

CHAPTER ELEVEN

NON-CURRENT ASSETS AND DEPRECIATION

CHAPTER OUTLINE

- ❖ Non-current assets
- ❖ Determination of cost of non-current assets
- ❖ Depreciation
- ❖ Methods of calculating depreciation
- ❖ Double entry recording of depreciation
- ❖ Disposal of non-current assets

Learning Objectives:

At the end of this chapter, the student should be able to:

- Explain the features of a non-current assets
- Define depreciation and its purposes
- Identify different methods of calculating depreciation.
- Identify the effects of depreciation on disposal of assets

11.1 NON CURRENT ASSETS.

Most business enterprises make use of non-current assets (i.e assets of durable nature acquired not for resale but for the purpose of increasing the earning capacity or the productivity in the organization). There should be a clear understanding of how to manage these non-current assets in relation to the prevailing accounting standards. It is necessary to know how to calculate the cost of the asset and equally determine the part of such cost that should be charged annually against the income of the organization.

11.2 DETERMINATION OF COST OF NON-CURRENT ASSETS.

When a non-current asset is acquired, it is recorded at its historical cost.

Such cost includes the price of obtaining the asset and the cost of bringing it to its required condition and location. It therefore, comprises costs such as

- (a) Purchase price
- (b) Freight or transportation cost
- (c) Installation cost, e.t.c

Illustration 11:1

Olasuki Ltd purchased plant and machinery at an invoiced price of ₦5,000,000. Other payments include value added tax of 5% on cost as well as freight charges of ₦1,000,000. The machine is to be re-modified at a cost of ₦800,000 to enable it be used. The installation cost of the machine is ₦500,000.

Required: Calculate the purchase price to be charged in the Plant and Machinery Account.

Solution 11.1

Olasuki's	
Purchase Price of Plant and Machinery.	
	₦
Invoice Price	5,000,000
Vat (5% of 5,000,000)	250,000
Freight Charge	1,000,000
Installation Cost	500,000
Re-modification charge	<u>800,000</u>
Total Purchase Price	<u>7,550,000</u>

The following points should be noted in the purchase of non-current assets:

- ❖ Cost of acquiring non-current assets is always huge and regarded as capital expenditure.
- ❖ The earning potential of such assets lasts for more than one accounting period.
- ❖ The cost of maintenance of the non-current asset is classified as revenue expenditure.
- ❖ This cost of maintenance (revenue expenditure) should be charged to the annual statement of comprehensive income.

11.3 DEPRECIATION

Statement of Accounting Standard (SAS) 9 states that depreciation represents an estimate of the portion of the historical cost or revalued amount of a non-current asset, chargeable to operations during an accounting period.

Ghana International Accounting Standard (GNAS 10) defines depreciation as "the allocation of the depreciable amount of an asset over its estimated useful life".

Generally, depreciation is defined as the recognition of loss in value of non-current asset as a result of using such an asset. As previously stated, the value derivable (revenue) from the use of non-current assets lasts over a number of years, hence the cost is spread over that number of years. This is in recognition of the matching principle in accounting which states that the revenue of an accounting period should be matched with cost or expense incurred in generating such revenue. Depreciation is that part of the cost of the non-current asset consumed during its period of use by the firm. It is an expense that should be charged to the statement of comprehensive income before determining the net profit or otherwise of the business.

Causes of depreciation

So many factors bring about depreciation of non-current assets. These factors according to Abdullahi (2014) can be grouped into:

1. Physical deterioration
2. Economic factors
3. Passage of time
4. Depletion.

Physical deterioration

Physical deterioration of assets results mainly from wear and tear occasioned by usage. Such wear and tear will likely lead to reduction in productive capacity or usefulness of the asset. Other contributory factors include effect of erosion, rust and decay in the presence of rain, sun and wind.

Economic factors

Economic factors stem from obsolescence and inadequacies. Obsolescence is the diminution in value as a result of change in technology or change in consumers' taste. A typical example is typewriters that are gradually phasing out due to the introduction of computers. A machine in excellent condition may become obsolete when more advanced/sophisticated ones are introduced. Inadequacy, on the other hand, refers to abandonment of the use of an asset due to growth. In other words, the services of an asset become insufficient in comparison to the need of the organization.

Passage of time

Passage of time mostly affects assets with fixed period of time such as patents, copy rights and leases. It also affects other causes. This is because some non-current assets may diminish in value after some time even without use. There are situations where certain equipment or their components are designed to last for a specific number of years. After the specified period, the asset will diminish in terms of service derivable from it.

Depletion

Some assets that are referred to as wasting assets (mines, quarries e.t.c) deplete or become worthless when the deposit resources in them are tapped. Depletion may also affect cost of imported assets; currency differentials may result in loss of value.

11.4 METHODS OF CALCULATING DEPRECIATION.

There are various methods of calculating depreciation. They include:

1. Straight line method
2. Reducing balance method
3. Sum of the years' digit method
4. Revaluation method
5. Machine hour method
6. Annuity method
7. Unit of output method
8. Sinking fund method

Discussion in this text will be restricted to the first four which are the commonly used methods.

Straight line method:

This method is sometimes called the fixed installment method. This is because once the depreciable value is calculated, it remains constant throughout the life span of the asset. The procedure of calculation is that number of years of the asset life is estimated; the disposal or scrap value is equally estimated. To determine the depreciable value, you are required to deduct the disposal value from the cost of the asset and divide the balance by the estimated useful life (in years) of the asset. Thus:

$$\text{Depreciation} = \frac{\text{Cost} - \text{Disposal value}}{\text{Estimated no of years}} \quad \text{i.e. } \frac{C - DV}{N}$$

This method is mostly used when the value of the non-current assets remains significantly stable.

Illustration 11.2

A motor lorry purchased at N100,000 has estimated useful life of four (4) years and scrap value of N20,000. Calculate the depreciation to be charged annually.

Solution 11.2

$$\text{Annual depreciation charge} = \frac{\text{Cost (N100,000)} - \text{Disposal Value (N20,000)}}{\text{No of years (4)}}$$

$$\begin{aligned} \text{Cost} &= \text{N100,000} \\ \text{Disposal value (DV)} &= \text{N20,000} \\ \text{Estimated No of Years (N)} &= 4 \\ &= \frac{100,000 - 20,000}{4} = \text{N20,000} \end{aligned}$$

Hence, the annual depreciation charge is N20,000.

Reducing Balance Method

Under this method, a fixed percentage meant for depreciation is deducted from the cost of the asset balance or net book value or carrying amount in the first year to get a balance known as closing balance. The same percentage is applied against the carrying amount in the second year. This

procedure is repeated till the end of the number of years of the asset. This method is equally called diminishing balance method and is mostly used for assets that suffer significant fall in value as they are used e.g. Motor Vehicles.

Illustration 11.3: On January 1st 2002, Cassandra Ltd purchased a Plant for N500,000. It is the policy of the company to depreciate Plants at 10%. You are required to calculate the carrying amount of the asset and the total depreciation chargeable at the end of 2006 accounting period, using reducing balance method, assuming the useful life of the asset is 5 years.

Solution 11.3.

Date	Details	N	Annual Depreciation
1/1/2002	Cost	500,000	N
31/12/2002	Dep. For 2002 (10%)	50,000	50,000
1/1/2003	Carrying Amount	450,000	
31/12/2003	Dep. (10% of 450,000)	45,000	45,000
1/1/2004	Carrying Amount	405,000	
31/12/2004	Dep. (10% of 405,000)	40,500	40,500
1/1/2005	Carrying Amount	364,500	
31/12/2005	Dep. (10% of 364,500)	36,450	36,450
1/1/2006	Carrying Amount	328,050	
31/12/2006	Dep. (10% of 328,050)	32,805	32,805
	Total depreciation chargeable		204,755
	Carrying amount	295,245	

Sometimes, when the rate of depreciation (r) is not given or is required to be calculated, the following formula may be applied: $r =$

$$1 - \sqrt[n]{\frac{s}{c}} \times \frac{100}{1}$$

Where r = rate of depreciation

n. = useful life of assets in years

s = scrap value

c = cost of asset.

Illustration 11.4

Azu Ltd is in a dilemma as to which method of depreciation to adopt, straight line method or reducing balance method. Luckily, he came in contact with the principal partner of leading accounting firm in Enugu who recommended reducing balance method. The problem now is how to choose an appropriate rate for the depreciation. From the following information you are required to suggest an appropriate rate.

Cost of Asset - N100,000
 Residual value - N7,500
 Estimated useful life - 5 years.

Solution 11.4

r =

$$1 - \sqrt[n]{\frac{s}{c}} \times \frac{100}{1}$$

Where r = rate of depreciation

n. = useful life of assets in years

s = scrap value

c = cost of asset.

$$r = 1 - \sqrt[5]{\frac{7500}{100,000}} \times \frac{100}{1}$$

$$= 1 - \sqrt[5]{0.075} \times \frac{100}{1}$$

$$= 1 - 0.59567849 \times \frac{100}{1}$$

$$= 0.40432105 \times 100$$

$$r = 40.4\%$$

Illustration 11.5

On 1st January, 2008 Nweze Enterprises Limited acquired a non-current asset at a cost of N1,000,000. The asset is expected to have a useful life of 5 years after which the asset will be scrapped for N237,000. It is the policy of the company to depreciate the non-current assets on a reducing balance basis.

You are required to:

- (a) Determine the percentage of reducing balance charge (depreciation rate)
- (b) Show the depreciation charge table for the five year period.

Solution 11.5.

(a) Depreciation rate, r =

$$1 - \sqrt[n]{\frac{s}{c}} \times \frac{100}{1}$$

Where

n = 5

s = N237,000

c = N1,000,000

r =

$$1 - \sqrt[5]{\frac{237,000}{1,000,000}} \times \frac{100}{1}$$

=

$$1 - \sqrt[5]{0.237} \times \frac{100}{1}$$

$$= 1 - 0.749807308$$

$$= 0.250192691 \times \frac{100}{1}$$

$$= 25\%$$

b. Schedule of depreciation charge table.

Date	Details	N	Annual Depreciation (N)
1/1/2008	cost	1,000,000	
31/12/08	Depr 25% of 1,000,000	250,000	250,000
	Net book value	750,000	
1/1/2009	Carrying amount	750,000	
31/12/09	Depr. 25% of 750,000	187,500	187,500
	Net book value	562,500	

1/1/2010	Carrying amount	562,500	
31/12/2010	Depr. 25% of 562,500	<u>140,625</u>	140,625
	Net book value	421,875	
1/1/2011	Carrying Amount	421,875	
31/12/2011	Depr. 25% of 421,875	<u>105,469</u>	105,469
	Net book value	316,406	
1/1/2012	Carrying amount	316,406	
	Depr. 25% of 316,400	<u>79,102</u>	79,102
	Net book (Scrap) value	237,304	

Sum of the Years' Digit Method

This method is very similar to the reducing balance method as it has the attribute of annual depreciation falling progressively. The number of the year's useful life of the asset is allocated in a reverse order as digit to each year. The value of the digits summed together is used in calculating the annual depreciation. This method is equally used for assets that suffer significant fall in value as they are used e.g. Motor Vehicles.

Illustration 11.6

Babatunde & Co. bought a depreciable non-current asset on 1st January, 2007 at a cost of ₦360, 000. The asset is expected to last for 5 years with a scrap value of ₦60, 000. It is the policy of the business to depreciate non-current asset using Sum-of-the years' digit method.

You are required to calculate the annual depreciation charge for the period.

Solution 11

Depreciable Value = ₦360,000 - ₦60,000 = ₦300,000

Year	No	Drifts	Workings	Annual Depreciation charge
				₦
2007	1	5	5/15 x 300,000 =	100,000
2008	2	4	4/15 x 300,000 =	80,000
2009	3	3	3/15 x 300,000 =	60,000
2010	4	2	2/15 x 300,000 =	40,000
2011	5	<u>1</u>	1/15 x 300,000 =	20,000
		15		

Revaluation method

This method is applied for depreciation of loose tools or other assets whose individual values seem insignificant but when considered in total would become very significant. To apply this method, the steps below should be taken:

1. Find the value of the assets at the beginning
2. Determine cost of new asset purchased (if any) within the accounting year in view.
3. Less the values of the asset at the year end.
4. The difference is the depreciation for the year.

This is shown in the format below

Value of assets at the beginning of the year	X
Add cost of new purchases	X
Less value of assets at the end	X
Depreciation charge for the year	XX

This method is suitable for depreciable assets or small items which cannot be separately treated.

Illustration 11.7

ABC Enterprises loose tools were valued at ₦200, 000 as at 1st January 2012. On 1st June 2012, it bought ₦20, 000 worth of new ones and on 31 December, 2012 the loose tools were revalued at ₦180, 000.

You are required to show the:

- Loose tool account
- Depreciation charge of the loose tool account
- Provision for depreciation account
- Statement of financial position extract.

Solution 11.7

Loose Tool Account			
Jan 1, 2012 Balance b/d	N 200,000	Bal c/d	N 220,000
June 1, 2012 Cash	20,000		
	<u>220,000</u>		<u>220,000</u>
Jan. 1 2013 Bal b/d	220,000		

Determination of depreciation Charge.

Value of loose tool at beginning	N 200,000
Additional loose tool purchased	20,000
Less value of loose tool at end	<u>180,000</u>
Depreciation for the year	40,000

Provision for Depreciation Account			
Dec. 31 2012 Bal. c/d	N <u>40,000</u>	Dec 31 Depreciation	N <u>40,000</u>

Depreciation Account			
Dec. 31, 2012 Prov. for Depreciation	N <u>40,000</u>	Dec. 31 Profit & Loss	N <u>40,000</u>

Statement of Financial Position (Extract)

Non Current Asset:	
Loose tools	220,000
Depreciation	<u>40,000</u>
	<u>180,000</u>

11.5 DOUBLE ENTRY RECORDING OF DEPRECIATION

To record depreciation in the books of accounts, there are two methods that may be adopted. The first is where the non-current asset is maintained at cost and other accounts opened to take the yearly depreciation charges. The second is where the non-current asset is maintained at net book value or carrying amount and the depreciation charges are recorded in the non-current asset account. We are going to concentrate on the first method as it is the method currently used in practice.

The accounting entries are as follows:

- At the purchase of non-current asset:
Action required: Dr: Non Current Asset Account
Cr: Cash/Bank Account
with the cost of the non-current asset.

- Provision for depreciation:
Action Required: Dr. Statement of Comprehensive Income
Cr. Accumulated Provision for Depreciation account.

11.6 DISPOSAL OF NON-CURRENT ASSET.

There may be situations where a business entity will decide to dispose of its non-current asset. The reasons for such disposal may be to purchase another one of higher capacity or the non-current asset is not required at that point in time.

Where an existing asset is sold, there will be necessary accounting entries to be made to recognize such a sale. An account known as Asset Disposal Account will be opened to take in the outstanding value in the Asset Account and the Accumulated Depreciation Account. Note that a profit or loss may arise from the disposal. The following procedures/accounting treatment should be adopted:

- Transfer the value/cost of the non-current asset to be sold to the newly created Asset Disposal Account.
Dr Non Current Asset Disposal Account

Cr. Non Current Asset Account
with the value/Cost of the Non Current Asset.
The effect of this will be the closure of the Non Current Asset Account,

2. Transfer the accumulated depreciation on the asset to be sold to the Non-Current Asset Disposal Account.

Dr. Accumulated Provision for Depreciation Account
Cr. Non-Current Asset Disposal Account.
with the accumulated depreciation on the asset disposed.

3. Record the amount from the sale of the asset as follows:

Dr Bank/Cash Account
Cr Non-Current Asset Disposal Account.

4. Balance off the Asset Disposal Account

1. If the balance in the Non-Current Asset Disposal Account is credit, it means that the amount received from the sales is more than the carrying amount or the Net Book Value of the asset. The following accounting treatment should be effected:

Dr. Non-Current Asset Disposal Account
Cr. Statement of Comprehensive Income.
with the profit on sale of the Non-Current Asset.

2. If the balance in the Non-Current Asset is debit, it then means that the amount received from the sale is less than the carrying amount or the Net Book Value of the asset, meaning that the asset is sold at a loss. This should be recorded as follows:

Dr. Statement of Comprehensive Income
Cr. Non-Current Asset Disposal Account
with the loss on sale of the Non-Current Asset.

Illustration 11.8

Goodluck Enterprises started business on January 1st 2008. On that day, he purchased a Motor Van for ₦280, 000. The estimated useful life of the Motor Van is 5 years with a residual value of ₦80, 000. The business adopted straight line method of depreciation. On 1st January, 2011 Goodluck

Enterprises decided to sell the Motor Van. The value of the proceed was ₦200, 000.

You are required to calculate and show the necessary accounting entries for the following:

- Annual Depreciation Charge
- Non-Current Asset Account
- Accumulated Provision for Depreciation Account
- Depreciation Expense Account
- Non-Current Asset Disposal Account
- Bank Account.

Solution 11.8

(a) Calculation of Annual Depreciation Charge using Straight Line method.
Annual Depreciation charge = $\frac{\text{Cost} - \text{disposal value}}{\text{Estimated useful life of asset}}$

$$\frac{\text{₦}280,000 - \text{₦}80,000}{5} = \text{₦}40,000.$$

(b) Non-Current Asset Account.

Motor Van Account			
	₦		₦
1/1/2008 Cash	280,000	31/12/2008	bal c/d 280,000
1/1/2009 bal b/d	280,000	31/12/2009	bal c/d 280,000
1/1/2010 bal b/d	280,000	31/12/2010	bal c/d 280,000
1/1/2011 bal b/d	280,000		

(c) Accumulated Provision for Depreciation Account

N		N	
31/12/2008 bal c/f	40,000	31/12/2008 Depreciation Expense	40,000
31/12/2009 bal c/f	<u>80,000</u>	1/1/2009 Bal b/d	40,000
	80,000	31/12/2009 Depreciation Expense	<u>40,000</u>
31/12/2010 bal c/f	<u>120,000</u>		80,000
	120,000	1/1/2010 Bal b/d	80,000
		31/12/2010 Depreciation Expense	<u>40,000</u>
			120,000
		1/1/2011 Bal b/d	120,000

(d) Depreciation Expense Account

N		N	
31/12/2008	Acc Dep. A/c 40,000	31/12/2008 Statement of Comp. Income	40,000
31/12/2009	Acc Dep. A/c 40,000	31/12/2009 Statement of Comp. Income	40,000
31/12/2010	Acc Dep. A/c 40,000	31/12/2010 Statement of Comp. Income	40,000

(e) Motor Van Disposal Account

N		N	
1/1/2011 Motor Van	280,000	1/1/2011 Acc Depr. for Prov. A/c	120,000
31/12/2011 Statement of Comp. Inc.	40,000	1/1/2011 Cash	200,000
	<u>320,000</u>		320,000

Bank Account

N	
1/1/2011 Cash	200,000