Notes

Chapter 11

Accounting
351

Spring 2011

California State University, Northridge

Cost Allocation of Operational Assets

Depreciation (tangibles)	Depletion (natural resources)	Amortization (intangibles)
Product Cost or Period Cost	Product Cost	Product Cost or Period Cost
Time-Based Methods • Sum-of-the-years'-digits • Declining Balance • Straight Line	Resources to be extracted.	Time-Based Methods
Activity-Based Methods • Units of Production • Input/Output (hours, miles, pounds, tons, etc.)	Equipment (Alternative Use?)	Legal/Contractual Life
Systematic & Rational Method • Accelerated to S/L		Software Development The greater of (1) ratio of current revenues to current and anticipated revenues or (2) straight line.

2

Partial Periods

Facts: Purchased equipment on April 1 for $10,000. Useful life is 5 years and salvage value is $1,000.

Double-Declining Balance

Year 1 $10,000 x 40% = $4,000 x ¾ = $3,000

Year 2 $10,000 x 40% = $4,000 x ¼ = $1,000
$ 6,000 x 40% = $2,400 x ¾ = $1,800
} $2,800

Sum-of-the-Years'-Digits $\frac{n(n+1)}{2}$

Year 1 ($10,000 - $1,000) x 5/15 = $3,000 x ¾ = $2,250

Year 2 ($10,000 - $1,000) x 5/15 = $3,000 x ¼ = $ 750
($10,000 - $1,000) x 4/15 = $2,400 x ¾ = $1,800
} $2,550

Half-Year Convention: Record one-half year of depreciation in the year of purchase and one-half year in the year of disposal.

Modified Half-Year Convention: Record full year of depreciation if purchased in first half of year or sold in second half of year.

Group and Composite Depreciation

Group – similar assets with approximately same useful life.

Composite – related but dissimilar assets and different useful life.

Assets	Cost	Residual Value	Depreciable Cost	Life	Depreciation
X	$5,000	$800	$4,200	6	$700
Y	2,000	200	1,800	3	600
Z	8,000	800	7,200	9	800
	$15,000		$13,200		$2,100

$\frac{\$2,100}{\$15,000} = 14\%$

Accumulated Depreciation	1,500	
Cash	3,500	
Asset X		5,000

Disposal of Operational Assets

Equipment	$20,000
Accumulated Depreciation	16,000
Book Value	$ 4,000

Sold (Cash received)

> Book Value → Gain

< Book Value → Loss

5

	Gain	Loss
Cash Received	$ 5,000	$ 1,000
Book Value	4,000	4,000
Gain	$ 1,000	
Loss		$ (3,000)

Gain

Cash	5,000	
Accumulated Depreciation	16,000	
Equipment		20,000
Gain on Sale		1,000

Loss

Cash	1,000	
Accumulated Depreciation	16,000	
Loss on Sale	3,000	
Equipment		20,000

6

Nonmonetary Exchanges of Operating Assets

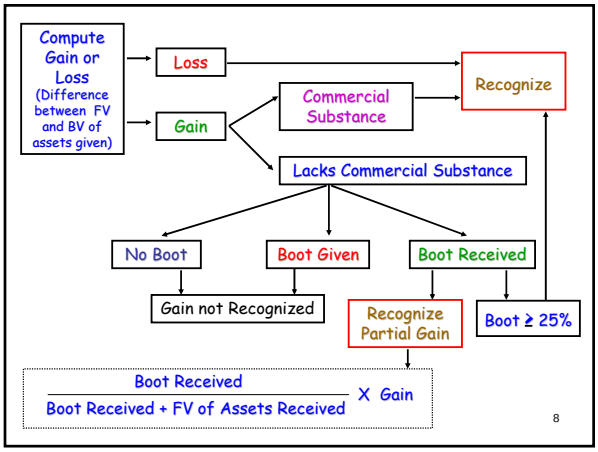
FAS 153; APB Opinion 29; ASC 845-10-30

General Rule (Commercial Substance) – When one asset is exchanged for another, record the asset received at the fair value (FV) of the asset given up.

Exception: If one of the following conditions exists, record the asset received at the same book value (BV) of the asset given up.

- ❑ Neither the fair value of the asset received or given up is reasonably determinable.
- ❑ The transaction is an exchange of inventory to facilitate sales to a third party. For example, when a company exchanges its inventory with another company in order to sell the newly acquired inventory to a third party.
- ❑ The transaction lacks "commercial substance." A nonmonetary exchange does *not* have commercial substance if it is not expected to have a significant impact on the risk, timing, or amount of the company's future cash flows.

7



8

New Cost (Basis)

Commercial Substance	Boot ≥ 25%	Lacks Commercial Substance
Fair Value (FV) of Assets Given		Book Value (BV) of Assets Given
+ Boot Paid - Boot Received		+ Boot Paid - Boot Received - Loss + Gain

Example of Loss

EqO: BV = $100 FV = $90 Loss = $10 on exchange
EqN: BV = $100 FV = $90 If sold for $90, loss = $10 on sale
Subtract Loss: $100 BV - $10 loss = $90 BV $90 FV - $90 BV = $0

Example of Gain

EqO: BV = $100 FV = $110 Boot received = $30 Gain = $10 on exchange
EqN: BV = $70 ($100 - $30) FV = $80 If sold for $80, gain = $10 on sale
Add Gain: $100 BV + $10 gain - $30 boot = $80 BV $80 FV - $80 BV = $0

9

Old equipment (EqO) is exchanged for new equipment (EqN). EqO original cost = $30,000 and accumulated depreciation = $20,000.

No Boot -- General Rule — FV EqO = $14,000

FV of EqO → Equipment (EqN) 14,000
Accum Depreciation 20,000
Equipment (EqO) 30,000
$14,000 (FV) - $10,000 (BV) → Gain on Disposal 4,000

No Boot -- Lacks Com/Sub — FV EqO = $14,000

BV of EqO → Equipment (EqN) 10,000
Accum Depreciation 20,000
Equipment (EqO) 30,000

No Boot -- All Losses — FV EqO = $9,000

FV of EqO or $10,000 (BV of EqO) - $1,000 (Loss) →
Equipment (EqN) 9,000
Accum Depreciation 20,000
Loss on Disposal 1,000 ← $10,000 (BV) - $9,000 (FV)
Equipment (EqO) 30,000

10

Boot Paid -- General Rule — FV EqO = $14,000 Paid = $2,000

$14,000 (FV of EqO) + $2,000 (Boot Paid) →
Equipment (EqN) 16,000
Accum Depreciation 20,000
Equipment (EqO) 30,000
Cash 2,000
$14,000 (FV) - $10,000 (BV) → Gain on Disposal 4,000

Boot Paid -- Lacks Com/Sub — FV EqO = $14,000 Paid = $2,000

$10,000 (BV of EqO) + $2,000 (Boot Paid) →
Equipment (EqN) 12,000
Accum Depreciation 20,000
Equipment (EqO) 30,000
Cash 2,000

Boot Paid -- All Losses — FV EqO = $9,000 Paid = $2,000

$9,000 (FV of EqO) + $2,000 (Boot Paid) or $10,000 (BV of EqO) + $2,000 (Boot Paid) - $1,000 (Loss) →
Equipment (EqN) 11,000
Accum Depreciation 20,000
Loss on Disposal 1,000 ← $10,000 (BV) - $9,000 (FV)
Equipment (EqO) 30,000
Cash 2,000

11

Boot Received -- General Rule — FV EqO = $14,000 Received = $2,000

$14,000 (FV of EqO) - $2,000 (Boot Received) →
Equipment (EqN) 12,000
Accum Depreciation 20,000
Cash 2,000
Equipment (EqO) 30,000
$14,000 (FV) - $10,000 (BV) → Gain on Disposal 4,000

Boot Received -- All Losses — FV EqO = $9,000 Rec = $2,000

$9,000 (FV of EqO) - $2,000 (Boot Received) or $10,000 (BV of EqO) - $2,000 (Boot Received) - $1,000 (Loss) →
Equipment (EqN) 7,000
Accum Depreciation 20,000
Loss on Disposal 1,000 ← $10,000 (BV) - $9,000 (FV)
Cash 2,000
Equipment (EqO) 30,000

Boot Received - Lacks Com/Sub — FV EqO = $14,000 Received = $2,000

$10,000 (BV of EqO) - $2,000 (Boot Received) + $571 (Gain) →
Equipment (EqN) 8,571
Accum Depreciation 20,000
Cash 2,000
Equipment (EqO) 30,000
Gain on Disposal 571

$$\frac{\$2{,}000 \text{ (Boot Received)}}{\$2{,}000 \text{ (Boot Received)} + \$12{,}000 \text{ (FV of Assets Received)}} \times \$4{,}000 \text{ (Gain)} = \$571$$

12

FV EqO = $14,000 Received = **$3,500**

$10,000 (BV of EqO) -
$3,500 (Boot Received)
+ $4,000 (Gain)

Equipment (EqN)	10,500	
Accum Depreciation	20,000	
Cash		**3,500**
Equipment (EqO)		30,000
Gain on Disposal		**4,000**

$3,500 (Boot Received) / $3,500 (Boot Received) + $**10,500** (FV of Assets Received) = 25% ≥ 25%

Boot Received – Lacks Com/Sub

FV EqO = $14,000 Received = $2,000

$10,000 (BV of EqO) -
$2,000 (Boot Received)
+ $571 (Gain)

Equipment (EqN)	8,571	
Accum Depreciation	20,000	
Cash		2,000
Equipment (EqO)		30,000
Gain on Disposal		571

$2,000 (Boot Received) / $2,000 (Boot Received) + $12,000 (FV of Assets Received) × $4,000 (Gain) = $571

13

Subsequent Expenditures

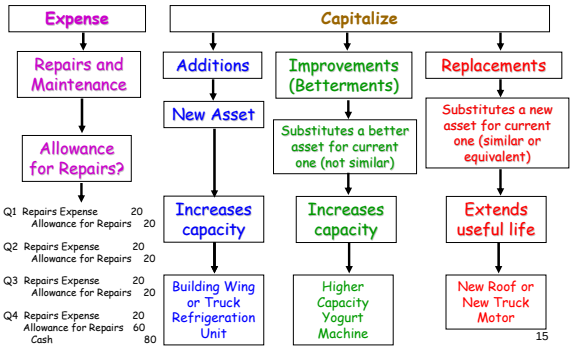
Capital Expenditure – Cost that increases the future economic benefits of the asset beyond what was originally expected.

- Extends useful life
- Improves productivity (capacity)
- Lowers production costs
- Increases product quality

Operating Expenditure – Cost that maintains normal operating condition or restores it to its intended condition.

14

Subsequent Expenditures



15

Subsequent Expenditures

First, if old book value is known, record new asset and remove old.

New Asset	500	
A/D-Old	xxx	
Gain or Loss	xxx	xxx
Old Asset		xxx
Cash		500

If old book value is not known . . .

(1) If useful life is extended, reduce accumulated depreciation.

A/D (cost of new)	500	
Cash		500

(2) If capacity is increased, add expenditure to original cost.

Old Asset	500	
Cash		500

16

Impairment - FAS 144; ASC 360-10-35

(To be held and used)

Tangible & Intangible Assets (finite life)	Intangible Assets (indefinite life)	Goodwill - FAS 142
Signs of Impairment	Annual (or signs of impairment)	Annual (or signs of impairment)
1. Recoverability Test FCF is less than BV (FCF = estimated undiscounted future cash flows)		1. Indication of Impairment Loss Loss indicated: Excess of net asset BV over entity FV
2. FV Test Impairment loss: Excess of BV over FV	1. FV Test Impairment loss: Excess of BV over FV	2. FV Test Impairment loss: Excess of BV of goodwill over implied FV of goodwill.

Tangible & Intangible Assets (finite life)

Example: Equipment with a cost of $500,000 and useful life of 10 years (assume no salvage value) is tested for impairment at the end of the 4th year due to a significant decline in the demand for the product it manufactures. Net cash inflow from the equipment is estimated to be $40,000 per year.

Step 1: Signs of impairment

- Significant decrease in market value of asset.
- Significant change in use of asset.
- Significant change in business climate affecting asset.
- Significant excess in costs expected to purchase or construct asset.
- Projected losses associated with asset.

Step 2: Recoverability Test

- ❑ FCF = the estimated future cash flows (undiscounted) = $240,000 ($40,000 x 6 years).
- ❑ BV = $500,000 - ($500,000/10 years x 4 years) = $300,000
- ❑ FCF ($240,000) < BV($300,000)

18

Step 3: Measurement of Impairment Loss

FV = Present value of future cash flows = $203,028
($40,000 x 5.07569) n=6, i=5%

Impairment loss = BV($300,000) - FV($203,028) = $96,972

Accumulated Depreciation	200,000	
Impairment Loss	96,972	
Equipment ($500,000 - $203,028)		296,972

Existence (undiscounted) vs. Amount (discounted)

FV can also be computed by the present value of future cash flow probabilities using a risk-free rate of interest.

Future Cash Inflows		Probability		n=6, i=3%
$35,000	x	80%	=	$28,000
$50,000	x	20%	=	10,000
				$38,000 x 5.41719 = $205,853

Discounted future cash flows → FV = $125

Undiscounted future cash flows → Recoverable Cost = $250

$0

Case 1	Case 2	Case 3
BV = $50	BV = $150	BV = $275
No loss	No loss	Loss = $275 - $125

20

Intangible Assets (indefinite life)

If the BV of the net assets is greater than the FV, the difference is the impairment loss.

Example: A broadcast license cost $80,000. The FV of the license has been determined to be $72,000. The impairment loss is $8,000.

Using probability and risk-free interest rate = 5%

Future Cash Inflows	PV of Indefinite Annual Cash Flows	Probability		
$3,000/.05	$ 60,000	70%	=	$42,000
$5,000/.05	$100,000	30%	=	30,000
				$72,000

21

Impairment of Goodwill – FAS 142; ASC 350-20-35

Alpha purchased Beta, which included $600,000 of goodwill.

Step 1: Indication of Impairment Loss: Excess of BV of net assets (including goodwill) over FV of the reporting unit.

At the end of year 2, the fair value of Beta is $1.5 million when BV of net assets is $1.8 million (FV = $2 million).

Step 2: Measurement of Impairment Loss: Excess of BV of goodwill over the implied FV of goodwill.

FV of Beta	$1,500,000
FV of net assets (excluding goodwill of $600,000)	1,400,000
Implied FV of goodwill	$ 100,000

Impairment loss = BV of goodwill ($600,000) – implied FV of goodwill ($100,000) = $500,000

Goodwill Impairment Loss	500,000	
Goodwill		500,000

Additional IFRS Differences

- ✓ **Depreciation** – IAS 16
  - Each component if cost is a significant part of total.
  - Review residual value annually.
- ✓ **PP&E** – IAS 16
  - May revalue to fair value within a class.
  - FV > BV = revaluation surplus in OCI
  - BV > FV = reduce revaluation surplus, then expense.
- ✓ **Intangible Assets** – IAS 38
  - May revalue to fair value within a class **if active market.** (Similar to PP&E)

23

- ✓ **Impairment of PP&E and Finite-Life Intangibles** – IAS 36
  - No recoverability test, only one test.
  - Loss = "Recoverable" amount minus BV
    - "Recoverable" amount = PV of estimated future cash flows or FV (less costs to sell), whichever is higher.
- ✓ **Impairment of Indefinite-Life Intangibles** – IAS 36
  - Loss = "Recoverable" amount minus BV. (See definition of "recoverable" amount.)
  - Reverse loss if circumstances change.
- ✓ **Impairment of Goodwill** – IAS 36
  - One step, not two.
  - Loss = "Recoverable" amount minus BV. (See definition of "recoverable" amount.)

24