Written Analysis Case Submitted By: Roll No. 2012-04-0029

Subject: Managerial Accounting & Control systems

Case: Waltham Motors Division **Instructor: Ayesha Bhatti**

Assignment Questions

Question #1:

Using budget data, how many motors would have to be sold for Waltham Motors Division to breakeven?

Answer:

As per budget data provided in case exhibit performance report,

Total Fixed costs = FC =$260000

Selling price per unit= SP= Total sales/Total sold units=864000/18000= $48

Variable Cost per unit=VCU=Total variable cost/total sold units=512800/18000=$28.49

Now by using formula,

Breakeven No. of motors=Total Fixed Cost/Contribution margin per motor

Here, Contribution margin per unit= SP - VCU= 48 - 28.49= $19.51

So, Breakeven No. of motors= 260000/19.51=13326

Waltham motors division should sell 13326 motors to achieve breakeven point where total sales revenue matches total cost.

Question # 2

Using budget data,what was the total expected cost per unit if all manufacturing & shipping overhead (both variable & fixed) was allocated to planned production?What was the actual per unit cost of production and shipping?

Answer:

As per budget data provided in Exhibit#1 shown below,

Total budgeted Cost (variable & fixed)=$512800+$260000=$772800

Total budgeted units=18000

So, **Total Expected cost per unit=772800/18000=$42.93**

Similarly, Total actual cost per unit=$49.51

Per unit actual production cost= $39.51 and Per unit actual shipping cost= $2

Exhibit #1: Per Unit Cost Analysis

Cost Type	Budgeted cost for 18000 units	Actual cost for 14000 units	Per Unit budget Cost	Per unit actual cost	Under or Over Budget
Variable manufacturing costs:					
Direct material	108000	85400	6.00	6.10	Over
Direct labor	288000	246000	16.00	17.57	Over
Indirect labor	57600	44400	3.20	3.17	Under
Idle time	14400	14200	0.80	1.01	Over
Cleanup time	10800	10000	0.60	0.71	Over
Misc supplies	5200	4000	0.29	0.29	
Total Variable manufacturing costs:	484000	404000	26.89	28.86	
Variable shipping costs	28800	28000	1.60	2.00	Over
Total Variable costs:	512800	432000	28.49	30.86	Over
Nonvariable manufacturing costs:					
Supervision	57600	58800	3.20	4.20	Over
Rent	20000	20000	1.11	1.43	Over
Depreciation	60000	60000	3.33	4.29	Over
Other	10400	10400	0.58	0.74	Over
Total nonvariable manufact costs:	148000	149200	8.22	10.66	Over
Selling & admn costs	112000	112000	6.22	8.00	Over
Total nonvariable costs:	260000	261200	14.44	18.66	Over
Total costs ($) :	772800	693200	**42.93**	**49.51**	**Over**

Question # 3:

Comment on the performance report and the plant accountant's analysis of results.How,if at all,would you suggest the performance report be changed before sending it on to the division manager and Marco corporation headquarters?

Ans:

Comment #1: The performance report prepared by the plant accountant is not depicting true picture as the sales revenues & costs (actual/budgeted) are being compared at different output level i.e 18000 for budget & 14000 for actual. The plant accountant's claim that every cost except supervision is either at or under budget, is totally wrong & cannot be accepted. As per unit cost analysis in Exhibit # 1, all costs are over-budgeting except indirect labor.

Comment # 2: Plant accountant is deliberately attempting to report over-simplification in inventory costs (WIP & finished goods),which is not a realistic scenario.

Comment # 3: As per plant accountant note nos.2,3,4 & 5, actual material price is 5% less than expected i.e actual material price should be $5.7(.95*6),but as per exhibit#1, actual material price comes out to be $6.1.Moreover,actual direct labor cost per unit should be $16.4 but as per exhibit #1, its value comes out to be $17.57.

Suggestion to change performance report:

As per comments narrated above, I suggest that budgeted as well as actual costs in the performance report, need two types of adjustments/changes before sending it to management:

- The static budget needs to be changed into flexible budget sothat budgeted figures are recorded according to the actual output (number of motors produced) i.e 14000.
- The actual direct material & direct labor costs need to be updated as per plant accountant's note nos.2,3,4&5.

Question # 4:

Prepare your own analysis of the Waltham Division's operations in May.Explain in as much detail as possible why income differed from what you would have expected?

Ans: As per Exhibit # 2,static budget variance (level1) for operating income is 98400 U which is further sub-divided into (level2) sales volume variance (78044U) & flexible budget variance (20356U).Sales volume variance may occur due to low overall motors demand, wrong budgeted sales targets or quality issue. Flexible budget variance for operating income (20356U) is further divided into selling price variance for sales (14000F), direct material variance (1400U), Direct labor variance(22000U), Variable/fixed overhead variance etc.Variance occurred as Waltham actually used greater quantities of inputs such as direct

material, direct labor , Idle time, shipping costs compared to the budgeted ones as well as used higher prices per unit of these inputs. Direct material variance (1400U) is due to only DM Price variance (1400U) as efficiency variance is zero. Direct labor variance (22000U) is further decomposed into DL-price variance (6000U) & DL-efficiency variance (16000U). Production manager should control efficiency variance.

W.r.t accountant's notes, actual direct material cost should be $79800 (0.95*84000) instead of $85400.Actual direct labor cost should be $229600 (2*8.2*14000) instead of $246000.Variable shipping cost against output of 14000 should be $22400 (1.6*14000) instead of $28000.With these three changes incorporated, we obtain actual operating income of $20400 instead of loss of $7200.

To conclude, the actual income differed from expected income due to following reasons:

- Expected income was recorded against output of 18000 motor units whereas actual income calculated against 14000 motor units.
- Actual selling price per unit was $49 whereas budgeted selling price per unit was $48.
- Actual direct material cost per unit was $6.1 whereas its budgeted value was $6.
- Actual direct labor cost per unit was $16.4 whereas its budgeted value was $16.

Exhibit # 2: Flexible Budget & variances calculations

Parameters	Static Budget	Actual	Static Budget variances		Flexible Budget	Flexible Budget Variance		Sales-Volume Variance	
Units	18000	14000	4000	U	14000	0		4000	U
Sales	864000	686000	178000	U	672000	14000	F	192000	U
Variable manufacturing costs:									
Direct material	108000	85400	22600	F	84000	1400	U	24000	F
Direct labor	288000	246000	42000	F	224000	22000	U	64000	F
Indirect labor	57600	44400	13200	F	44800	(400)	F	12800	F
Idle time	14400	14200	200	F	11200	3000	U	3200	F
Cleanup time	10800	10000	800	F	8400	1600	U	2400	F
Misc supplies	5200	4000	1200	F	4044	(44)	F	1156	F
Total Variable manufacturing costs:	484000	404000	80000	F	376444	27556	U	107556	F
Variable shipping costs	28800	28000	800	F	22400	5600	U	6400	F
Total Variable costs:	512800	432000	80800	F	398844	33156	U	113956	F
Contribution Margin	351200	254000	97200	U	273156	19156	U	78044	U
Nonvariable manufacturing costs:									
Supervision	57600	58800	1200	U	57600	1200	U	0	
Rent	20000	20000	0		20000	0		0	
Depreciation	60000	60000	0		60000	0		0	
Other	10400	10400	0		10400	0		0	
Total nonvariable manufact costs:	148000	149200	1200	U	148000	1200	U	0	
Selling & admn costs	112000	112000	0		112000	0		0	
Total nonvariable costs:	260000	261200	1200	U	260000	1200	U	0	
								0	
Operating Income(loss):	**91200**	**-7200**	**98400**	**U**	**13156**	**20356**	**U**	**78044**	**U**

Reference:

- Cost Accounting 13th Ed By Horngren , Datar, Foster,Rajan & Ittner
- Introduction to Managerial Accounting By Folk, Garrison & Noreen