# CHAPTER 10

## Acquisition and Disposition of Property, Plant, and Equipment

### ASSIGNMENT CLASSIFICATION TABLE (BY TOPIC)

| Topics | Questions | Brief Exercises | Exercises | Problems | Concepts for Analysis |
|---|---|---|---|---|---|
| 1. Valuation and classification of land, buildings, and equipment. | 1, 2, 3, 5, 6, 11, 12, 21 | 1 | 1, 2, 3, 4, 5, 13 | 1, 2, 3, 5 | 1, 6, 7 |
| 2. Self-constructed assets, capitalization of overhead. | 4, 7, 20, 21 | | 4, 6, 12, 16 | | 2 |
| 3. Capitalization of interest. | 7, 8, 9, 10, 12, 21 | 2, 3, 4 | 4, 5, 7, 8, 9, 10, 16 | 1, 5, 6, 7 | 3, 4 |
| 4. Exchanges of non-monetary assets. | 11, 15, 16 | 8, 9, 10, 11, 12 | 3, 11, 16, 17, 18, 19, 20 | 4, 8, 9, 10, 11 | 5 |
| 5. Lump-sum purchases, issuance of shares, deferred-payment contracts. | 11, 13, 14 | 5, 6, 7 | 3, 6, 11, 12, 13, 14, 15, 16 | 2, 3, 11 | |
| 6. Government grants. | 17 | 14 | 21, 22 | | |
| 7. Costs subsequent to acquisition. | 18, 19 | 13 | 23, 24, 25 | | 1 |
| 8. Disposition of assets. | 22, 23 | 15, 16 | 26, 27 | 4 | 1 |

# ASSIGNMENT CLASSIFICATION TABLE (BY LEARNING OBJECTIVE)

| Learning Objectives | Brief Exercises | Exercises | Problems |
|---|---|---|---|
| 1. Describe property, plant, and equipment. | | | |
| 2. Identify the costs to include in initial valuation of property, plant, and equipment. | 1 | 1, 2, 3, 4, 5, 11, 12, 13 | 1, 2, 3, 4, 5, 6, 11 |
| 3. Describe the accounting problems associated with self-constructed assets. | | 4, 5, 6, 11, 12 | 3 |
| 4. Describe the accounting problems associated with interest capitalization. | 2, 3, 4 | 5, 6, 7, 8, 9, 10 | 5, 6, 7, 8, 9, 10, 11 |
| 5. Understand accounting issues related to acquiring and valuing plant assets. | 5, 6, 7, 8, 9, 10, 11, 12, 14 | 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 | 3, 4 |
| 6. Describe the accounting treatment for costs subsequent to acquisition. | 13 | 23, 24, 25 | |
| 7. Describe the accounting treatment for the disposal of property, plant, and equipment. | 15, 16 | 26, 27 | 2, 4, 11 |

  

# ASSIGNMENT CHARACTERISTICS TABLE

| Item | Description | Level of Difficulty | Time (minutes) |
|---|---|---|---|
| E10-1 | Acquisition costs of realty. | Moderate | 15–20 |
| E10-2 | Acquisition costs of realty. | Simple | 10–15 |
| E10-3 | Acquisition costs of trucks. | Simple | 10–15 |
| E10-4 | Purchase and self-constructed cost of assets. | Moderate | 20–25 |
| E10-5 | Treatment of various costs. | Moderate | 20–25 |
| E10-6 | Correction of improper cost entries. | Moderate | 15–20 |
| E10-7 | Capitalization of interest. | Moderate | 20–25 |
| E10-8 | Capitalization of interest. | Moderate | 20–25 |
| E10-9 | Capitalization of interest. | Moderate | 20–25 |
| E10-10 | Capitalization of interest. | Moderate | 20–25 |
| E10-11 | Entries for equipment acquisitions. | Simple | 10–15 |
| E10-12 | Entries for asset acquisition, including self-construction. | Simple | 15–20 |
| E10-13 | Entries for acquisition of assets. | Simple | 20–25 |
| E10-14 | Purchase of equipment with zero-interest-bearing debt. | Moderate | 15–20 |
| E10-15 | Purchase of computer with zero-interest-bearing debt. | Moderate | 15–20 |
| E10-16 | Asset acquisition. | Moderate | 25–35 |
| E10-17 | Non-monetary exchange. | Simple | 10–15 |
| E10-18 | Non-monetary exchange. | Moderate | 20–25 |
| E10-19 | Non-monetary exchange. | Moderate | 15–20 |
| E10-20 | Non-monetary exchange. | Moderate | 15–20 |
| E10-21 | Government grants. | Simple | 15–20 |
| E10-22 | Government grants. | Moderate | 10–15 |
| E10-23 | Analysis of subsequent expenditures. | Moderate | 20–25 |
| E10-24 | Analysis of subsequent expenditures. | Simple | 15–20 |
| E10-25 | Analysis of subsequent expenditures. | Simple | 10–15 |
| E10-26 | Entries for disposition of assets. | Moderate | 20–25 |
| E10-27 | Disposition of assets. | Simple | 15–20 |
| P10-1 | Classification of acquisition and other asset costs. | Moderate | 35–40 |
| P10-2 | Classification of acquisition costs. | Moderate | 40–55 |
| P10-3 | Classification of land and building costs. | Moderate | 35–45 |
| P10-4 | Dispositions, including condemnation, demolition, and trade-in. | Moderate | 35–40 |
| P10-5 | Classification of costs and interest capitalization. | Moderate | 20–30 |
| P10-6 | Interest during construction. | Moderate | 25–35 |
| P10-7 | Capitalization of interest. | Moderate | 20–30 |
| P10-8 | Non-monetary exchanges. | Moderate | 35–45 |
| P10-9 | Non-monetary exchanges. | Moderate | 30–40 |
| P10-10 | Non-monetary exchanges. | Moderate | 30–40 |
| P10-11 | Purchases by deferred payment, lump-sum, and non-monetary exchanges. | Moderate | 35–45 |

## ASSIGNMENT CHARACTERISTICS TABLE (Continued)

| Item | Description | Level of Difficulty | Time (minutes) |
|---|---|---|---|
| CA10-1 | Acquisition, improvements, and sale of realty. | Moderate | 20–25 |
| CA10-2 | Accounting for self-constructed assets. | Moderate | 20–25 |
| CA10-3 | Capitalization of interest. | Simple | 20–25 |
| CA10-4 | Capitalization of interest. | Moderate | 30–40 |
| CA10-5 | Non-monetary exchanges. | Moderate | 30–40 |
| CA10-6 | Costs of acquisition. | Simple | 20–25 |
| CA10-7 | Cost of land vs. building—ethics. | Moderate | 20–25 |

# ANSWERS TO QUESTIONS

**1.** The major characteristics of plant assets are (1) that they are acquired for use in operations and not for resale, (2) that they are long-term in nature and usually subject to depreciation, and (3) that they have physical substance.

**2.** (a) The acquisition costs of land may include the purchase or contract price, the broker's commission, title search and recording fees, assumed taxes or other liabilities, and surveying, demolition (less salvage), and landscaping costs.

(b) Machinery and equipment costs may properly include freight and handling, taxes on purchase, insurance in transit, installation, and expenses of testing and breaking-in.

(c) If a building is purchased, all repair charges, alterations, and improvements necessary to ready the building for its intended use should be included as a part of the acquisition cost. Building costs in addition to the amount paid to a contractor may include excavation, permits and licenses, architect's fees, interest accrued on funds obtained for construction purposes (during construction period only) called avoidable interest, insurance premiums applicable to the construction period, temporary buildings and structures, and property taxes levied on the building during the construction period.

**3.** (a) Land.
(b) Land.
(c) Land.
(d) Machinery. The only controversy centers on whether fixed overhead should be allocated as a cost to the machinery.
(e) Land Improvements, may be depreciated.
(f) Building.
(g) Building, provided the benefits in terms of information justify the additional cost involved in providing the information.
(h) Land.
(i) Land.

**4.** (a) The position that no fixed overhead should be capitalized assumes that the construction of plant (fixed) assets will be timed so as not to interfere with normal operations. If this were not the case, the savings anticipated by constructing instead of purchasing plant assets would be nullified by reduced profits on the product that could have been manufactured and sold. Thus, construction of plant assets during periods of low activity will have a minimal effect on the total amount of overhead costs. To capitalize a portion of fixed overhead as an element of the cost of constructed assets would, under these circumstances, reduce the amount assignable to operations and therefore overstate net income in the construction period and understate net income in subsequent periods because of increased depreciation charges.

(b) Capitalizing overhead at the same rate as is charged to normal operations is defended by those who believe that all manufacturing overhead serves a dual purpose during plant asset construction periods. Any attempt to assign construction activities less overhead than the normal rate implies costing favors and results in the misstatement of the cost of both plant assets and finished goods.

**Questions Chapter 10** (Continued)

**5.** (a) Disagree. Promotion expenses should be expensed.

(b) Agree. Architect's fees for plans actually used in construction of the building should be charged to the building account as part of the cost.

(c) Agree. IFRS recommends that avoidable interest or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition or location necessary for its intended use. Interest costs are capitalized starting with the first expenditure related to the asset and capitalization would continue until the asset is substantially completed and ready for its intended use. Property taxes during construction should also be charged to the building account.

(d) Agree. Interest revenue earned on specific borrowings is offset against interest costs capitalized.

(e) Disagree. Operating losses are not considered part of the cost of the building.

**6.** Since the land for the plant site will be used in the operations of the firm, it is classified as property, plant, and equipment. The other tract is being held for speculation. It is classified as an investment.

**7.** A common accounting justification is that all costs associated with the construction of an asset, including interest, should be capitalized in order that the costs can be matched to the revenues which the new asset will help generate.

**8.** Assets that do not qualify for interest capitalization are (1) assets that are in use or ready for their intended use, and (2) assets that are not being used in the earnings activities of the firm and that are not undergoing the activities necessary to get them ready for use.

**9.** The avoidable interest is determined by multiplying (an) interest rate(s) by the weighted-average amount of accumulated expenditures on qualifying assets. For the portion of weighted-average accumulated expenditures which is less than or equal to any amounts borrowed specifically to finance construction of the assets, the capitalization rate is the specific interest rate incurred. For the portion of weighted-average accumulated expenditures which is greater than specific debt incurred, the interest rate is a weighted average of all other interest rates incurred.

The amount of interest to be capitalized is the avoidable interest, or the actual interest incurred, whichever is lower.

An alternative to the specific rate is to use an average borrowing rate.

**10.** The total interest cost incurred during the period should be disclosed, indicating the portion capitalized and the portion charged to expense.

IFRS requires that interest revenue earned on specific borrowing offset interest costs capitalized. The interest revenue earned on specific borrowings is directly related to interest cost incurred on that borrowing.

**11.** (a) **Assets acquired by issuance of ordinary shares**—when property is acquired by issuance of securities such as ordinary shares, the cost of the property is not measured by par or stated value of such shares. If the shares are actively traded on the market, then the fair value of the shares is a fair indication of the cost of the property because the fair value of the shares is a good measure of the current cash equivalent price. If the fair value of the ordinary shares is not determinable, then the fair value of the property should be established and used as the basis for recording the asset and issuance of ordinary shares.

(b) **Assets acquired by grant**—when assets are acquired in this manner a strict cost concept would dictate that the valuation of the asset be zero. However, in this situation, most companies record the asset at its fair value. The credit should be made to Deferred Grant Revenue. Another approach would be to deduct the grant from the carrying amount of the assets received from the grant.

(c) **Cash discount**—when assets are purchased subject to a cash discount, the question of how the discount should be handled occurs. If the discount is taken, it should be considered a reduction in the asset cost. Different viewpoints exist, however, if the discount is not taken. One approach is that the discount must be considered a reduction in the cost of the asset. The rationale for this approach is that the terms of these discounts are so attractive that failure to take the discount must be considered a loss because management is inefficient. The other view is that failure to take the discount should not be considered a loss, because the terms may be unfavorable or the company might not be prudent to take the discount. Presently both methods are employed in practice. The former approach is conceptually correct.

(d) **Deferred payments**—assets should be recorded at the present value of the consideration exchanged between contracting parties at the date of the transaction. In a deferred payment situation, there is an implicit (or explicit) interest cost involved, and the accountant should be careful not to include this amount in the cost of the asset.

(e) **Lump sum or basket purchase**—sometimes a group of assets are acquired for a single lump sum. When a situation such as this exists, the accountant must allocate the total cost among the various assets on the basis of their relative fair values.

(f) **Trade or exchange of assets**—when one asset is exchanged for another asset, the accountant is faced with several issues in determining the value of the new asset. The basic principle involved is to record the new asset at the fair value of the new asset or the fair value of what is given up to acquire the new asset, whichever is more clearly evident. However, the accountant must also be concerned with whether the exchange has commercial substance. The commercial substance issue rests on whether the expected cash flows on the assets involved are significantly different.

**12.** The cost of such assets includes the purchase price, freight and handling charges incurred, insurance on the equipment while in transit, cost of special foundations if required, assembly and installation costs, and costs of conducting trial runs. Costs thus include all expenditures incurred in acquiring the equipment and preparing it for use. When plant assets are purchased subject to cash discounts for prompt payment, the question of how the discount should be handled arises. The appropriate view is that the discount, whether taken or not, is considered a reduction in the cost of the asset. The rationale for this approach is that the real cost of the asset is the cash or cash equivalent price of the asset. Similarly, assets purchased on long-term payment plans should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the transaction.

**13.** $\frac{\text{Fair value of land}}{\text{Fair value of building and land}}$ X Cost = Cost allocated to land

$\frac{€500,000}{€2,500,000}$ X €2,200,000 = €440,000 (Cost allocated to land)

$\frac{€2,000,000}{€2,500,000}$ X €2,200,000 = €1,760,000 (Cost allocated to building)

**14.** $10,000 + $4,208 = $14,208

**15.** Ordinarily accounting for the exchange of non-monetary assets should be based on the fair value of the asset given up or the fair value of the asset received, whichever is more clearly evident. Thus any gains and losses on the exchange should be recognized immediately. If the fair value of either asset is not reasonably determinable, the book value of the asset given up is usually used as the basis for recording the non-monetary exchange. This approach is always employed when the exchange has commercial substance. The general rule is modified when exchanges lack commercial substance. In this case, the enterprise is not considered to have completed the earnings process and therefore a gain should not be recognized. However, a loss should be recognized immediately.

**16.** In accordance with IFRS which requires losses to be recognized immediately, the entry should be:

| | | |
|---|---|---|
| Heavy Duty Truck | 42,000 | |
| Accumulated Depreciation | 9,800* | |
| Loss on Disposal of Heavy Duty Truck | 4,200** | |
| Heavy Duty Truck | | 30,000 |
| Cash | | 26,000 |

*[($30,000 – $6,000) X 49 months/120 months = $9,800]
**(Book value $20,200 – $16,000 trade-in = $4,200 loss)

**17.** IFRS requires that a grant be recognized in income on a systematic basis that matches it with the related costs that they are intended to compensate. This can be accomplished by either (1) recording the grant as deferred grant revenue, which is recognized as income over the useful life of the asset, or (2) deducting the grant from the carrying amount of the asset acquired from the grant, which reduces depreciation expense.

**18.** Ordinarily such expenditures include (1) the recurring costs of servicing necessary to keep property in good operating condition, (2) cost of renewing structural parts of major plant units, and (3) costs of major overhauling operations which may or may not extend the life beyond original expectation.

The first class of expenditures represents the day-to-day service and in general is chargeable to operations as incurred. These expenditures should not be charged to the asset account.

The second class of expenditures may or may not affect the recorded cost of property. If the asset is rigidly defined as a distinct unit, the renewal of parts does not usually disturb the asset accounts; however, these costs may be capitalized and apportioned over several fiscal periods on some equitable basis. If the property is conceived in terms of structural elements subject to separate replacement, such expenditures should be charged to the plant asset accounts.

The third class of expenditures, major overhauls, is usually entered through the asset accounts because replacement of important structural elements is usually involved. Other than maintenance charges mentioned above are those expenditures which add some physical aspect not a part of the asset at the time of its original acquisition. These expenditures may be capitalized in the asset account.

**19.** (a) **Additions.** Additions represent entirely new units or extensions and enlargements of old units. Expenditures for additions are capitalized by charging either old or new asset accounts depending on the nature of the addition.

(b) **Major Repairs.** Expenditures to replace parts or otherwise to restore assets to their previously efficient operating condition are regarded as repairs. To be considered a major repair, several periods must benefit from the expenditure. The cost should be handled as an addition, improvement or replacement depending on the type of major repair made.

(c) **Improvements.** An improvement does not add to existing plant assets. Expenditures for such betterments represent increases in the quality of existing plant assets by rearrangements in plant layout or the substitution of improved components for old components so that the facilities have increased productivity, greater capacity, or longer life. The cost of improvements is accounted for by charges to the appropriate property accounts and the elimination of the cost and accumulated depreciation associated with the replaced components, if any.

**Replacements.** Replacements involve an "in kind" substitution of a new asset or part for an old asset or part. Accounting for major replacements requires entries to retire the old asset or part and to record the cost of the new asset or part. Minor replacements are treated as period costs.

**20.** The cost of installing the machinery should be capitalized, but the extra month's wages paid to the dismissed employees should not, as this payment did not add any value to the machinery.

The extra wages should be charged off immediately as an expense; the wages could be shown as a separate item in the income statement for disclosure purposes.

**21.** (a) Overhead of a business that builds its own equipment. Some accountants have maintained that the equipment account should be charged only with the additional overhead caused by such construction. However, a more realistic figure for cost of equipment results if the plant asset account is charged for overhead applied on the same basis and at the same rate as used for production (see Question 4).

(b) Cash discounts on purchases of equipment. Some accountants treat all cash discounts as financial or other revenue, regardless of whether they arise from the payment of invoices for merchandise or plant assets. Others take the position that only the net amount paid for plant assets should be capitalized on the basis that the discount represents a reduction of price and is not income. The latter position seems more logical in light of the fact that plant assets are purchased for use and not for sale and that they are written off to expense over a long period of time.

(c) Interest paid during construction of a building. IFRS requires that avoidable or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition and location necessary for its intended use.

(d) Profit on self-construction. This is not a proper cost of property, plant and equipment.

(e) Freight on equipment returned before installation, for replacement by other equipment of greater capacity. If ordering the first equipment was an error, whether due to judgment or otherwise, the freight should be regarded as a loss. However, if information became available after the order was placed which indicated purchase of the new equipment was more advantageous, the cost of the return freight may be viewed as a necessary cost of the new equipment.

(f) Cost of moving machinery to a new location. Normally, only the cost of one installation should be capitalized for any piece of equipment. Thus the original installation and any accumulated depreciation relating thereto should be removed from the accounts and the new installation costs (i.e., cost of moving) should be capitalized. In cases where this is not possible and the cost of moving is substantial, it is capitalized and depreciated appropriately over the period during which it makes a contribution to operations.

(g) Cost of plywood partitions erected in the remodeling of the office. This is a part of the remodeling cost and may be capitalized as part of the remodeling itself is of such a nature that it is an addition to the building and not merely a replacement or repair.

(h) Replastering of a section of the building. This seems more in the nature of a repair than anything else and as such should be treated as an expense.

(i) Cost of a new motor for one of the trucks. This probably extends the useful life of the truck. As such it may be viewed as a major repair and charged to the Truck account. The remaining service life of the truck should be estimated and the depreciation adjusted to write off the new book value, less residual value, over the remaining useful life. A more appropriate treatment is to remove the cost of the old motor and related depreciation and add the cost of the new motor if possible.

**22.** This approach is not correct since at the very minimum the investor should be aware that certain assets are used in the business which are not reflected in the main body of the financial statements. Either the company should keep these assets on the statement of financial position or they should be recorded at residual value and the resulting gain recognized. In either case, there should be a clear indication that these assets are fully depreciated, but are still being used in the business.

**23.** Gains or losses on plant asset disposals should be shown in the income statement along with other items that arise from customary business activities.

# SOLUTIONS TO BRIEF EXERCISES

## BRIEF EXERCISE 10-1

**$27,000 + $1,400 + $10,200 = $38,600**

## BRIEF EXERCISE 10-2

| | Expenditures | | |
|---|---|---|---|
| Date | Amount | Capitalization Period | Weighted-Average Accumulated Expenditures |
| 3/1 | HK$1,800,000 | 10/12 | HK$1,500,000 |
| 6/1 | 1,200,000 | 7/12 | 700,000 |
| 12/31 | 3,000,000 | 0 | 0 |
| | HK$6,000,000 | | HK$2,200,000 |

## BRIEF EXERCISE 10-3

| | Principal | Interest |
|---|---|---|
| 10%, 5-year note | HK$2,000,000 | HK$200,000 |
| 11%, 4-year note | 3,500,000 | 385,000 |
| | HK$5,500,000 | HK$585,000 |

$$\text{Capitalization rate} = \frac{\text{HK\$585,000}}{\text{HK\$5,500,000}} = 10.64\%$$

## BRIEF EXERCISE 10-4

| Weighted-Average Accumulated Expenditures | X | Interest Rate | = | Avoidable Interest |
|---|---|---|---|---|
| HK$1,000,000 | | 12% | | HK$120,000 |
| 1,200,000 | | 10.64% | | 127,680 |
| HK$2,200,000 | | | | HK$247,680 |

## BRIEF EXERCISE 10-5

| | | |
|---|---|---|
| Truck (£80,000 X .68301) | 54,641 | |
| Notes Payable | | 54,641 |

## BRIEF EXERCISE 10-6

| | Fair Value | % of Total | | Cost | Recorded Amount |
|---|---|---|---|---|---|
| Land | $ 60,000 | 60/360 | X | $315,000 | $ 52,500 |
| Building | 220,000 | 220/360 | X | $315,000 | 192,500 |
| Equipment | 80,000 | 80/360 | X | $315,000 | 70,000 |
| | $360,000 | | | | $315,000 |

## BRIEF EXERCISE 10-7

| | | |
|---|---|---|
| Land (2,000 X $40) | 80,000 | |
| Share Capital—Ordinary (2,000 X $10) | | 20,000 |
| Share Premium—Ordinary | | 60,000 |

## BRIEF EXERCISE 10-8

| | | |
|---|---|---|
| Computer | 3,300 | |
| Accumulated Depreciation | 18,000 | |
| Truck | | 20,000 |
| Cash | | 500 |
| Gain on Disposal of Truck | | 800 |

  

## BRIEF EXERCISE 10-9

| | | |
|---|---|---|
| Computer (£3,300 – £800) | 2,500 | |
| Accumulated Depreciation | 18,000 | |
| Truck | | 20,000 |
| Cash | | 500 |

## BRIEF EXERCISE 10-10

| | | |
|---|---|---|
| Office Equipment | 5,000 | |
| Accumulated Depreciation | 3,000 | |
| Loss on Disposal of Machine | 4,000 | |
| Machine | | 9,000 |
| Cash | | 3,000 |

## BRIEF EXERCISE 10-11

| | | |
|---|---|---|
| Truck | 37,000 | |
| Accumulated Depreciation | 27,000 | |
| Loss on Disposal of Truck | 2,000 | |
| Truck | | 30,000 |
| Cash | | 36,000 |

## BRIEF EXERCISE 10-12

| | | |
|---|---|---|
| Truck | 35,000 | |
| Accumulated Depreciation | 17,000 | |
| Loss on Disposal of Truck | 1,000 | |
| Truck | | 20,000 |
| Cash | | 33,000 |

**BRIEF EXERCISE 10-13**

**Costs (a) and (c) are expensed when incurred.**

**BRIEF EXERCISE 10-14**

| | | | |
|---|---|---|---|
| **1.** | **Deferred revenue approach:** | | |
| | **Cash** | **2,000,000** | |
| | **Deferred Grant Revenue** | | **2,000,000** |
| **2.** | **Reduction of asset approach:** | | |
| | **Cash** | **2,000,000** | |
| | **Research Equipment** | | **2,000,000** |

**BRIEF EXERCISE 10-15**

| | | | |
|---|---|---|---|
| **(a)** | **Depreciation Expense ($2,400 X 8/12)** | **1,600** | |
| | **Accumulated Depreciation** | | **1,600** |
| **(b)** | **Cash** | **10,500** | |
| | **Accumulated Depreciation ($8,400 + $1,600)** | **10,000** | |
| | **Machinery** | | **20,000** |
| | **Gain on Disposal of Machinery** | | **500** |

**BRIEF EXERCISE 10-16**

| | | | |
|---|---|---|---|
| **(a)** | **Depreciation Expense ($2,400 X 8/12)** | **1,600** | |
| | **Accumulated Depreciation** | | **1,600** |
| **(b)** | **Cash** | **5,200** | |
| | **Loss on Disposal of Machinery** | **4,800** | |
| | **Accumulated Depreciation ($8,400 + $1,600)** | **10,000** | |
| | **Machinery** | | **20,000** |

  

# SOLUTIONS TO EXERCISES

## EXERCISE 10-1 (15–20 minutes)

| Item | Land | Land Improvements | Building | Other Accounts |
|---|---|---|---|---|
| (a) | | | | (€275,000) Notes Payable |
| (b) | | | €275,000 | |
| (c) | € 10,000 | | | |
| (d) | 7,000 | | | |
| (e) | | | 6,000 | |
| (f) | | | (1,000) | |
| (g) | | | 25,000 | |
| (h) | 250,000 | | | |
| (i) | 9,000 | | | |
| (j) | | $ 4,000 | | |
| (k) | 11,000 | | | |
| (l) | (5,000) | | | |
| (m) | | | 13,000 | |
| (n) | | 19,000 | | |
| (o) | 14,000 | | | |
| (p) | | | 3,000 | |

## EXERCISE 10-2 (10–15 minutes)

**The allocation of costs would be as follows:**

| | Land | Building |
|---|---|---|
| Land | $450,000 | |
| Razing costs | 42,000 | |
| Salvage | (6,300) | |
| Legal fees | 1,850 | |
| Survey | | $ 2,200 |
| Plans | | 65,000 |
| Title insurance | 1,500 | |
| Liability insurance | | 900 |
| Construction | | 2,740,000 |
| Interest | | 170,000 |
| | $489,050 | $2,978,100 |

**EXERCISE 10-3 (10–15 minutes)**

| | | | |
|---|---|---|---|
| **1.** | **Truck #1** | **13,900** | |
| | **Cash** | | **13,900** |
| **2.** | **Truck #2** | **18,364*** | |
| | **Cash** | | **2,000** |
| | **Notes Payable** | | **16,364** |
| | ***PV of $18,000 @ 10% for 1 year =** | | |
| | **$18,000 X .90909 = $16,364** | | |
| | **$16,364 + $2,000 = $18,364** | | |
| **3.** | **Truck #3** | **15,200** | |
| | **Cost of Goods Sold** | **12,000** | |
| | **Inventory** | | **12,000** |
| | **Sales** | | **15,200** |

**[Note to instructor: The selling (retail) price of the computer system appears to be a better gauge of the fair value of the consideration given than is the list price of the truck as a gauge of the fair value of the consideration received (truck). Vehicles are very often sold at a price below the list price.]**

| | | | |
|---|---|---|---|
| **4.** | **Truck #4** | **13,000** | |
| | **Share Capital—Ordinary** | | **10,000** |
| | **Share Premium—Ordinary** | | |
| | **(1,000 shares X $13 = $13,000;** | | |
| | **$13,000 less $10,000 par value)** | | **3,000** |

**EXERCISE 10-4 (20–25 minutes)**

**Purchase**

| | |
|---|---|
| Cash paid for equipment, including sales tax of €5,000 | €105,000 |
| Freight and insurance while in transit | 2,000 |
| Cost of moving equipment into place at factory | 3,100 |
| Wage cost for technicians to test equipment | 6,000 |
| Special plumbing fixtures required for new equipment | 8,000 |
| Total cost | €124,100 |

The insurance premium paid during the first year of operation on this equipment should be reported as insurance expense, and not be capitalized. Repair cost incurred in the first year of operations related to this equipment should be reported as repair and maintenance expense, and not be capitalized. Both these costs relate to periods subsequent to purchase.

**Construction**

| | |
|---|---|
| Material and purchased parts (€200,000 X .99) | €198,000 |
| Labor costs | 190,000 |
| Overhead costs | 50,000 |
| Cost of installing equipment | 4,400 |
| Total cost | €442,400 |

Note that the cost of material and purchased parts is reduced by the amount of cash discount not taken because the equipment should be reported at its cash equivalent price. The imputed interest on funds used during construction related to stock financing should not be capitalized or expensed. This item is an opportunity cost that is not reported.

Profit on self-construction should not be reported. Profit should only be reported when the asset is sold.

## EXERCISE 10-5 (20–25 minutes)

| | Land | Buildings | M & E | Other | |
|---|---|---|---|---|---|
| Abstract fees | $ 520 | | | | |
| Architect's fees | | $ 3,170 | | | |
| Cash paid for land and old building | 92,000 | | | | |
| Removal of old building ($20,000 – $5,500) | 14,500 | | | | |
| Interest on loans during construction | | 7,400 | | | |
| Excavation before construction | | 19,000 | | | |
| Machinery purchased | | | $63,700 | $1,300 | —Misc. expense (Discount Lost) |
| Freight on machinery | | | 1,340 | | |
| Storage charges caused by noncompletion of building | | | | 2,180 | —Misc. expense (Loss) |
| New building | | 485,000 | | | |
| Assessment by city | 1,600 | | | | |
| Hauling charges—machinery | | | | 620 | —Misc. expense |
| Installation—machinery | | | 2,000 | | (Loss) |
| Landscaping | 5,400 | | | | |
| | $114,020 | $514,570 | $67,040 | $4,100 | |

## EXERCISE 10-6 (15–20 minutes)

| | | | |
|---|---|---|---|
| 1. | Land | 127,500 | |
| | Buildings | 297,500 | |
| | Equipment | 255,000 | |
| | Cash | | 680,000 |

$$\$680{,}000 \times \frac{\$150{,}000}{\$800{,}000} = \$127{,}500 \quad \text{Land}$$

$$\$680{,}000 \times \frac{\$350{,}000}{\$800{,}000} = \$297{,}500 \quad \text{Buildings}$$

$$\$680{,}000 \times \frac{\$300{,}000}{\$800{,}000} = \$255{,}000 \quad \text{Equipment}$$

  

**EXERCISE 10-6 (Continued)**

| | | | |
|---|---|---|---|
| **2.** | **Store Equipment** | **25,000** | |
| | **Cash** | | **2,000** |
| | **Note Payable** | | **23,000** |
| **3.** | **Office Equipment** | **19,600** | |
| | **Accounts Payable ($20,000 X .98)** | | **19,600** |
| **4.** | **Building** | **270,000** | |
| | **Deferred Grant Revenue** | | **270,000** |
| **5.** | **Warehouse** | **600,000** | |
| | **Cash** | | **600,000** |

**EXERCISE 10-7 (20–25 minutes)**

**(a)** **Avoidable Interest**

| Weighted-Average Accumulated Expenditures | X | Interest Rate | = | Avoidable Interest |
|---|---|---|---|---|
| €2,000,000 | | 12% | | €240,000 |
| 1,800,000 | | 10.38% | | 186,840 |
| €3,800,000 | | | | €426,840 |

| Capitalization rate computation | Principal | Interest |
|---|---|---|
| 10% short-term loan | €1,600,000 | €160,000 |
| 11% long-term loan | 1,000,000 | 110,000 |
| | €2,600,000 | €270,000 |

$$\frac{\text{Total Interest}}{\text{Total Principal}} = \frac{€270,000}{€2,600,000} = 10.38\%$$

## EXERCISE 10-7 (Continued)

**(b)**

| | Actual Interest | |
|---|---|---|
| Construction loan | €2,000,000 X 12% = | €240,000 |
| Short-term loan | €1,600,000 X 10% = | 160,000 |
| Long-term loan | €1,000,000 X 11% = | 110,000 |
| | Total | €510,000 |

Because avoidable interest is lower than actual interest, use avoidable interest.

| | |
|---|---|
| Cost | €5,200,000 |
| Interest capitalized | 426,840 |
| Total cost | €5,626,840 |

$$\text{Depreciation Expense} = \frac{€5,626,840 - €300,000}{30 \text{ years}} = €177,561$$

## EXERCISE 10-8 (20–25 minutes)

**(a) Computation of Weighted-Average Accumulated Expenditures**

| | Expenditures | | | | |
|---|---|---|---|---|---|
| Date | Amount | X | Capitalization Period | = | Weighted-Average Accumulated Expenditures |
| March 1 | $ 360,000 | | 10/12 | | $ 300,000 |
| June 1 | 600,000 | | 7/12 | | 350,000 |
| July 1 | 1,500,000 | | 6/12 | | 750,000 |
| December 1 | 1,200,000 | | 1/12 | | 100,000 |
| | $3,660,000 | | | | $1,500,000 |

**Computation of Avoidable Interest**

| Weighted-Average Accumulated Expenditures | X | Interest Rate | = | Avoidable Interest |
|---|---|---|---|---|
| $1,500,000 | | 12% (Construction loan) | | $180,000 |

**Computation of Actual Interest**

| | |
|---|---|
| Actual interest | |
| $3,000,000 X 12% | $360,000 |
| $4,000,000 X 11% | 440,000 |
| $1,600,000 X 10% | 160,000 |
| | $960,000 |

Note: Use avoidable interest for capitalization purposes because it is lower than actual interest. The $180,000 of avoidable interest is reduced by the $49,000 of interest revenue earned on specific borrowing.

## EXERCISE 10-8 (Continued)

| | | | |
|---|---|---|---|
| (b) | Building ..... | 131,000 | |
| | Interest Expense* ..... | 829,000 | |
| | Cash ($360,000 + $440,000 + $160,000)..... | | 960,000 |

| | |
|---|---|
| *Actual interest for year | $ 960,000 |
| Less: Amount capitalized ($180,000 – $49,000) | (131,000) |
| Interest expense debit | $ 829,000 |

## EXERCISE 10-9 (20–25 minutes)

### (a) Computation of Weighted-Average Accumulated Expenditures

| | Expenditures | | | | |
|---|---|---|---|---|---|
| Date | Amount | X | Capitalization Period | = | Weighted-Average Accumulated Expenditures |
| July 31 | $300,000 | | 3/12 | | $75,000 |
| November 1 | 100,000 | | 0 | | 0 |
| | | | | | $75,000 |

**Interest revenue** $100,000 X 10% X 3/12 = $2,500

**Avoidable interest**

| Weighted-Average Accumulated Expenditures | X | Interest Rate | = | Avoidable Interest |
|---|---|---|---|---|
| $75,000 | | 12% | | $9,000 |

**Actual Interest**

| | | |
|---|---|---|
| $400,000 X 12% X 5/12 | = | $20,000 |
| $30,000 X 8% | = | 2,400 |
| | | $22,400 |

**Interest capitalized** $ 6,500 ($9,000 – $2,500)

**EXERCISE 10-9 (Continued)**

| | | | | | |
|---|---|---|---|---|---|
| **(b)** | **(1)** | **7/31** | **Cash** | **400,000** | |
| | | | **Note Payable** | | **400,000** |
| | | | **Machine** | **300,000** | |
| | | | **Trading Securities** | **100,000** | |
| | | | **Cash** | | **400,000** |
| | **(2)** | **11/1** | **Cash** | **102,500** | |
| | | | **Interest Revenue ($100,000 X 10% X 3/12)** | | **2,500** |
| | | | **Trading Securities** | | **100,000** |
| | | | **Machine** | **100,000** | |
| | | | **Cash** | | **100,000** |
| | **(3)** | **12/31** | **Machine** | **6,500** | |
| | | | **Interest Expense ($22,400 – $6,500)** | **15,900** | |
| | | | **Cash ($30,000 X 8%)** | | **2,400** |
| | | | **Interest Payable ($400,000 X 12% X 5/12)** | | **20,000** |

**EXERCISE 10-10 (20–25 minutes)**

***Situation I.*** **$40,000—The requirement is the amount Columbia should report as capitalized interest at 12/31/10. The amount of interest eligible for capitalization is**

**Weighted-Average Accumulated Expenditures X Interest Rate = Avoidable Interest**

**Since Columbia has outstanding debt incurred specifically for the construction project, in an amount greater than the weighted-average accumulated expenditures of $900,000, the interest rate of 10% is used for capitalization purposes. Therefore, the avoidable interest is $40,000, which is less than the actual interest, computed as interest on specific borrowing less investment income on those funds:**

**($900,000 X .10 = $90,000) – $50,000 investment income**

  

***Situation II.*** **$39,000—The requirement is total interest costs to be capitalized. IFRS identifies assets which qualify for interest capitalization: assets constructed for an enterprise's own use and assets intended for sale or lease that are produced as discrete projects. Inventories that are routinely produced in large quantities on a repetitive basis do not qualify for interest capitalization. Therefore, only $30,000 and $9,000 are capitalized.**

***Situation III.*** **$180,000—The requirement is to determine the amount of interest to be capitalized on the financial statements at April 30, 2011. The IFRS requirements are met: (1) expenditures for the asset have been made, (2) activities that are necessary to get the asset ready for its intended use are in progress, and (3) interest cost is being incurred. The amount to be capitalized is determined by applying an interest rate to the weighted-average amount of accumulated expenditures for the asset during the period. Because the $6,000,000 of expenditures incurred for the year ended April 30, 2011, were incurred evenly throughout the year, the weighted-average amount of expenditures for the year is $3,000,000, ($6,000,000 ÷ 2). Therefore, the amount of interest to be capitalized is $180,000 [($3,000,000 X 11%) – $150,000 (interest earned)]. In any period the total amount of interest cost to be capitalized shall not exceed the total amount of interest cost incurred by the enterprise. (Total interest is $1,100,000).**

## EXERCISE 10-11 (10–15 minutes)

| | | | |
|---|---|---|---|
| (a) | Equipment | 15,000 | |
| | Accounts Payable | | 15,000 |
| | | | |
| | Accounts Payable | 15,000 | |
| | Equipment (₩15,000 X .02) | | 300 |
| | Cash | | 14,700 |
| | | | |
| (b) | Equipment (new) | 14,600* | |
| | Loss on Disposal of Equipment | 1,600** | |
| | Accumulated Depreciation (₩8,000 – ₩6,000) | 6,000 | |
| | Accounts Payable | | 14,200 |
| | Equipment (old) | | 8,000 |

| | |
|---|---|
| **Cost | ₩8,000 |
| Accumulated depreciation | 6,000 |
| Book value | 2,000 |
| Fair market value | 400 |
| Loss | ₩1,600 |

*Cost (₩14,200 + ₩400) ₩14,600

| | | | |
|---|---|---|---|
| | Accounts Payable | 14,200 | |
| | Cash | | 14,200 |
| | | | |
| (c) | Equipment (₩16,200 X .91743) | 14,862 | |
| | Notes Payable | | 14,862 |
| | | | |
| | Interest Expense | 1,338 | |
| | Notes Payable | 14,862 | |
| | Cash | | 16,200 |

  

**EXERCISE 10-12 (15–20 minutes)**

| | | | |
|---|---|---|---|
| (a) | Land | 81,000 | |
| | Grant Revenue | | 81,000 |
| (b) | Land | 180,000 | |
| | Buildings | 630,000 | |
| | Share Capital—Ordinary ($50 X 14,000) | | 700,000 |
| | Share Premium—Ordinary* | | 110,000 |

*Since the market value of the shares is not determinable, the market value of the property is used as the basis for recording the asset and issuance of the shares.

| | | | |
|---|---|---|---|
| (c) | Machinery | 41,700 | |
| | Materials | | 12,500 |
| | Direct Labor | | 16,000 |
| | Factory Overhead | | 13,200* |

| | | |
|---|---|---|
| *Fixed overhead applied | (60% X $16,000) | $ 9,600 |
| Additional overhead | | 2,700 |
| Factory supplies used | | 900 |
| | | $13,200 |

**EXERCISE 10-13 (20–25 minutes)**

| | | | |
|---|---|---|---|
| 1. | Land | 375,000 | |
| | Building | 1,125,000 | |
| | Machinery and Equipment | 750,000 | |
| | Share Capital—Ordinary (12,500 X $100) | | 1,250,000 |
| | Share Premium—Ordinary ($2,250,000 – $1,250,000) | | 1,000,000 |

The cost of the property, plant and equipment is $2,250,000 (12,500 X $180). This cost is allocated based on appraised values as follows:

| | | |
|---|---|---|
| Land | $\frac{\$400,000}{\$2,400,000}$ | X $2,250,000 = $375,000 |
| Building | $\frac{\$1,200,000}{\$2,400,000}$ | X $2,250,000 = $1,125,000 |
| Machinery & Equipment | $\frac{\$800,000}{\$2,400,000}$ | X $2,250,000 = $750,000 |

**EXERCISE 10-13 (Continued)**

| | | | |
|---|---|---|---|
| **2.** | **Buildings ($105,000 plus $161,000)** | **266,000** | |
| | **Machinery and Equipment** | **135,000** | |
| | **Land Improvements** | **122,000** | |
| | **Land** | **18,000** | |
| | **Cash** | | **541,000** |
| **3.** | **Machinery and Equipment** | **284,900** | |
| | **Cash** | | **284,900** |
| | **($10,500 plus $274,400, which is 98% of $280,000.)** | | |

**EXERCISE 10-14 (15–20 minutes)**

| | | | |
|---|---|---|---|
| **(a)** | **Equipment** | **648,860*** | |
| | **Notes Payable** | | **648,860** |
| | ***PV of $180,000 annuity @ 12% for 5 years ($180,000 X 3.60478) = $648,860** | | |
| **(b)** | **Interest Expense** | **77,863*** | |
| | **Notes Payable** | **102,137** | |
| | **Cash** | | **180,000** |
| | ***(12% X $648,860)** | | |

| Year | Note Payment | 12% Interest | Reduction of Principal | Balance |
|---|---|---|---|---|
| 1/2/10 | | | | $648,860 |
| 12/31/10 | $180,000 | $77,863 | $102,137 | 546,723 |
| 12/31/11 | 180,000 | 65,607 | 114,393 | 432,330 |

  

**EXERCISE 10-14 (Continued)**

| | | | |
|---|---|---|---|
| (c) | Interest Expense | 65,607 | |
| | Notes Payable | 114,393 | |
| | Cash | | 180,000 |
| (d) | Depreciation Expense | 64,886* | |
| | Accumulated Depreciation | | 64,886 |

*($648,860 ÷ 10)

**EXERCISE 10-15 (15–20 minutes)**

| | | | |
|---|---|---|---|
| (a) | Equipment | 105,815.80* | |
| | Cash | | 30,000.00 |
| | Notes Payable | | 75,815.80 |

*PV of $20,000 annuity @ 10% for 5 years ($20,000 X 3.79079) $ 75,815.80
Down payment 30,000.00
Capitalized value of equipment $105,815.80

| | | | |
|---|---|---|---|
| (b) | Notes Payable | 12,418.42 | |
| | Interest Expense (see schedule) | 7,581.58 | |
| | Cash | | 20,000.00 |

| Year | Note Payment | 10% Interest | Reduction of Principal | Balance |
|---|---|---|---|---|
| 12/31/09 | | | | $75,815.80 |
| 12/31/10 | $20,000.00 | $7,581.58 | $12,418.42 | 63,397.38 |
| 12/31/11 | 20,000.00 | 6,339.74 | 13,660.26 | 49,737.12 |

**EXERCISE 10-15 (Continued)**

| | | | |
|---|---|---|---|
| (c) | Notes Payable | 13,660.26 | |
| | Interest Expense | 6,339.74 | |
| | Cash | | 20,000.00 |

**EXERCISE 10-16 (25–35 minutes)**

**LOGAN INDUSTRIES**
**Acquisition of Assets 1 and 2**

**Use appraised values to break-out the lump-sum purchase**

| Description | Appraisal | Percentage | Lump-Sum | Value on Books |
|---|---|---|---|---|
| Machinery | $ 90,000 | 90/120 | $104,000 | $78,000 |
| Office Equipment | 30,000 | 30/120 | 104,000 | 26,000 |
| | $120,000 | | | |

| | | |
|---|---|---|
| Machinery | 78,000 | |
| Office Equipment | 26,000 | |
| Cash | | 104,000 |

**Acquisition of Asset 3**

**Use the cash price as a basis for recording the asset with a discount recorded on the note.**

| | | |
|---|---|---|
| Machinery | 35,900 | |
| Cash | | 10,000 |
| Notes Payable | | 25,900 |

  

**EXERCISE 10-16 (Continued)**

**Acquisition of Asset 4**

**Since the exchange lacks commercial substance, the gain of $16,000 is not recognized. Instead the gain of $16,000 ($80,000 – $64,000) is used to reduce the basis of the asset acquired.**

| | | |
|---|---|---|
| **Machinery ($70,000 – $16,000)** | **54,000** | |
| **Accumulated Depreciation** | **36,000** | |
| **Cash** | **10,000** | |
| **Machinery** | | **100,000** |

**Acquisition of Asset 5**

**In this case the Office Equipment should be placed on Logan's books at the market value of the shares. The difference between the shares's par value and their fair value (based on market price) should be credited to Share Premium.**

| | | |
|---|---|---|
| **Office Equipment (100 X $11 per share)** | **1,100** | |
| **Share Capital—Ordinary** | | **800** |
| **Share Premium—Ordinary** | | **300*** |

***($11 – $8) X 100 Shares.**

**EXERCISE 10-16 (Continued)**

**Schedule of Weighted-Average Accumulated Expenditures**

| Date | Amount | Current Year Capitalization Period | Weighted-Average Accumulated Expenditures |
|---|---|---|---|
| February 1 | $ 180,000 | 9/12 | $135,000 |
| February 1 | 120,000 | 9/12 | 90,000 |
| June 1 | 360,000 | 5/12 | 150,000 |
| September 1 | 480,000 | 2/12 | 80,000 |
| November 1 | 100,000 | 0/12 | 0 |
| | $1,240,000 | | $455,000 |

**Note that the capitalization is only 9 months in this exercise.**

**Avoidable Interest**

| Weighted-Average Accumulated Expenditures | | Interest Rate | | Avoidable Interest |
|---|---|---|---|---|
| $455,000 | X | 12% | = | $54,600 |

**Since the weighted-average expenditures are less than the amount of specific borrowing, the specific borrowing rate is used.**

**Land Cost** $ 180,000
**Building Cost** $1,114,600 ($1,060,000 + $54,600)

| | | |
|---|---|---|
| Land | 180,000 | |
| Building | 1,114,600 | |
| Cash | | 1,240,000 |
| Interest Expense | | 54,600 |

  

**EXERCISE 10-17 (10–15 minutes)**

**Alatorre Corporation**

| | | |
|---|---|---|
| Machine (€320 + €85) | 405 | |
| Accumulated Depreciation | 140 | |
| Loss on Disposal of Machine | 65* | |
| Machine | | 290 |
| Cash | | 320 |

*Computation of loss:

| | |
|---|---|
| Book value of old machine (€290 – €140) | €150 |
| Fair value of old machine | (85) |
| Loss on disposal | € 65 |

**Mills Business Machine Company**

| | | |
|---|---|---|
| Cash | 320 | |
| Inventory | 85 | |
| Cost of Goods Sold | 270 | |
| Sales | | 405 |
| Inventory | | 270 |

**EXERCISE 10-18 (20–25 minutes)**

**(a) Exchange has commercial substance:**

| | | |
|---|---|---|
| Depreciation Expense | 800 | |
| Accumulated Depreciation—Melter | | 800 |
| ($12,700 – $700 = $12,000; | | |
| $12,000 ÷ 5 = $2,400; | | |
| $2,400 X 4/12 = $800) | | |
| | | |
| Melter | 15,200** | |
| Accumulated Depreciation—Melter | 8,000 | |
| Gain on Disposal of Plant Assets | | 500* |
| Melter | | 12,700 |
| Cash | | 10,000 |

| | |
|---|---|
| *Cost of old asset | $12,700 |
| Accumulated depreciation ($7,200 + $800) | (8,000) |
| Book value | 4,700 |
| Fair value of old asset | (5,200) |
| Gain (on disposal of plant asset) | $ 500 |

| | |
|---|---|
| **Cash paid | $10,000 |
| Fair value of old melter | 5,200 |
| Cost of new melter | $15,200 |

**EXERCISE 10-18 (Continued)**

**(b) Exchange lacks commercial substance:**

| | | |
|---|---|---|
| Depreciation Expense | 800 | |
| Accumulated Depreciation—Melter | | 800 |
| | | |
| Melter | 14,700** | |
| Accumulated Depreciation—Melter | 8,000 | |
| Melter | | 12,700 |
| Cash | | 10,000 |

| | |
|---|---|
| **Cash paid | $10,000 |
| Fair value of old asset | 5,200 |
| —Gain deferred ($5,200 – $4,700) | 500 |
| Cost of new asset | $14,700 |

**EXERCISE 10-19 (15–20 minutes)**

**(a) Exchange lacks commercial substance.**

**Santana Company:**

| | | |
|---|---|---|
| Equipment | 11,000 | |
| Accumulated Depreciation | 19,000 | |
| Equipment | | 28,000 |
| Cash | | 2,000 |

**Valuation of equipment**

| | |
|---|---|
| Book value of equipment given | $ 9,000 |
| Cash paid | 2,000 |
| New equipment | $11,000 |

**EXERCISE 10-19 (Continued)**

**OR**

| | |
|---|---|
| **Fair value received** | **$15,500** |
| **Less: Gain deferred** | **4,500*** |
| **New equipment** | **$11,000** |

| | |
|---|---|
| ***Fair value of old equipment** | **$13,500** |
| **Book value of old equipment** | **(9,000)** |
| **Gain on disposal** | **$ 4,500** |

**Delaware Company:**

| | | |
|---|---|---|
| **Cash** | **2,000** | |
| **Equipment** | **13,500** | |
| **Accumulated Depreciation—Equipment** | **10,000** | |
| **Loss on Disposal of Plant Assets** | **2,500*** | |
| **Equipment** | | **28,000** |

***Computation of loss:**

| | |
|---|---|
| **Book value of old equipment** | **$18,000** |
| **Fair value of old equipment** | **15,500** |
| **Loss on disposal of equipment** | **$ 2,500** |

  

**EXERCISE 10-19 (Continued)**

**(b) Exchange has commercial substance**

**Santana Company**

| | | |
|---|---|---|
| Equipment | 15,500* | |
| Accumulated Depreciation—Equipment | 19,000 | |
| Equipment | | 28,000 |
| Cash | | 2,000 |
| Gain on Disposal of Equipment | | 4,500** |

*Cost of new equipment:

| | |
|---|---|
| Cash paid | $ 2,000 |
| Fair value of old equipment | 13,500 |
| Cost of new equipment | $15,500 |

**Computation of gain on disposal of equipment:

| | |
|---|---|
| Fair value of old equipment | $13,500 |
| Book value of old equipment ($28,000 – $19,000) | 9,000 |
| Gain on disposal of equipment | $ 4,500 |

**Delaware Company**

| | | |
|---|---|---|
| Cash | 2,000 | |
| Equipment | 13,500* | |
| Accumulated Depreciation—Equipment (Old) | 10,000 | |
| Loss on Disposal of Equipment | 2,500** | |
| Equipment | | 28,000 |

*Cost of new equipment:

| | |
|---|---|
| Fair value of equipment | $15,500 |
| Less: Cash received | 2,000 |
| Cost of new equipment | $13,500 |

**Computation of loss on disposal of equipment:

| | |
|---|---|
| Book value of old equipment ($28,000 – $10,000) | $18,000 |
| Fair value of equipment (Old) | 15,500 |
| Loss on disposal of equipment | $ 2,500 |

**EXERCISE 10-20 (15–20 minutes)**

**(a) Exchange has commercial substance**

| | | |
|---|---|---|
| Automatic Equipment | 53,900 | |
| Accumulated Depreciation—Equipment | 20,000* | |
| Gain on Disposal of Equipment | | 3,800 |
| Equipment | | 62,000 |
| Cash ($7,000 + $1,100) | | 8,100 |

*$62,000 – $42,000.

Valuation of equipment

| | |
|---|---|
| Cash | $ 7,000 |
| Installation cost | 1,100 |
| Market value of used equipment | 45,800 |
| Cost of new equipment | $53,900 |

Computation of gain

| | |
|---|---|
| Cost of old asset | $62,000 |
| Accumulated depreciation | 20,000 |
| Book value | 42,000 |
| Market value of old asset | 45,800 |
| Gain on disposal of equipment | $ 3,800 |

**(b) Fair value not determinable**

| | | |
|---|---|---|
| Automatic Equipment | 50,100* | |
| Accumulated Depreciation—Equipment | 20,000 | |
| Equipment | | 62,000 |
| Cash | | 8,100 |

*Basis of new equipment

| | |
|---|---|
| Book value of old equipment | $42,000 |
| Cash paid (including installation costs) | 8,100 |
| Basis of new equipment | $50,100 |

  

**EXERCISE 10-21 (15–20 minutes)**

**(a) 1. Carrying amount = £320,000 (£400,000 – £80,000)**

**2. Depreciation expense = £80,000 (£400,000 ÷ 5 yrs.)**

**3. Grant revenue = 0**

**(b) 1. Deferred grant revenue balance = £80,000 (£100,000 – £20,000)**

**2. Depreciation expense = £100,000 (£500,000 ÷ 5 yrs.)**

**3. Grant revenue = £20,000**

**EXERCISE 10-22 (10–15 minutes)**

**(a)** **January 2, 2010**

| | | |
|---|---|---|
| Cash (€5,000,000 X .74726)..... | 3,736,300 | |
| Note Payable ..... | | 3,736,300 |
| Cash..... | 1,263,700 | |
| Deferred Grant Revenue..... | | 1,263,700 |

**(b) Interest expense – 2010 = €3,736,300 X .06 = €224,178**
**Grant revenue – 2010 = €224,178**

**EXERCISE 10-23 (20–25 minutes)**

**(a) Any addition to plant assets is capitalized because a new asset has been created. This addition increases the service potential of the plant.**

**(b) Expenditures that do not increase the service benefits of the asset are expensed. Painting costs are considered ordinary repairs because they maintain the existing condition of the asset or restore it to normal operating efficiency.**

**(c) The approach to follow is to remove the book value of the old roof and substitute the cost of the new roof. It is assumed that the expenditure increases the future service potential of the asset.**

**(d) Conceptually, the book value of the old electrical system should be removed. However, practically it is often difficult if not impossible to determine this amount. In this case, one of two approaches is followed. One approach is to capitalize the replacement on the theory that sufficient depreciation was taken on the old system to reduce the carrying amount to almost zero. A second approach is to debit Accumulated Depreciation on the theory that the replacement extends the useful life of the asset and thereby recaptures some or all of the past depreciation. In our present situation, the problem specifically states that the useful life is not extended and therefore debiting Accumulated Depreciation is inappropriate. Thus, this expenditure should be added to the cost of the plant facility.**

**(e) See discussion in (d) above. In this case, because the useful life of the asset has increased, a debit to Accumulated Depreciation would appear to be the most appropriate.**

**EXERCISE 10-24 (15–20 minutes)**

| | | | |
|---|---|---|---|
| 1/30 | Accumulated Depreciation—Buildings | 95,200* | |
| | Loss on Disposal of Plant Assets | 21,900** | |
| | Buildings | | 112,000 |
| | Cash | | 5,100 |

*(5% X $112,000 = $5,600; $5,600 X 17 = $95,200)
**($112,000 – $95,200) + $5,100

| | | | |
|---|---|---|---|
| 3/10 | Cash ($2,900 – $300) | 2,600 | |
| | Accumulated Depreciation—Machinery | 11,200* | |
| | Loss on Disposal of Plant Assets | 2,200** | |
| | Machinery | | 16,000 |

*(70% X $16,000 = $11,200)
**($16,000 – $11,200) + $300 – $2,900

| | | | |
|---|---|---|---|
| 3/20 | Machinery | 3,000 | |
| | Cash | | 3,000 |

| | | | |
|---|---|---|---|
| 5/18 | Machinery | 5,500 | |
| | Accumulated Depreciation—Machinery | 2,400* | |
| | Loss on Disposal of Plant Assets | 1,600** | |
| | Machinery | | 4,000 |
| | Cash | | 5,500 |

*(60% X $4,000 = $2,400)
**($4,000 – $2,400)

| | | | |
|---|---|---|---|
| 6/23 | Building Maintenance and Repairs Expense | 6,900 | |
| | Cash | | 6,900 |

## EXERCISE 10-25 (10–15 minutes)

**(a) C**
**(b) E, assuming immaterial**
**(c) C**
**(d) C**
**(e) C**
**(f) E**
**(g) C**
**(h) C**

## EXERCISE 10-26 (20–25 minutes)

| | | | |
|---|---|---|---|
| **(a)** | **Depreciation Expense (8/12 X $72,000)** | **48,000** | |
| | **Accumulated Depreciation—Machine** | | **48,000** |
| | **Loss on Disposal of Machine ($1,300,000 – $408,000) – $630,000** | **262,000** | |
| | **Cash** | **630,000** | |
| | **Accumulated Depreciation—Machine ($360,000 + $48,000)** | **408,000** | |
| | **Machine** | | **1,300,000** |
| **(b)** | **Depreciation Expense (3/12 X $72,000)** | **18,000** | |
| | **Accumulated Depreciation—Machine** | | **18,000** |
| | **Cash** | **1,040,000** | |
| | **Accumulated Depreciation—Machine ($360,000 + $18,000)** | **378,000** | |
| | **Machine** | | **1,300,000** |
| | **Gain on Disposal of Machine [$1,040,000 – ($1,300,000 – $378,000)]** | | **118,000** |

**EXERCISE 10-26 (Continued)**

| | | | |
|---|---|---|---|
| (c) | Depreciation Expense (7/12 X $72,000) | 42,000 | |
| | Accumulated Depreciation—Machine | | 42,000 |
| | Contribution Expense | 1,100,000 | |
| | Accumulated Depreciation—Machine ($360,000 + $42,000) | 402,000 | |
| | Machine | | 1,300,000 |
| | Gain on Disposal of Machine | | 202,000* |

*$1,100,000 – ($1,300,000 – $402,000)

**EXERCISE 10-27 (15–20 minutes)**

| | | | |
|---|---|---|---|
| April 1 | Cash | 410,000 | |
| | Accumulated Depreciation—Building | 160,000 | |
| | Land | | 60,000 |
| | Building | | 280,000 |
| | Gain on Disposal of Plant Assets | | 230,000* |

*Computation of gain:

| | |
|---|---|
| Book value of land | $ 60,000 |
| Book value of building ($280,000 – $160,000) | 120,000 |
| Book value of land and building | 180,000 |
| Cash received | 410,000 |
| Gain on disposal | $230,000 |

| | | | |
|---|---|---|---|
| Aug. 1 | Land | 90,000 | |
| | Building | 380,000 | |
| | Cash | | 470,000 |

# TIME AND PURPOSE OF PROBLEMS

**Problem 10-1** (Time 35–40 minutes)
Purpose—to provide a problem involving the proper classification of costs related to property, plant, and equipment. Property, plant, and equipment must be segregated into land, buildings, leasehold improvements, and machinery and equipment for purposes of the analysis. Such costs as demolition costs, real estate commissions, imputed interest, minor and major repair work, and royalty payments are presented. An excellent problem for reviewing the first part of this chapter.

**Problem 10-2** (Time 40–55 minutes)
Purpose—to provide a problem involving the proper classification of costs related to property, plant, and equipment. Such costs as land, freight and unloading, installation, parking lots, sales and use taxes, and machinery costs must be identified and appropriately classified. An excellent problem for reviewing the first part of this chapter.

**Problem 10-3** (Time 35–45 minutes)
Purpose—to provide a problem involving the proper classification of costs related to land and buildings. Typical transactions involve allocation of the cost of removal of a building, legal fees paid, general expenses, cost of organization, special tax assessments, etc. A good problem for providing a broad perspective as to the types of costs expensed and capitalized.

**Problem 10-4** (Time 35–40 minutes)
Purpose—to provide a problem involving the method of handling the disposition of certain properties. The dispositions include a condemnation, demolition, trade-in, contribution and sale to a shareholder. The problem therefore involves a number of situations and provides a good overview of the accounting treatment accorded property dispositions.

**Problem 10-5** (Time 20–30 minutes)
Purpose—to provide the student with a problem in which schedules must be prepared for the costs of acquiring land and the costs of constructing a building. Interest costs are included.

**Problem 10-6** (Time 25–35 minutes)
Purpose—to provide the student with a problem to determine costs to include in the value of land and plant, including interest capitalization.

**Problem 10-7** (Time 20–30 minutes)
Purpose—to provide the student with a problem to compute capitalized interest and to present disclosures related to capitalized interest.

**Problem 10-8** (Time 35–45 minutes)
Purpose—to provide the student with a problem involving the exchange of machinery. Four different exchange transactions are possible, and journal entries are required for each possible transaction. The exchange transactions cover the receipt and payment of cash as well as the purchase of a machine from a dealer of machinery.

**Problem 10-9** (Time 30–40 minutes)
Purpose—to provide a problem on the accounting treatment for exchanges of assets that have and do not have commercial substance involving gain situations.

**Problem 10-10** (Time 30–40 minutes)
Purpose—to provide the student with a problem involving the exchange of productive assets. The exchange of assets have and do not commercial substance.

**Problem 10-11** (Time 35–45 minutes)
Purpose—to provide a property, plant, and equipment problem consisting of three transactions that have to be recorded—(1) an asset purchased on a deferred payment contract, (2) a lump-sum purchase, and (3) a non-monetary exchange.

# SOLUTIONS TO PROBLEMS

## PROBLEM 10-1

**(a)**

**REAGAN COMPANY**
**Analysis of Land Account**
**for 2010**

| | | | |
|---|---|---|---|
| Balance at January 1, 2010 | | | £ 230,000 |
| Land site number 621 | | | |
| Acquisition cost | | £850,000 | |
| Commission to real estate agent | | 51,000 | |
| Clearing costs | £35,000 | | |
| Less: Amounts recovered | 13,000 | 22,000 | |
| Total land site number 621 | | | 923,000 |
| Land site number 622 | | | |
| Land value | | 300,000 | |
| Building value | | 120,000 | |
| Demolition cost | | 41,000 | |
| Total land site number 622 | | | 461,000 |
| Balance at December 31, 2010 | | | £1,614,000 |

**REAGAN COMPANY**
**Analysis of Buildings Account**
**for 2010**

| | | |
|---|---|---|
| Balance at January 1, 2010 | | £ 890,000 |
| Cost of new building constructed on land site number 622 | | |
| Construction costs | £330,000 | |
| Excavation fees | 38,000 | |
| Architectural design fees | 11,000 | |
| Building permit fee | 2,500 | 381,500 |
| Balance at December 31, 2010 | | £1,271,500 |

**PROBLEM 10-1 (Continued)**

**REAGAN COMPANY**
**Analysis of Leasehold Improvements Account**
**for 2010**

| | |
|---|---|
| Balance at January 1, 2010 | £660,000 |
| Office space | 89,000 |
| Balance at December 31, 2010 | £749,000 |

**REAGAN COMPANY**
**Analysis of Machinery and Equipment Account**
**for 2010**

| | | |
|---|---|---|
| Balance at January 1, 2010 | | £875,000 |
| Cost of the new machines acquired | | |
| Invoice price | £87,000 | |
| Freight costs | 3,300 | |
| Installation costs | 2,400 | 92,700 |
| Balance at December 31, 2010 | | £967,700 |

**(b) Items in the fact situation which were not used to determine the answer to (a) above are as follows:**

1. **Interest imputed on equity financing is not permitted by IFRS and thus does not appear in any financial statement.**
2. **Land site number 623, which was acquired for £650,000, should be included in Reagan's statement of financial position as land held for resale (investment section).**
3. **Royalty payments of £17,500 should be included as a normal operating expense in Reagan's income statement.**

  

## PROBLEM 10-2

**(a)**

**LOBO CORPORATION**
**Analysis of Land Account**
**2010**

| | |
|---|---|
| Balance at January 1, 2010 | $300,000 |
| Plant facility acquired from Mendota Company—portion of fair value allocated to land (Schedule 1) | 185,000 |
| Balance at December 31, 2010 | $485,000 |

**LOBO CORPORATION**
**Analysis of Land Improvements Account**
**2010**

| | |
|---|---|
| Balance at January 1, 2010 | $140,000 |
| Parking lots, streets, and sidewalks | 95,000 |
| Balance at December 31, 2010 | $235,000 |

**LOBO CORPORATION**
**Analysis of Buildings Account**
**2010**

| | |
|---|---|
| Balance at January 1, 2010 | $1,100,000 |
| Plant facility acquired from Mendota Company—portion of fair value allocated to building (Schedule 1) | 555,000 |
| Balance at December 31, 2010 | $1,655,000 |

**PROBLEM 10-2 (Continued)**

**LOBO CORPORATION**
**Analysis of Machinery and Equipment Account**
**2010**

| | | |
|---|---|---|
| Balance at January 1, 2010 | | $ 960,000 |
| Cost of new machinery and equipment acquired | | |
| Invoice price | $400,000 | |
| Freight and unloading costs | 13,000 | |
| Sales taxes | 20,000 | |
| Installation costs | 26,000 | 459,000 |
| | | 1,419,000 |
| Deduct cost of machines disposed of | | |
| Machine scrapped June 30, 2010 | $ 80,000* | |
| Machine sold July 1, 2010 | 44,000* | 124,000 |
| Balance at December 31, 2010 | | $1,295,000 |

*The accumulated depreciation account can be ignored for this part of the problem.

  

**PROBLEM 10-2 (Continued)**

**Schedule 1**

**Computation of Fair Value of Plant Facility Acquired from Mendota Company and Allocation to Land and Building**

| | | |
|---|---|---|
| **20,000 shares of Lobo ordinary shares at $37 quoted market price on date of exchange (20,000 X $37)** | | **$740,000** |

**Allocation to land and building accounts in proportion to appraised values at the exchange date:**

| | Amount | Percentage of total |
|---|---|---|
| **Land** | **$230,000** | **25** |
| **Building** | **690,000** | **75** |
| **Total** | **$920,000** | **100** |

| | | |
|---|---|---|
| **Land** | **($740,000 X 25%)** | **$185,000** |
| **Building** | **($740,000 X 75%)** | **555,000** |
| **Total** | | **$740,000** |

**(b) Items in the fact situation that were not used to determine the answer to (a) above, are as follows:**

1. **The tract of land, which was acquired for $150,000 as a potential future building site, should be included in Lobo's statement of financial position as an investment in land.**
2. **The $110,000 and $320,000 book values respective to the land and building carried on Mendota's books at the exchange date are not used by Lobo.**
3. **The $12,000 loss (Schedule 2) incurred on the scrapping of a machine on June 30, 2010, should be included in the other income and expense section in Lobo's income statement. The $68,000 accumulated depreciation (Schedule 2) should be deducted from the Accumulated Depreciation—Machinery and Equipment account in Lobo's statement of financial position.**

**PROBLEM 10-2 (Continued)**

4. **The $3,000 loss on sale of a machine on July 1, 2010 (Schedule 3) should be included in the other income and expenses section of Lobo's income statement. The $21,000 accumulated depreciation (Schedule 3) should be deducted from the Accumulated Depreciation—Machinery and Equipment account in Lobo's statement of financial position.**

**Schedule 2**

**Loss on Scrapping of Machine**
**June 30, 2010**

| | |
|---|---|
| Cost, January 1, 2002 | $80,000 |
| Accumulated depreciation (Straight-line method, 10-year life) January 1, 2002, to June 30, 2010 ($80,000 ÷ 10) X 8½ years | 68,000 |
| Asset book value June 30, 2010 | $12,000 |
| Loss on scrapping of machine | $12,000 |

**Schedule 3**

**Loss on Sale of Machine**
**July 1, 2010**

| | |
|---|---|
| Cost, January 1, 2007 | $44,000 |
| Depreciation (straight-line method, salvage value of $2,000, 7-year life) January 1, 2007, to July 1, 2010 [$3^1/_2$ years ($44,000 – $2,000) ÷ 7] | (21,000) |
| Asset book value July 1, 2010 | $23,000 |
| | |
| Asset book value | $23,000 |
| Proceeds from sale | (20,000) |
| Loss on sale | $ 3,000 |

  

## PROBLEM 10-3

| | | | | |
|---|---|---|---|---|
| (a) | 1. | Land (Schedule A) | 188,700 | |
| | | Building (Schedule B) | 136,250 | |
| | | Insurance Expense (6 months X $95) | 570 | |
| | | Prepaid Insurance (16 months X $95) | 1,520 | |
| | | Organization Expense | 610 | |
| | | Retained Earnings | 53,800 | |
| | | Salary Expense | 32,100 | |
| | | Land and Building | | 399,950 |
| | | Share Premium—Preference (800 shares X $17) | | 13,600 |

**Schedule A**

| | |
|---|---|
| Amount Consists of: | |
| Acquisition Cost ($80,000 + [800 X $117]) | $173,600 |
| Removal of Old Building | 9,800 |
| Legal Fees (Examination of title) | 1,300 |
| Special Tax Assessment | 4,000 |
| Total | $188,700 |

**Schedule B**

| | |
|---|---|
| Amount Consists of: | |
| Legal Fees (Construction contract) | $ 1,860 |
| Construction Costs (First payment) | 60,000 |
| Construction Costs (Second payment) | 40,000 |
| Insurance (2 months) ([2,280 ÷ 24] = $95 X 2 = $190) | 190 |
| Plant Superintendent's Salary | 4,200 |
| Construction Costs (Final payment) | 30,000 |
| Total | $136,250 |

| | | | | |
|---|---|---|---|---|
| | 2. | Land and Building | 4,000 | |
| | | Depreciation Expense | | 2,637 |
| | | Accumulated Depreciation—Building | | 1,363 |

**PROBLEM 10-3 (Continued)**

**Schedule C**

| | |
|---|---|
| Depreciation taken | $ 4,000 |
| Depreciation that should be taken (1% X $136,250) | (1,363) |
| Depreciation adjustment | $ 2,637 |

**(b) Plant, Property, and Equipment:**

| | | |
|---|---|---|
| Land | | $188,700 |
| Building | $136,250 | |
| Less: Accumulated depreciation | 1,363 | 134,887 |
| Total | | $323,587 |

## PROBLEM 10-4

**The following accounting treatment appears appropriate for these items:**

**Land—The loss on the condemnation of the land of $9,000 ($40,000 – $31,000) should be reported as an other income and expense item on the income statement. The $35,000 land purchase has no income statement effect.**

**Building—There is no recognized gain or loss on the demolition of the building. The entire purchase cost ($15,000), decreased by the demolition proceeds ($3,600), is allocated to land.**

**Warehouse—The gain on the destruction of the warehouse should be reported as another income and expense item. The gain is computed as follows:**

| | | |
|---|---|---|
| Insurance proceeds | | $74,000 |
| Deduct: Cost | $70,000 | |
| Less: Accumulated depreciation | 16,000 | 54,000 |
| Realized gain | | $20,000 |

**Some contend that a portion of this gain should be deferred because the proceeds are reinvested in similar assets. We do not believe such an approach should be permitted. Deferral of the gain in this situation is not permitted under IFRS.**

**Machine—The unrecognized gain on the transaction would be computed as follows:**

| | | |
|---|---|---|
| Fair value of old machine | | $7,200 |
| Deduct: Book value of old machine | | |
| Cost | $8,000 | |
| Less: Accumulated depreciation | 2,800 | 5,200 |
| Total gain | | $2,000 |

**PROBLEM 10-4 (Continued)**

**This gain would be deducted from the fair value of the new machine in computing the new machine's cost. The cost of the new machine would be capitalized at $4,300.**

| | |
|---|---|
| **Fair value of new machine** | **$6,300** |
| **Less: Gain deferred** | **2,000** |
| **Cost of new machine** | **$4,300** |

**Furniture—The contribution of the furniture would be reported as a contribution expense of $3,100 with a related gain on disposition of furniture of $950: $3,100 – ($10,000 – $7,850). The contribution expense and the related gain may be netted, if desired.**

**Automobile—The loss on sale of the automobile of $2,580: [$2,960 – ($9,000 – $3,460)] should be reported in the other income and expense section.**

  

## PROBLEM 10-5

**(a)**

**BLAIR CORPORATION**
**Cost of Land (Site #101)**
**As of September 30, 2011**

| | |
|---|---|
| Cost of land and old building | $500,000 |
| Real estate broker's commission | 36,000 |
| Legal fees | 6,000 |
| Title insurance | 18,000 |
| Removal of old building | 54,000 |
| Cost of land | $614,000 |

**(b)**

**BLAIR CORPORATION**
**Cost of Building**
**As of September 30, 2011**

| | |
|---|---|
| Fixed construction contract price | $3,000,000 |
| Plans, specifications, and blueprints | 21,000 |
| Architects' fees | 82,000 |
| Interest capitalized during 2010 (Schedule) | 130,000 |
| Interest capitalized during 2011 (Schedule) | 190,000 |
| Cost of building | $3,423,000 |

**Schedule**

**Interest Capitalized During 2010 and 2011**

| | Weighted-Average Accumulated Construction Expenditures | | Interest Rate | | Interest to be Capitalized |
|---|---|---|---|---|---|
| 2010: | $1,300,000 | X | 10% | = | $130,000 |
| 2011: | $1,900,000 | X | 10% | = | $190,000 |

## PROBLEM 10-6

### INTEREST CAPITALIZATION
### Balance in the Land Account

| | |
|---|---|
| Purchase Price | ¥139,000 |
| Surveying Costs | 2,000 |
| Title Insurance Policy | 4,000 |
| Demolition Costs | 3,000 |
| Salvage | (1,000) |
| Total Land Cost | ¥147,000 |

**Expenditures (2010)**

| Date | Amount | Fraction | Weighted-Average Accumulated Expenditures |
|---|---|---|---|
| 1-Dec | ¥147,000 | 1/12 | ¥12,250 |
| 1-Dec | 30,000 | 1/12 | 2,500 |
| 1-Dec | 3,000 | 1/12 | 250 |
| | ¥180,000 | | ¥15,000 |

**Interest Capitalized for 2010**

| Weighted-Average Accumulated Expenditures | Interest Rate | Amount Capitalizable |
|---|---|---|
| ¥15,000 | 8% | ¥1,200 |

| | |
|---|---|
| Interest charged to Interest Expense | |
| [(¥600,000 X .08 X $^{1}/_{12}$) – ¥1,200] | ¥2,800 |

  

**PROBLEM 10-6 (Continued)**

| Expenditures (2011) | | | Weighted |
|---|---|---|---|
| Date | Amount | Fraction | Expenditure |
| 1-Jan | ¥180,000 | 6/12 | ¥ 90,000 |
| 1-Jan | 1,200 | 6/12 | 600 |
| 1-Mar | 240,000 | 4/12 | 80,000 |
| 1-May | 330,000 | 2/12 | 55,000 |
| 1-Jul | 60,000 | 0 | 0 |
| | ¥811,200 | | ¥225,600 |

**Interest Capitalized for 2011**

| Weighted-Average Expenditure | Interest Rate | Amount Capitalizable |
|---|---|---|
| ¥225,600 | 8% | ¥18,048 |

| | |
|---|---|
| Interest charged to Interest Expense | |
| [(¥600,000 X .08) – ¥18,048] | ¥29,952 |

| | | |
|---|---|---|
| (a) | Balance in Land Account—2010 and 2011 ..... | 147,000 |
| (b) | Balance in Building—2010 ..... | 34,200* |
| | Balance in Building—2011 ..... | 682,248** |
| (c) | Balance in Interest Expense—2010..... | 2,800 |
| | Balance in Interest Expense—2011..... | 29,952 |

*¥30,000 + ¥3,000 + ¥1,200

**¥34,200 + ¥240,000 + ¥330,000 + ¥60,000 + ¥18,048

## PROBLEM 10-7

### (a) Computation of Weighted-Average Accumulated Expenditures

| | Expenditures | | | | |
|---|---|---|---|---|---|
| Date | Amount | X | Capitalization Period | = | Weighted-Average Accumulated Expenditures |
| July 30, 2010 | $ 900,000 | | 10/12 | | $ 750,000 |
| January 30, 2011 | 1,500,000 | | 4/12 | | 500,000 |
| May 30, 2011 | 1,600,000 | | 0 | | 0 |
| | $4,000,000 | | | | $1,250,000 |

### (b)

| Weighted-Average Accumulated Expenditures | X | Capitalization Rate | = | Avoidable interest |
|---|---|---|---|---|
| $1,250,000 | | 11.2%* | | $140,000 |

**Loans Outstanding During Construction Period**

| | Principal | Actual Interest |
|---|---|---|
| *10% five-year note | $2,000,000 | $200,000 |
| 12% ten-year bond | 3,000,000 | 360,000 |
| | $5,000,000 | $560,000 |

$$\frac{\text{Total interest}}{\text{Total principal}} = \frac{\$560,000}{\$5,000,000} = 11.2\% \text{ (capitalization rate)}$$

### (c) (1) and (2)

| | |
|---|---|
| Total actual interest cost | $560,000 |
| Total interest capitalized | $140,000 |
| Total interest expensed | $420,000 |

  

## PROBLEM 10-8

**1. Holyfield Corporation**

| | | |
|---|---|---|
| Cash | 23,000 | |
| Machinery | 69,000 | |
| Accumulated Depreciation | 60,000 | |
| Loss on Disposal of Machinery | 8,000* | |
| Machinery | | 160,000 |

*Computation of loss:

| | |
|---|---|
| Book value | $100,000 |
| Fair value | (92,000) |
| Loss | $ 8,000 |

**Dorsett Company**

| | | |
|---|---|---|
| Machinery | 92,000 | |
| Accumulated Depreciation | 45,000 | |
| Loss on Disposal of Machinery | 6,000* | |
| Cash | | 23,000 |
| Machinery | | 120,000 |

*Computation of loss:

| | |
|---|---|
| Book value | $ 75,000 |
| Fair value | (69,000) |
| Loss | $ 6,000 |

**2. Holyfield Corporation**

| | | |
|---|---|---|
| Machinery | 92,000 | |
| Accumulated Depreciation | 60,000 | |
| Loss on Disposal of Machinery | 8,000 | |
| Machinery | | 160,000 |

**Winston Company**

| | | |
|---|---|---|
| Machinery ($92,000 – $11,000) | 81,000* | |
| Accumulated Depreciation | 71,000 | |
| Machinery | | 152,000 |

*Computation of gain deferred:

| | |
|---|---|
| Fair value | $92,000 |
| Book value | (81,000) |
| Gain deferred | $11,000 |

**PROBLEM 10-8 (Continued)**

**3.** **Holyfield Corporation**

| | | |
|---|---|---|
| Machinery | 95,000 | |
| Accumulated Depreciation | 60,000 | |
| Loss on Disposal of Machinery | 8,000 | |
| Machinery | | 160,000 |
| Cash | | 3,000 |

**Liston Company**

| | | |
|---|---|---|
| Machinery | 92,000 | |
| Accumulated Depreciation | 75,000 | |
| Cash | 3,000 | |
| Machinery | | 160,000 |
| Gain on Disposal of Machinery | | 10,000* |

| | |
|---|---|
| *Fair value | $ 95,000 |
| Book value | (85,000) |
| Gain | $ 10,000 |

**Because the exchange has commercial substance, the entire gain should be recognized.**

**4.** **Holyfield Corporation**

| | | |
|---|---|---|
| Machinery | 185,000 | |
| Accumulated Depreciation | 60,000 | |
| Loss on Disposal of Machinery | 8,000 | |
| Machinery | | 160,000 |
| Cash | | 93,000 |

**Greeley Company**

| | | |
|---|---|---|
| Cash | 93,000 | |
| Used Machine Inventory | 92,000 | |
| Sales | | 185,000 |
| Cost of Goods Sold | 130,000 | |
| Inventory | | 130,000 |

  

## PROBLEM 10-9

**(a) Exchange has commercial substance:**

**Hyde, Inc.'s Books**

| | | |
|---|---|---|
| Asset B | 75,000 | |
| Accumulated Depreciation—Asset A | 40,000 | |
| Asset A | | 96,000 |
| Gain on Disposal of Plant Assets ($60,000 – [$96,000 – $40,000]) | | 4,000 |
| Cash | | 15,000 |

**Wiggins, Inc.'s Books**

| | | |
|---|---|---|
| Cash | 15,000 | |
| Asset A | 60,000 | |
| Accumulated Depreciation—Asset B | 47,000 | |
| Asset B | | 110,000 |
| Gain on Disposal of Plant Assets ($75,000 – [$110,000 – $47,000]) | | 12,000 |

**(b) Exchange lacks commercial substance:**

**Hyde, Inc.'s Books**

| | | |
|---|---|---|
| Asset B ($75,000 – $4,000) | 71,000* | |
| Accumulated Depreciation—Asset A | 40,000 | |
| Asset A | | 96,000 |
| Cash | | 15,000 |

*Computation of gain deferred:

| | |
|---|---|
| Fair value | $60,000 |
| Book value | (56,000) |
| Gain deferred | $ 4,000 |

**PROBLEM 10-9 (Continued)**

**Wiggins, Inc.'s Books**

| | | |
|---|---|---|
| **Cash** | **15,000** | |
| **Asset A ($60,000 – $12,000*)** | **48,000** | |
| **Accumulated Depreciation—Asset B** | **47,000** | |
| **Asset B** | | **110,000** |

**Computation of gain deferred:**

| | |
|---|---|
| **Fair value of Asset B** | **$75,000** |
| **Book value of Asset B** | **(63,000)** |
| **Gain deferred** | **$12,000*** |

  

## PROBLEM 10-10

**(a) Has Commercial Substance**

**Marshall Construction**

| | | | |
|---|---|---|---|
| 1. | Equipment (€82,000 + €118,000) | 200,000 | |
| | Accumulated Depreciation—Equipment | 50,000 | |
| | Loss on Disposal of Plant Assets | 8,000* | |
| | Equipment | | 140,000 |
| | Cash | | 118,000 |

*Computation of loss:

| | |
|---|---|
| Book value of old crane (€140,000 – €50,000) | €90,000 |
| Fair value of old crane | 82,000 |
| Loss on disposal of plant assets | € 8,000 |

**Brigham Manufacturing**

| | | | |
|---|---|---|---|
| 2. | Cash | 118,000 | |
| | Equipment Inventory | 82,000 | |
| | Sales | | 200,000 |
| | Cost of Goods Sold | 165,000 | |
| | Equipment Inventory | | 165,000 |

**(b) Lacks Commercial Substance**

1. Marshall Construction should record the same entry as in part (a) above, since the exchange resulted in a loss.
2. Brigham should record the same entry as in part (a) above. No gain is deferred because we are assuming that Marshall is a customer.

**(c) Has Commercial Substance**

**Marshall Construction**

| | | | |
|---|---|---|---|
| 1. | Equipment (€98,000 + €102,000) | 200,000 | |
| | Accumulated Depreciation—Equipment | 50,000 | |
| | Equipment | | 140,000 |
| | Cash | | 102,000 |
| | Gain on Disposal of Plant Assets | | 8,000* |

*Computation of gain:

| | |
|---|---|
| Book value of old crane (€140,000 – €50,000) | €90,000 |
| Fair value of old crane | 98,000 |
| Gain on disposal of plant assets | € 8,000 |

**PROBLEM 10-10 (Continued)**

**Brigham Manufacturing**

| | | | |
|---|---|---|---|
| **2.** | **Cash** | **102,000** | |
| | **Equipment Inventory** | **98,000** | |
| | **Sales** | | **200,000** |
| | | | |
| | **Cost of Goods Sold** | **165,000** | |
| | **Equipment Inventory** | | **165,000** |

**(d)** **Marshall Construction**

| | | | |
|---|---|---|---|
| **1.** | **Equipment (€200,000 – €7,000*)** | **193,000** | |
| | **Accumulated Depreciation—Equipment** | **50,000** | |
| | **Cash** | | **103,000** |
| | **Equipment** | | **140,000** |

***[Fair Value–Old (€97,000) – Book Value–Old (€90,000)]**

**Brigham Manufacturing**

| | | | |
|---|---|---|---|
| **2.** | **Cash** | **103,000** | |
| | **Equipment Inventory** | **97,000** | |
| | **Sales** | | **200,000** |
| | | | |
| | **Cost of Goods Sold** | **165,000** | |
| | **Equipment Inventory** | | **165,000** |

**Same reasons as cited in (b) (2) on the previous page.**

  

## PROBLEM 10-11

**(a) The major characteristics of plant assets, such as land, buildings, and equipment, that differentiate them from other types of assets are presented below.**

1. **Plant assets are acquired for use in the regular operations of the enterprise and are not for resale.**
2. **Property, plant, and equipment possess physical substance or existence and are thus differentiated from intangible assets such as patents and goodwill. Unlike other assets that possess physical substance (i.e., raw materials), property, plant, and equipment do not physically become part of the product held for resale.**
3. **These assets are durable and long-term in nature and are usually subject to depreciation.**

**(b)** ***Transaction 1*****. To properly reflect cost, assets purchased on deferred-payment contracts should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the consideration. When no interest rate is stated, interest must be imputed at a rate that approximates the rate that would be negotiated in an arm's-length transaction. In addition, all costs necessary to ready the asset for its intended use are considered to be costs of the asset.**

$$\text{Asset cost} = \text{Present value of the note} + \text{Freight} + \text{Installation}$$

$$= \left[\left(\frac{\$28{,}000}{4}\right) \text{X } 3.17\right] + \$425 + \$500$$

$$= \$22{,}190 + \$925$$

$$= \$23{,}115$$

***Transaction 2*. The lump-sum purchase of a group of assets should be accounted for by allocating the total cost among the various assets on the basis of their relative fair values. The $8,000 of interest expense incurred for financing the purchase is a period cost and is not a factor in determining asset cost.**

| | |
|---|---|
| **Inventory** | **$220,000 X ($ 50,000/$250,000) = $44,000** |
| **Land** | **$220,000 X ($ 80,000/$250,000) = $70,400** |
| **Building** | **$220,000 X ($120,000/$250,000) = $105,600** |

***Transaction 3.* The cost of a non-monetary asset acquired in an exchange that has commercial substance should be recorded at the fair value of the asset given up plus any cash paid. Furthermore, any gain on the exchange is also recognized.**

| | |
|---|---|
| **Fair value of trucks** | **$46,000** |
| **Cash paid** | **19,000** |
| **Cost of land** | **$65,000** |

**(c) 1. A building purchased for speculative purposes is not a plant asset as it is not being used in normal operations. The building is more appropriately classified as an investment.**

**2. The two-year insurance policy covering plant equipment is not a plant asset as it is not long-term in nature, not subject to depreciation, and has no physical substance. This policy is more appropriately classified as a current asset (prepaid insurance).**

**3. The rights for the exclusive use of a process used in the manufacture of ballet shoes are not plant assets as they have no physical substance. The rights should be classified as an intangible asset.**

  

# TIME AND PURPOSE OF CONCEPTS FOR ANALYSIS

**CA 10-1** (Time 20–25 minutes)
Purpose—to provide the student with a problem to decide which expenditures related to purchasing land, constructing a building, and adding to the building should be capitalized and how each should be depreciated. When the land and building are sold, the student discusses how the book value is determined and how a gain would be reported.

**CA 10-2** (Time 20–25 minutes)
Purpose—to provide the student with a situation involving the proper allocation of costs to self-constructed machinery. As part of this case, the student is required to discuss the propriety of including overhead costs in the construction costs. Finally, the proper accounting treatment accorded the development costs associated with the construction of a new machine must be evaluated.

**CA 10-3** (Time 20–25 minutes)
Purpose—to provide the student with a problem involving the proper accounting treatment for interest costs. The student is required to assess the advantages and disadvantages of capitalizing interest. In addition, this problem should provide you with an opportunity to discuss the IASB pronouncement in this area.

**CA 10-4** (Time 30–40 minutes)
Purpose—to provide the student with a situation to determine capitalization of interest and to explain in a memorandum the conceptual basis for interest capitalization.

**CA 10-5** (Time 30–40 minutes)
Purpose—to provide the student with a situation in which to examine differences in accounting for exchanges that have or lack commercial substance.

**CA 10-6** (Time 20–25 minutes)
Purpose—to provide the student with an understanding of the proper accounting treatment involving incidental costs associated with the purchase of a machine. The student must be able to defend why certain costs might be capitalized even though this valuation has no relationship to net realizable value. In addition, the costs may be charged off immediately for tax purposes and the student is required to analyze why these costs may still be capitalized for book purposes.

**CA 10-7** (Time 20–25 minutes)
Purpose—to provide the student with a case involving allocation of costs between land and buildings, including ethical issues.

# SOLUTIONS TO CONCEPTS FOR ANALYSIS

## CA 10-1

(a) Expenditures should be capitalized when they benefit future periods. The cost to acquire the land should be capitalized and classified as land, a nondepreciable asset. Since tearing down the small factory is readying the land for its intended use, its cost is part of the cost of the land and should be capitalized and classified as land. As a result, this cost will not be depreciated as it would if it were classified with the capitalizable cost of the building.

Since rock blasting and removal is required for the specific purpose of erecting the building, these costs are part of the cost of the building and should be capitalized and classified with the capitalizable cost of the building. This cost should be depreciated over the estimated useful life of the building.

The road and the parking lot are land improvements, and these costs should be capitalized and classified separately as a land improvements. These costs should be depreciated over their estimated useful lives.

The added four stories is an addition, and its cost should be capitalized and classified with the capitalizable cost of the building. This cost should be depreciated over the remaining life of the original office building because that life is shorter than the estimated useful life of the addition.

(b) A gain should be recognized on the sale of the land and building because income is realized whenever the earning process has been completed and a sale has taken place.

The net book value at the date of sale would be composed of the capitalized cost of the land, the land improvement, and the building, as determined above, less the accumulated depreciation on the land improvement and the building. The excess of the proceeds received from the sale over the net book value at the date of sale would be accounted for as a gain in continuing operations in the income statement.

## CA 10-2

(a) Materials and direct labor used in the construction of the equipment definitely should be charged to the equipment account. It should be emphasized that no gain on self-construction should be recorded because such an approach violates the historical cost principle. The controversy centers on the assignment of indirect costs, called overhead or burden, consisting of power, heat, light, insurance, property taxes on factory buildings, etc. The suggested approaches are discussed below.

(b) 1. Many believe that only the variable overhead costs that increase as a result of the construction should be assigned to the cost of the asset. This approach assumes that the company will have the same fixed costs regardless of whether the company constructs the asset or not, so to charge a portion of the fixed overhead costs to the equipment will usually decrease current expenses and consequently overstate income of the current period. Therefore, only the incremental costs should be charged.

2. Proponents of alternative (2) argue that such assets should be given the same treatment as inventory items and that all costs should be allocated thereto just as if saleable goods were being produced. They state that no special favor should be granted in the allocation of any cost, as long as sufficient facts are available to enable the allocation to be made. They argue that allocation of overhead to fixed assets is similar to allocation to joint products and byproducts, and should be made at regular rates. Of course, no item should be capitalized at an amount greater than that prevailing in the market.

## CA 10-2 (Continued)

(c) It could be argued that because costs of development are usually higher on the first few units, the additional costs of $273,000 should be allocated to all four machines. If these costs are due to inefficiency and not development costs, the additional costs should be expensed.

## CA 10-3

Three approaches have been suggested to account for actual interest incurred in financing the construction or acquisition of property, plant, and equipment. One approach is to capitalize no interest during construction. Under this approach interest is considered a cost of financing and not a cost of construction. It is contended that if the company had used equity financing rather than debt financing, this expense would not have developed. The major arguments against this approach are that an implicit interest cost is associated with the use of cash regardless of the source.

A second approach is to capitalize the actual interest costs. This approach relies on the historical cost concept that only actual transactions are recorded. It is argued that interest incurred is as much a cost of acquiring the asset as the cost of the materials, labor, and other resources used. As a result, a company that uses debt financing will have an asset of higher cost than an enterprise that uses equity financing. The results achieved by this approach are held to be unsatisfactory by some because the cost of an asset should be the same whether cash, debt financing, or equity financing is employed.

A third approach is to charge construction with all costs of funds employed, whether identifiable or not. This approach is an economic cost approach that maintains that one part of the cost of construction is the cost of financing whether by debt, cash, or equity financing. An asset should be charged with all costs necessary to get it ready for its intended use. Interest, whether actual or imputed, is a cost of building, just as labor, materials, and overhead are costs. A major criticism of this approach is that imputation of a cost of equity capital is subjective and outside the framework of a historical cost system.

IFRS require that the lower of actual or avoidable interest cost be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition or location necessary for its intended use. Interest costs would be capitalized (provided interest costs are being incurred) starting with the first expenditure related to the asset and would continue until the asset is substantially completed and ready for its intended use. Capitalization should occur only if the benefits exceed the costs.

**CA 10-4**

**To:** **Jane Esplanade, President**

**From:** **Good Student, Manager of Accounting**

**Date:** **January 15, 2010**

**Subject:** **Capitalization of avoidable interest on the warehouse construction project**

**I am writing in response to your questions about the capitalized interest costs for the warehouse construction project. This brief explanation of my calculations should facilitate your understanding of these costs.**

**Generally, the accounting profession does not allow accrued interest to be capitalized along with an asset's cost. However, the IASB made an exception for interest costs incurred during construction. In order to qualify for this treatment, the constructed asset must require a period of time to become ready for its intended use.**

**Because interest capitalization is allowed in special circumstances only, the company must be especially careful to capitalize only that interest which is associated with the construction itself. Thus, the IASB issued a standard indicating how much interest may be associated with the construction, i.e., the lower of actual or avoidable interest.**

**On the surface, this standard seems simple. Actual interest incurred during the construction period equals all interest which accrued on any debt outstanding during that period. Avoidable interest equals the amount of interest which would not have been incurred if the construction project had not been undertaken. The amount of interest capitalized is the smaller of the two.**

**To determine the amount capitalized, we must calculate both the actual and the avoidable interest during 2009. Actual interest is computed by applying the interest rates of 12%, 10%, and 11% to their related debt. Thus, total actual interest for this period is $490,000 (see Schedule #1 on page 10-70).**

**CA 10-4 (Continued)**

**Calculations for avoidable interest are more complex. First, interest can be capitalized only on the weighted-average amount of accumulated expenditures. Although total costs amounted to $5,200,000 for the project, an average of only $3,500,000 was committed to the project during the period of construction.**

**Second, of the total $4,400,000 debt outstanding during this period, only $2,000,000 of it can be associated with the actual construction project. Therefore, rather than arbitrarily choose the interest rate for one of the other loans, we must calculate the capitalization rate. This rate is the ratio of accrued interest on the other loans to the total amount of their principal. For the $1,500,000 balance of weighted-average accumulated expenditures, this interest rate equals 10.42% (see Schedule #2).**

**Third, we compute our avoidable interest as follows: calculate the interest on the loan directly associated with the construction. Apply the capitalization rate to the remainder of the weighted-average accumulated expenditures. Now, add these products. Avoidable interest for 2009 amounts to $396,300 (see Schedule #3).**

**So as not to overstate the interest associated with the construction, we capitalize the smaller of the two—$396,300—along with the other construction costs. The remainder of the interest ($93,700) is expensed.**

**I hope that this explanation has answered any questions you may have had about capitalized interest. If any further questions should arise, please contact me.**

**CA 10-4 (Continued)**

**Schedule #1**

**Actual Interest**

| | | |
|---|---|---|
| Construction loan | $2,000,000 X 12% = | $240,000 |
| Short-term loan | $1,400,000 X 10% = | 140,000 |
| Long-term loan | $1,000,000 X 11% = | 110,000 |
| | Total | $490,000 |

**Schedule #2**

**Capitalization Rate**

| Capitalization rate computation | Principal | Interest |
|---|---|---|
| 10% short-term loan | $1,400,000 | $140,000 |
| 11% long-term loan | 1,000,000 | 110,000 |
| | $2,400,000 | $250,000 |

$$\frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$250,000}{\$2,400,000} = 10.42\%$$

**Schedule #3**

**Avoidable Interest**

| Weighted-Average Accumulated Expenditures | X | Interest Rate | = | Avoidable Interest |
|---|---|---|---|---|
| $2,000,000 | | 12% | | $240,000 |
| 1,500,000 | | 10.42% | | 156,300 |
| $3,500,000 | | | | $396,300 |

**Schedule #4**

**Interest Capitalized**

Because avoidable interest is lower than actual interest, use avoidable interest.

| | |
|---|---|
| Cost | $5,200,000 |
| Interest capitalized | 396,300 |
| Total cost | $5,596,300 |

  

## CA 10-5

(a) **Client A**

Treatment if the exchange has commercial substance

Client A would recognize a gain of £20,000 on the exchange. The basis of the asset acquired would be £100,000. The entry would be as follows:

| | | |
|---|---|---|
| Machinery (£80,000 + £20,000) | 100,000 | |
| Accumulated Depreciation—Machinery | 40,000 | |
| Cash | | 20,000 |
| Gain on Disposal of Plant Assets | | 20,000* |
| Machinery | | 100,000 |

| | |
|---|---|
| *Book value of old machinery (£100,000 – £40,000) | £60,000 |
| Fair value of old machinery | 80,000 |
| Gain on disposal of plant asset | £20,000 |

(b) Treatment if the exchange lacks commercial substance

Client A would be prohibited from recognizing a £20,000 gain on the exchange. This is because the transaction lacks commercial substance. The new asset on their books would have a basis of £80,000 (£100,000 less the £20,000 unrecognized gain). The entry would be as follows:

| | | |
|---|---|---|
| Machinery (£100,000 – £20,000) | 80,000 | |
| Accumulated Depreciation | 40,000 | |
| Cash | | 20,000 |
| Machinery | | 100,000 |

(c) Memo to the Controller:

TO: The Controller

RE: Exchanges of Assets—Commercial Substance Issues.

Financial statement effect of treating the exchange as having commercial substance versus not.

1. The income statement will reflect a before-tax gain of £20,000. This gain will increase the reported income on this year's financial statements. Future income statements will probably show a higher depreciation deduction because of an increased book value of the new asset. Thus future income statements will reflect lower income.
2. The current statement of financial position will show a £20,000 higher value for plant assets, a higher liability for taxes payable and higher retained earnings if the exchange has commercial substance. This difference will disappear gradually as the asset is depreciated.

## CA 10-5 (Continued)

(d) **Client B**

Treatment if the exchange has commercial substance

In this situation, the full £30,000 gain would be recognized on this year's income statement. The new asset would go on the books at its fair value. The entry is as follows:

| | | |
|---|---|---|
| Machinery | 80,000 | |
| Accumulated Depreciation—Machinery | 80,000 | |
| Cash | 20,000 | |
| Machinery | | 150,000 |
| Gain on Disposal of Plant Assets | | 30,000* |

| | |
|---|---|
| *Book value of old machinery (£150,000 – £80,000) | £ 70,000 |
| Fair value of old machinery | 100,000 |
| Gain on disposal of plant assets | £ 30,000 |

(e) Treatment if the exchange lacks commercial substance

| | | |
|---|---|---|
| Machinery (£80,000 – £30,000) | 50,000 | |
| Accumulated Depreciation—Machinery | 80,000 | |
| Cash | 20,000 | |
| Machinery | | 150,000 |

(f) Memo to the Controller:

TO: The Controller

RE: Asset Exchanges—Commercial Substance

1. The income statement will reflect a before-tax gain of £30,000 if the exchange has commercial substance. This gain will increase the reported income on this year's financial statements. Future income statements will probably show a higher depreciation deduction because of an increased book value of the new asset. Thus future income statements will reflect lower income. No gain will be reported if the exchange lacks commercial substance.
2. The current statement of financial position will show a £30,000 higher value for plant assets, a higher liability for taxes payable and higher retained earnings if the exchange has commercial substance. This difference will disappear gradually as the asset is depreciated.

## CA 10-6

In general, the inclusion of the $7,500 as part of the cost of the machine is justified because the primary purpose in accounting for plant asset costs is to secure an equitable allocation of incurred costs over the period of time when the benefits are being received from the use of the assets. These costs—both the $50,000 and the $7,500—are much like prepaid expenses, to be matched against the revenue emerging through their use. The purpose of accounting for plant assets then is not primarily aimed at determining the fair valuation of the asset for statement of financial position purposes, but proper matching of incurred costs with revenue resulting from use of the assets.

(1) It may be true that these installation costs could not be recovered if the machine were to be sold. This is not important, however, because presumably the machine was acquired to be used, not to be sold. Assuming approximately equal utilization of the machine in each of the ten years, the owner properly could allocate $5,750 (10% of $57,500) against each year's operations. If the owner's suggestion was followed, the first year would be charged with $12,500 ($7,500 plus 10% of $50,000), and the following nine years with $5,000 per year, hence overstating expenses by $6,750 the first year and understating expenses by $750 per year for the succeeding nine years. This could hardly be defended as proper matching of costs and revenue.

(2) Again, the purpose of accounting for plant assets is not to arrive at an approximation of fair value of the assets each year over the life of the assets. However, even if this were an objective, the question of which method would come closer to stating current fair value at some later date would revolve around the general trend of the price level over the years involved.

(3) Assuming that the $7,500 could properly be deducted, there would be some tax savings over the years unless the tax rates applicable to the business were reduced during the following years. There is some value to taking the $7,500 deduction right now because of the present value of money. If the rates increased, there would be an increase in total taxes, due to higher rates applicable during the period when depreciation deductions would be reduced. However, IFRS are not determined by income tax effects.

## CA 10-7

(a) If the land is undervalued so that a higher cost is assigned to the building, management interests are served. The lower net income and reduced tax liability save cash to be used for management purposes. By contrast, shareholders and potential investors are misled by the inaccurate cost values. They will have been deprived of information concerning the significant impact of changing real estate values on this holding.

(b) The ethical question centers on whether to allocate the cost of the purchase on the fair value of land and building or whether to determine the allocation in view of the potential effect on net income. Carter faces an ethical dilemma if Ankara will not accept Carter's position. Carter should specify alternative courses of action and carefully assess the consequences of each before deciding what to do.

(c) For basket (lump-sum) purchases of land and buildings, costs should be allocated on the ratio of fair values of the land and buildings.

# FINANCIAL STATEMENT ANALYSIS CASE

**UNILEVER**

**(a) The cost of plant and building equipment at the end of 2008 was €4,098,000,000.**

**(b) As indicated in footnote number one to the financial statements, the company utilizes the straight-line method for financial statement purposes for all additions to property, plant, and equipment. Given that straight-line depreciation provides a lower charge for depreciation as compared to an accelerated method in the early years of an asset's life, the accounting appears to be less conservative.**

**(c) The cash flow statement reports the amount of interest paid in cash (€487 million).**

**(d) Free cash flow is defined as net cash flows provided by operating activities less capital expenditures and dividends.**

**Free cash flow is the amount of discretionary cash flow a company has for purchasing additional investments, retiring its debt, purchasing treasury stock, or simply adding to its liquidity. In Unilever's situation, free cash flow is computed as follows:**

| | |
|---|---|
| **Net cash flows from operating activities** | **€3,871,000,000** |
| **Less: Additions to property, plant and equipment** | **1,142,000,000** |
| **Dividends** | **2,086,000,000** |
| **Free cash flow** | **€ 643,000,000** |

**As indicated from the above computation, Unilever has considerable free cash flows. The company has excellent financial flexibility.**

  

**For example, the company is able to pay its dividends without resorting to external financing. Secondly, even if operations decline, it appears that the company will be able to fund additions to property, plant, and equipment. Thirdly, the company is using its free cash flow to expand its operations by acquiring new businesses.**

# ACCOUNTING, ANALYSIS AND PRINCIPLES

## ACCOUNTING

| | | |
|---|---|---|
| **Equipment ($50,000 + $12,000)** | **62,000** | |
| **Accumulated Depreciation—Equipment** | **80,000*** | |
| **Equipment** | | **112,000** |
| **Cash** | | **12,000** |
| **Gain on Disposal of Equipment $50,000 – ($112,000 – $80,000)** | | **18,000** |

***($112,000 – $12,000) ÷ 5 = $20,000/yr. X 4 yrs.**

## ANALYSIS

**The gain on the disposal increases income, leading to a one-time increase in the return on assets (ROA) in the year of the exchange. In essence, the gain reflects the extent to which prior years' depreciation was overstated related to the decline in the fair value of the asset traded in. As a result, in the year of the exchange, Durler's ROA will appear higher than in prior years. Some analysts will adjust these nonrecurring gains out of income when conducting analysis using ROA.**

## PRINCIPLES

**The concept of commercial substance is a fundamental element in the accounting for exchanges. If the transaction above lacked commercial substance, the gain on the exchange would be deferred. That is, if the expected cash flows arising from the assets exchanged are not significantly different, Durler is in the same economic position after the exchange with respect to exchanged assets. As a result, no gain is reported, and the nonrecurring gain will not affect analysts' comparisons of a company's ROA across years with and without exchanges.**

  

## PROFESSIONAL RESEARCH

**(a) Yes, it is permissible to capitalize interest into the cost of assets. IAS 23 revised: (http://eifrs.iasb.org/eifrs/bnstandards/en/ias23.pdf.)**

**(b) The objectives of capitalizing interest are to allow an entity the right to capitalize borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset (par. 1).**

**(c) The following assets qualify for interest capitalization (par. 7):**
- **a. inventories**
- **b. manufacturing plants**
- **c. power generation facilities**
- **d. intangible assets**
- **e. investment properties.**

**(d) Yes, there is a limit to the amount of interest capitalised in a period. To the extent that an entity borrows funds specifically for the purpose of obtaining a qualifying asset, the entity shall determine the amount of borrowing costs eligible for capitalisation as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings (par. 12).**

**(e) An entity shall disclose:**
- **a. the amount of borrowing costs capitalised during the period; and**
- **b. the capitalisation rate used to determine the amount of borrowing costs eligible for capitalisation (par. 26).**

## PROFESSIONAL SIMULATION

**Measurement**

**Historical cost is measured by the cash or cash-equivalent price of obtaining the asset and bringing it to the location and condition for its intended use. For Norwel, this is:**

| | |
|---|---|
| **Price** | **$12,000** |
| **Sales tax ($12,000 X .05)** | **600** |
| **Platform** | **1,400** |
| **Total** | **$14,000** |

**Journal Entry**

**January 2, 2009**

| | | |
|---|---|---|
| **Machine** | **14,000** | |
| **Cash** | | **14,000** |

**December 31, 2009**

| | | |
|---|---|---|
| **Depreciation Expense** | **1,500** | |
| **Accumulated Depreciation** | | **1,500*** |

***Depreciable base: ($14,000 – $2,000) = $12,000**
**Depreciation expense: $12,000 ÷ 4 = $3,000 per year**
**2009: 1/2 year = $3,000 X .50 = $1,500**

**Financial Statements**

**The amount reported in the statement of financial position at December 31, 2010 is the cost of the asset less accumulated depreciation:**

| | |
|---|---|
| **Machine** | **$14,000** |
| **Accumulated depreciation** | **(4,500)** |
| **Book value** | **$ 9,500** |

  

**PROFESSIONAL SIMULATION (Continued)**

**Analysis**

**The income effect is a gain or loss, determined by comparing the book value of the asset to the disposal value:**

| | |
|---|---|
| **Cost** | **$14,000** |
| **Accumulated depreciation ($4,500 + $1,500*)** | **6,000** |
| **Book value** | **8,000** |
| **Cash received for machine and platform** | **7,000** |
| **Pretax loss** | **$ 1,000** |

***$3,000 X 6/12**