

Long-Term Assets Exercises III

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Problem 1

Shaw Corporation recently requested a contractor to prepare a proposal to refurbish the exterior of its office building. Shaw wanted to give its building a “face lift.” The contractor provided the following bid document:

| | |
|--|----------|
| Add extension to front porch approach | \$70,000 |
| Install shrubs and trees | 8,750 |
| Replace rotting exterior siding material | 26,250 |
| Replace burned out exterior light bulbs | 1,750 |

Assume that Shaw Corporation agreed to the bid, and authorized the work. What journal entry would be appropriate for each of the above expenditures?

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|---|-------|--------|
| Date | Accounts | Debit | Credit |
| | | | |
| | <i>To record addition to existing building</i> | | |
| | | | |
| | | | |
| | <i>To record addition of landscaping</i> | | |
| | | | |
| | | | |
| | <i>To record replacement of siding material</i> | | |
| | | | |
| | | | |
| | <i>To record replacement of light bulbs</i> | | |

Solution

| GENERAL JOURNAL | | | |
|-----------------|---|--------|--------|
| Date | Accounts | Debit | Credit |
| | Building | 70,000 | |
| | Cash | | 70,000 |
| | <i>To record addition to existing building</i> | | |
| | | | |
| | Land Improvements | 8,750 | |
| | Cash | | 8,750 |
| | <i>To record addition of landscaping</i> | | |
| | | | |
| | Accumulated Depreciation | 26,250 | |
| | Cash | | 26,250 |
| | <i>To record replacement of siding material</i> | | |
| | | | |
| | Repair Expense | 1,750 | |
| | Cash | | 1,750 |
| | <i>To record replacement of light bulbs</i> | | |

Problem 2

Motorway Construction Company owns a tractor that originally cost \$350,000, with a 20-year life, and no anticipated salvage value. Motorway uses the straight-line depreciation method. Review the following three independent cases, and prepare the journal entry to reflect the disposition of the tractor in each case.

Case 1 After 6 years of ownership, the tractor was destroyed by a flood.

Case 2 After 10 years of ownership, the tractor was sold for \$245,000.

Case 3 After 17 years of ownership, the tractor was sold for \$44,000.

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|----------|-------|--------|
| Date | Accounts | Debit | Credit |
| Case 1 | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Case 2 | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Case 3 | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Solution

| GENERAL JOURNAL | | | |
|-----------------|--|---------|---------|
| Date | Accounts | Debit | Credit |
| Case 1 | Accumulated Depreciation | 103,500 | |
| | Loss | 241,500 | |
| | Tractor | | 345,000 |
| | <i>To record loss of tractor (6 years X \$17,250 = \$103,500)</i> | | |
| Case 2 | Accumulated Depreciation | 172,500 | |
| | Cash | 245,000 | |
| | Gain | | 72,500 |
| | Tractor | | 345,000 |
| | <i>To record sale of tractor (10 years X \$17,250 = \$172,500)</i> | | |
| Case 3 | Accumulated Depreciation | 293,250 | |
| | Cash | 44,000 | |
| | Loss | 7,750 | |
| | Tractor | | 345,000 |
| | <i>To record sale of tractor (17 years X \$17,250 = \$293,250)</i> | | |

Problem 3

Deep Water Sport Fishing Corporation owns many sport fishing boats. The company has usually contracted with a trucking company to haul the boats to the boat dealership for repairs. With the aging of the boats, the company is incurring substantial hauling costs because of the increasing frequency of repairs. The company is considering trading a boat for a trailer, thereby enabling it to haul boats without having to hire a trucking company. This exchange transaction would significantly improve the company’s cash flow and does have “commercial substance.

The trailer that will be acquired in the exchange has a fair value of \$15,000. Deep Water owns two boats that are currently valued at \$85,000. One of these two boats will be exchanged (and no boot will be involved). Art Fish, the owner of the Deep Water, is trying to decide which boat to give up, and is interested in learning about the financial statement impact of the exchange. Prepare alternative journal entries, assuming an exchange of Boat A versus Boat B. Facts about each boat follow:

Boat A Cost, \$105,000; accumulated depreciation \$75,000

Boat B Cost, \$60,000; accumulated depreciation \$35,000

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|----------|-------|--------|
| Date | Accounts | Debit | Credit |
| Boat A | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Boat B | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Solution

| GENERAL JOURNAL | | | |
|-----------------|--|--------|---------|
| Date | Accounts | Debit | Credit |
| Boat A | Accumulated Depreciation | 75,000 | |
| | Trailer | 15,000 | |
| | Gain | | 15,000 |
| | Boat | | 105,000 |
| | <i>To record gain on exchange (net book value given \$20,000 (\$105,000 - \$75,000) versus fair value, \$15,000)</i> | | |
| Boat B | Accumulated Depreciation | 35,000 | |
| | Trailer | 15,000 | |
| | Loss | 10,000 | |
| | Boat | | 60,000 |
| | <i>To record loss on exchange (net book value given \$50,000 (\$75,000 - \$25,000) versus fair value, \$35,000)</i> | | |

Problem 4

Liquid Gold Oil acquired an existing oil well and all related equipment used in the production of oil. Liquid Gold paid \$5,000,000, of which 30% was attributable to pumps, pipelines, and tanks. The oil well is expected to produce oil as follows:

| | |
|--------|---------------------|
| Year 1 | 200 barrels per day |
| Year 2 | 160 barrels per day |
| Year 3 | 120 barrels per day |
| Year 4 | 100 barrels per day |
| Year 5 | 50 barrels per day |

At the end of the 5th year, Liquid Gold anticipates selling the oil well and equipment for \$2,000,000. Of this amount, \$500,000 is expected to be attributable to the equipment.

Assuming the above estimates serve as the basis for depletion, calculate depletion cost for the 3rd year. Prepare an appropriate journal entry for depletion. In preparing the entry, assume that all oil is sold at the time of its production (i.e., none of the oil remains in inventory).

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|--|-------|--------|
| Date | Accounts | Debit | Credit |
| Year 3 | | | |
| | | | |
| | <i>To record depletion of oil well</i> | | |

Solution

The production rate during the 3rd year is 20% of the expected total production (based on a run rate of “120/(200 + 160 + 120 + 100 + 20)”). Therefore, depletion would be 20% of the depletable base. The depletion is calculated as follows:

| | | | |
|--|---|----|-----------|
| Total cost | | \$ | 5,000,000 |
| Portion represented by natural resource | X | | 70% |
| | | | 3,500,000 |
| Total natural resource cost | | \$ | 3,500,000 |
| Less: Residual value (\$2,000,000 - \$500,000) | | | 1,500,000 |
| | | | 2,000,000 |
| Depletable base | | \$ | 2,000,000 |
| Portion attributable to Year 3 | X | | 20% |
| | | | 400,000 |
| Year 3 depletion | | \$ | 400,000 |

Note that the equipment cost would be depreciated separately.

| GENERAL JOURNAL | | | |
|-----------------|--|---------|---------|
| Date | Accounts | Debit | Credit |
| Year 3 | Depletion Expense (or COGS) | 400,000 | |
| | Oil Well | | 400,000 |
| | <i>To record depletion of oil well</i> | | |

Problem 5

The general journal of Pierce Hall Industries included the following entries relating to various expenditures during 20X8. Review this information and prepare corresponding entries to record any necessary straight-line amortization or other impairment for the year ending December 31.

| GENERAL JOURNAL | | | |
|-----------------|---|---------|---------|
| Date | Accounts | Debit | Credit |
| 01-Feb | Patent | 100,000 | |
| | Cash | | 100,000 |
| | <i>Acquired a patent from an inventor. The patent has a 15-year remaining legal life, but it is expected that Pierce will utilize the patent for only 10 years.</i> | | |
| 15-Apr | Research Expense | 24,000 | |
| | Cash | | 24,000 |
| | <i>Incurred costs in research and development activity. It is possible these costs will result in new product with a 36-month life.</i> | | |
| 01-Jun | Inventory | 50,000 | |
| | Building | 150,000 | |
| | Goodwill | 75,000 | |
| | Cash | | 275,000 |
| | <i>To record purchase of business, expected to be operated successfully for an indefinite number of future years.</i> | | |
| 15-Dec | Copyright | 15,000 | |
| | Cash | | 15,000 |
| | <i>Purchased copyright to a video production, but concluded that it was worthless by year's end.</i> | | |

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|----------|-------|--------|
| Date | Accounts | Debit | Credit |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Solution

Research and development costs are expensed as incurred, and no further amortization is necessary. The goodwill is not amortized.

| GENERAL JOURNAL | | | |
|-----------------|---|--------|--------|
| Date | Accounts | Debit | Credit |
| 31-Dec | Amortization Expense | 10,000 | |
| | Patent | | 10,000 |
| | <i>To record amortization of patent cost over 10-year life (\$100,000/10)</i> | | |
| 31-dec | Loss on Impairment | 15,000 | |
| | Copyright | | 15,000 |
| | <i>To record copyright becoming worthless</i> | | |

Problem 6

Johansen Corporation's accounting staff was unsure of how to account for certain expenditures relating to its property, plant, and equipment. As a result, the company has delayed recording entries related to the following transactions. In addition, until these items are resolved, the determination of depreciation expense for the year has been delayed.

- Item A The company's delivery truck, originally costing \$65,000 and having a 5-year life with no salvage value, was substantially overhauled at a cost of \$15,000. This expenditure occurred at the beginning of the year, when the truck was three years old. This action restored the truck to "like-new" condition, and extended the useful life by an additional three years.
- Item B At mid-year, the company added a new \$80,000 dust handling unit to the heating and ventilation system in its inventory warehouse. This new feature is supposed to reduce dust from the air and provide for a cleaner environment in which to store inventory. The new dust unit has a 15-year physical life, but it is anticipated that it will be scrapped 9 and one-half years after its installation, when the primary heating system is replaced. As of the beginning of the year, the heating and ventilation system had a cost of \$350,000 and accumulated depreciation of \$150,000.
- Item C The company entered into a 5-year contract with Master Maintenance Services Company. The agreement provides for Johansen to make monthly payments of \$2,500 for all routine cleaning and maintenance activities on shop equipment. Two months of services had been provided and paid as of the end of the year. As of the beginning of the year, shop equipment had a remaining net book value of \$200,000, and a remaining life of four years.
- Item D Johansen entered into a joint agreement with several other companies to mutually acquire an easement on an adjoining tract of land. The easement was needed to provide right-of-way for a future rail transport line extension that will benefit all of the participating companies. Johansen paid \$30,000 for its share of the access easement. The easement is perpetual in nature.

Prepare journal entries for each of the four described expenditures. Then, calculate depreciation, as appropriate, for the expenditure and/or related assets. Assume straight-line depreciation in each case.

Item A

Item B

Item C

Item D

Solution

| GENERAL JOURNAL | | | |
|-----------------|---|--------|--------|
| Date | Accounts | Debit | Credit |
| 1-Jan | Accumulated Depreciation | 15,000 | |
| | Cash | | 15,000 |
| | <i>To record significant overhaul of existing truck</i> | | |
| 1-Jul | Ventilation Equipment | 80,000 | |
| | Cash | | 80,000 |
| | <i>To record addition of dust handling unit</i> | | |
| Nov/Dec | Maintenance Expense | 2,500 | |
| | Cash | | 2,500 |
| | <i>To record routine maintenance costs</i> | | |
| 20XX | Land Easement | 30,000 | |
| | Cash | | 30,000 |
| | <i>To record acquisition of land easement</i> | | |

Item A

| | | |
|---|----|---------------|
| Original cost (annual depreciation @ \$13,000 per year) | \$ | 65,000 |
| Accumulated depreciation at beginning of year (2 years) | | (26,000) |
| Beginning net book value | \$ | 39,000 |
| Expenditure to reduce accumulated depreciation | | 15,000 |
| Revised net book value | \$ | 54,000 |
| Revised remaining life (5 years - 3 years + 3 years) | | ÷ 5 years |
| Depreciation expense | \$ | <u>10,800</u> |

Item B

| | | |
|--|----|---------------|
| Original cost | \$ | 350,000 |
| Accumulated depreciation at beginning of year | | (150,000) |
| Beginning of year net book value | \$ | 200,000 |
| Remaining life (9.5 years + first half of year) | | ÷ 10 years |
| Depreciation expense on original heating system | \$ | 20,000 |
| Cost of dust handler | \$ | 95,000 |
| Life (6.5 years) | | ÷ 9.5 years |
| Annual depreciation expense on dust handler | \$ | 10,000 |
| Portion of year in use | | x 1/2 year |
| Depreciation expense on dust handler | \$ | 5,000 |
| Total depreciation expense on heating/dust handler (\$20,000 + \$5,000) | \$ | <u>25,000</u> |

Item C

| | | |
|--------------------------|----|---------------|
| Beginning net book value | \$ | 200,000 |
| Remaining life (3 years) | | ÷ 4 years |
| Depreciation expense | \$ | <u>50,000</u> |

The maintenance expense does not impact the book value or depreciation.

Item D

The land easement cost is not depreciated, given its perpetual existence.

Problem 7

Brosnan Corporation recently hired a new manager for its struggling construction division. The manager was given responsibility for streamlining operations and restoring profitability. Selling selected assets is one option under consideration.

Begin by reviewing the following asset listing, and prepare hypothetical entries “as if” each asset were sold for cash at its estimated fair value. Then, determine which asset should be sold if the objective becomes to (a) have the largest immediate accounting gain, (b) have the largest immediate accounting loss, (c) result in the highest avoidance of future depreciation expense in periods subsequent to the period of asset sale, (d) produce the most immediate cash inflow, (e) have the largest total asset position, or (f) have no change in total assets.

| | Cost | Accumulated Depreciation | Fair Value |
|---------|---------------|-----------------------------|---------------|
| Asset C | \$ 20,700,000 | \$ 2,250,000 | \$ 18,000,000 |
| Asset A | 11,250,000 | 4,500,000 | 13,500,000 |
| Asset D | 14,625,000 | 5,625,000 | 5,625,000 |
| Asset B | 3,600,000 | 450,000 | 3,150,000 |

Worksheet

| GENERAL JOURNAL | | | |
|-----------------|----------------------------------|-------|--------|
| Date | Accounts | Debit | Credit |
| | | | |
| | | | |
| | | | |
| | | | |
| | <i>To record sale of Asset A</i> | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | <i>To record sale of Asset B</i> | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | <i>To record sale of Asset C</i> | | |
| | | | |
| | | | |
| | | | |
| | <i>To record sale of Asset D</i> | | |

- a) Largest gain
- b) Largest loss
- c) Highest depreciation to avoid
- d) Largest immediate cash flow
- e) Largest addition to total assets
- f) No change in assets

Solution

| GENERAL JOURNAL | | | |
|-----------------|----------------------------------|------------|------------|
| Date | Accounts | Debit | Credit |
| | Cash | 18,000,000 | |
| | Accumulated Depreciation | 2,250,000 | |
| | Loss on Sale | 450,000 | |
| | Asset A | | 20,700,000 |
| | <i>To record sale of Asset A</i> | | |
| | Cash | 13,500,000 | |
| | Accumulated Depreciation | 4,500,000 | |
| | Gain on Sale | | 6,750,000 |
| | Asset B | | 11,250,000 |
| | <i>To record sale of Asset B</i> | | |
| | Cash | 5,625,000 | |
| | Accumulated Depreciation | 5,625,000 | |
| | Loss on Sale | 3,375,000 | |
| | Asset C | | 14,625,000 |
| | <i>To record sale of Asset C</i> | | |
| | Cash | 3,150,000 | |
| | Accumulated Depreciation | 450,000 | |
| | Asset D | | 3,600,000 |
| | <i>To record sale of Asset D</i> | | |

- | | |
|---|---------|
| a) Largest gain (\$6,750,000) | Asset B |
| b) Largest loss (\$3,375,000) | Asset C |
| c) Highest depreciation to avoid (\$18,450,000) | Asset A |
| d) Largest immediate cash flow (\$18,000,000) | Asset A |
| e) Largest addition to total assets (\$6,750,000) | Asset B |
| f) No change in assets | Asset D |

Problem 8

Bad Brad's Bar-B-Q Restaurant recently remodeled its store. The remodel included obtaining all new kitchen equipment. Much of the older equipment was traded-in as partial consideration toward the purchase of the newer items. Examine each of the following exchanges, and prepare appropriate entries to reflect the trade. Each exchange was deemed to have commercial substance, except for the trade relating to the smoker oven.

| | <u>Cost</u> | <u>Accumulated Depreciation</u> | <u>Cash Given or (Received)</u> | <u>Fair Value of New Item</u> |
|-----------------|-------------|-------------------------------------|-------------------------------------|-----------------------------------|
| Sink | \$ 17,000 | \$ 11,050 | \$ - | \$ 8,500 |
| Cutting table | 34,000 | 13,600 | - | 17,000 |
| Refrigerator | 20,400 | 17,000 | 25,500 | 34,000 |
| Freezer | 30,600 | 6,800 | 18,700 | 28,900 |
| Computer | 12,750 | 10,200 | (1,700) | 8,500 |
| Fire suppressor | 15,300 | 3,400 | (3,400) | 5,100 |
| Smoker oven | 21,250 | 4,250 | - | 22,100 |

Solution

| GENERAL JOURNAL | | | |
|-----------------|---|--------|--------|
| Date | Accounts | Debit | Credit |
| | Equipment (<i>new</i>) | 8,500 | |
| | Accumulated Depreciation | 11,050 | |
| | Gain | | 2,550 |
| | Equipment (<i>old</i>) | | 17,000 |
| | <i>To record exchange of sink</i> | | |
| | | | |
| | Equipment (<i>new</i>) | 17,000 | |
| | Accumulated Depreciation | 13,600 | |
| | Loss | 3,400 | |
| | Equipment (<i>old</i>) | | 34,000 |
| | <i>To record exchange of table</i> | | |
| | | | |
| | Equipment (<i>new</i>) | 34,000 | |
| | Accumulated Depreciation | 17,000 | |
| | Gain | | 5,100 |
| | Cash | | 25,500 |
| | Equipment (<i>old</i>) | | 20,400 |
| | <i>To record exchange of refrigerator</i> | | |
| | | | |
| | Equipment (<i>new</i>) | 28,900 | |
| | Accumulated Depreciation | 6,800 | |
| | Loss | 13,600 | |
| | Cash | | 18,700 |
| | Equipment (<i>old</i>) | | 30,600 |
| | <i>To record exchange of freezer</i> | | |

| GENERAL JOURNAL | | | |
|-----------------|--|--------|--------|
| Date | Accounts | Debit | Credit |
| | Equipment (<i>new</i>) | 8,500 | |
| | Accumulated Depreciation | 10,200 | |
| | Cash | 1,700 | |
| | Gain | | 7,650 |
| | Equipment (<i>old</i>) | | 12,750 |
| | <i>To record exchange of computer</i> | | |
| | | | |
| | Equipment (<i>new</i>) | 5,100 | |
| | Accumulated Depreciation | 3,400 | |
| | Cash | 3,400 | |
| | Loss | 3,400 | |
| | Equipment (<i>old</i>) | | 15,300 |
| | <i>To record exchange of fire system</i> | | |
| | | | |
| | Equipment (<i>new</i>) | 17,000 | |
| | Accumulated Depreciation | 4,250 | |
| | Equipment (<i>old</i>) | | 21,250 |
| | <i>To record exchange of oven</i> | | |