

Overheads (Absorption costing)

↓
Indirect Cost
(IM + IL + IE)

↓
How to link OH to cost object?
& When

Budgeted Actual

① Estimate OH

* DM amt DL of
Service Dept. are
Overheads.

OH

Primary Dist. {
② Cost Allocation (Specific)
③ Cost Apportionment (Common)

④ Re-apportionment

Prod. Dept.

Service Dept.

PD₁ PD₂ PD₃

SD₁ SD₂ SD₃

Re-apportionment

Service Dept is
not providing any
services to other
service Dept.

SD ⇒ PD only

Direct Redistribution

Service Dept is
providing services to other
Service Dept also.

SD ⇒ PD & SD

SD₁ to SD₂

SD₁ to SD₂

OR

AND

SD₂ to SD₁

SD₂ to SD₁

(Non Reciprocal)

(Reciprocal)

↓
Step Ladder
method.

↓
Simultaneous
Equation
method OR
Repeated
Redistribution
method

SR. No.	Particulars	Amt. (Total)	Basis.	PD ₁	PD ₂	SD ₁	SD ₂
	OH as per primary Distribution (A+A)	x		---	---	---	---
	Re-app of SD ₁			---	---	(---)	
	Re-app of SD ₂			---	---		(---)
	∴ Total	x		---	---	0	0

- * S₁ ⇒ S₂ S₃ S₄ S₅ (4)
- (S₂) ⇒ S₃ S₄ (2)
- S₃ ⇒ S₅ (1)
- S₄ ⇒ None (0)
- S₅ ⇒ None (0)

* Under Step Ladder method we re-apportion OH of Service Dept. providing services to maximum No. of other Service Dept.

	S ₁	S ₂	S ₃
OH as per primary Dist.	---	5000	---
Repp. of S ₁	(---)	---	---
	0	5800	---
Reapp of S ₂		(5800)	---
		0	---

$$\text{OH of } S_1 = \text{OH of } S_1 \text{ as per primary Dist.} + \text{OH received from } S_2$$

$$x = 3,40,000 + 0.40y$$

$$\text{OH of } S_2 = \text{OH of } S_2 \text{ as per primary Dist.} + \text{OH received from } S_1$$

$$y = 6,10,000 + 0.30x$$

	PD ₁	PD ₂	SD ₁	SD ₂
S ₁ provides to	40%	30%	-	30%
S ₂ provides to	50%	10%	40%	-

$$\begin{array}{l} \text{Primary amt of } S_1 = 3,40,000 \quad x > 3,40,000 \\ \text{---||--- } S_2 = 6,10,000 \quad y > 6,10,000 \end{array}$$

	S ₁	S ₂
as per primary	3,40,000	6,10,000
S ₁	(3,73,450)	-49,300
S ₂	33,450	(6,59,300)
	0	0

Step 5: Absorption (Absorption Rate)

$$\text{① Machine Hour Rate} = \frac{\text{Comprehensive OH of m/c}}{\text{Machine Hrs}}$$

↓
 (a) Set up time & Productive time
 (Two Tiers MHR)

(b) Amt. are p.a., p.m., per quarter etc.
AND

Per M/C or All M/C

(c) Running cost (Variable) } Show MHR
standing charges (Fixed) } Separately

e.g. ^{total} MHR = 35/Hour for 4000 Hrs

Fixed Cost = ₹ 40000

Find MHR at 7000 Hrs Level.

$$\text{Sol: Var. cost at Present per Hour} = \frac{(4000 \times 35) - 40000}{4000}$$

$$= 25/\text{Hr}$$

$$\text{At 7000 Level MHR will be} = \frac{(7000 \times 25) + 40000}{7000}$$

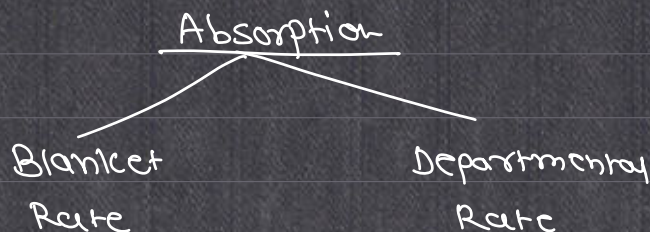
$$= 30.71/\text{Hr.}$$

② Labour Hours Rate

③ % of ^{direct} Labour Cost = OH / Lab. Cost

④ % of mat. cost

⑤ % of prime cost



Step 6: Absorbed OH = कितना खर्च होना
 चाहिए था!
 ↓
 Std. OH
 ↓
 For Actual output

e.g. SH/unit = 4 Hrs
 Budgeted output = 25000 units
 Budgeted OH = ₹ 9,50,000
 Actual output = 31000 units Act Hrs = 1,14,000
 Actual OH = 10,85,000

Sol: Absorption Rate per Hour = $\frac{\text{Budgeted OH}}{\text{Budgeted Hrs}}$

$$= \frac{9,50,000}{(25000 \times 4)}$$

$$= 9.50 / \text{Hour}$$

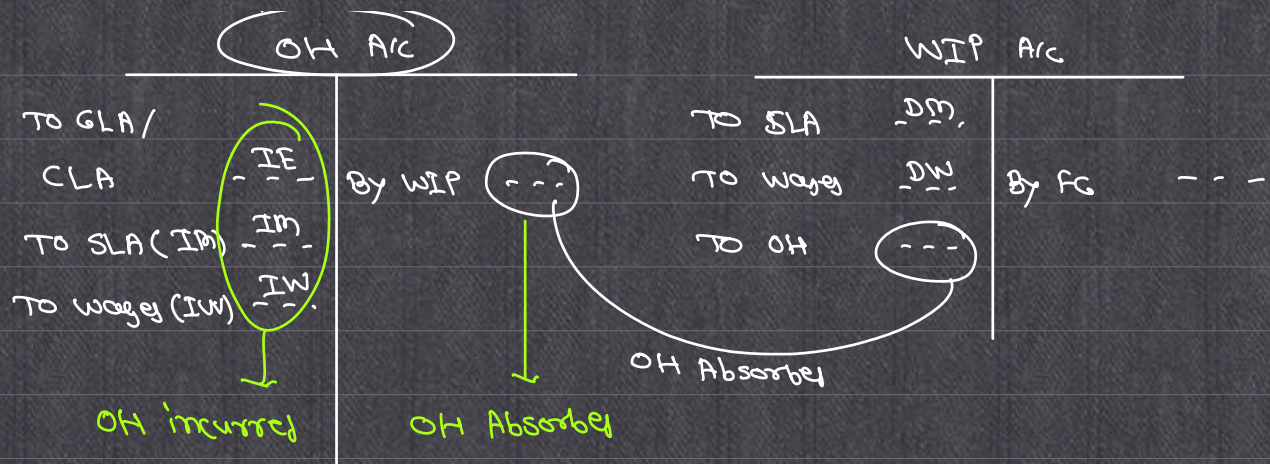
Absorption Rate per unit = $9.50 \times 4 = \underline{38/\text{unit}}$

Absorbed OH = Actual O/P × Absorption Rate/unit
 = 31000 × 38 = 11,78,000

OR

Absorbed OH = Actual Hrs × Absorption Rate/Hour
 = 1,14,000 × 9.50
 = 10,83,000

Absorbed OH = Std. Hrs × Absorption Rate/Hour
 = (31000 × 4) × 9.50
 = 11,78,000



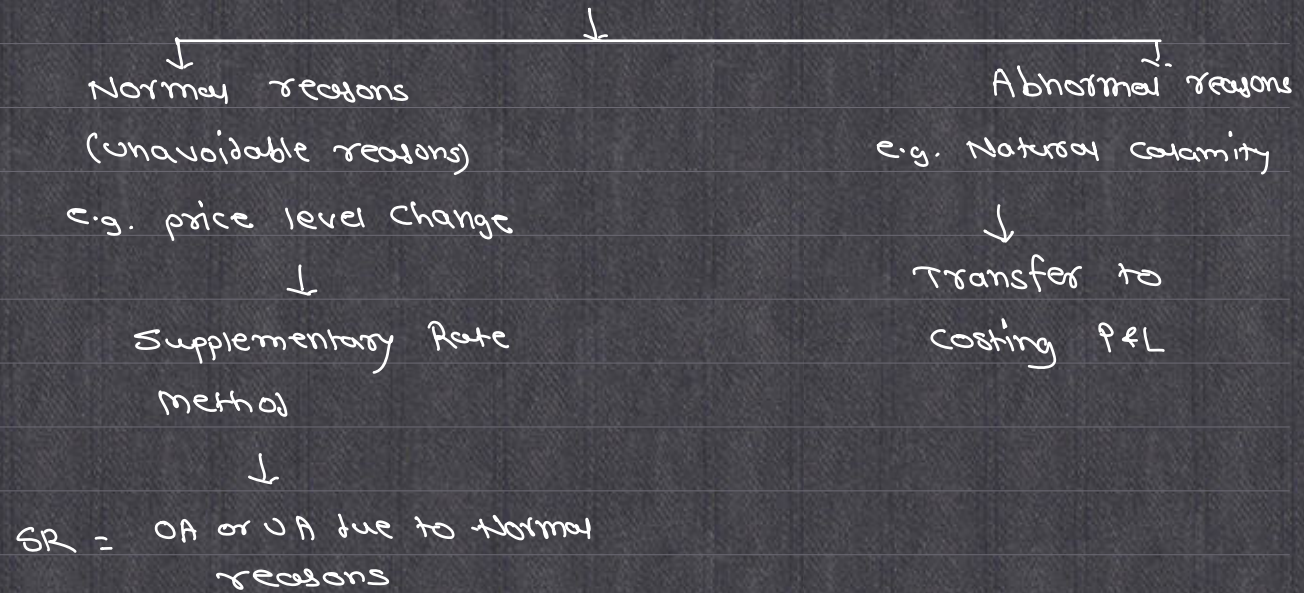
Dr. Bal in OH A/c \Rightarrow Under Absorption \Rightarrow Adverse Variance

Cr. Bal in OH A/c \Rightarrow over Absorption \Rightarrow Favourable Variance

Under / over Absorption Analysis

as per Accounting Angle

(overheads Chapter)



Eq. units

↓
 Debit or credit to
 WIP A/c, FG A/c, Cost of Sales A/c

Physical
Qty

Eq.

e.g. Job Qty	10000	Qty
Less: Still in WIP	2000 → 70% = 1400	
∴ FG Completed	8000	
Less: Still in Stock	1500 → 100% = 1500	
∴ Sold	6500 → 100% = 6500	
		<u>9400</u>

OH incurred = £ 19,00,000
 OH Absorbed = £ 17,10,000
 ∴ UA = 1,90,000

$$\begin{aligned} \text{Supplementary Rate per Unit} &= \frac{\text{UA due to normal reasons}}{\text{Eq. units}} \\ &= \frac{190000}{9400} \\ &= 20.21 / \text{unit} \end{aligned}$$

WIP A/c	(1400 × 20.21)	28294
FG A/c	(1500 × 20.21)	30315
Cost of Sales A/c	(6500 × 20.21)	1,31,365
TO OH A/c		<u>1,89,974</u>

* If Amt of UA/OA is very small then we carry forward Amt. of UA/OA without Any Analysis.

Analysis of UA/OA from Mgmt. Angle.
 (Standard Costing)

$$\begin{aligned} \text{OH Cost Variance} &= \text{Std. Cost} - \text{Actual Cost} \\ &= (\text{Act. O/P} \times \text{SR/unit}) - \text{Actual Cost} \end{aligned}$$

VA or OA

OR

$$= (\text{Std. hrs} \times \text{SR/Hours}) - \text{Actual Cost}$$

How to separate SVC?

Regression

Analyse Vouchers

High Low method

Beta = variable cost or slope

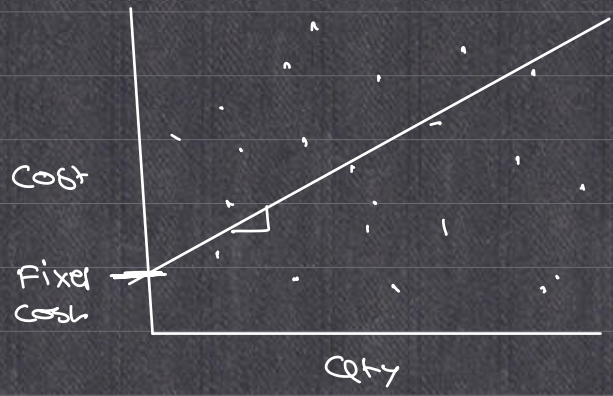
$$\text{var. cost/unit} = \frac{\text{change in cost}}{\text{change in qty}}$$

y intercept = Fixed cost

$$\text{SVC} = \text{var. cost} + \text{Fixed cost}$$

$$\text{SVC} = \text{Qty} \times \text{var. cost/unit} + \text{Fix. cost}$$

Qty (x)	SVC (y)
-	-
-	-
-	-
-	-
-	-



$$\text{slope (m)} = \frac{\text{Covariance}_{xy}}{\text{Variance}_x} = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

$$y = mx + c$$

$$\bar{y} = m\bar{x} + c$$

$$\bar{y} - m\bar{x} = c \rightarrow \text{fixed cost}$$

Analysis of Var. OH cost variance (hrs based)

$$\text{VOH var} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{Efficiency variance} & & \text{Exp. variance} \\ & & \text{(Price Level)} \\ \downarrow & & \downarrow \\ = (\text{SH} - \text{AH}) \times \text{SR} / \text{Hour} & & = (\text{SR} - \text{AR}) \text{AH} \end{array}$$

Analysis of Var OH cost variance (output based)

$$\text{VOH var} = (\text{Act. O/P} \times \text{SR}) - (\text{Act. O/P} \times \text{AM/unit})$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{Efficiency variance} & & \text{Exp. variance} \\ = \left(\text{Std. O/P} - \text{Actual O/P} \right) \times \text{SR/unit} & & = \left(\text{Std. O/P} \times \text{SR/unit} \right) - \text{Actual overheads} \end{array}$$

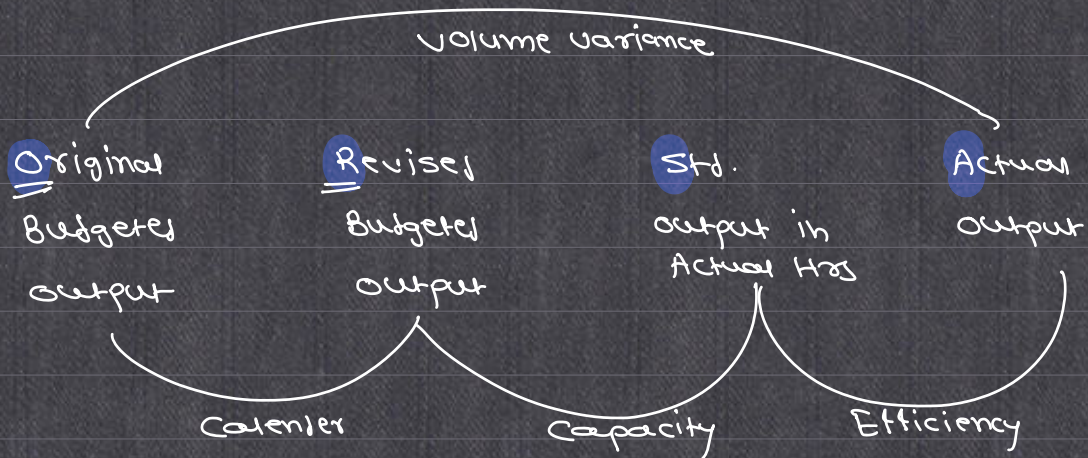
Fixed overhead variance (Output Based)

$$\text{FOH cost variance} = \text{Std. cost} - \text{Actual cost}$$

$$= (\text{Act. O/P} \times \text{SR/unit}) - (\text{Act. O/P} \times \text{Actual Rate/unit})$$

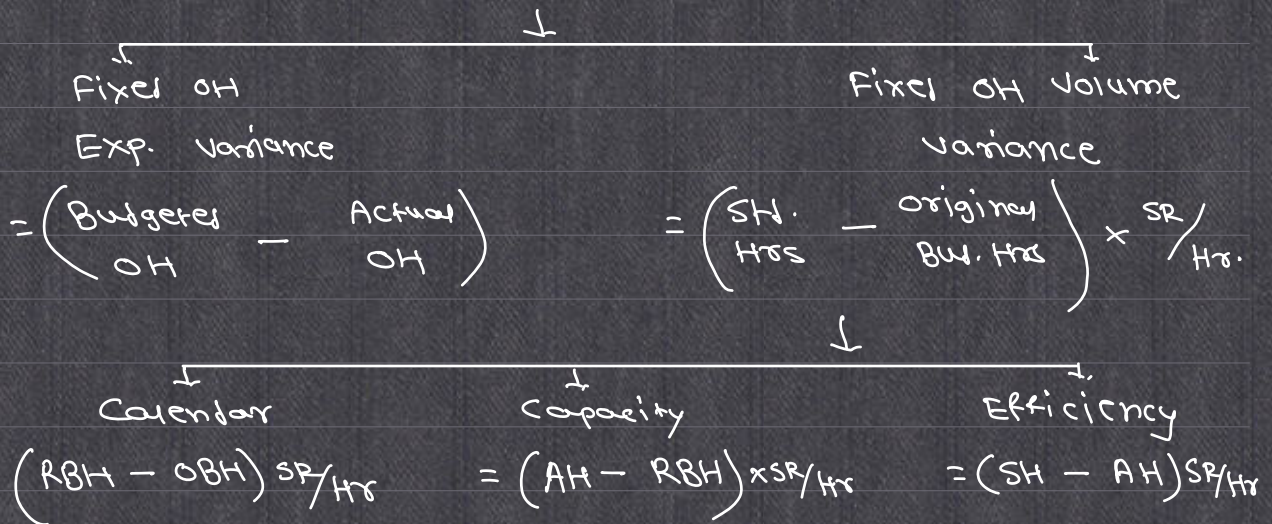
$$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{Fixed overhead} & & \text{Fixed overhead} \\ \text{Exp. variance} & & \text{Volume variance} \\ \downarrow & & \downarrow \\ = \left(\text{Budgeted Fixed OH} - \text{Actual Fixed OH} \right) & & = \left(\text{Actual output} - \text{original But. O/P} \right) \text{SR/unit} \\ & & \downarrow \end{array}$$

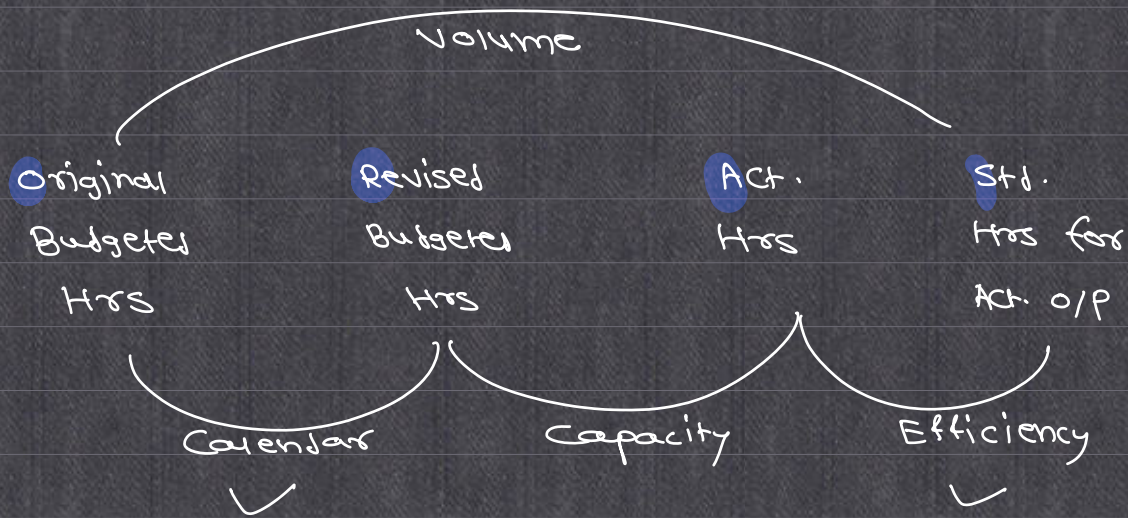
$$= \left(\overset{\downarrow \text{Calendar}}{\text{Revised Bud. O/P}} - \overset{\downarrow}{\text{original Bud. O/P}} \right) \text{SR/unit} = \left(\overset{\downarrow \text{Capacity}}{\text{Std. O/P}} - \overset{\downarrow}{\text{Revised Bud. O/P}} \right) \times \text{SR/unit} = \left(\overset{\downarrow \text{Efficiency}}{\text{Act. O/P}} - \overset{\downarrow}{\text{Std. O/P}} \right) \text{SR/unit}$$



Fixed OH Cost Variance (Hrs Base)

$$= (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$





Control Ratio's

$$(i) \text{ Efficiency Ratio} = \frac{\text{Std. Hrs for Act. O/P}}{\text{Actual Hrs}} \times 100$$

$$(ii) \text{ Calendar Ratio} = \frac{\text{Revised Bud. Hrs}}{\text{original Bud. Hrs}} \times 100$$

$$\text{OR}$$

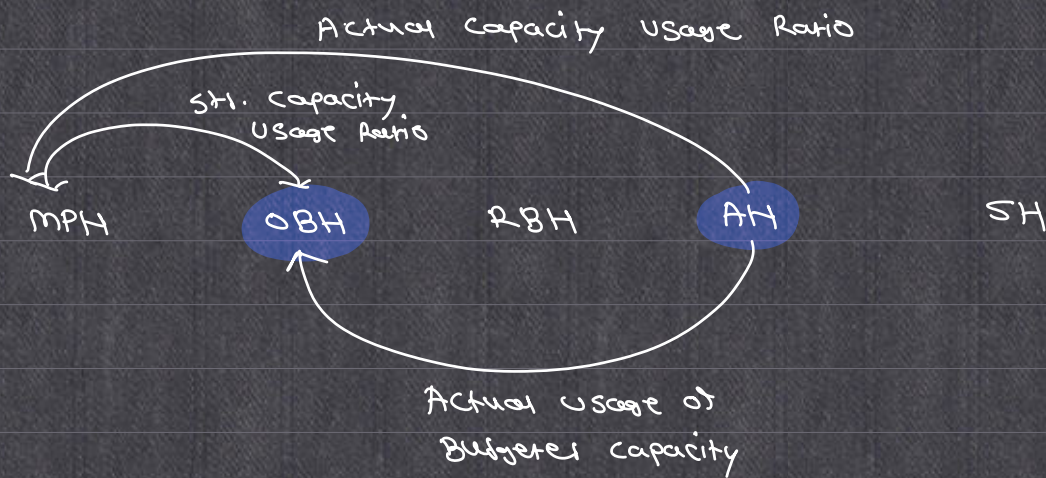
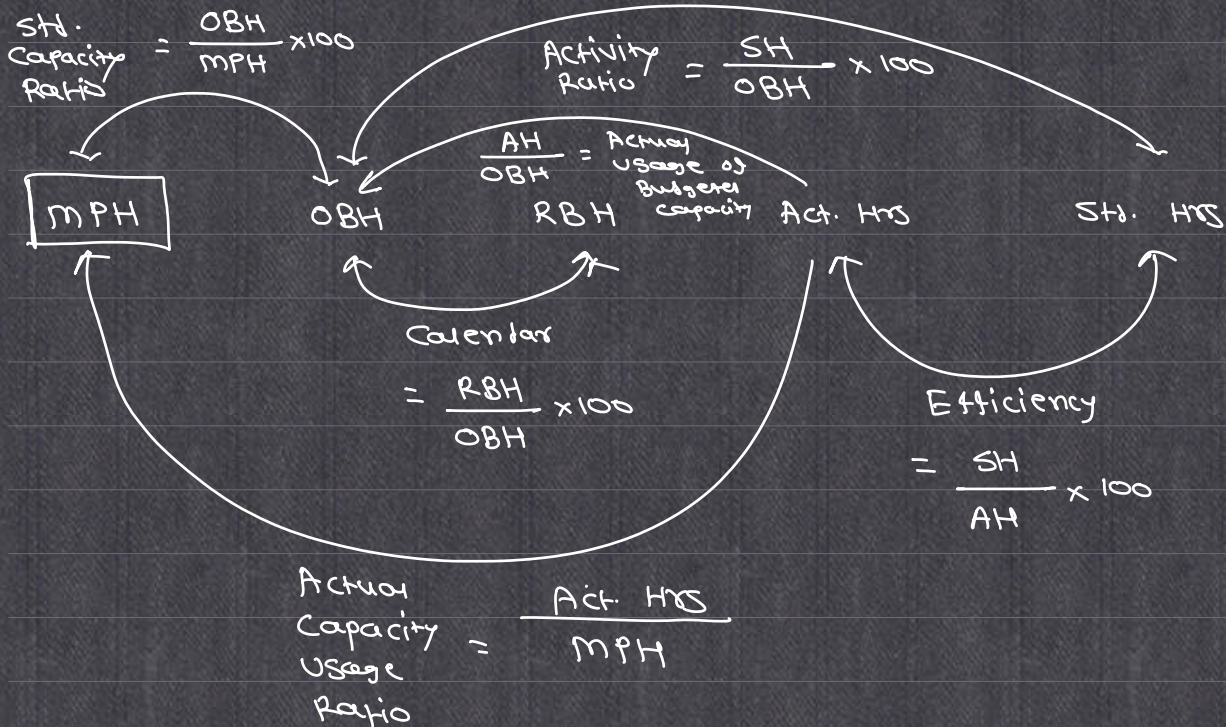
$$= \frac{\text{Actual days}}{\text{Budgeted days}} \times 100$$

$$(iii) \text{ Std. Capacity Usage Ratio} = \frac{\text{Bud. Hrs}}{\text{max possible Hrs in Budget}} \times 100$$

$$(iv) \text{ Actual Capacity Usage Ratio} = \frac{\text{Actual Hrs}}{\text{max possible Hrs}} \times 100$$

$$(v) \text{ Actual Usage of Budgeted Capacity} = \frac{\text{Actual Hrs}}{\text{Original Bw. Hrs}} \times 100$$

$$(vi) \text{ Activity Ratio} = \frac{\text{Std. Hrs}}{\text{Original Bw. Hrs}} \times 100$$



Control Ratios (Based on o/p)

