can be found and investigated at once to save future unwise expenditure.

Other charts contain similar information for the various expense items in detail so that if the expense chart shows a discrepancy, it can be traced through to the individual item that is out of line and the cause determined.

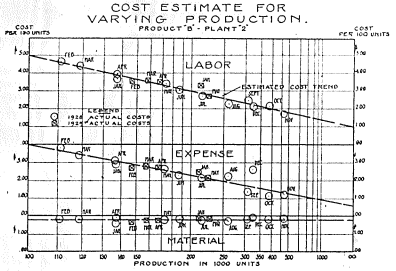

Figure 9

In preparing a standard of this kind, the procedure is, of course, in reverse order to the manner illustrated. The estimates are made for the items first, and then accumulated into the total cost estimate later. The examples cited above are evidence of the value of this method. Out of the seventeen months cited, the cost was materially out of line for but three or four months. Some of these discrepancies may be accounted for by clerical errors and in one case there was an unusually high maintenance bill, so that the number of months which show actual discrepancies are reduced to one or perhaps two.

Production in this department is estimated in advance, as stated above. From these estimates it is a simple matter to prepare a budget and plan in advance. The monthly estimated costs for the estimated production are read from the trend line (Figure 8) and the amount of expenditure computed and accumulated for the year. The total yearly expenditure is then divided by the total yearly production to give the average unit cost for the year. Table 5 shows such a budget for the department used in the illustration above.

From the above standards and the estimated budget for the year, it is possible to put in the

TABLE 5

BUDGET FOR 1929

PRODUCT "B" PLANT "2"

MONTH	PRODUCTION	COST PER 100	AMOUNT
January	225,000	$6.85	$15,412.50
February	150,000	8.25	12,376.00
March	145,000	8.45	12,252.50
April	160,000	8.00	12,800.00
May	205,000	7.00	14,350.00
June	220,000	6.90	15,180.00
July	265,000	6.20	16,430.00
August	325,000	5.65	18,362.50
September	450,000	5.00	22,500.00
October	500,000	4.85	24,250.00
November	630,000	4.55	28,665.00
December	400,000	5.20	20,800.00
TOTAL	3,675,000		213,377.50
AVERAGE COST PER 100		$5.80	

hands of management a monthly cost sheet that will show not only what the product has cost, but how that cost compares with what can reasonably be expected at the production level attained. Also, the production and cost can be compared with the budget to determine whether or not the expected profit is likely to be attained. Such a cost sheet is shown in Table 6.

The first four columns of this sheet give the actual production, total cost, and cost per 100 units by items for the current month and year-to-date. The last three columns show: first, the estimated production for the month, year-to-date and total year; second, the estimated cost by items for the actual production for the month and year-to-date; and third, at the bottom of the last column is shown the estimated cost per 100 units for the year based on the budget.

From this example, it is clear that the production for the month (231,300) is higher than the budget (205,600). The year-to-date production is also higher (924,800 as against 885,000). The cost for the month ($6.65) is slightly higher than the standard ($6.62), although not so much so as the year-to-date, which is $7.60 compared to $7.38. This indicates a slightly improved condition over previous months. If we trace back through the cost items, we shall find that the principal difference lies in the expense item which is $2.19 against a standard of $2.10. This difference is probably not great enough to merit inquiry. The general impression, as created by this sheet, is satisfactory. The department is showing improvement,

TABLE 6

MANUFACTURING COST

PRODUCT "B" PLANT "2"

MAY, 1929

	ACTUAL				ESTIMATE		
	Month	Year to Date	Month	Year to Date	Month	Year to Date	Total Year
Production	231,300	924,800			205,600	885,000	3,675,000
Cost Items	TOTAL COST		COST PER 100 UNITS		ESTIMATED COST AT ACTUAL PROD.		
Material	$4,096.86	$16,547.01	$1.77	$1.79	$1.80		
Labor	6,218.97	30,101.27	2.69	3.25	2.72		
Expense	5,062.47	23,674.57	2.19	2.56	2.10		
TOTAL COST	$15,378.30	$70,322.85	$6.65	$7.60	$6.62	$7.38	$5.80

and it is evident that if conditions remain favorable, we shall meet our production and cost estimates for the year. As time passes, and we come nearer to the goal set for the year, this cost sheet will become more and more interesting to all parties concerned.

These cost standards have had far reaching effects in this department. Meeting the standard cost under all conditions has become more or less of a game of Supervision. The result has been substantial savings due to efficient management. Also, the accounting department has improved its methods so that costs are more accurate because every discrepancy is very apt to be investigated.

Reasonable cost standards that are flexible enough to apply under all ordinary conditions of manufacture are an especially useful tool to management. From them, fluctuating budgets may be set up, and estimated advance statements of profit and loss may be calculated; the amount of business necessary to break even may be calculated; and the true effect of increasing volume may be worked out and used as a basis for making price concessions for large orders. A better knowledge of the probable average cost of a commodity can be made available, so that correct selling prices may be worked out before either the business is lost to a competitor or a loss is suffered due to too low selling prices.

Aside from these general policy uses, a good standard cost is an excellent incentive for efficient management. If all parties are convinced that the standard is reasonable, and that it takes actual conditions into consideration, they will strive to make a good showing by meeting it. This result will well pay the cost of carrying on the work.

The method that we have outlined is not a cure-all. It works in the particular case of varying production and its usefulness stops there. But, there are many industries that have the seasonal problem, and for these industries this method should be useful.

We believe, however, that any cost problem may be satisfactorily solved if it is carefully analyzed and studied by the methods of industrial engineering and business research. If the actual conditions of manufacture are studied, certainly the cost of operation can be standardized to the point where the facts can be stated in a clear and understandable manner that will not conceal any facts.

ANNUAL MEETING OF THE TAYLOR SOCIETY

DECEMBER 4-6, 1929

Outline of tentative program for this meeting will be found on pages 158-159.