

01
CHAPTER**COST SHEET****1 PREPARING COST SHEET**

Direct Material

+ Direct Labour

+ Direct Expenses

PRIME COST

+ Factory OH / Production OH

GROSS FACTORY COST

+ Opening WIP

- Closing WIP

NET FACTORY COST

+ Quality Control cost

+ Research & Develop cost

+ Admin cost related to production

+ Only Primary Packaging

- Sale of scrap or By-product

COST OF PRODUCTION

+ Opening FG

- Closing FG

COST OF GOODS SOLD

+ General Admin OH
 + Selling OH
 + Distribution OH
 + Secondary packaging

COST OF SALES

+ profit

SALES

HOW TO BIFURCATE SEMI-VARIABLE COST

- Variable cost per unit :- $\frac{\text{DIFFERENCE OF TOTAL COST}}{\text{DIFFERENCE OF TOTAL UNITS}}$
- Fixed cost (total) :- $\text{Total cost} - \left[\text{variable cost per unit} \times \text{No of units} \right]$

HOW TO CALCULATE COST OF DIRECT MATERIAL

Opening stock of Raw material	xx
+ Cost of material purchased	xx
+ Freight Inwards	xx
+ Insurance and other direct exp	xx
+ Any tax	xx
- Trade Discount	(xx)
- Abnormal loss	(xx)
- Sale amount of scrap of RM	(xx)
- Closing stock of Raw material	(xx)
DIRECT MATERIAL COST	xxx

02
CHAPTER

MATERIAL COST

2 VALUATION OF MATERIAL

Purchase price of the material xxx

(-) Discounts :-

Trade Discount (xx)

Quantity Discount (xx)

Grant / Subsidy from anyone (xx)

Cash Discount [or any finance charges is also excluded] (xx)

(+) Taxes :-

Road Tax or Toll tax paid by buyer xx

Any GST only if ITC not allowed xx

Customs / Import Duty xx

Penalties :-

Any type of penalty won't be included —
(so don't even add or minus penalty)

(Demurrage / Detention Charge / Fine)
is also penalty or abnormal cost.

(+) Other Expenditure :-

Insurance / commission xx

Freight Inwards xx

Cost of container (point 2) xx

(-) Abnormal loss (point 3) (xx)

COST OF MATERIAL

- Order cost = $\frac{\text{Annual consumption}}{\text{Re-order Qty}} \times \text{Ordering cost per-order}$

$$\text{No. of order} \times \text{ordering cost per order}$$

- Carry cost = $\frac{1}{2} \times \text{Re-order Qty} \times \text{Carry cost per unit per annum}$

- EOQ = $\sqrt{\frac{2 \times A \times O}{C}}$
 - A = Annual consumption (for year)
 - O = Ordering cost per order
 - C = Carrying cost per unit per annum

- Re-order level

Formula 1 :- $\text{Maximum consumption per day} \times \text{Maximum lead Time}$

Formula 2 :- $\left[\text{Average consumption per day} \times \text{Average lead Time} \right] + \text{Minimum Stock (or) Safety Stock}$

- Maximum Stock = $\text{Re-order Qty} + \text{Re-order level} - \left[\text{Min. lead Time} \times \text{Min. Consump} \right]$

- Minimum Stock = $\text{Re-order level} - \left[\text{Avg. lead Time} \times \text{Avg. Consumption} \right]$

- Average Stock = $\frac{\text{Minimum Stock} + \text{Maximum Stock}}{2}$

$$\textcircled{08} = \frac{1}{2} \times \text{Re-order Qty} + \text{Minimum Stock}$$

- Danger level = $\frac{\text{Emergency lead Time}}{\text{Average Consumption}}$

- Inventory T/O Ratio = $\frac{\text{COGS or RM consumed}}{\text{Average Inventory}}$

$$\text{RM consumed} = \text{O/stock} + \text{purchases} - \text{closing stock}$$

$$\text{Average Inventory} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

$$\text{Days Inventory is held} = \frac{360 \text{ Days}}{\text{Inventory T/O Ratio}}$$

03
CHAPTER

EMPLOYEE COST

3

GROSS PAYMENT & NET PAYMENT

Basic Pay

(+) Dearness Allowance

Basic + D.A

(+) Other Allowance

(+) Bonus / Commission

(+) Other cash payment (overtime)

Gross Payment

(-) TDS

(-) Professional Tax

(-) EMI deduction for any loan

(-) Any other deduction [like excess contribution to PF or any other fund]

(-) Employees Contribution to PF

(-) Employees Contribution to ESI

Net wages paid to worker

4

LABOUR COST

Basic Pay

(+) Dearness Allowance

Basic + D.A

(+) Other Allowance

(+) Bonus / Commission

(+) Other cash payment (overtime)

(+) Perquisites

(+) Employer's Contribution to PF

(+) Employer's Contribution to ESI

Total labour cost

$$\frac{\left[\begin{array}{c} \text{working hours} \\ \text{given} \end{array} - \begin{array}{c} \text{Normal} \\ \text{Idle Time} \end{array} - \text{Holidays} \right]}{\text{LABOUR COST PER HOUR}}$$

LABOUR COST PER HOUR

So to convert Piece Rate into Time Rate

$$= \frac{\text{Piece Rate Given}}{\text{Standard Time Per piece}}$$

• Bonus under Halsey Plan = 50% of $\left[\frac{\text{Standard Hours} - \text{Actual Hours}}{\text{Hours}} \right] \times \text{Rate per Hr}$

• Total payment under Halsey = $\frac{\text{AH} \times \text{R}}{\text{Normal pay}} + \frac{50\% \text{ of } [\text{SH} - \text{AH}] \times \text{R}}{\text{Bonus for time saved}}$

• Bonus under Rowan Plan = $\frac{\text{AH}}{\text{SH}} \times \left[\frac{\text{Standard Hours} - \text{Actual Hours}}{\text{Hours}} \right] \times \text{Rate per Hr}$

• Total payment under Rowan = $\frac{\text{AH} \times \text{R}}{\text{Normal pay}} + \frac{\text{AH}/\text{SH} \times [\text{SH} - \text{AH}] \times \text{R}}{\text{Bonus for time saved}}$

$$\begin{aligned} AH &= \text{Actual Hours Worked} \\ R &= \text{Normal Time Rate} \\ SH &= \text{Standard Hour for total units produced} \\ (SH - AH) &= \text{Time Saved} \end{aligned}$$

Under both Halsey and Rowan plan, the final rate is :-

$$\text{Effective rate per Hour} = \frac{\text{Total Amount}}{\text{Actual Hours Worked}}$$

DIFFERENT METHODS FOR LABOUR TURNOVER RATES

$$(i) \text{ SEPERATION METHOD} = \frac{\text{No of Seperations}}{\text{Average workers for period}} \times 100$$

$$(ii) \text{ REPLACEMENT METHOD} = \frac{\text{No of Replacements}}{\text{Average workers for period}} \times 100$$

$$(iii) \text{ FLUX METHOD} = \frac{\text{No of [Seperation + Replacement]}}{\text{Average workers for period}} \times 100$$

$$(iv) = \frac{\text{No of [Seperation + Replacement + New Joinee]}}{\text{Average workers for period}} \times 100$$

$$(v) \text{ ACCESSION METHOD} = \frac{\text{No of New Joinees}}{\text{Average workers for period}} \times 100$$

$$\textcircled{08} = \frac{\text{No of [New Joinees + Replacement]}}{\text{Average workers for period}} \times 100$$

$$\text{(v) EQUIVALENT LABOUR TURNOVER} = \frac{\text{Employee T/O for period}}{\text{No. of days in the period}} \times 365$$

04

CHAPTER

OVERHEADS

5 MACHINE HOUR RATE

FIXED CHARGES :-

Depreciation not related to activity	xx
+ Rent of machine	xx
+ Insurance of machine	xx
+ Wages of workers and Bonus for machine	xx
+ General Overheads of Department	xx
<u>Total Fixed Charges</u>	<u>xxx</u>

RUNNING CHARGES :-

Repairs and Maintenance	xx
+ Power	xx
+ Depreciation related to activity	xx
+ Lubricants	xx
+ Sundry Variable Expenses	xx
<u>Total Running Charges</u>	<u>xxx</u>

Important Notes :-

Hours paid to workers = Normal Hours — Absent without pay

Total Machine Hours = Normal Hours
(take special care of
no. of machines or
no. of months in Ques)

— Absent without pay
— Absent with pay
— Idle Time

(Simply number of Hrs)
machine was running.

6 UNDER AND OVER ABSORPTION

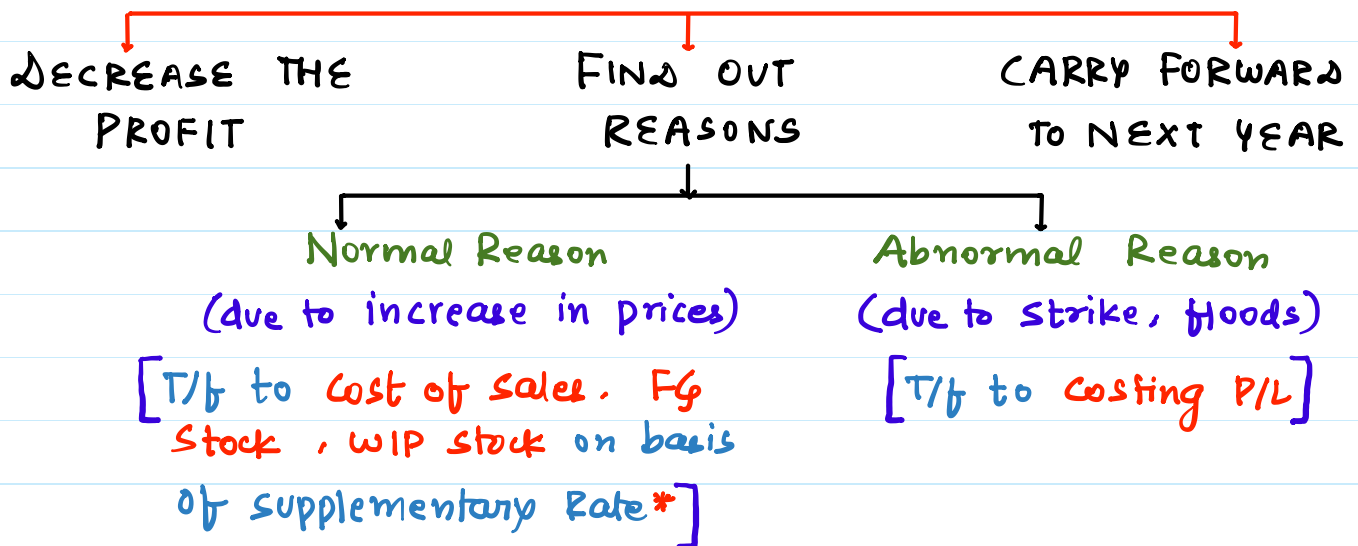
example :-
 Budgeted OH Rate = ₹ 10/unit
 Actual units = 10,000
 Actual OHs = ₹ 120,000
 OHs recovered = ₹ 10/unit × 10000
 = ₹ 1,00,000

[Under-recovered] So ₹ 20,000 overheads were not recovered

example :-
 Budgeted OH Rate = ₹ 10/unit
 Actual units = 10,000
 Actual OHs = ₹ 90,000
 OHs recovered = ₹ 10/unit × 10000 = ₹ 1,00,000

[Over-recovered] So ₹ 10,000 overheads were recovered extra

TREATMENT FOR UNDER-RECOVERY



* Supplementary Rate = $\frac{\text{Total Overheads underabsorbed}}{\text{units sold} + \text{Fg stock} + \text{eq. WIP}}$

05
CHAPTER

ABC

7 STEPS TO IMPLEMENT ABC

Step 1 :- Identify activities to be performed.

Step 2 :- Calculate total cost pool.

Step 3 :- Identify cost drivers.

Step 4 :- Find Total No. of Cost drivers.

Step 5 :- Calculate Recovery Rate.

06
CHAPTER**MARGINAL COSTING****8 CONTRIBUTION**

$$\begin{array}{rcl} \text{Sale price per unit} & \text{or} & \text{Total Sales} \\ - \text{Variable cost per unit} & & - \text{Total variable cost} \end{array}$$

$$\begin{array}{rcl} \text{or} & & \text{Total Fixed cost} \\ & & - \text{Total profit} \end{array}$$

9 PROFIT - VOLUME RATIO

$$\begin{array}{rcl} \frac{\text{Contribution per unit}}{\text{Sales price per unit}} & \text{or} & \frac{\text{Total contribution}}{\text{Total sales}} \end{array}$$

$$\text{or} \quad \frac{\text{Sales} - \text{VC}}{\text{Sales}} = 1 - \text{Variable Cost \%}$$

10 BREAK - EVEN POINT

$$\text{BEP (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution/unit}}$$

$$\text{BEP (in amount ₹)} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{or} \quad \text{BEP in units} \times \text{SP per unit}$$



So it means if we want to recover :- $\frac{\text{Cost}}{\text{Contribution/unit}}$
 any cost, all we need to do is

And sometimes Question can ask us (units) $\frac{\text{Fixed cost} + \text{Profit}}{\text{Contribution/unit}}$
 to recover (Fixed cost + profit), :-
 so all we need to do is

(or)
 (amount) $\frac{\text{Fixed cost} + \text{Profit}}{\text{P/v Ratio}}$

II MARGIN OF SAFETY

Since we already recovered our full cost in BEP, so now it's time to earn profit.

MOS refers to the sales we did beyond the Break even level.

Margin of Safety = Actual units sold - Break-even units
 (or)
 Actual sales amount - Break even amount
 (or)
 (units) $\frac{\text{Total Profit}}{\text{Contribution/unit}}$
 (or)
 (amount) $\frac{\text{Total Profit}}{\text{P/v Ratio}}$

12 TWO-PERIOD QUESTION

2 Sales given

2 profit given

Calculate P/V
Ratio

2 units given

2 profit given

Calculate contribution
per unit

2 cost given

2 profit given

Calculate variable
Cost/unit

- **P/v Ratio** =
$$\frac{\text{Change in profit or contribution}}{\text{Change in Sales}}$$

- **Contribution per unit** =
$$\frac{\text{Change in profit or contribution}}{\text{Change in units}}$$

- **variable cost per unit** =
$$\frac{\text{Change in profit or contribution}}{\text{Change in cost}}$$

Indifference Point =
$$\frac{\text{Difference of Total Fixed cost}}{\text{Difference of variable cost/unit}}$$

If prod > Indiff point, go for option with **High FC**

If prod < Indiff point, go for option with **Low FC**

SHUT DOWN POINT (any level below it) =
$$\frac{\text{Avoidable FC} - \text{Re-opening cost}}{\text{Contribution/unit}}$$

07
CHAPTER

STANDARD COSTING

13 MATERIAL VARIANCES

TOTAL MATERIAL COST VARIANCE

$$(SQAQ \times SP) - (AQAQ \times AP)$$

$$\textcircled{08} (SQ/\text{unit} \times AQ \times SP) - (AQ/\text{unit} \times AQ \times AP)$$

MATERIAL PRICE VARIANCE

$$(SP - AP) \times AQ$$

$$\textcircled{08} (SP - AP) \times AQ/\text{unit} \times AQ$$

MATERIAL USAGE VARIANCE

$$(SQAQ - AQ) \times SP$$

$$\textcircled{08} (SQ/\text{unit} - AQ/\text{unit}) \times AQ \times SP$$

YIELD VARIANCE

$$(SQAQ - RSAQ) \times SP$$

MIX VARIANCE

$$(RSAQ - AQ) \times SP$$

SQAQ = Standard Quantity of RM for actual units produced

AQ = Actual Quantity of RM for actual units produced

SP = Standard price for one unit of Raw material

AP = Actual price paid for one unit of Raw material

RSAQ = When the Actual Quantity used is re-distributed as per standard mix.

14 LABOUR VARIANCES

TOTAL LABOUR COST VARIANCE

$$(SHAO \times SR) - (AHAO \times AR)$$

$$\textcircled{OR} (SH/unit \times AO \times SR) - (AH/unit \times AO \times AR)$$

LABOUR RATE VARIANCE

$$(SR - AR) \times AH$$

$$\textcircled{OR} (SR - AR) \times AH/unit \times AO$$

(Here we use AH paid)

LABOUR EFFICIENCY VARIANCE

$$(SHAO - AH) \times SR$$

$$\textcircled{OR} (SH/unit - AH/unit) \times AO \times SR$$

(Here we use AH worked)

Idle Time VARIANCE

$$(AHW - AHP) \times SR$$

YIELD VARIANCE

$$(SHAO - RSH) \times SR$$

MIX VARIANCE

$$(RSH - AH) \times SR$$

SHAO = Standard Hours for actual units produced

AH = Actual Hours for actual units produced

SR = Standard price for one hour

AR = Actual price paid for one hour

RSH = When the Actual Hours worked is re-distributed as per standard mix.

15 VARIABLE OH VARIANCES

(calculated on the basis of units)

TOTAL VARIABLE OH COST VARIANCE

$$(SQAQ \times SP) - (AQAQ \times AP)$$

$$\text{or } (SQ/\text{unit} \times AQ \times SP) - (AQ/\text{unit} \times AQ \times AP)$$

V.OH EXPENDITURE VARIANCE

$$(SP - AP) \times AQ$$

$$\text{or } (SP - AP) \times AQ/\text{unit} \times AQ$$

V.OH EFFICIENCY VARIANCE

$$(SQAQ - AQ) \times SP$$

$$\text{or } (SQ/\text{unit} - AQ/\text{unit}) \times AQ \times SP$$

SQAQ = Standard Quantity of OH for actual units produced

AQ = Actual Quantity of OH for actual units produced

SP = Standard price for one unit of OH

AP = Actual price paid for one unit of OH

16 VARIABLE OH VARIANCES

(calculated on the basis of Hours)

TOTAL VARIABLE OH COST VARIANCE

$$(SHAQ \times SR) - (AHAQ \times AR)$$

$$\text{or } (SH/\text{unit} \times AQ \times SR) - (AH/\text{unit} \times AQ \times AR)$$

V.OH EXPENDITURE VARIANCE

$$(SR - AR) \times AH$$

$$\text{or } (SR - AR) \times AH/\text{unit} \times AQ$$

(Here we use AH paid)

V.OH EFFICIENCY VARIANCE

$$(SHAQ - AH) \times SR$$

$$\text{or } (SH/\text{unit} - AH/\text{unit}) \times AQ \times SR$$

(Here we use AH worked)

- SHAO = Standard Hours of VOH for actual units produced
AH = Actual Hours of VOH for actual units produced
SR = Standard price for one hour of VOH
AR = Actual price paid for one hour of VOH

17 FIXED OH VARIANCES

(calculated on the basis of units)

TOTAL FIXED OH COST VARIANCE

$$\text{Recovered FOH} - \text{Actual FOH}$$

F.OH EXPENDITURE VARIANCE

$$\text{Budgeted FOH} - \text{Actual FOH}$$

F.OH VOLUME VARIANCE

$$\text{Recovered FOH} - \text{Budgeted FOH}$$

Budgeted FOH = will be given in the Ques

Actual FOH = will be given in the Ques

Recovered FOH = Also known as Standard FOH for Actual output

$$\frac{\text{Budgeted FOH}}{\text{Budgeted units}} \times \text{Actual output}$$

18 FIXED OH VARIANCES

(calculated on the basis of Hours)

The entire formula for calculation of variances are same.
the only difference is in the calculation of further variance.

TOTAL FIXED OH COST VARIANCE

$$\text{Recovered FOH} - \text{Actual FOH}$$

FOH EXPENDITURE VARIANCE

$$\text{Budgeted FOH} - \text{Actual FOH}$$

FOH VOLUME VARIANCE

$$\text{Recovered FOH} - \text{Budgeted FOH}$$

FOH CALENDER VARIANCE

$$\left[\begin{array}{cc} \text{Actual} & - & \text{Budg.} \\ \text{work} & & \text{work} \\ \text{days} & & \text{days} \end{array} \right] \times \begin{array}{c} \text{Budg} \\ \text{rate} \\ \text{per} \\ \text{day} \end{array}$$

FOH CAPACITY VARIANCE

$$\left[\begin{array}{cc} \text{Actual} & - & \text{Budg.} \\ \text{Hrs} & & \text{Hrs} \\ \text{Actual} & & \text{Budg} \\ \text{Days} & & \text{Days} \end{array} \right] \times \begin{array}{c} \text{Budg} \\ \text{rate} \\ \text{per} \\ \text{Hour} \end{array}$$

FOH EFFICIENCY VARIANCE

$$\left[\text{SHAO} - \text{AHAO} \right] \times \begin{array}{c} \text{Budg} \\ \text{rate} \\ \text{per} \\ \text{Hour} \end{array}$$

$$\text{Budgeted Rate Per Hour} = \frac{\text{Budgeted FOH}}{\text{Budgeted Hours}}$$

$$\text{Budgeted Rate Per Hour} = \frac{\text{Budgeted FOH}}{\text{Budgeted Days}}$$

$$\text{Recovered FOH} = \text{Also known as Standard FOH for Actual output}$$

$$\frac{\text{Budgeted FOH}}{\text{Budgeted Hours}} \times \text{Actual Hours}$$

08
CHAPTER

JOINT-BY PRODUCT

19 AVERAGE UNIT COST METHOD

$$\text{Average cost} = \frac{\text{Total Joint cost}}{\text{Output}_1 (+) \text{Output}_2}$$

$$\# \text{ joint cost allocated to product}_1 = \frac{\text{Average Cost}}{\text{Cost}} \times \text{Output}_1$$

$$\# \text{ joint cost allocated to product}_2 = \frac{\text{Average Cost}}{\text{Cost}} \times \text{Output}_2$$

20 MARKET VALUE AT POINT OF SEPERATION

	<u>Joint Product₁</u>	<u>Joint Product₂</u>
Sales price at split off stage	xx	xx
(-) Selling expenses	(xx)	(xx)
Net Market Price at split off point	xx punit	xx punit
x units produced	xx	xx
Final values	xxx	xxx
Distribute in this ratio		

21 MARKET VALUE AFTER FURTHER PROCESS

	<u>Joint Product₁</u>	<u>Joint Product₂</u>
Sales price after further processing	xx	xx
X No of units after further processing	xx	xx
Final value	xxx	xxx

: Distribute in this ratio

22 NRV METHOD AT SPLIT OFF STAGE

first check - do we need to further process or not . If yes then we use sales price after further processing and if not then sales price before processing .

	<u>Joint Product₁</u>	<u>Joint Product₂</u>
Sales price after or before further processing	xx	xx
X No of units	xx	xx
Total	xxx	xxx
(-) Further processing cost	(xx)	(xx)
(-) Further selling exp	(xx)	(xx)
Final Amount	xxx	xxx

Split in this ratio

23 CONTRIBUTION MARGIN METHOD

TOTAL JOINT COST

Variable part of cost

Allocate on the basis of
no. of output

Fixed part of cost

Allocate on the basis
of contribution

If any product's contribution is **ZERO**, don't allocate joint cost to that product.

24 REVERSE CALCULATION

Joint cost of A

(+) Further process cost of A
(+) Selling exp of A
(+) Profit of A

Sales of A

Joint cost of B

(+) Further process cost of B
(+) Selling exp of B
(+) Profit of B

Sales of B

10 CHAPTER

BUDGETARY CONTROL

25 BUDGET RATIOS

(i) **EFFICIENCY RATIO** = $\frac{\text{Standard Hours for Actual output}}{\text{Actual Hours}} \times 100$

It is calculated to find out whether it took more or less actual hours than expected.

(ii) **ACTIVITY RATIO** = $\frac{\text{Standard Hours for Actual output}}{\text{Standard Hours}} \times 100$

It is calculated to find out level of activity in an organisation. Like at what level a company is working 70% or 80%.

(iii) **CALENDER RATIO** = $\frac{\text{Available working day}}{\text{Total working days in Budgeted period}} \times 100$

It is calculated to find out whether all the days or hours that were planned during the budget period were actually available or not.

$$(iv) \text{ STANDARD CAPACITY USAGE RATIO} = \frac{\text{Budgeted Hours}}{\text{Max possible hours in the Budgeted period}} \times 100$$

It shows how many hours were planned as against total hours available.

$$(v) \text{ ACTUAL CAPACITY USAGE RATIO} = \frac{\text{Actual Hours worked}}{\text{Max possible hours in the period}} \times 100$$

It shows how many hours were actually worked against total hours available.

$$(vi) \text{ ACTUAL USAGE OF BUDGETED CAPACITY RATIO} = \frac{\text{Actual working Hours}}{\text{Budgeted Hours}} \times 100$$

It shows how many hours were actually worked against total budgeted hours.