

Chapter 11 :-

Depreciation, Impairments, and depletions -

* Depreciation :-

توزيع تكلفة أصل ثابت

بناءً على كونه الوكيلين الفيزيائية

Allocating costs of long-lived asset :-

- Fixed asset = Depreciation expense

- Intangibles = Amortization expense

- Natural resources = Depletion expense

depreciable base :-

Cost - Salvage value

Depreciable Base for the asset :-

Original cost 10000

Less Salvage value 1000

Depreciation Base 9000

Estimation of Service lives

1) Service life often differs from physical life

(العمر الاقتصادي يختلف عن العمر الفيزيائي)

2) Companies retire assets for two reasons :-

(العمرات بغير استهلاكها من الاستهلاك)

A *Physical Factors (casualty or expiration of Physical life)

انتهاء صلاحية ال asset وعمروا ملاوي انتهى

B* Economic Factors (inadequacy, supersession, obsolescence)

عوامل اقتصادية (عدم كفاية، التقوية التكنولوجية، التآكل)

*Methods of depreciation:-

1) Activity method (unit of activity)

2) Straight-line method

3) Sum of the years digits

4) Declining balance method. } → Degrading charge method

5) Group and composite methods

6) Hybrid or combination methods } → Special method

⇒ 3, 4 - Degrading charge method

لأنهم يطبقون depreciation على السنوات الأولى

ويعتبرها بليست قبل (أكثر شئيت يطبقوا)

matching principle) ⇒ 3, 4

⇒ 5, 6 - Special method من أجل تطبيق

① Activity methods -

Cost of crane 5000000

Estimated useful life 5 years

Estimated Salvage Value 50000

Productive life in hours 30000 hours

- If Stanley uses the crane for 4000 hours the first year, the depreciation charge is ?

Depreciation Charge = $\frac{\text{cost} - \text{salvage value}}{\text{total estimated hours}} \times \text{Hours this Year}$

$$\begin{aligned} \text{units of activity} &= \frac{450000}{30000} \\ &= 15 \end{aligned}$$

$$\begin{aligned} &= \frac{(5000000 - 50000) \times 4000}{30000} \\ &= 60000 \text{ (annual)} \end{aligned}$$

② Straight line method

$$\begin{aligned} \text{Depreciation Charge} &= \frac{\text{Cost} - \text{Salvage value}}{\text{Estimated service life (in years)}} \\ &= \frac{5000000 - 50000}{5} \\ &= 900000 \end{aligned}$$

③ decreasing Charge method

⇒ double declining balance method.

Rate Useful life $\times 2$

$$\text{Rate} = \frac{900000}{450000} = 20\%$$

① Activity methods -

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③ decreasing Charge method

→ double declining balance method.

Rate Useful life $\times 2$

$$\text{Rate} = \frac{90000}{450000} = 20\%$$

Declining Balance method = BV at the Beginning Period
 \times DB Rate

④ Sum of Years digits (SYD)

$$SYD = \text{Dep. Cost} = \frac{\text{Remaining UL at Beg. of the period}}{\text{Sum of the year}}$$

Year	Dep. Base	Dep. expense	BV
Y ₁	450000	5/15	150000
Y ₂	450000	4/15	120000
Y ₃	450000	3/15	90000
Y ₄	450000	2/15	60000
Y ₅	450000	1/15	30000
		15/15	

* Sum of the Years = $\frac{n(n+1)}{2}$

Example Slide 17 :-

A) Straight line method

$$SLM = \text{Cost} - SV$$

$$= 150000 - 24000$$

$$= 126000$$

$$\Rightarrow \frac{SLM}{UL} = \frac{126000}{5} = 25200$$

$$Y_1 = 25200 \times 5/12 = \boxed{10500}$$

$$Y_2 = 25200 \text{ (أما 5)}$$

$$Y_3 = 25200$$

$$Y_4 = 25200$$

$$Y_5 = 25200$$

$$Y_6 = 25200 \times (7/12) = \boxed{14700}$$

$$= 25200$$

* إذا كانت السنة الأولى لا يوجد

أما ما كان في السنة الأولى.

B) Activity method \Rightarrow

$$\frac{\text{Dep Base}}{\text{Est. unit}} = \frac{126000}{21000} = 6\$$$

$$\text{Dep cost per hour} = 6 \times 800 = 4800$$

C) Double deding method

$$= BV \times \text{Rate (2)}$$

40%

Y ₁	150000	x 40%	60000	x 5/12 = 25000
Y ₂	125000	x 40%	50000	
Y ₃	75000	x 40%	30000	
Y ₄	45000	x 40%	18000	
Y ₅	27000	x 40%	10800	plug 3000

D) SYD = Depreciable cost x Remaining V.L.

Sum of Years

$$Y_1 = 126000 \times \frac{5}{15} = 42000 \times \frac{5}{12} = 17500$$

$$Y_2 = 126000 \times \frac{4.58333}{15} = 38500$$

$$Y_3 = 126000 \times \frac{3.58333}{15} = 30100$$

$$Y_4 = 126000 \times \frac{2.58333}{15} = 21700$$

$$Y_5 = 126000 \times \frac{1.58333}{15} = 13300$$

$$Y_6 = 126000 \times \frac{0.58333}{15} = 4900$$

* Special methods -

Example Slide 24g -

BS = Cars, Trucks, Campers 224000

Loss \Rightarrow Acc. Dep.

Dr Depreciation Expense 56000

Cr Accumulated depreciation 56000

SLM = composite depreciation Rate

$$= \frac{\text{Total dep. expense}}{\text{Total original cost}} = \frac{56000}{224000} = 25\%$$

Composite life = $\frac{\text{Total depreciation cost}}{\text{Total depreciation exp}}$

$= \frac{190000}{56000} \rightarrow 3.39$

Example Slide 25g -

Item

Campers \Rightarrow Cost cash

5000 \downarrow 2600

Acc. Depreciation

Acc. Depreciation 2400

Cash 2600

Cars, Trucks, Campers 5000

← الفرق بين Cash و Cost
 ما يكون لا gain ولا loss بسيط
 Acc. Depreciation

Example Slide 20 ⇒

Five Fractional Year Policies

SLM ⇒ Machine = 45000 45000
 U.L = 5 years SLM = Cost - $\frac{0}{5 \text{ U.L}}$
 June 10 = 9000

Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆
5000	9000	9000	9000	9000	4000

• Nearest a fraction of a Year

10 June ⇒ $\frac{20}{30} = 0.6667 \leftarrow \text{Days}$

10 June → Dec 31 (6/12) ← Month
 $9000 \times \frac{6.6667}{12} = 5000$

* Nearest Full month

1-15 June ← asset
 Full

16-30 ← asset
 Zero

Y₁ ⇒ $9000 \times \frac{7}{12}$
 = 5250

Y₆ = $9000 \times \frac{5}{12}$
 = 3750

- Half Year in period of acquisition and disposal

بفترة انوال النصف في اول سنة واول سنة اخرى

$$Y_1 = 4500$$

$$Y_6 = 4500$$

- Full Year in Period

بفترة انوال asset في اول السنة واول سنة اخرى

$$Y_1 = 9000$$

$$Y_6 = \emptyset$$

- None Year in Period

$$Y_1 = \emptyset \quad Y_6 = 9000$$

Cost = actual

SV = Est.

UL = Est.

} depreciation

} اعلى ال dep. المتبقي

Example Slide 328-

$$\text{Cost} = 510000$$

$$\text{SV} = 10000$$

$$\text{UL} = 10 \text{ Years}$$

$$\text{SV} = 5000$$

$$\text{UL} = 15 \text{ Years}$$

• SLM

↑ New Est.

Revision Dep. Exp.

$$= \text{Beg. BV} - \text{New SV}$$

Remaining UL

$$SLM = \frac{510000 - 10000}{10} = 50000$$

$$50000 \times 7 \text{ Years}$$

$$= 350000$$

$$BV = \text{Cost} - \text{Acc. Dep}$$

$$= 510000 - 350000$$

$$= 160000$$

$$- SV (5)$$

$$\hline 155000$$

Impairments -

Going concern assumptions -

⇓

Recoverability concept.

Test (Impairment loss) ← Dr

Cr Acc. Dep.

Carrying value ⇒ Cost - Acc. Dep.

Test #1 Recoverability Test

Sum of expected Net future cash flow

Impairment \leftarrow CV \leq Sum of expected Net future cash flow

Yes impairment \leftarrow CV $>$ Sum of expected Net future cash flow

Test #2 Amount of impairment loss

CV $>$ Fair value or PV of Expected NCF

Dr Impairment loss

Cr Acc. Dep.

Asset held for

1 - Test (2) Fair value

\Rightarrow amount of impairment loss.

CV $>$ fair value or PV of Exp

2 - Depreciation Expense

(New cost basis)

BV at beg. - SR

Remaining U.L

3 Restoration (write up)

~~Impairment~~ \uparrow Impairment

Limit: not above CV before imp.

Impairment + Impairment reversal \leftarrow

Asset held for disposal

1 - Test (2) fair value amount

of impairment loss

CV $>$ net fair value

(PV - cost of disposal)

2 - Depreciation (No Dep.)

3 - Restoration is allowed

(write off)

Dr Acc. Dep.

Cr Restoration of

previously impairment loss.

Example Slide 39:-

Test (1) Recoverability test

Sum of Exp. NCF < CV

$$650000 > 600000$$

No impairment

$$CV = \text{cost} - \text{Acc. Dep.}$$

$$= 800000 - 200000$$

$$= 600000$$

~~No impairment~~

Example Slide 40:-

Sum of Expense NCF

① 580000

CV

600000

Yes impairment

Test (2) Fair value test (impairment of imp. loss)

⇒ Asset held for use

$$CV > FV$$

$$600000 > 525000 \leftarrow \text{New cash basis}$$

$$75000 \leftarrow \text{impairment cost}$$

Dr Impairment loss 75000

Cr Acc. Dep. 75000

Assume: the asset is held for disposal utilization ←

Test (2) FV tests: -

CV > net FV

600000 > 522000

78000 ← loss

* net FV = FV - cost of disposal

= 525000 - 3000

= 522000

cost of disposal is = 3000

↑

* Depletion ← BS ← PPE

- Natural resources wasting assets.

الأصول المستنفذة التي تخضع على الموارد الطبيعية (تستخدم بشكل تام).

• Depletion: process of allocating the cost of natural resources.

← مرحلة من مراحل توزيع وتخصيص تكلفة المصادر الطبيعية.

* Establishing a depletion base

① Acquisition cost (تكاليف شراء الموارد الطبيعية)

② Cash paid for undeveloped land

(I have the right to search and explore)

بعض أقاليمنا عندما نشتريها ونسحقها ونجربها أو نبرهن أننا نملك حقنا

اكتشفنا الأرض وأنها كذلك أيضاً موارد.

Entry الرأبكونة

Dr undeveloped land

Cr cash

وعتدي احوالين ①، ②، ③ ما الاصل الموارد.

⇒ positive results

مفيدة اذا كانت النتيجة ايجابية ومفيدة لنا
↳ Dr mine gold undeveloped land

⇒ ~~negative~~ negative results

Dr exploration expense / loss

Cr undeveloped land ~~loss~~

② Cash paid purchase price for ready ~~all~~, discovered resources

natural resources

Dr mine Silver / oil / etc

Cr cash

③ PS of future payments ← الدفقات المستقبلية لازم نكتب

ch 6/4 ← ordinary annuity جدول التوزيع

Dr lease mine

Cr cash

lease liability

↳ ② exploration cost

□ successful efforts concept ← في كرفيت

□ full cost concept

□ الكبرياء ناجحة

□ غير ناجحة

Assume ⇒ ten holes (عشر حفرية)

the first 7 holes were dry (unsuccessful efforts)

the last 3 holes were successful

each hole cost ⇒ 10,000 \$

Dr exploration expenses 70000 (7 x 10000)
 Dr mine oil 30000
 Cr Cash 100000

② Full cost concept

$$\text{Depletion exp.} = \frac{\text{Depletion Base (cost - SV)}}{\# \text{ of unit Estimated}} * \text{}$$

→ 10 holes

↳ 6 unsuccessful - 60000 (6 x 10000)

↳ 4 successful = 40000 (4 x 10000)

each hole ⇒ 10000

Dr Mine Silver 100000

Cr cash 100000

↳ ③ Development costs - (تكاليف التطوير)

① Tangible Equipment ② Intangible Development.

↳ ① Equipment that can be used moved from one location to other locations.

↳ ② Fixed Equipment (drilling Foundation)

← الأعمدة والمستندات

② Tunnels, shafts, wells

Dr exploration expenses 70000 (7 x 10000)

Dr mine oil 30000

Cr Cash 100000

② full cost concept

$$\text{Depletion exp.} = \frac{\text{Depletion Base (cost - SV)}}{\# \text{ of unit Estimated}} \times$$

→ 10 holes

↳ 6 unsuccessful = 60000 (6 x 10000)

↳ 4 successful = 40000 (4 x 10000)

each hole ⇒ 10000

Dr Mine Silver 100000

Cr cash 100000

↳ ③ Development costs - (التطوير والتجهيز)

① Tangible Equipment ② Intangible Development.

↳ ① Equipment that can be used moved from one location to other locations.

↳ ② Fixed Equipment (drilling foundation)

← الأعمدة والمستاد

② Tunnels, shafts, wells

↳ ④ Restoration cost
Asset retirement obligation (ARO)
at the end of the mine's UL
(Future Payment) Present value

$$\text{Depletion Base (expense) Per units} = \frac{\text{Cost} - \text{SV}}{\text{Estimated units extracted during UL for the N/R}}$$

$$\text{Depletion cost Per unit} \times \text{number of units extracted \& sold} = \text{Depletion Expense}$$

Example Slide 498-

lease cost 50000

exploration cost 100000

opening the mine 850000

↳ Cost = 1000000

SV = 0

$$\frac{1000000 - 0}{100000} = 10 \text{ Depletion cost per unit}$$

10 x 25000

$$\text{Depletion Expense} = 250000$$

Dr Mine Silver 250000 *
 Cr Accumulated depreciation 250000

(=> Sales of 250000)

• Dr cash / Acc. Receivable.
 Cr Sales Revenue.

Dr C.G.S
 Cr Mine Silver *

* Estimating Recoverable Reserves.

Revision of Depletion Exp. = $\frac{BV \text{ at Beg.} - \text{new SV}}{\text{Remaining units to be extracted}}$

New E. = $150000 - \frac{25000}{75000} \times 75000 = 0$

Depletion Exp. = 125000 (125000)

* Liquidating dividends -

Cash dividends = $3 \times 1000000 = 3000000$

Dr RE 1650000

Dr APIC (paid in capital) 1350000

Cr Cash

* Asset turnover ratio

$$= \frac{\text{Net Sales} \rightarrow \text{IS}}{\text{Average total Assets} \rightarrow \text{BS}}$$

$$\left(\frac{\text{Beginning total asset} + \text{Ending total asset}}{2} \right)$$

* Profit margin on Sales

$$= \frac{\text{Net income}}{\text{Net Sales}}$$

* Return on assets

$$= \frac{\text{Net income}}{\text{Average total assets}}$$

$$\left(\frac{\text{Bq.} - \text{End.}}{2} \right)$$