
Machinery	240,000.	240, 000 / 1, 600,000. = 15%	15% x 1, 000,000.	150,000.
Total	1,600,000.	100%		1,000,000.

The entry to record the lump-sum purchase:

Land	500,000	
Building	350,000	
Machinery	150,000	
Cash		1,000,000
(To record acquisition of land building & machinery)		

Concept of Depreciation

Depreciation- is the process of allocating the cost of a plant asset over its useful (service) life in a rational and systematic manner. The basic purpose of depreciation is to provide the proper matching of expense with revenues in accordance with the matching principle.

- *Depreciation* is a process of cost allocation, not a process of assets valuation. Accountants make no attempt to measure the change in an assets mkt. value during ownership, because plant assets are not held for resale.
- *Depreciation* does not mean that the business sets aside or accumulates cash to replace assets as they become fully depreciated. Establishing such a cash fund is decision entirely separate from depreciation. Accumulate depreciation is that portion of the plant asset's cost that has already been recorded as expense.

Causes of Depreciation

The two major causes of depreciation are physical deterioration & obsolescence.

a. Physical Deterioration – occurs from wear & tear while in use as well as from the action of the weather (exposure to sun, wind, and other climatic factors)

b. Obsolescence (Function Depreciation) - is the process of becoming out of date before the assets physically wears out.

In todays rapidly advance in technology, obsolescence is a more important consideration than physical deterioration. E.g. a personal computer made in the 1980's would not be able to provide an Internet connection.

Assets like computers, other electronic equipment & airplanes may become obsolete before they physically deteriorate. An asset is obsolete when another asset can do the job better or more efficiently.

Depreciation Methods

There are several alternative methods of computing depreciation. A business need not use the same method of depreciation for all its various assets.

Depreciation is computed using one of the following different methods:

1. Straight line method
2. Units of output method
3. Declining balance method
4. Sum-of-the-years'-digits method

Like the inventory costing method, each method is acceptable under GAAP, thus it is up to the management of the business to select a method, which is believed to be appropriate in the circumstance. Depreciation affects the Balance sheet reports through the account of accumulated depreciation, as well as the Income statement through the account of depreciation expense. Thus, its proper accounting and record is imperative for financial reporting.

Three factors affect the computation of depreciation:

- a. **Cost** - is the initial cost incurred in acquiring the asset. Cost is measured in accordance with the cost principle of accounting. Cost is objective fact.
- b. **Useful Life** - is an estimate of the expected productive life, also called service life, of the asset. Useful life maybe expressed in term of time, units of activity such as machine hours, or in units of output.
- c. **Salvage Value** - also called scrap or residual value is an estimate of the asset's value at the end of its useful life.
 - o The full cost of a plant asset is depreciated if the asset is expected to have no residual value.
 - o The plant assets cost minus its estimated residual value is called the depreciable cost.

1. Straight - Line Method

Under the Straight - Line Method, an equal portion of the cost of the asset is allocated to each period of use; consequently, this method is most appropriate when usage of an asset is fairly uniform from year to year.

- The Straight Line Method is the simplest & most widely used method of computing depreciation.
- The Straight Line Method depreciation assumed that a business receives equal benefits from an asset each day of the asset's life. Straight Line, then, allocates an equal part of the total cost to each day of an asset's useful life.

To illustrate, assume a delivery truck has a cost of Br.17, 000 a residual value of Br 2,000 and an estimated useful life of five years. The annual computation of depreciation exp. will be as follows:

$$\begin{aligned}\text{Straight - Line depreciation per year} &= \frac{\text{Cost - Residual value}}{\text{Useful life in years}} \\ &= \frac{\text{Br. } 17,000.00 - \text{Br. } 2,000.00}{5} \\ &= \text{Br. } 3,000.00\end{aligned}$$

Depreciation Schedule – Straight-line method

Computation			Depreciation Expense	Accumulated Depreciation	Book value
Year	Depreciation Rate	Cost			
1 st	20%	x Br. 15,000.	Br. 3,000.	Br. 3,000.	Br. 17,000.
2 nd	20%	x 15,000.	3,000.	6,000.	11,000.
3 rd	20%	x 15,000.	3,000.	9,000.	8,000.
4 th	20%	x 15,000.	3,000.	12,000.	5,000.
5 th	20%	x 15,000.	3,000.	15,000.	2,000.
	100%		Br. 15,000.		

Depreciation rates for various types of assets can conveniently be stated as percentages.

In the illustration, it was assumed that the asset was acquired on Jan. 1, the beginning of the accounting period.

If the asset had been acquired during the year, on October 1, it would have been in use for only 3 months, or 3/12 of a year. Then, the depreciation expense for the three months would be computed as follows:

$$\text{Depreciation on December 31} = \text{Br. } 15,000.00 \times 20\% \times 3/12 = \underline{750}$$

The straight-line method predominates in practice. It is simple to apply, & it matches expenses with revenues appropriately when the use of the asset is reasonably uniform throughout the service life.

2. Unit of Output Method

This method is used for assets whose useful life is limited by physical wear- and -tear rather than obsolescence. The asset life is expressed in expected units of output, such as hours, miles, or number of units. This method is appropriate when the service of a fixed asset is related to use rather than time. It is based on the assumption that an asset depreciates only as it is used. Thus the asset life is expressed in expected units of output such as miles,

To illustrate, assume that the delivery truck in the previous example has an estimated useful life of 100,000 miles, and in the first year of its usage it is driven 15,000.00 miles. The depreciation for the first year, is then computed as follows:

$$\text{Depreciation Per unit of output} = \frac{\text{Cost} - \text{Residual Value}}{\text{Est. Units of Output (Miles)}}$$

$$\frac{\text{Br. } 17,000. - \text{Br. } 2,000.}{100,000 \text{ Miles}} \\ \text{Br. } 0.15 \text{ Dep. per mile}$$

In the units-of-output method, a fixed amount of depreciation is assigned to each unit of output produced or each unit of capacity used by the plant assets.

Year 1 depreciation exp. = Br. $0.15 \times 15,000$ miles

= Br. 2,250

Year 1 depreciation exp. = Br. $0.15 \times 7,000$ miles

= Br. 1,050

So, when the amount of use of a fixed asset varies from year to year, the units-of-output method is more appropriate than the straight-line method. In such a case, the units-of-output method better matches the expense with related revenue.

3. Declining Balance Method

The basic idea behind the declining balance method is that more service benefits are received in the early years of an asset's life when it is new, & fewer benefits are received each year as the asset grows older. So this method assigns more (greater) depreciation exp. to the early years of the asset's life & less to later ones.

To illustrate, consider the previous e.g. of the Br. 17,000 delivery truck.

To depreciate the truck by the double declining balance method, we double the straight-line rate of 20% & apply the doubled rate of 40% to the book value at the beginning of each year.

Depreciation Schedule Declining Balance Method

Year	Computation Book Value Beg. Of year	Depreciation Rate	Annual Dep. exp.	Accumulated Depreciation	Book Value
0	-	-	-	-	Br. 17,000.
1 st	Br. 17,000.	40%	Br. 6,800.	Br. 6,800.	10,200.
2 nd	10,200.	40%	4,080.	10,880.	6,120.
3 rd	6,120.	40%	2,448.	13,328	3,672.
4 th	3,672.	40%	1,469.	14,797.	2,203.
5 th	2,203.	40%	203.	15,000	2,000.

- The declining balance method produces a decreasing annual depreciation expense over the useful life of the asset.
- The method is so named because computation of periodic depreciation is based on a declining book value (cost less accumulated depreciation) of the asset.
- The depreciation rate remains constant from year to year, but the book value to which the rate is applied declines each year.
- Unlike the other depreciation methods, salvage value is ignored in determining the amount to which the declining balance is applied. Salvage value, however, does limit the total depreciation that can be taken. Depreciation stops when the asset's B.V. equals expected salvage value.
- Because the declining balance method produces higher depreciation expense in the early years than in the later years, it is considered an accelerated depreciation method.

If the asset has been acquired on October 1, rather than on January 1, depreciation for only 3 months would be computed as follows:

$$40\% \times \text{Br. } 17,000.00 \times 3/12 = \text{Br. } 1,700$$

$$\text{For the next year, the calculation would be, } 40\% \times (17,000 - 1,700) = \text{Br. } 1,620$$

4. Sum of the years Digits method

Like the declining balance method, the sum of the year's digit allocates a large portion of the asset cost to the early years of its use as accelerated depreciation method. The depreciation rate to be used is a fraction, of which the numerator is the remaining years of useful life (as of the beginning of the year) & the denominator is the sum of the individual years that comprise total service life.

SYD is an appropriate method for assets that provide more service benefits in the early years of their lives & less in later years. Many assets are efficient when first purchased but become less efficient as time passes. This decrease in utility may be caused by technological obsolescence or by accumulated effects of physical wear and tear. Copying machines & computer are examples of assets that are depreciated by an accelerated depreciation method

Consider again the example of the delivery truck costing Br. 17,000 having an estimated life of Five (5) years & an estimated residual value of Br. 2,000.

First the sum of the digits of the years of the asset's useful life has to be determined through a short cut formula that yields the same results as the more tiresome addition process.

$$\text{Sum of the digits} = \frac{n(n+1)}{2}, \text{ where } n \text{ is number of years in the assets life}$$

$$5\text{- years sum of the digits} = \frac{5(5+1)}{2} = 5(3) = \underline{15}$$

Year	Depreciable Cost	Computation SYD Fraction	Annual Dep. exp.	Accumulated Depreciation	Book Value
0	-	-	-	-	Br 17,000.00
1 st	Br. 15,000.	5/15	Br. 5,000.	Br. 5,000.	12,000.00
2 nd	15,000.	4/15	4,000	9,000.	8,000.00
3 rd	15,000.	3/15	3,000.	12,000.	5,000.00
4 th	15,000.	2/15	2,000	14,000.	3,000.00
5 th	15,000.	1/15	1,000.	15,000.	2,000.00
			Br.15,000.		

If the truck was acquired on Oct 1, since the asset was in use for only 3 months during the first accounting period, the depreciation to be recorded in the 1st period will be for only 3/12 of a full year. i.e.

$$3/12 \times \text{Br. } 5,000. = \text{Br. } 1,250$$

$$\text{For the second year, } \text{Br. } 15,000 \times 5/15 \times 9/12 = \text{Br. } 3,750$$

$$15,000 \times 4/15 \times 3/12 = \underline{1,000}$$

$$\text{Total} \quad \underline{\underline{4,750}}$$

Comparison of the Depreciation Methods

A comparison of annual & total depreciation expense under each of the four methods is shown above. The yearly amount of depreciation varies by method, but the total Br. 15,000 depreciable cost becomes total expense under all four methods.

Since depreciation involves estimation of useful life & salvage value of an asset, whenever a business learns a change in the original estimation, the annual depreciation expense needs to be revised. If wear & tear or obsolescence indicates that annual depreciation is inadequate or excessive, a change in the periodic amount should be made. When a change in an estimate is required, the change is made in current & future years but not to prior periods.

To illustrate, assume that a fixed asset purchased for Br. 130,000 was originally estimated to have a useful life of 30 years & a residual value of Br. 10,000. The asset has been depreciated for 10 years by the straight-line method. During the eleventh (11th) year, it is believed that the remaining useful life is 25 years (instead of 20) because of its excellent condition, and that the residual value is Br. 5,000 (rather than Br. 10,000).

Book value (un depreciated cost), end of 10th year = Br. 90,000

Revised annual depreciation expense $85,000 / 25 =$ Br. 3,400

8

Capital Expenditure Versus Revenue Expenditure

The difference between these two types of expenditure can be summarized as follows:

<i>Capital Expenditure</i>	<i>Revenue Expenditure</i>
➤ Increases the operating efficiency, productive Capacity, or extend the useful life of the plant assets	- Merely maintains its existing condition or restore the asset to good working order
➤ Material in amount and occur infrequently	- Fairly small amounts that occur frequently
➤ Benefits more than one accounting period (accounting)	- Primarily benefits one (the current Period
➤ Such expenditures are debited to the asset account account or to the related accumulated depreciation account	- Such costs are debited to expense

Examples of Capital Expenditures

Additions – an addition generally results in a larger physical unit and increased productive capacity. Additions

are debited to the asset account to which the expenditure pertains. E.g- cost of adding an air conditioning, major engine overhaul.

Betterment/Improvements: may result in replacement of a subunit of a productive asset with a new unit. E.g. a factory machine with a 10 h.p. electric motor may be improved by replacing the motor in a 15 h.p. motor. The cost of the new unit should then be debited to the machine account.

Extra Ordinary Reports – an expenditure that increases the useful life of an asset beyond its original estimate is called an *extraordinary repair*. Such expenditure should be debited to the related accumulated depreciation account. In such cases, the repairs are said to be restore or make good a portion of the depreciation recorded in years. The depreciation for future periods should be computed on the basis of the revised book value of the asset and the revised estimate of the remaining unequal life.

To Illustrate, assume that a machine costing Br. 50,000 has no estimated residual value and an estimated useful life of 10 years. Assume also that the machine has been depreciated for 6 years by the straight-line method. At the beginning of the seventh year, an extra ordinary repair of Br. 11,500 increases the according useful life of the machine to 7 years (instead of four). The annual depreciation for the remaining 7 years of use would be 4,500, computed as follow:

Cost of machine -----	Br. 50,000
Less: Accumulated Depreciation Balance:	
Depreciation for 6 years (Br.5, 000x6)	Br.30,000
Deduct: debit due to extra ordinary repairs	<u>11,500</u>
Balance of Accumulated depreciation ----	<u>18,500</u>

Revised Book Value of machine after extra ordinary repair 31,500

Annual Depreciation (31,500 ÷ 7, years remaining useful life) 4,500

The revised annual depreciation can also be computed through the following formula by first determining the revised annual depreciation.

Computation of revised depreciable cost:

Book value prior to capital	+	Capital expenditure	—	Net Est. Salvage Value	=	Revised Depreciable cost
--------------------------------	---	------------------------	---	---------------------------	---	-----------------------------

10,000 + 11,500 - 0 = 31,500 ÷ 7 years = 4,500

To illustrate again, assume that Haben Co. makes a Br. 10,000 major repair to factory machinery. This capital expenditure increases the remaining useful life of the machine to 5 years. In addition, the salvage value is expected to be Br. 4,000. The book value of the factory machine prior to the major repair is Br. 100,000. Under the straight-line method, the new annual depreciation for the remaining five years of useful life is Br. 21,250 computed as shown below:

Book value prior to capita expenditure	-----	Br. 100,000
Add: Cost of capital expenditure	-----	<u>10,000</u>
Book value after capital expenditure	-----	110,000
Less: New estimated salvage value	-----	<u>4,000</u>
Revised depreciable cost	-----	106,000
Remaining useful life	-----	÷ 5
Revised Annual depreciation		Br. <u>21,200</u>

Depreciation Expense	-----	21,200
Accumulated depreciation	-----	21,200

Effects of Error in Distinguishing between capital and Revenue expenditure

Treating a capital expenditure as revenue expenditure or vice versa creates errors in the Financial Statement.

Suppose a company makes an extraordinary report to equipment and erroneously expenses this cost. It is a capital expenditure that should have been debited to an asset account. This accounting error overstates expenses and understates net income on the income statement. On the balance sheet, the asset (equipment) account is understated and so is owner's equity.

On the other hand, capitalizing the cost of an *ordinary* repair creates the opposite error. Expenses will be understated and net income will be overstated on the income statement. The balance sheet reports overstated amounts for assets and owners equity.

These examples indicate that a careful destruction between capital and revenue expenditures is essential to the attainment of one of the most fundamental objective of accounting - the determination of accurate net income for each year of operation of a business.

Disposal of Plant Asset

Eventually, a plant asset ceases to serve a Company's needs. The asset may have become worn out, obsolete, or for some other reason no longer useful to the business.

Plant assets of various types may be disposed of in three ways:

1. Retirement – the plant asset is scrapped or discarded
2. Sale – the plant asset is sold to another party
3. Exchange – an existing plant asset is traded in a new plant asset.

At the time of disposal, it is necessary to determine the book value of the plant asset. The book value is the difference between the cost of the plant asset and the accumulated depreciation to date.

If the disposal accounts at any time during the year, depreciation for the fraction of the year to the date of the disposal must be recorded.

1. Retirement (Discarding) Fixed Asset

Under fixed asset are no longer useful to the business and have no residual or market value, they are discarded.

To illustrate, the accounting for a retirement, assume that ABC Company retires its computer printers, which cost Br. 32,000. The accumulated depreciation on these printers is also Br. 32, 000; to equip, is therefore, fully depreciated (zero book value), the enter to read this retirement is:

Accumulated depreciation – printing equip. -----	32,000
Printing equip -----	32,000
(To record installment of fully depreciation equip.)	

What about if a fully depreciated plant asset is still useful to the company?

Assume that moon light company discards its delivery equipment, which cost Br. 18,000, and has accumulated depreciation of Br. 14,000 at the date of retirement. The entry to record the retirement is as follows:

Accumulated depreciation-Deliver equip. -----	14,000
Loss on disposal -----	4,000
Delivery equip -----	18,000

2. Selling of Plant Assets

In a disposal by sale, the book value of the asset is compared to the proceeds received for the sale. If the proceeds received from the sale exceed the book value of the plant asset, a gain on disposal occurs. If, however, the proceeds of the sale are less than the book value of the plant asset sold, a loss on disposal occurs.

To illustrate, assume that on July 1, 1993 Gura Trading Company sells Office Furniture for Br 16,000 cash. The Office- furniture originally cost Br. 60,000 and as of Jan 1, 1993, had accumulated depreciation of Br. 41,000. The yearly depreciation is Br. 16,000.

Depreciation for the first six months of 1995 is Br. 8,000. The entry to record depreciation expense and update accumulated depreciation to July 1 is as follows:

July 1, Depreciation expense -----	8,000
------------------------------------	-------

Accumulated depreciation of furniture ----- 8,000
(To record depreciation expense for the 1st six months of 1993)

After the accumulated depreciation balance is updated, **a gain on disposal** of Br. 5,000 is computed.

Cost of furniture -----	Br. 60,000
Less: Accumulated Depreciation (4,000 + 8,000) -----	<u>49,000</u>
Book value at date of disposal -----	11,000
Proceeds from sale -----	<u>16,000</u>
Gain on disposal -----	Br. <u>5,000</u>

The entry to record the sale and the gain on disposal is as follows:

July 1. Cash -----	16,000
Accumulated. Dep. - Office furn. -----	49,000
Office furn. -----	60,000
Gain on Disposal -----	5,000

(To record sale of office furniture at a gain)

Loss on Disposal

Assume that instead of selling the office furniture for Br. 16,000, Guna trading sells it for Br. 9,000. In this case, a loss of Br. 2,000 is computed as follows:

Cost of office furniture -----	Br. 60,000
Less: accumulated depreciation. -----	<u>49,000</u>
Book value at date of disposal -----	11,000
Proceeds from sale -----	<u>9,000</u>
Loss on disposal -----	Br. <u>2,000</u>

The entry to record the sale and the loss on disposal is as follow:

July 1. Cash -----	9,000
Accumulated dep. - office furn. -----	49,000
Loss on disposal -----	2,000
Office furniture -----	60,000

(To record sales of office furniture at a loss)

3. Exchanging Fixed Asset

Plant assets may also be disposed of through exchange. Business often exchange (trade – in) their old plant assets for similar assets that are newer and more efficient. Exchange can be for either similar or dissimilar assets because exchanges of similar assets are more common; we will focus more on the exchange for similar assets.

Exchange of similar assets involves assets of the same type. This occurs for example, when old equipment is exchanged for new delivery equipment or when old office furniture is exchanged for new office furniture.

At the time of exchange, the seller allows the buyer an amount for the old equipment traded in. This amount called the trade in-allowance may be either greater or less than the book value of the old

equipment. The remaining balance- the amount owed – is either paid in cash or a liability is recorded. It is normally called *boot*, which is its tax name.

The cost recorded for the new asset can be determined in either of two ways:

- i. Cost of new asset = List price of new asset - unrecognized gain
- ii. Cost of new asset = Cash given or liability assumed + Book value of old asset

Gain Treatment

Assume that ABC Company decides to exchange its old delivery equipment for new delivery equipment. The cost of the old equipment is Br. 4,000 and its related accumulated depreciation is Br. 3,200. The dealer of the new equip. offers a Br. 1,100 trade-in allow, and the cash market price of the new equipment is Br. 5,000.

The cost of the new equipment and the gain, which is not recognized, is computed as follows:

Similar equipment acquired (new):

List price of new equipment -----	Br. 5,000
Trade-in allow on old equipment -----	<u>1,100</u>
Cash to be paid at June 19, date of exchange ----	<u>3,900</u>

Equip. Traded - in (Old):

Cost of old equipment -----	Br. 4,000
Accumulated Depreciation at date of exchange --	<u>3,200</u>
Book value at date of exchange -----	<u>800</u>

Recorded Cost of New Equipment:

Method One

List price of new equipment -----	Br. 5,000
Trade-in allowance -----	Br. 1,100
Book value of old equipment -----	<u>800</u>
Unrecognized gain on exchange -----	<u>- 300</u>
Cost of new equipment -----	Br. <u>4,700</u>

Method Two

Book value of old equipment -----	Br. 800
Cash paid at date of exchange -----	<u>3,900</u>
Cost of new equipment -----	<u>4,700</u>

The entry to record this exchange and payment of cash is as follows:

Accumulated Depreciation-equip. -----	3,200
Equip. (New) -----	4,700
Equipment (Old) -----	4,000
Cash -----	3,900

(To record exchange of equipment).

The trade-in allowance and the list price of the new equipment are not recorded in the purchaser's accounting records. These amounts are only used in order to determine the amount the purchaser

must pay in addition to turning in the old truck.

Loss Treatment

When a loss occurs on the exchange of similar assets, it is recognized immediately, it is not deferred. When there is a loss, the cost recorded for the new asset should be the market (list) price.

To illustrate, consider the previous e.g., but assume this time the company exchanged the equipment by paying cash of Br. 4,600.

List price of new equipment -----	Br. 5,000
Less: Trade-in allowance on old equip.. ----	<u> ? </u>
Cash paid -----	<u>4,600</u>

Cash payment = List price – trade-in allowance
Trade-in allow = List price – Cash Pmt.
= Br. 400

Loss on Disposal = Book Value – Trade in allowance
= Br. 800 – 400
= Br. 400

The entry to record the exchange, loss & cash Payment is as follows:

Equipment (new) -----	5,000
Accumulate depreciation – equipment -----	3,200
Loss on disposal -----	400
Equipment (old) -----	4,000
Cash -----	4,600

(To record exchange of equipment at loss)

The justification for requiring the recognition of a loss but not allowing the recognition of a gain is the principle of conservatism. The Principles of Conservatism requires that losses should be recognized when incurred, but gains should be deferred until cash or another liquid asset is received.

Consider again another related example: the cost of old equipment is Br.7, 000; its accumulated depreciation is Br. 4,600. Cash paid is Br. 8,000. and the list price of the new equipment is Br. 10,000. Then, the amount of trade-in allowance, loss, and the value of the new equipment is determined as follows: following exchange:

Similar equipment acquired (new):

List price of new equipment -----	Br. 10,000
Trade – in allowance on old equip. -----	<u> ? </u>
Cash paid -----	Br. <u>8,000</u>

Equipment Traded - in (old)

Cost of old equipment -----	Br. 7,000
Accumulated Depreciation at time of exchange ---	<u>4,600</u>
Book Value at date of exchange -----	2,400
Trade-in allow. on old equip. -----	<u>2,000</u>
Loss on exchange -----	Br. <u>400</u>

The entry to record to exchange is as follows:

Accumulated Depreciation - equip.	-----	4,600
Equipment (new)	-----	10,000
Loss on disposal of fixed assets	-----	400
Equip.	-----	7,000
Cash	-----	8,000

(To recode exchange of equipment to loss).

Natural Resources

The fixed assets of some businesses include standing timber and underground deposits of oil, gas, minerals or other natural resources. As this business harvest or mine and sell these resources, a portion of the cost of acquiring them must be debited to an expense account. This process of transferring the cost of natural resources to an expense account is called **depletion**.

A natural resource as its name implies is a resource existing naturally, not constructed by humans. Examples of typical natural resources are deposits of coal, oil, and other minerals. These natural resources are typically used as raw manufacture in the production of other goods .A quantity of natural resource can be considered as consisting of a total bundle of materials, tons of coal, barrels of oil, etc. As these materials are removed, a part of the natural resource is used up – depleted.

The **acquisition cost** of a natural resource is the cash or cash equivalent price, necessary to acquire the resource and prepare it for its intended use. For already discovered resources such as an existing Coal Mine ,cost is the price paid for the property.

The systematic write-off of the cost of natural resources is called depletion. The units of activity (output) method are generally used to compute depletion, because periodic depletion generally is a function of the units extracted during the year.

$$\begin{array}{l} \text{Depletion Cost} \\ \text{Per Unit} \end{array} = \frac{\text{Total Cost - Salvage}}{\text{Total Estimated Units}}$$

$$\begin{array}{l} \text{Periodic Depletion} \\ \text{Expense} \end{array} = \begin{array}{l} \text{Depletion Cost} \\ \text{Per Unit} \end{array} \times \begin{array}{l} \text{Number of Units} \\ \text{Extracted \& Sold} \end{array}$$

To illustrate, assume that the Global Coal Co. invests Br. 5,000,000 in a mine estimated to have 10 million tons of coal and no salvage value. In the first year, 800,000 tons of coal are extracted and sold.

Using the above formula, the computations are as follows:

$$\begin{array}{l} \text{Depletion Cost} \\ \text{per unit} \end{array} = \frac{\$ 5,000,000}{10,000,000} = \text{Br. 0.5 depletion cost per ton.}$$

$$\begin{array}{l} \text{Depletion expense} \\ \end{array} = \text{Br. 0.5 x 800,000 tons} = \text{Br. 400,000}$$

The enter to record depletion expense for the first year of operation is as follows:

Dec. 31	Depletion expense	-----	400,000
	Accumulated depletion	-----	400,000

(To record depletion expense on coal deposits)

Accumulated depletion, a contra asset account similar to accumulated depreciation, is deducted from the cost of the natural resources in the balance sheet as follows:

Coal Mines -----	Br. 5,000,000	
Less: Accumulated depletion -----	<u>400,000</u>	Br. 4,600,000

- Sometimes, natural resources extracted in one accounting period will not be sold until a later period. In this case, depletion is not expensed until the resource is sold. The amount not sold is reported in the current asset section as inventory.

Intangible Assets

Long-lived assets that (1) lack physical substance and (2) are not held for investments are classified as **intangible assets**.

The **acquisition cost** of intangible assets is determined by using the same general rule as property, plant, and equipment.

There are few differences between accounting for intangible assets and accounting for plant assets.

- The term used to describe the write-off of an intangible asset is amortization, rather than depreciation.
- The amortization period of an intangible asset cannot be longer than 40 years.
- Unlike plant assets, all intangible assets are typically amortized on a straight-line basis. The universal use of this method adds comparability.

The following are some common intangibles.

1. Patent

A **Patent** is an exclusive right granted by the government for manufacturing, use, and sale of a particular product. The purpose of this exclusive right is to encourage the invention of new machine and processes. Although patents may be granted for fixed period time (17 or 20 Years) it may change as technology or consumer tastes change. So the cost of a patent should be amortized over its legal life or useful life, which ever is shorter.

To illustrate, assume that a patent is purchased from the investor at a cost of Br. 100,000 after five years of the legal life have expired (its legal life is 17 years). It is estimated that the useful life after purchase is only four years. The entry to be made to record the purchase and the annual amortization expense would be:

Jan 1, Patent -----	100,000	
Cash -----		100,000

(To record acquisition of patent that until have a legal life of 17 years)

Dec. 31 Amortization Expense - Patent -----	25,000	
Patents -----		25,000

(To amortize cost patent on a straight-line basis and estimated life of

four years)

Note that although the remaining life is 12 years, the estimated useful life is only four years., amortization should be based on this shorter period.

2. Copy right

A **copyright** is an exclusive right granted by government to protect the production and sell of literary or artistic materials for the life of the creator plus 50 years. The useful life of a copyright generally is shorter than its legal life. Similar to other intangible assets, the maximum write-off is 40 years. However, because of the difficulties of determining the period over which benefits are to be received, copyrights usually are amortized over a relatively short period of time.

3. Trade mark and Trade Names

A **trademark or trade name** is a word, phrase, or symbol that distinguishes or identifies a particular enterprise or product. E.g. Co-Ca Cola, Sony, Dell, Nike etc...

The creator or original user may obtain exclusive legal right to the trademark or trade name by registering it with the government office.

4. Franchise and Licenses

A **franchise** is a right granted by a company or a governmental unit to conduct a certain type of business in a specific geographical area.

When the cost of franchise is small, it may be charged immediately to expense or amortized over a short period such as five years. When the cost is material, amortization should be based upon the life of the franchise (if limited) and the amortization period, however, may not exceed 40 years.

5. Goodwill

In business, **goodwill** refers to an intangible asset of a business that is created from such favorable factors as location, product quality, reputation, and managerial skill. Goodwill allows a business to earn a rate of return on its investment that is often in excess of the normal rate for other firms in the same business.

GAAP permits the recording of goodwill in the accounts only if it is objectively determined by a transaction. E.g. Purchase or sale of business.

Goodwill must be amortized over its estimated useful life, which cannot exceed 40 years.

To illustrate how goodwill is determined and accounted consider the following example:

ABC- Hotel		
<u>Balance sheet</u>		
	<u>At. Cost</u>	<u>At fair Mkt. Value</u>
Total Assets	4,300.000	6,350.000
Total Liability	-1,100.000	-1,100.000
Net Asset	3,200.000	5,250.000
Purchase Price (Cost) -----	- Br. 6,100.000	

Less: Fair mkt. Value of the assets -----	<u>5,250.000</u>
Goodwill -----	850.000