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IAS® Standard 16 Property, Plant and Equipment

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CASE STUDY- IAS 16 PROPERTY, PLANT AND EQUIPMENT

Introduction

In order to carry out their activities, entities need different types of durable tangible assets. As a result of their use and market changes, their value changes over time. The main goal of the accounting of long-term tangible assets is to ensure that the information presented in the financial statements about them is as objective and reliable as possible.

The aim of this case study is for students to apply the rules for accounting for fixed tangible assets owned by the entity. The case study includes questions related to initial evaluation; follow-up assessment; depreciation and write-off of a fixed tangible asset owned by the entity.

The Case Information

The entity carries out the following business operations related to property, plant and equipment:

Entity "Steel" Ltd. is a producer of metal products.

The entity purchases a production machine (lathe for processing metal parts), with the following data:

Purchase price: CU 150,000;

Customs duties and fees: CU 11,900;

Transportation costs: CU 6,000;

Fees of consultants for the preparation of the asset for exploitation: CU 2,100;

Installation costs: CU 3,000;

Administrative costs: CU 2,000.

The entity has adopted the straight-line method of depreciation for this class of assets. The useful life of the machine is 25 years.

After initial recognition, the entity adopts one of the two approaches provided for by IAS 16 Property, Plant and Equipment, namely: the revaluation approach.

At the end of the fifth year, a revaluation of the production machine was carried out. The fair value of the machinery at the revaluation date is CU 160,000.

At the end of the sixth year, a revaluation of the production machine was carried out. The fair value of the machinery at the revaluation date is CU 110,000.

At the end of the seventh year, a revaluation of the production machine was carried out. The fair value of the machinery at the revaluation date is CU 140,000.

Discussion Questions

What is the cost of the production machine, according to the provisions of IAS 16 Property, plant and equipment?

Determine the depreciation rate and depreciation quota for the purposes of depreciating the production machinery.

Prepare the accounting entries for the revaluation of the production machine at the end of the fifth year and explain the changes in the affected accounts for both revaluation options:

> First option: writing off the accumulated depreciation at the expense of the carrying amount and
>
> Second option: recalculation of carrying amount and accumulated depreciation in proportion to the change in carrying amount at the date of revaluation.

Make the revaluation of the production machine at the end of the sixth year. Prepare the ledger entries and explain the changes in the affected ledger accounts. Compile the accounting records and explain the changes in the affected accounts according to the revaluation option: writing off the accumulated depreciation at the expense of the carrying amount.

Make the revaluation of the production machine at the end of the seventh year. Prepare the ledger entries and explain the changes in the affected ledger accounts. Compile the accounting records and explain the changes in the affected accounts according to the revaluation option: writing off the accumulated depreciation at the expense of the carrying amount.

SOLUTION OF CASE STUDY- IAS 16 PROPERTY, PLANT AND EQUIPMENT

Determination of the cost of the production machine:

Elements of the cost	**Amount (CU)**	**Classification of elements**
Purchase price	150,000	Capitalise
Customs duties and fees	11,900	Capitalise
Transportation costs	6,000	Capitalise
Consultants' fees	2,100	Capitalise
Installation costs	3,000	Capitalise
Administrative costs	2,000	Expense
Total:	**173,000**	

Determination of the depreciation rate and the depreciation quota of the production machine.

Determining the depreciation rate:

$$Depreciation\,rate\ = \frac{100}{Useful\ life\ of\ assets\ \ (years)} = \frac{100}{25} = 4\,\%$$

Determining the depreciation quota for one year:

Depreciation quota = CU 173,000 * 4% = CU 6,920

Determination of the result of the revaluation at the end of the fifth year.

First option writing off the accumulated depreciation at the expense of the carrying amount

Accumulated depreciation to date

5 years * CU 6,920 = CU 34,600

Carrying amount of the asset before the revaluation

Net carrying amount = Gross carrying amount – Accumulated depreciation = CU 173,000 – CU 34, 600 = CU 138,400

Fair value at the revaluation date: CU 160,000

First option to reflect the revaluation, according to IAS 16 Property, plant and equipment

Writing off the accumulated depreciation at the expense of the gross carrying amount:

Values after revaluation:

Depreciation = CU 34,600 – CU 34,600 = 0

Difference between fair value and carrying amount = CU 160,000 – CU 138, 400 = CU 21,600 (increase)

This difference will increase the net book value to the fair (revalued) value.

Accounting entries:

To write off accumulated depreciation:

Dr. Accumulated depreciation	34,600	
Cr. Property, plant and equipment		34,600

To accounting the increase in the book value of the revaluation asset in a revaluation reserve:

Dr. Property, plant and equipment	21,600	
Cr. Revaluation Reserve		21,600

Statement of accounts

Account Accumulated depreciation

Depreciation write-off CU 34, 600	Before revaluation CU 34,600
	Balance after revaluation: 0

Account Property, plant and equipment

Acquisition of the machine CU 173,000 Correction (increase) of the balance carrying amount CU 21,600	Write-off of part of the gross carrying amount CU 34,600
	Balance after revaluation: CU 160,000

Account Revaluation Reserve

	Formation of revaluation reserve CU 21,600
	Balance after revaluation: CU 21,600

Second option to reflect the revaluation, according to IAS 16 Property, plant and equipment

Recalculation of carrying amount and accumulated depreciation in proportion to the change in carrying amount at the date of revaluation.

Calculation of conversion coefficient:

$$K = \frac{Difference\ between\ carrying\ amount\ and\ fair\ value}{Carrying\ amount} = \frac{21{,}600}{138{,}400} = 0.15606936$$

Recalculation of the gross carrying amount by means of a coefficient = CU 173 000 x $0.15606936 \approx$ CU 27,000

Recalculation of depreciation, by coefficient = CU34,600 * 0.15606936 = CU 5,400

Recalculated gross carrying amount = CU 173,000 + CU 27,000 = CU 200,000

Recalculated depreciation = CU 34,600 + CU 5,400 = CU 40,000

Carrying amount after revaluation = Gross carrying amount – Depreciation = CU 200, 000 – CU 40,000 = CU 160,000

Accounting entries:

To correction the carrying amount of the asset in the direction of increase:

Dr. Property, plant and equipment	27,000	
Cr. Accumulated depreciation		5,400
Cr. Revaluation reserve		21,600

Statement of accounts

Account Accumulated depreciation

	Before revaluation CU 34,600
	Increase in depreciation after the revaluation CU 5 ,400
	Balance after revaluation: CU 40,000

Account Property, plant and equipment

Acquisition of the machine CU 173,000	
Correction (increase) of the carrying amount CU 27 ,000	
	Balance after revaluation: CU 200,000

Account Revaluation Reserve

	Formation of revaluation reserve CU 21,600
	Balance after revaluation: CU 21,600

Determination of the outcome of the reassessment at the end of the sixth year.

Since the production machine was revalued in the previous year, this resulted in a change in the gross carrying amount and, accordingly, the depreciation allowance for the following years of the machine's useful life.

Write-off of depreciation to date at the expense of the gross book value:

At the end of the fifth year, the depreciation was fully written off. For the following years of the asset's useful life, the depreciation quota will change, because as a result of the revaluation, the gross carrying amount, which is the basis for determining the depreciation quota, has also changed.

Before the first revaluation, the depreciation quota is CU 6,920 per year. In the following year, it will change as a result of the changed book value of the asset. The new net book value of the asset is CU 160,000. This will be the new gross book value. Since the straight-line method is applied for the remaining period of the asset's useful life, the depreciation allowance is CU 8,000 (CU 160,000 / 20 = CU 8,000).

Thus, at the end of the year, the revaluation will be carried out under the following parameters:

Gross carrying amount: CU 160,000

Accumulated depreciation to date (for one year after the last revaluation): CU 8,000

Net carrying amount: CU 152,000

Formed reserve from previous revaluation: CU 21,600

New fair value: CU 110,000

Values after revaluation:

Depreciation = CU 8,000 – CU 8,000 = 0

Difference between fair value and carrying amount = CU 152,000 – CU 110,000 = CU 42,000

This difference will reduce the net carrying amount of the production machinery to the revalued (fair) value.

Accounting entries:

To correct the carrying amount of the asset in the direction of decrease:

Dr. Accumulated depreciation	8,000	
Dr. Impairment loss	20,400	
Dr. Revaluation reserve	<u>21,600</u>	
Cr. Property, plant and equipment		50,000

Statement of accounts

Account Accumulated depreciation

Depreciation write-off CU 8,000	Before revaluation CU 8,000
	Balance after revaluation: 0

Account Property, plant and equipment

Gross carrying amount of machine CU 160,000	Decrease of a part of gross carrying amount at the expense of depreciation CU 8,000 Decrease of a part of gross carrying amount at the expense of accumulated revaluation reserve CU 21,600 Decrease of a part of gross carrying amount at the expense of accumulated Impairment costs CU 20,400
	Balance after revaluation: CU 110,000

Account Revaluation Reserve

Using the reserve to cover the reduction from the revaluation CU 21,600	Reserve formation from the previous one reassessment CU21,600
	Balance after revaluation: CU 0

Account Impairment loss

Accrual of costs for depreciation	CU 20,400	
		Balance after revaluation: CU 20,400 [1]

Determination of the result of the reassessment at the end of the seventh year

Since the production machine was revalued in the previous year, this resulted in a change in the gross carrying amount and, accordingly, the depreciation allowance for the following years of the machine's useful life.

Write-off of depreciation to date at the expense of the gross carrying amount:

At the end of the sixth year, the depreciation was fully written off. For the following years of the asset's useful life, the depreciation quota will change, because as a result of the revaluation, the gross carrying amount, which is the basis for determining the depreciation quota, has also changed.

Prior to the last revaluation, the depreciation quota was CU 8,000 per year. In the following year, it will change as a result of the changed carrying amount of the asset. The new net carrying amount of the asset is CU 110,000. This will be the new gross carrying amount. Since the straight-line method is applied for the remaining period of the useful life of the asset, the depreciation quota is CU 5,789. 47 (CU 110,000 / 19 = CU 5, 789.47)

Thus, at the end of the year, the revaluation will be carried out under the following parameters:

Gross carrying amount: CU 110,000

Accumulated depreciation to date (for one year after the last revaluation): CU 5,789.47

Net carrying amount: CU 104,210.53

Reported impairment charges for previous revaluation: CU 20,400

New fair value: CU 140,000

Values after revaluation:

Depreciation = CU 5,789.47 – CU 5,789.47 = 0

[1] At the end of the year, the account is included in the financial result and closed.

Difference between fair value and carrying amount = CU 140,000 – CU 104,210.53 = CU 35,789.47

This difference will increase the net carrying amount of the production machinery to the revalued (fair) value.

Accounting entries:

To write off accumulated depreciations to date

Dr. Accumulated depreciation	5,789,47	
Cr. Property, plant and equipment		5,789,47

To correct the carrying amount of the asset in the direction of increase

Dr. Property, plant and equipment	35,789,47	
Cr. Revaluation reserve		15,389,47[2]
Cr. Income from subsequent asset valuations		20,400

Statement of accounts:

Account Accumulated depreciation

Depreciation write off	CU 5,789.47	Before revaluation	CU 5,789.47
		Balance after revaluation:	0

Account Property, plant and equipment

Gross carrying amount of the machine	CU 110,000	Decrease of a part of gross carrying amount at the expense of accumulated depreciation	CU 5,789.47
Increase in carrying amount	CU 35,789.47		
		Balance after revaluation:	CU 140,000

[2] The increase in the carrying amount of the asset as a result of the revaluation is in the amount of CU 35,789.47. For this purpose, revaluation income will be reported up to the amount of impairment losses reported in the previous period (in this case CU 20,400), and the difference above this amount is reported as a revaluation reserve (in this case CU 15,389.47).

Account Revaluation Reserve

	Formation of a reserve from a previous revaluation CU 15,389.47
	Balance after revaluation: CU 15,389.47

Account Income from subsequent asset valuations

	Accounting of income up to the amount of reported expense from a previous period CU20,400
	Balance after revaluation: CU 20,400 [3]

[3] The income recovers the amount of the previous reduction in the asset's book value from revaluation on account of reported expenses.