Depreciation Accounting

CPT Section A: Fundamentals of Accounting Chapter-5
Part 2: Methods of Depreciation

CA. Poonam Patni
The Topics Already covered in Part 1

- Understand the Meaning & Need of Depreciation
- Causes of Depreciation
- Objectives of Depreciation
- Factors to be considered for Depreciation
- Journal Entries for Depreciation
Learning Objectives

SLM Method
- Formula
- Rationale
- Advantages
- Disadvantages
- Journal Entry
- Examples

WDV Method
- Formula
- Rationale
- Advantages
- Disadvantages
- Journal Entry
- Examples

SOYD Method
- Formula
- Rationale
- Advantages
- Disadvantages
- Journal Entry
- Examples
Methods for Providing Depreciation

- Straight Line Method
- Reducing Balance Method
- Sum of Years of Digits Method
- Annuity Method
- Sinking Fund Method
- Insurance Policy Method
- Machine Hour Method
- Production Unit Method
Methods of Depreciation

- Formula
- Rationale
- Advantages
- Disadvantages
- Journal Entries
- Ledger
- Example
Straight Line Method: - Formula

- **Straight Line Depreciation:**
  \[ \text{Depreciation} = \frac{\text{Cost of Asset} - \text{Scrap Value}}{\text{Useful Life}} \]

- **Straight Line Depreciation Rate:**
  \[ \frac{\text{Depreciation}}{\text{Cost of Assets}} \times 100 \]

- **Example:**
  - If an asset costs Rs.30000/- & rate of depreciation is 10%
  - Rs.3000/- will be written off each year
Straight Line Method :- Rationale

- Equal Amount Written Off
- Assets give equal utility throughout the life
- Simplest Way
Advantages

- Simple to Apply
- Accurate Results
Disadvantages

- Ignores Repair & Maintenance
- Assets fully written off
### Journal Entries:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Debit Amount</th>
<th>Credit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation Account</td>
<td>Dr. XYZ</td>
<td></td>
</tr>
<tr>
<td>To Asset Account</td>
<td></td>
<td>XYZ</td>
</tr>
<tr>
<td>(Being Depreciation provided on the Assets)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Debit Amount</th>
<th>Credit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit &amp; Loss Account</td>
<td>Dr. XYZ</td>
<td></td>
</tr>
<tr>
<td>To Depreciation Account</td>
<td></td>
<td>XYZ</td>
</tr>
<tr>
<td>(Being Depreciation provided on the Assets)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example
Mr. Ajay Malya purchased an aircraft for bingfisher on 01.04.2012 costing Rs.30,000/-. Asset has useful life of 10 years with Nil scrap Value. Accountant Mr. Raju wants to provide depreciation on SLM basis. Suggest him on amount of depreciation to be charged & Leger Posting.

**Straight Line Depreciation:**

\[
\frac{\text{Cost of Asset} - \text{Scrap Value}}{\text{Useful Life}}
\]

\[
\frac{30000 - 0}{10} = \text{Rs.3,000/-}
\]
### Aircraft Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/04/2012</td>
<td>To Bank/Cash</td>
<td>30,000</td>
<td>31/03/2013</td>
<td>By Depreciation A/c</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>By Balance c/d</td>
<td>27,000</td>
</tr>
</tbody>
</table>

### Depreciation Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/03/2013</td>
<td>To Asset A/c</td>
<td>3000</td>
<td>31/03/2013</td>
<td>By Profit &amp; Loss A/c</td>
<td>3000</td>
</tr>
</tbody>
</table>
Example.2

Sharma & Co. purchased a machine on 1st July, 2011 at a cost of Rs.60,000 and spent Rs.5,000 as its installation expenses. The firm writes off depreciation at 10% p.a. every year. The books are closed on 31st December every year. Show the Machinery Account on Straight Line method for the year 2011 and 2012.

Solution

Cost of Asset:-
Rs.60000+Rs.5000 = Rs.65000/-

Depreciation(2011):- Rs.65000 X 10% X 6Months/12 Months = Rs.3250/-
## Ledger

### Machine Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/07/2011</td>
<td>To Bank/Cash</td>
<td>65000</td>
<td>31/12/2011</td>
<td>By Depreciation A/c</td>
<td>3250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31/12/2011</td>
<td>By Balance c/d</td>
<td>61750</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>65000</strong></td>
<td></td>
<td></td>
<td><strong>65000</strong></td>
</tr>
</tbody>
</table>

### Depreciation Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/07/2011</td>
<td>To Machine A/c</td>
<td>3250</td>
<td>31/12/2011</td>
<td>By Profit &amp; Loss A/c</td>
<td>3250</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>3250</strong></td>
<td></td>
<td></td>
<td><strong>3250</strong></td>
</tr>
</tbody>
</table>
### Ledger

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2012</td>
<td>To Balance b/f</td>
<td>61750</td>
<td>31/12/2012</td>
<td>By Depreciation A/c</td>
<td>6500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>By Balance c/d</td>
<td>55250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61750</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2012</td>
<td>To Asset A/c</td>
<td>6500</td>
<td>31/12/2012</td>
<td>By Profit &amp; Loss A/c</td>
<td>6500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reducing Balance Method

\[ 1 - \frac{n}{\text{Acquisition cost}} \sqrt[\text{Net residual Value}]{\text{Acquisition cost}} \]

- Where \( n \) = Useful life (In Years)

Most Commonly Used

Even prescribed by Income Tax Act
WDV Calculation

**Assets at Net Book Value**

Annual Depreciation = Net Book Value \( \times \) Depreciation Rate

**Assets at Original Cost**

Annual Depreciation = (Cost – Accumulated Depreciation) \( \times \) Depreciation Rate
Ram purchased a machine worth Rs. 50000/-
Rate of depreciation @ 10% p.a Calculate the amount of
depreciation to be charged every year.

**Solution**

<table>
<thead>
<tr>
<th>1st year 50000*10%=5000</th>
<th>2nd year 50000-5000=45000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45000*10%=4500</td>
</tr>
<tr>
<td></td>
<td>And So On........</td>
</tr>
</tbody>
</table>
Rationale

- Repairs increases as the assets gets old.
- To give equal burden on profit
- Scrap value to remain in the books at the end of life.
Advantages

- Assets never fully written off
- Considers Repair and Maintenance
- Revenue Charge is uniform
Disadvantages

A too lower rate may be adopted

Assets can remain in the books even after scraped
Example

L&T. acquired a machine on 1st April, 2011 at a cost of Rs.19,000 and spent Rs.1,000 on its installation.

The depreciation rate is 10% p.a..

The books are closed on 31st December every year.

Show the Machinery Account on diminishing balance method for the year 2011 and 2012.
Calculation Of Depreciation

For 2011

\[(19000 + 1000) \times 10\% \times \frac{9}{12} = \text{Rs.1500/-}\]

For 2012

\[\text{WDV = Original Cost – Depreciation already charged} = 20000 - 1500 = \text{Rs.18500/-}\]

\[\text{Depreciation} = 18500 \times 10\% = \text{Rs.1850/-}\]
# Machinery Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/04/2011</td>
<td>To Bank A/c</td>
<td>19000</td>
<td>31/12/2011</td>
<td>By Depreciation A/c</td>
<td>1500</td>
</tr>
<tr>
<td>01/04/2011</td>
<td>To Bank A/c (Installation Expenses)</td>
<td>1000</td>
<td>31/12/2011</td>
<td>By Balance c/d</td>
<td>18500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20000</td>
</tr>
<tr>
<td>01/01/2012</td>
<td>To Balance b/d</td>
<td>18500</td>
<td>31/12/2012</td>
<td>By Depreciation A/c</td>
<td>1850</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18500</td>
<td>31/12/2012</td>
<td>By Balance c/d</td>
<td>16650</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18500</td>
</tr>
</tbody>
</table>
## Depreciation Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2011</td>
<td>To Asset A/c</td>
<td>1500</td>
<td>31/12/2011</td>
<td>By P&amp;L A/c</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>31/12/2012</td>
<td>To Asset A/c</td>
<td>1850</td>
<td>31/12/2012</td>
<td>By P&amp;L A/c</td>
<td>1850</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1850</td>
</tr>
</tbody>
</table>
### Differences

<table>
<thead>
<tr>
<th>SLM</th>
<th>WDV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculated on original cost</td>
<td>Calculated on WDV</td>
</tr>
<tr>
<td>Depreciation is equal each year</td>
<td>Depreciation declines</td>
</tr>
<tr>
<td>Depreciation Charged is Lower initially</td>
<td>Depreciation Charged is Higher initially</td>
</tr>
<tr>
<td>Asset fully written off</td>
<td>Asset not fully written off</td>
</tr>
<tr>
<td>Does not take repair And Maintenance into consideration</td>
<td>Does take repair And Maintenance into consideration</td>
</tr>
</tbody>
</table>
Sum of Digits Method - Formula

Amount to be w/o x Remaining life of assets/Total of all digits representing the life of asset

Sum of digits = \( \frac{n(n+1)}{2} \)

Where \( n \) = Useful economic life (Life in Years)
Example:

Suppose the estimated life of asset is 10 years. The total of all the digits from 1 to 10 is 55 i.e.
\[1+2+3+4+5+6+7+8+9+10 = 55\]

\[\frac{N(n+1)}{2} = \frac{10 \times 11}{2} = 55\]

The depreciation to be written off in the first year will be \(\frac{10}{55}\) of the cost of the asset less estimated scrap value; & the depreciation for the 2\(^{nd}\) year will be \(\frac{9}{55}\) of the depreciable amount and so on...

Cost of Asset = Rs.1000
Depreciation for 1st Year :- Rs.1000 x \(\frac{10}{55}\) = Rs.182/-
Depreciation for 2nd Year :- Rs.1000 x \(\frac{9}{55}\) = Rs.164/-
Depreciation should be charged as follows:

Year 1   (Cost – Residual value) x n / Sum of digits
Year 2   (Cost – Residual value) x (n-1) / Sum of digits
Year 3   (Cost – Residual value) x (n-2) / Sum of digits
Year 4   (Cost – Residual value) x (n-3) / Sum of digits

Year n   (Cost – Residual value) x 1 / Sum of digits

With diminishing years of life to run.
Rationale

• It provides higher depreciation to be charged in the early years, and lower depreciation in the later periods.

• Considers Repair & Maintenance

• Calculated based on Ratio
Advantages

Same as WDV Method

Disadvantages

SYD depreciation method might be more confusing and harder to compute compare to the straight line one

Incorrect Estimated Useful life can lead to Incorrect Depreciation
M/s Rajnikant & Co. purchased a machine for Rs.2,00,000. Estimated useful life and scrap value were 10 years and Rs.24,000 respectively. The machine was put to use on 1.1.2007. Show Machinery Account and Depreciation Account in their books for 2012 by using sum of years digits method.
Sum of Digits: \[ 10 \times \frac{10+1}{2} = 55 \]

Amount already written off as depreciation for 2007-2011
Sum of digits for these years: \[ 10+9+8+7+6 = 40 \]

\[ = (Rs.2,00,000 - Rs.24,000) \times \frac{40}{55} = 1,28,000 \]

Written down value as on 1-1-2012
\[ Rs.2,00,000 - Rs.1,28,000 = Rs.72,000 \]

Depreciation for 2012
\[ \cdot (Rs.2,00,000 - Rs.24,000) \times \frac{5}{55} = Rs.16,000. \]
In the books of M/s Rajnikant & Co.

**Machinery Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2012</td>
<td>To Balance b/d (W.N 2)</td>
<td>72,000</td>
<td>31/12/2012</td>
<td>By Depreciation (W.N)</td>
<td>16,000</td>
</tr>
<tr>
<td></td>
<td>By Balance c/d</td>
<td></td>
<td></td>
<td>By Balance c/d</td>
<td>56,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>72,000</td>
</tr>
</tbody>
</table>

**Depreciation Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
<th>Date</th>
<th>Particular</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2012</td>
<td>To Machinery</td>
<td>16,000</td>
<td>31/12/2012</td>
<td>By P&amp; L</td>
<td>16,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16,000</td>
</tr>
</tbody>
</table>

|            |                |        |            |            | 16,000 |
Lesson Summary

- SLM Method of Depreciation
- WDV Method of Depreciation
- SOYD Method of Depreciation
Next Steps...

Please also refer following modules/parts in this series

• Annuity Method
• Sinking Fund Method
• Insurance Policy Method
• Machine Hour Method
• Production Unit Method
• Sale/Disposal of Assets
• Revaluation of Assets
• Change in Estimate Life of Asset
Thank You! 😊