A COMPARISON OF THE THEORY AND METHODS OF STANDARD COST ACCOUNTING

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

THE EVOLUTION OF ACCOUNTING AS A CONTROL DEVICE

Books, chapters in books, and articles in periodicals dealing with standard cost accounting are fairly numerous. However, each of these seem to deal with one special methodology or with limited areas of the whole field of standard cost accounting. One is unable to find a place where he may get a complete view of the entire field of standard cost accounting. For this reason it seemed appropriate to study this literature and attempt a brief coordination of the material and to make a comparison of the different methodologies which are called standard cost accounting.

After some study it became apparent that the principal differences were between the theory and methods of basic standard cost accounting and current standard accounting. In order to keep the report within reasonable bounds, it was decided to investigate this area in some detail and give only minor treatment to other matters related to the subject of standard cost accounting. Some treatment of other matters, although minor, seemed advisable in order to place the principal problems in their proper setting.

Following the line of thought of placing the problem in its proper setting, it seemed advisable, likewise, to outline very briefly the whole of accounting methodology leading up to the development of standard costs. This introduction is, therefore, a brief statement of the evolution of all accounting as a control device; because out of all accounting, and because of its deficiencies as a cost control device, standard cost accounting was evolved.

HISTORICAL COSTS

The usual methodology of accounting, including cost accounting, is

that of recording only actual costs, expenses, and incomes in the accounts as they occur or accrue. This frequently is called the historical cost concept of accounting. One use of these historical costs is to study them for the purpose of comparing them with past costs and finding in any way possible the weak points in the financial structure as shown by past history. The figures themselves point out no weak spots except perhaps a low gross profit ratio and an insufficient net profit. It is necessary to go behind the figures in order to make reasonable decisions therefrom.

~~GENERAL ACCOUNTING~~

When general accounting ~~only~~ (out) is used, ~~the~~ (out) costs and expenses are charged to natural accounts or accounts which show the kind of expense, such as rent, taxes, insurance, etc. There is no analysis by departments or functions of the business. The entire business is considered as one function as far as the accounts are concerned. Naturally, only weakness in the structure as a whole is evident. The place of weakness within the whole structure is in no wise indicated; hence, adequate control of costs is limited.

~~COST ACCOUNTING~~

The evident weakness of general accounting as a cost control device led to attempts to break the natural expense accounts and primary cost accounts down into the business functions or departments. When this is done, the procedure is called cost accounting. Cost accounting may go further than this. It may attach the functional or departmental costs to the materials that pass through the functions or departments. This assumes that the costs which go to make finished goods are "sticky" in nature. They adhere to the raw material and become a part of the cost of the finished goods.

Cost accounting generally recognizes two classifications of the methods of manufacturing, resulting in two distinct systems of accumulation of costs, namely, process cost accounting and job order or lot cost accounting.

Process cost accounting is normally found in industries where it is customary to determine the cost of production in one or more manufacturing departments for a given period of time, rather than ascertaining the cost of each individual order. The time element and the departments involved are emphasized, rather than the individual job orders. Costs in each department are averaged by being totaled and then divided by the number of units of output for the period to obtain unit cost. Each process has separate manufacturing accounts (Work in Process) to accumulate costs for the process.

Job cost accounting is a method of cost accounting that accumulates manufacturing costs by jobs as well as by processes or departments. It emphasizes the costs by jobs rather than by departments. Job ~~or lot~~ cost accounting is used primarily in ~~jobbing plants, small plants, and large~~ plants that produce according to customer specifications. ~~3~~ Stop It may be noted here that the application of expenses to jobs in job cost accounting involves a new problem. Since costs are being accumulated by jobs or lots, certain expenses (direct expenses) are identifiable with the jobs or lots, while other factory expenses (indirect expenses) are of such nature that they cannot be so identified. The generally accepted solution is to charge these indirect expenses to accounts normally called Burden Department I, Burden Department II, etc. The burden accounts are then credited (and the jobs charged) with an amount for each job, such amount usually being the product of the direct labor hours and the predetermined burden rate. This is usually known as burden application. There should be a burden account

go on to next page

for each production department because costs are best controlled where they enter the line of production. This they do in departments, and there they are controllable.

~~THE NEED FOR STILL BETTER ANALYSIS~~

It has been explained how cost accounting breaks the costs for a business as a whole down into smaller parts--as many parts as there are departments or functions of a business. This is obviously superior to general accounting as a control device. By comparison of these costs with past costs for the same department, one can better locate weak spots in the company's organization and take some steps to avoid future losses. Also, in job cost accounting there may be a comparison with like jobs. But past costs may likewise have been too high. A comparison of present costs with past costs which were "out of line" is a poor comparison. A superior comparison, if not the best, would be to compare actual costs with an amount which represented what the costs should have been, i.e., with a standard. This is the idea behind standard cost accounting. When actual costs are compared with standard costs outside the double entry system, it is said that we have cost standards, frequently referred to as budgetary standards. When the comparison is woven into the double entry system, it is said that we have standard cost accounting. In the latter case the accounting system brings out the difference between actual and standard more or less automatically, although further analysis of these variations is necessary before proper action can be taken.

This report is limited chiefly to a consideration of the ways standards are woven into the double entry system, i.e., the accounting methodology of different methods of standard cost accounting and the performance level at which such standards should be set. But since theory affects methodology, comparative theory is also studied.

STANDARD COST ACCOUNTING

Generally, standards should be set on the basis of what costs of material, labor, and overhead should be if the plant is operated as a reasonably efficient unit. The standards, which are determined before the beginning of the period (predetermined costs), are used as a measure of efficiency. Briefly, it may be said that standard costs are scientifically predetermined costs of a product predicated upon the concept of what the product should cost, not what it is expected to cost, such predetermined costs being used to price inventories and to analyze variations therefrom and to ferret out and explain inefficiencies and the reasons therefor.

Since the development of the idea of standard cost accounting, a considerable difference of opinion has existed among cost accountants and writers on the subject as to the method of applying and computing standard costs. Claims for each of the various methods have been made; some seem valid, others appear to lose sight of the principal objective, i.e., to provide comparable statistics that measure what management needs to know. There is also considerable variation in the interpretation, meaning, and use of certain terms peculiar to standard cost accounting. The following statements, epitomized from current books and periodicals, illustrate the existing confusion as to the meaning of standards and show the need for uniform methods in their determination:

a. Standards represent ideal conditions of productive activity.

b. Standards are a forecast of what costs should be under normal operating conditions.

c. Standards are representative of average cost conditions.

d. Standards are predetermined costs representing budget forecasts of expected production and costs.

e. Standards are a reasonable attainable expectation of conditions of plant operation.

f. Standards are replacement costs computed at the latest market or replacement value.[1]

SUMMARY OF THE FIELD OF STUDY

The following outline summarizes the various aspects of standard costs that are discussed and compared herein.

a. Estimated Cost Systems:

Estimated cost systems are not considered standard costs; however, they are discussed since they are frequently confused with standard costs because they are a form of predetermined costs. Inclusion herein is primarily to indicate the differences and to show why they should not be classified as standard costs.

b. The Standard Cost Controversy:

There is controversy as to application of standards. A considerable group of writers and cost accountants feel that standards should be Current Standards, which are costs of production computed in advance. Current standards are set at what the costs should be rather than at what the costs are expected to be. The standards are changed to meet current conditions. Actual costs are then compared with the standards which coupled with a detailed analysis of the variations reveals any inefficiencies. Others (apparently in the minority) feel that the standards should be Basic Standards. Basic standards are intended to serve as a yardstick or bench mark with which both actual costs and certain variations can be compared. The basic standard is set for the first or base year and is very seldom changed; therefore, variances of actual costs from basic standards primarily indicate trend.

There is another area of controversy. This area is with respect to the

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[1] John G. Blocker, Cost Accounting, Second Edition, p. 554.

level of performance that shall be used to determine the standard burden rate. Should the level of performance be:

a. Expected Actual, which is a level that represents the costs the business actually expects to incur over the next fiscal period;

b. Average Capacity, often referred to as normal, which is generally considered to be a statistically computed figure representing the average or long-time performance covering the ensuing business cycle; or

c. Practical Capacity, occasionally referred to as ideal, which is a level based on the theoretical capacity of the plant adjusted for unavoidable delays, stoppages, etc.?

ORGANIZATION OF CHAPTERS

The discussion of these various theories and methods are presented in chapters as follows:

CHAPTER II	Estimated Cost Systems
CHAPTER III	The Comparative Theory of Standard Costs
CHAPTER IV	The Mechanics of Standard Costs and Illustrative Problem
CHAPTER V	Comparative Summary and Conclusions

CHAPTER II

ESTIMATED COST ACCOUNTING SYSTEMS

As previously stated, estimated cost accounting systems are often erroneously classified as standard costs. The purpose of this chapter is to explain briefly the application of estimated costs and to explain why they are not admitted to the category of standard costs.

Prior to the development of standard cost systems, a system of accounting was used known as estimated costs. Such systems are still being used and are particularly adapted to industries in which the element of style is predominant and in which it is necessary to make samples, quote selling prices, and take orders far in advance of actual manufacturing at prices which are based on the probable cost. The shoe and clothing industries meet all the prerequisites for use of estimated costs. Manufacturers in some other industries, such as chemicals, candy, and patent medicines, have a product which is based on definite formulas and are able to make estimates of their costs from the formula. In all such instances, it is important that the estimates be proved as to their accuracy. An estimated cost system, also variously known as specifications or formula cost systems, is a means of proving the accuracy of estimated costs or determining to what extent error has entered into such estimates.

ACCOUNTING PROCEDURE

The general accounting procedure may be briefly outlined as follows:

(1) The preparation of estimated cost sheets showing unit costs of the article to be manufactured, usually detailed to show materials cost, labor costs, and factory expense. Figure 1 is a typical estimated cost sheet.

(2) The entry of actual and estimated costs in the accounts.

(3) At the end of the accounting period, accounts having estimated costs therein are adjusted to correspond to actual costs.

FIGURE 1

ESTIMATED COST SHEET

PER UNIT OF MANUFACTURING MEN'S SUIT

Style M - 51

	Cutting Department	Tailoring Department	Total
Materials Used	$ 12.00	$ --	$ 12.00
Supplies (Linings & Buttons)	--	2.50	2.50
Labor	5.00	10.00	15.00
Factory Expense (60% of Labor)	3.00	6.00	9.00
TOTALS	$ 20.00	$ 18.50	$ 38.50

Estimated costs is not a distinct accounting system; it is an added feature to the normal accounts. The accounting procedure outlined above may be further explained by the following proforma entries:

(1) Materials

(a) Purchase

Dr. Direct Materials	$(Actual Cost)	
Cr. Vouchers Payable		$(Actual)

(b) Requisition by cutting department

Work in Process-Material	$(Actual)	
Direct Material		$(Actual)

(2) Labor

(a) Direct

Work in Process-Labor	$(Actual)	
Accrued Payroll		$(Actual)

(b) Indirect

Manufacturing Expense	$(Actual)	
Accrued Payroll		$(Actual)

(3) Manufacturing Expense

Work in Process--Mfg. Exp.	$(Actual)	
Manufacturing Expense		$(Actual)

(4) Finished Goods--The number of units completed are recorded on production reports priced at estimated cost.

Finished Goods	$(Estimated)	
Work in Process-Material		$(Estimated)
Work in Process-Labor		$(Estimated)
Work in Process-Mfg. Exp.		$(Estimated)

When the above entries are posted to the accounts, the Work in Process account will have been debited with <u>actual</u> costs and credited with <u>estimated</u> costs. The finished goods account will have been debited with <u>estimated</u> costs.

(5) Sales

Accounts Receivable	$(Selling Price)	
Sales		$(Selling Price)

Cost of Goods Sold	$(Estimated)	
Finished Goods		$(Estimated)

(6) At the end of the accounting period, a physical inventory of Work in Process is taken, valued at estimated cost. The difference between this

physical inventory and the balance of the Work in Process accounts is prorated to finished goods, work in process, and cost of goods sold. Proration is usually made on the basis of estimated costs in each account, or on equivalent production quantity of each. The effect of proration is to adjust all the accounts from estimated costs to actual costs. From this point, the records are handled as any actual cost records would be. Figure 2 shows the flow of accounting data in the accounts where estimated costs are being used.

From the above, it is clear that estimated costs are a form of predetermined costs. However, it must be realized that, although standard costs are also predetermined costs, the purposes of the two systems are very different. In estimated cost systems, the predetermined costs are set as nearly as possible to coincide with the actual costs when the comparison is made at the end of the period. In standard cost systems, predetermined costs are the costs that should be incurred if the factory operated in a reasonably efficient manner and are considered to be the true costs. At the end of the accounting period in estimated cost systems, the accounts are adjusted from estimated to actual costs, while in standard costs the variations are written off to profit and loss.

The following quotation emphasizes clearly the differences between estimated and standard cost systems as to theory and purpose:

> The purpose of an estimating cost system is to discover errors in the estimated costs and cause their correction. An estimating cost system, therefore, assumes that the actual costs are the true costs and that the estimates should be fitted to them. Standard costs, on the other hand, assume that the actual costs are subject to error or are susceptible to improvement and seek to point out the places where improvement can be made.[1]

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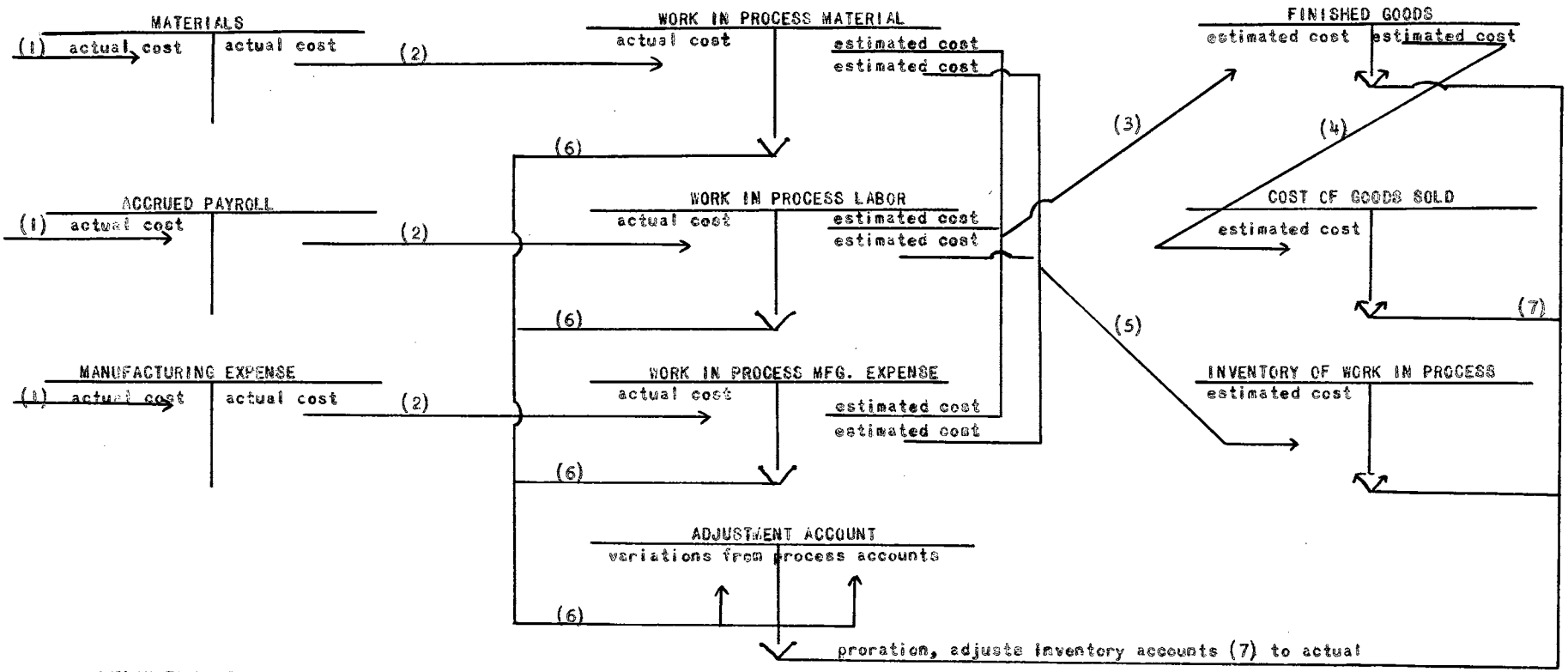
[1] W. B. Lawrence, Cost Accounting, p. 376.



EXPLANATION OF INDICATED ENTRIES

(1) To record costs at actual
(2) To record costs transferred to process accounts at actual
(3) To record goods finished, valued at estimated cost
(4) To record cost of goods sold valued at estimated cost
(5) To record ending work in process inventory valued at estimated cost
(6) To transfer remaining balances of work in process accounts at end of period to the adjustment account
(7) To record proration of variations in the adjustment account to finished goods, cost of goods sold, and work in process inventory

FIGURE 2

DIAGRAM OF THE FLOW OF ACCOUNTING DATA IN PROCESS ACCOUNTS
IN AN ESTIMATED COST SYSTEM

Since the concept of estimated cost systems is that the actual costs are the true costs, and adjustments are made accordingly, they are not designed to provide data for cost control. However, since the costs are predetermined, the entire firm personnel is certainly more cost conscious and any large variation between the estimates and actual costs will certainly indicate the advisability of a cost investigation. In estimated cost systems, cost analysis would certainly be limited as the records will not automatically provide the needed information. If such detailed analysis is desired, considerable subsidiary records would be necessary and would probably indicate the need for a complete cost system.

CHAPTER III

THE COMPARATIVE THEORY OF STANDARD COSTS

The purpose of this chapter is to analyze and explain the theory of standard cost accounting with respect to basic and current standards; also, to analyze the theory of the various levels of performance which have been suggested for use in setting standards.

Since the development of standard cost accounting, there have been numerous writings on this subject. Unfortunately, in these writings there has been considerable controversy and consequently confusion as to terminology and application. To date there have emerged some basic principles upon which there is general agreement, but there are still some areas within which there is considerable controversy.

Standard cost accounting systems are distinguished from other cost accounting systems primarily in that standard costs in addition to actual costs are used in the accounts. This is a basic concept of standard cost accounting, while the controversy lies in the way it should be applied in practice.

The broad objectives of standard cost accounting have been very clearly stated by one writer as follows:

> 1. To provide a means of measuring the efficiency of operations not available under ordinary cost procedure.
>
> 2. To facilitate control by isolating and bringing to the attention of the administrative officials unusual or "below par" performances for such action as may be advisable, necessary or possible. This procedure is sometimes said to be based on the "principle of exceptions."
>
> 3. To obtain substantially the same information with respect to costs as is obtained under ordinary cost procedure but at a lesser accounting cost.
>
> These objectives are attained by determining in advance a standard of measurement, by keeping the accounts in such a manner

as to show variances from the standard, and analyzing the variances to determine the causes of the deviation.[1]

UNIFORM ACCOUNTING VERSUS STANDARD COST ACCOUNTING

There are two concepts of the meaning of the term, "standard cost accounting," that should be clearly understood.

(1) The term, "standard cost accounting," is used at times to mean a standardized scheme of accounts and methods of recording therein that has been accepted by a particular industry. In other words, when used in this sense it means a pattern or copy which others follow or use as a guide. An example would be the uniform accounts and methods agreed upon and used by the petroleum industry in the United States. A better terminology is "uniform cost systems" (pattern standards) rather than "standard cost accounting." Since this concept is not really standard cost accounting under any concept, it will not be discussed further herein.

(2) The term, "standard cost accounting," is correctly used to mean the use of standard costs (predetermined costs) along with the use of actual costs in process or job cost accounting records. This seems to be the prevailing (and correct) usage of the term and will be discussed further.

All writers on the subject of standard costs agree that they are predetermined costs. This does not mean that all cost figures prepared in advance are admitted to the category of standard costs. Predetermined costs may be estimated costs or standard costs. Estimated costs are predetermined costs that represent some average of past costs or an opinion of what actual costs will be. They are not based upon scientific methods of fact finding for the determination of true costs. Estimated costs have been explained in detail in Chapter II.

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[1] James L. Dohr & Howell A. Inghram, Cost Accounting, pp. 445-6.

BASIC STANDARDS VERSUS CURRENT STANDARDS

Standard costs are costs established by scientific methods which consist of using past experience coupled with actual experiments as to physical quantities required to produce the article in question. Such experiments include engineering tests and measurements as to quality and quantity of material required, time and motion studies to determine required time, with adequate consideration from the engineering viewpoint of equipment and manufacturing facilities.

The Areas of Controversy. The aspect of standard costs upon which the principal differences of opinion seem to arise are twofold, namely:

(1) Whether the standard, with respect to application, should be a

a. basic standard, or

b. a current standard.

(2) Whether the standard (basic or current), with respect to level of performance, should be set at

a. an expected actual level, or

b. average capacity level, or

c. practical capacity level.

Basic Standards. The concept of basic standards is that of measuring all variations from a base, which is a standard set the first year. The base or first year standard may be set at any one of the three levels of performance, i.e., expected actual, average capacity, or practical capacity. The most commonly used level for basic standards appears to be expected actual. Once the base (or basic) standard is set, it is very seldom changed. A change would ordinarily be made only when specifications or methods of manufacture were changed. Basic standards are often referred to as "bogey" standards. Basic standards are intended to serve as a bench

mark or yardstick with which both actual and expected performance can be compared. They are somewhat analogous to the base upon which a price index number is computed. The results reduce actual costs, expected costs, and the variations between them to percentage relatives with the basic standard as the base.

Basic standard cost figures do not displace actual cost figures in the accounts and financial statements. Basic standards occasionally are carried outside the accounts; however, they may be, and generally are, introduced into the accounts as indicated in Chapter IV.

When basic standards are used, it is necessary to compute an expected actual also, the reason being that the basic standard (after the first year) does not represent what performance for the current period ought to be but serves only as a base from which to measure trend. Management usually requires that a quota be set up for the current year and wants to know the variation or deviation therefrom. Basic standards alone will not provide such data; therefore, expected actual must be predetermined and comparisons made in regard thereto. In basic standard cost accounts, the variations between actual and expected actual are normally expressed as a percentage of the basic standard. Actual costs, likewise, are expressed as percentages of the basic standard and are also compared with the expected actual to find out how much actual performance has deviated from what was expected and with the basic standard to determine trends from period to period. This latter comparison would not be possible in current standard costs, as it is a changing standard.

Current Standards. Current standards are generally regarded as the true or real costs to be carried through the accounts and into the financial statements. Such standards are revised frequently to reflect changes in methods, specifications, and prices. The standard is recomputed each

year, and changes may be made during the year if conditions require it. Since current standards are regarded as the true costs, they replace actual costs in the accounts; the difference between actual and current standards show up as variations, which are closed to profit and loss. Once current standards as a system is decided upon, the level of performance to be used in setting the standard must be decided upon. The level of performance may be expected actual, average capacity, or practical capacity. The practical capacity level of performance is being used more and more, with the result that many writers and others assume a practical capacity level of performance when they use the term, current standards.

LEVELS OF PERFORMANCE

The level of performance implies more than mere prices. It refers to all the elements of performance which would include: rate of production; prices paid for labor, materials, and services; quantities of material, labor, etc.; and other costs.

The three levels previously mentioned (expected actual, average capacity, and practical capacity) are generally recognized by most writers on standard costs. However, there is disagreement as to the meaning and usefulness of each, and it must be admitted that there is overlapping of meaning which prevents a clear-cut differentiation of meaning. The basic standard, when originally determined, may be based upon any one of these three levels, or in some cases a combination thereof. Similarly, current standards may be set at any one of the three levels or a combination thereof; however, as previously mentioned, some writers consider current standards as set only at the practical level. This is not in conformity with the majority of writers. Therefore, it is felt that current standards is generally understood to be a separate system as opposed to basic standards, and either system may be set at one of three levels or a combination thereof.

Expected Actual Level. The expected actual level is one that represents the costs the business actually expects to incur if the anticipated prices are paid for materials and services and the usages thereof correspond to that believed necessary to produce the planned volume of goods. Such standard does not divulge all inefficiencies (such as idle capacity due to production less than capacity) but does divulge variations or inefficiencies from the expected. Variances from such standard will normally be due to failure to achieve the volume expected, prices paid for materials and services different from expected, or efficiency in the production process not as expected. These variances can reflect performance above or below the standard, hence, may be debit or credit balances.

Average Capacity. This level, often referred to as the normal level, is generally considered to be a statistically computed figure representing the average or long-time performance. It is intended to be the average covering an entire business cycle, thereby tending to level the seasonal, cyclical, and other erratic fluctuations. It is the actual level expected to be attainable over one or more operating cycles. Variations from such standards will be due to output, prices, or performance efficiency being above or below the long-time average.

Practical Capacity. This level is referred to by some writers as the ideal level. This obviously is a misuse of terms, since "ideal" means the best or highest level of performance. Ideal level, if the correct use of the word "ideal" is used, more nearly means theoretical capacity. Practical capacity looks to the plant rather than to time for determination of the level of performance. To determine practical capacity, one must begin with theoretical plant capacity (ideal) and adjust it for unavoidable delays such as machine breakdowns, labor turnover, vacations, maintenance, etc.

It is often said to be the rate at which the plant can operate most economically. It is usually regarded as approximately 85 per cent of theoretical capacity.

Some writers (very much in the minority) have advocated the use of theoretical capacity as the level at which to set the standard, maintaining that no cost of idleness should be capitalized in the cost of finished goods. Such a level appears to be absurd, for of what value is a measure of something that is practically unavoidable? It only tends to cover up or hide the real variations about which management should be informed.

WHAT TYPE OF STANDARD TO USE

The decision as to whether to use basic or current standards rests with management. However, since management generally relies heavily on the accountant concerned, his views and feelings will probably be the deciding factor. Consequently, it is of utmost importance that the accountant have the proper perspective of standard costs and not lose sight of the two primary objectives, namely: (1) that the purpose of standard costs is to provide management with a measure that points out only those inefficiencies and losses that are controllable, and (2) it should use the most economical and efficient method of doing this.

As between current and basic standards, the former is the most commonly used. The choice between the two probably will be made after considering the following ideas:

(1) The one that furnished management with the most correct and useful data.

(2) Type and size of industry.

(3) Analysis desired by management.

(4) Possibility of educating management in regard to the system.

over

(5) Value to management to know the fixed expenses of idle capacity.

(6) Managerial preference for variances in absolute (current standard) or ratio form (basic standard).

(7) Need or desire for trend indicators (basic standard).

The current trend appears to be in favor of current standard set at the practical capacity level. Any higher capacity standard results in variances which are partly the result of acts beyond the control of management. It is also felt that the standard should be attainable. From the accounting standpoint, many writers prefer practical capacity because, with this methodology, the unavoidable loss is capitalized and the avoidable loss is not capitalized. Such level (practical capacity) brings to the attention of management the loss due to idle capacity as well as the variances indicated for other levels.

The average capacity level has little value for control over unused capacity loss, because it does not indicate what should be accomplished during any particular time. There is, also, the difficulty of giving definite meaning to the concept of average or normal. Normal methods are used principally for overhead costs because there is need for some method that will minimize the effect of fluctuations of such costs on the end cost of the product due to seasonal and cyclical changes in output and cost.

From a practical viewpoint it may be stated that the level to be used should be the one that will provide management with statistical information (analysis of variations) that will enable them to make the correct decision the greatest number of times. Proof of one to the exclusion of the others would be hard to show. However, the practical level appears to offer the most for management purposes.

BUDGETS

There is some confusion as to the relationship between budgets and standard costs. Both, of course, imply the predetermination of costs. The principal difference lies in the scope of the terms. A budget comprises the setting or predetermining of objectives, costs, production, etc., based primarily on a sales forecast for the year. The budget covers the whole and generally represents the expected or goal. Standard costs for burden may be on part of the budget. They are concerned only with the production department expenses. Standard costs are concerned only with the factory and may be set at the same price and production level or at a different level from the budget. Therefore, it may be seen that, although the two are related somewhat, they are distinctly different.

CHAPTER IV

THE MECHANICS OF STANDARD COSTS

The mechanics of standard cost systems, that is, the methods of introducing standard costs into the accounts, are not subject to controversy. This point has been indicated in the preceding chapters. There are, however, a number of minor variations regarding the methods of recording standard costs in the accounts. The more representative ones are discussed in this chapter.

COST STANDARDS

Cost standards (budgetary standards) are systems in which the predetermined costs are not journalized or entered into the accounts but are carried outside the regular accounts. The differences or variations are analyzed to a great extent in a manner similar to other methods. Both current standards and basic standards may be handled in this manner, that is, outside the regular accounts. However, since current standards are generally considered to be the true costs to be carried in the accounts, carrying them outside the accounts would be somewhat inconsistent.

BASIC STANDARDS

For basic standard costs, there is a fairly well-accepted method of introduction of the standard into the accounts. The actual costs are carried through the accounts in the usual manner, basic standards being introduced into certain accounts in addition to the actual costs. The following list of accounts is representative of those showing both actual and the basic standard:

Work in Process--Labor
Work in Process--Burden
Work in Process--Material
Finished Goods

Usually, each product has the above four accounts. If there are many products, a subsidiary ledger is advisable. In these accounts the basic standard is used primarily as a method of valuing the inventories and cost of goods as shown in Figure 3. The calculation of the amounts in the illustration is as follows:

Work in Process debits are at actual cost ($570.00) and also at standard cost ($400.00); then the actual is divided by the standard to obtain the variance rate of 142.5%. The credits indicate that 10 units of Product I have been finished. In respect to Product I, the standard cost of material "M" used is $100.00. The variance rate (142.5%) is carried from the debit to the credit side. The standard cost of Product I material ($100.00) is then multiplied by the variance rate to obtain the actual cost figure of $142.50, which is entered on the credit side as shown. Both costs (actual and standard) are transferred to the finished goods account as shown. The same procedure is followed in valuing the cost of goods sold and the finished goods. The basic standard cost is not carried beyond the finished goods account and does not show up in the financial statements. Figure 4 shows the flow of accounting data through a factory using basic standard costs.

CURRENT STANDARDS

The usual procedure in current standard costs is to enter the actual costs (except possibly materials) up to the process accounts. From this point the accounts show only standard costs. The three methods listed below are quoted from a manual on advanced cost by George H. Newlove of the University of Texas:

> Method A--Charge Work in Process with the actual costs of production for the period, credit with the standard cost of the product completed, and debit (or credit) with the net variation between the actual and standard cost of the equivalent production.

FIGURE 3

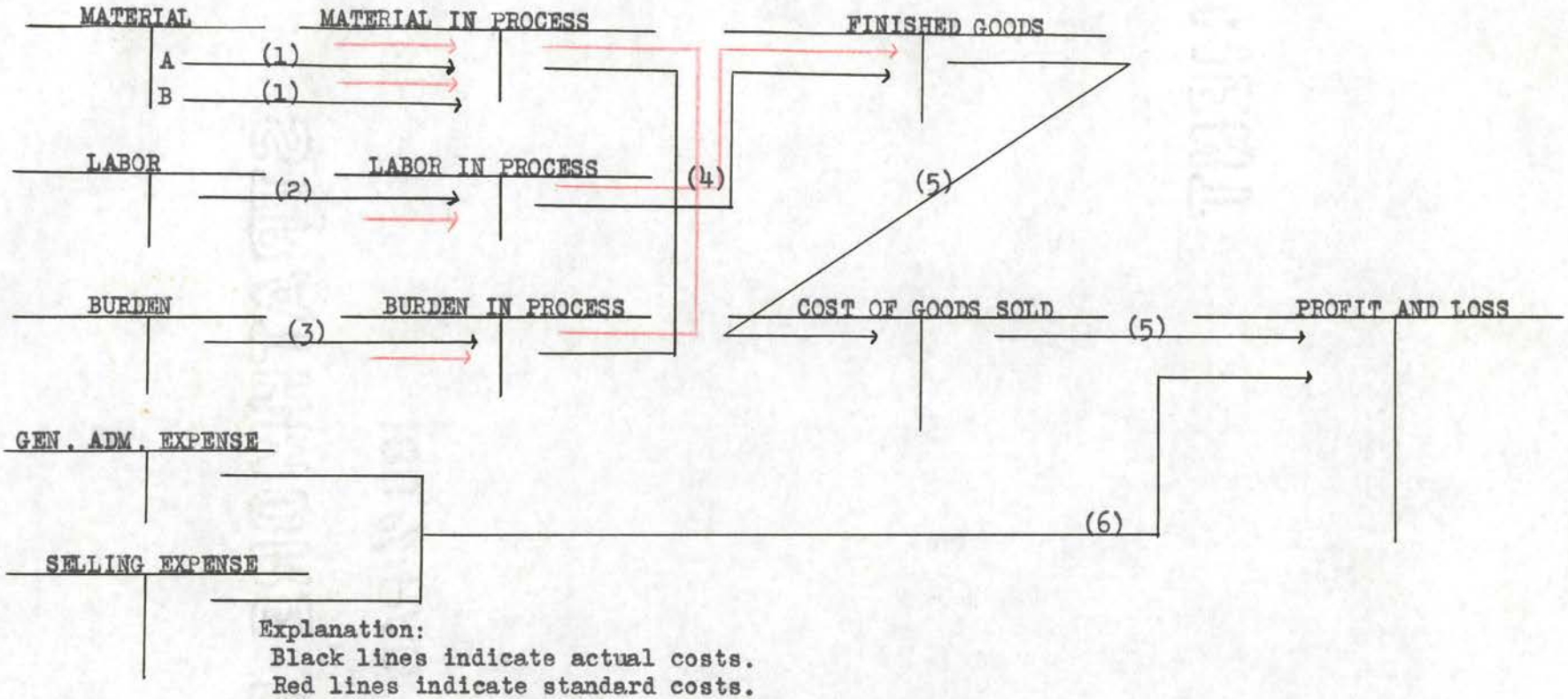
WORK IN PROCESS--MATERIAL AND FINISHED GOODS ACCOUNT
ILLUSTRATING BASIC STANDARD COSTS

WORK IN PROCESS--MATERIAL "M"

	actual	standard	rate		actual	standard	rate
Inventory	150.00	100.00	150%	Finished Goods Product I 10 units	142.50	100.00	142.5%
Added to Process	420.00	300.00	140	Inventory-down	427.50	300.00	142.5
	570.00	400.00	142.5		570.00	400.00	142.5
Inventory	427.50	300.00	142.5				

FINISHED GOODS--PRODUCT I

	actual	standard	rate		actual	standard	rate
Inventory 30 Units	704.00	660.00	140.0	Sold 20 Units	497.20	440.00	113.0%
From Process 10 units				Inventory-down	497.30	440.00	113.0
Mat'l	142.50	100.00	142.5				
Labor	96.00	80.00	120.0				
Burden	52.00	40.00	130.0				
	994.50	880.00	113.0		994.50	880.00	113.0



Explanation:
Black lines indicate actual costs.
Red lines indicate standard costs.
(1) Transfer of materials to process account.
(2) Transfer of factory labor to process account.
(3) Burden application.
(4) Transfer of finished goods to inventory account.
(5) To record cost of goods sold and thence to profit and loss.
(6) Transfer of general administrative and selling expenses to profit and loss.

FIGURE 4

FLOW CHART OF FACTORY USING BASIC STANDARD COSTS IN JOB COST RECORDS

Method B--Charge Work in Process with the standard costs of the equivalent production for the period (diverting differences between the actual and standard costs to variation accounts) and credit with the standard costs of the product completed.

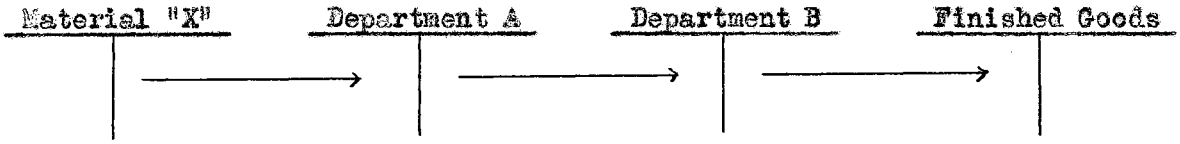
Method C--Charge Work in Process with the actual and standard costs of the equivalent production and credit with the actual and standard costs of the product completed (using accounts with two debit and two credit money columns).

Figures 5, 6, and 7 show in chart form the flow of accounting data in the accounts using each of the three methods explained above.

ILLUSTRATIVE PROBLEM

The following problem has been designed to show some of the differences between current standard costs and basic standard costs, and to illustrate some of the differences in mechanics involved. It purposely has been made as simple as possible in order to illustrate the differences involved without illustrating the complexities. The plan is to present the solution under the two methods (basic and current) simultaneously so that differences may be observed more easily. Entries are keyed for ready reference. Comments relative to various points are made throughout the problem.

The assumed plan of production may be charted as follows:



The data given for the problem are tabulated for easy reference. In some instances the data vary somewhat from what would appear to be normal; however, such deviations are introduced for simplification or to illustrate clearly some particular point. Basic standard is assumed to have been set some time in the past, presumably at expected actual. Current standard is set at practical capacity level. Actual is shown by unit cost for simplification.

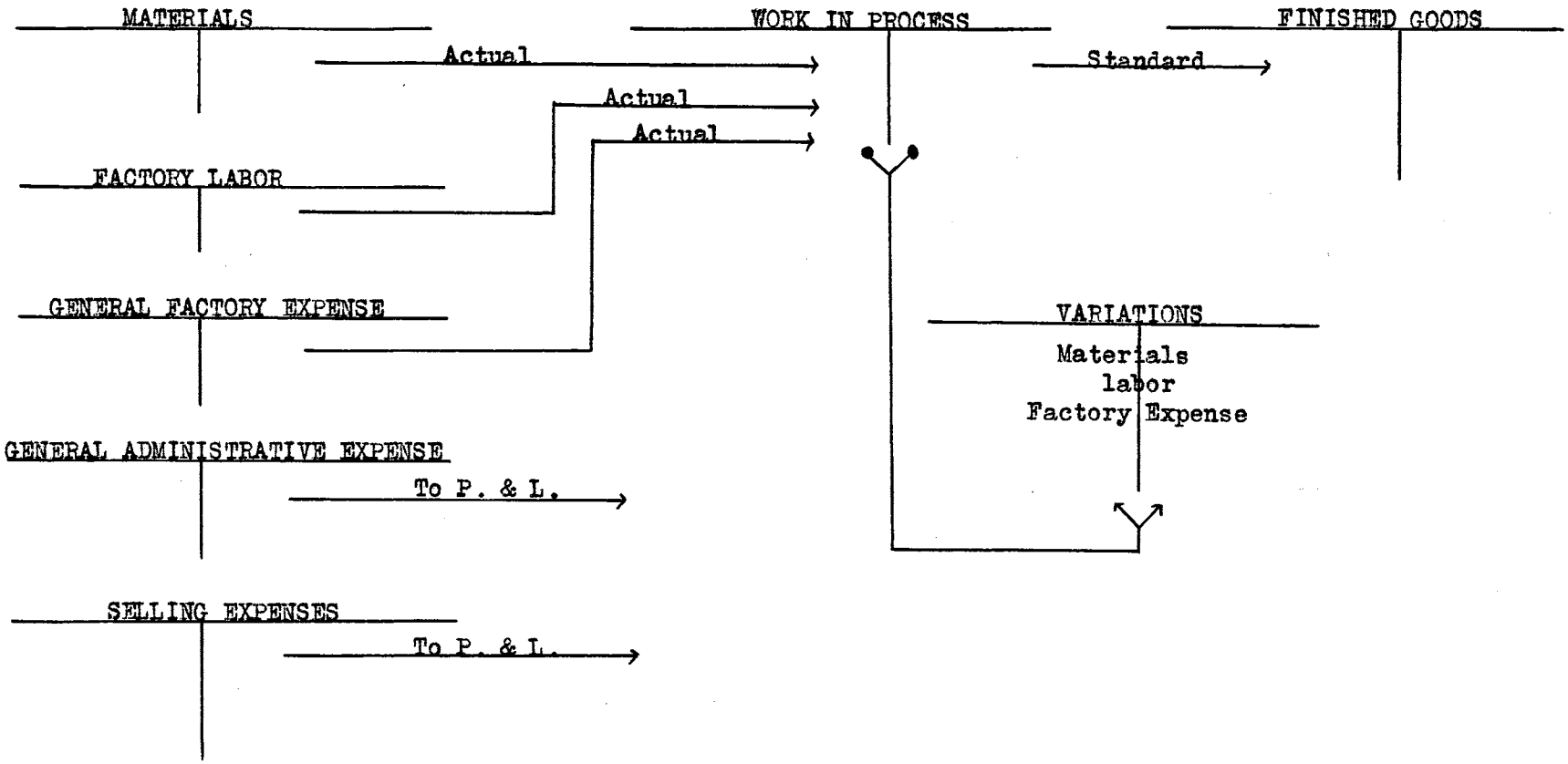


FIGURE 5

FLOW CHART OF ACCOUNTING DATA IN A FACTORY USING CURRENT STANDARD COSTS IN PROCESS ACCOUNTING METHOD A

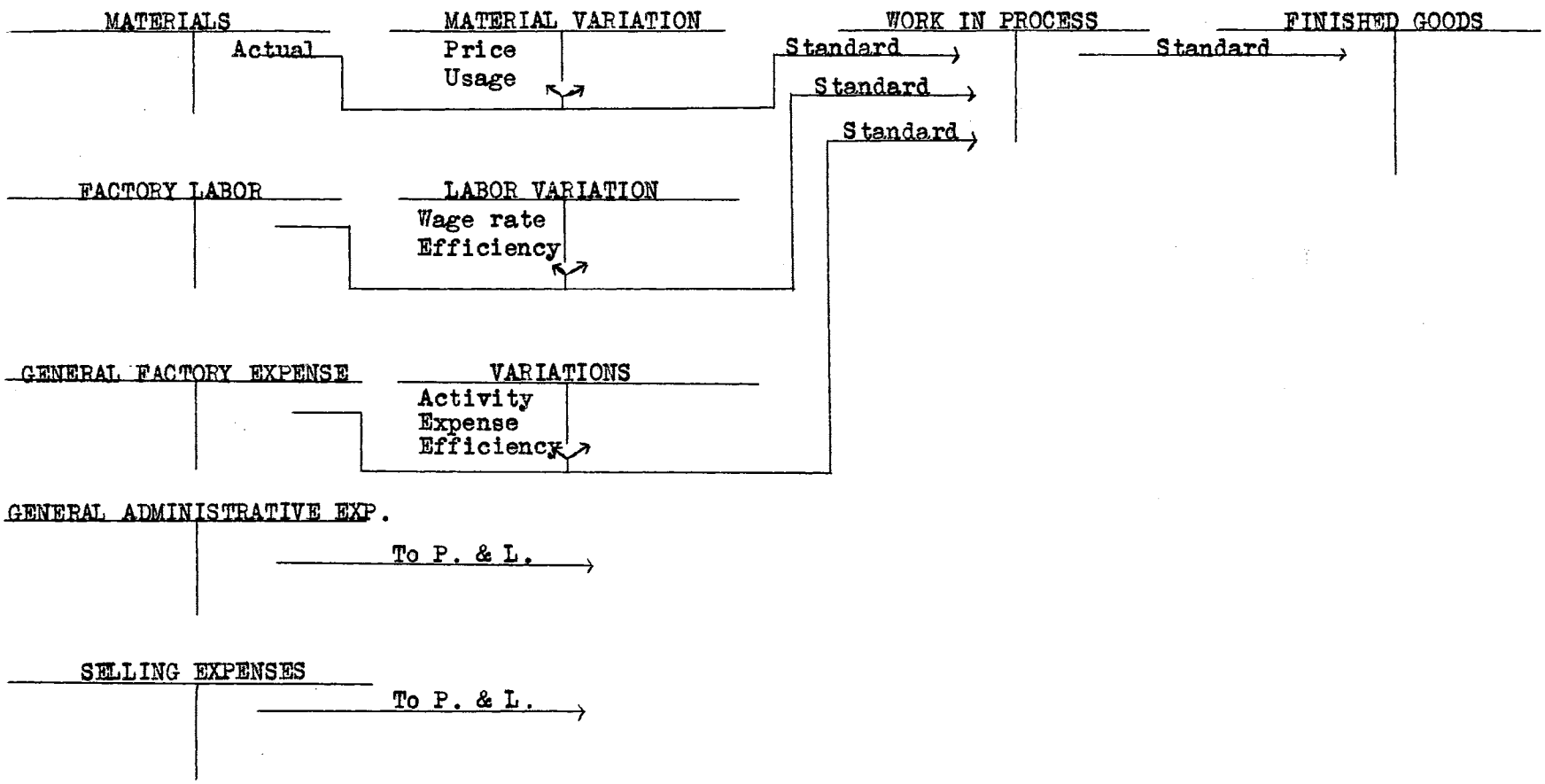


FIGURE 6

FLOW CHART OF ACCOUNTING DATA IN A FACTORY USING CURRENT STANDARD COSTS IN PROCESS ACCOUNTING METHOD B

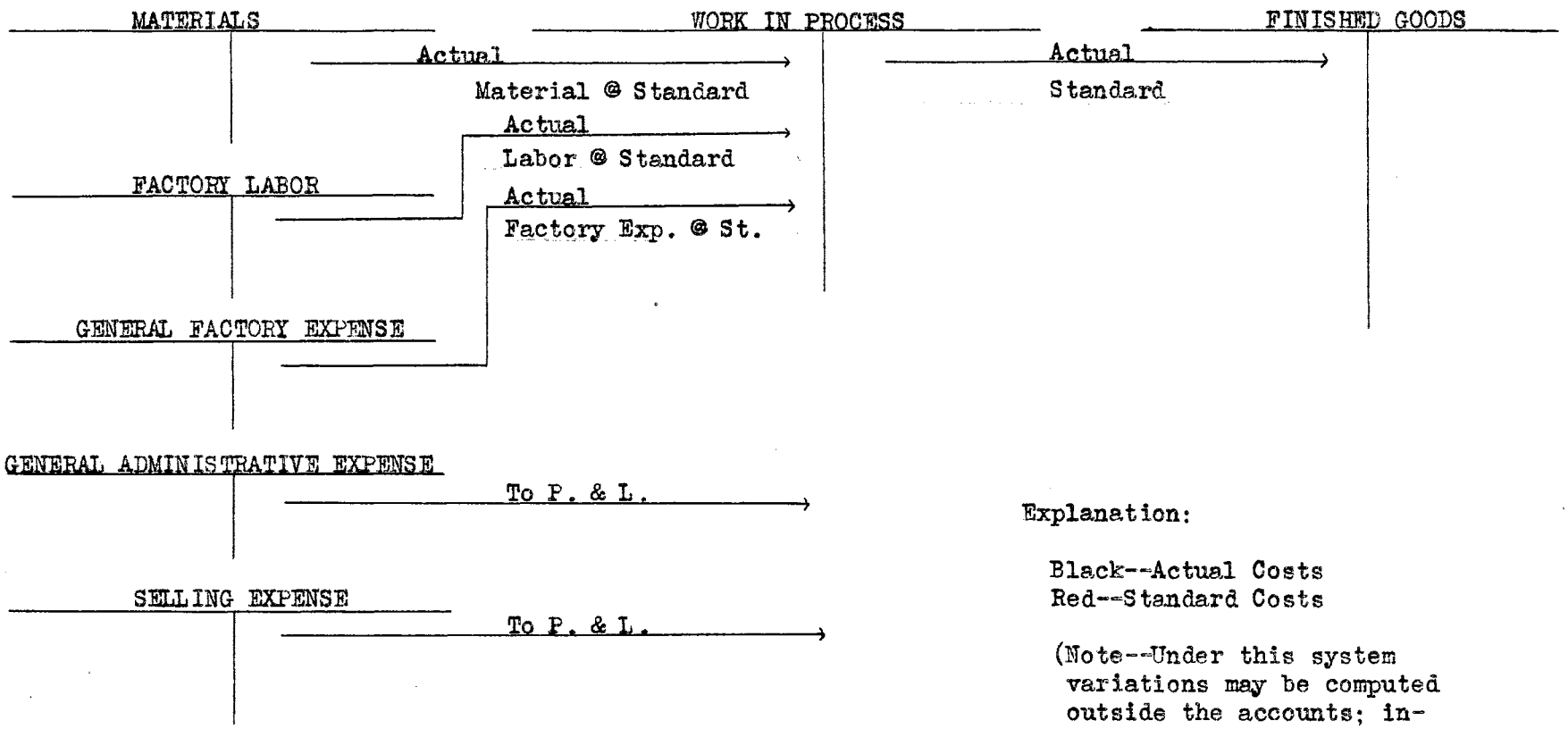


FIGURE 7

FLOW CHART OF ACCOUNTING DATA IN A FACTORY USING CURRENT STANDARD COSTS IN PROCESS ACCOUNTING METHOD C

Data for the problem:

(a) Beginning Inventories:

(1) Raw Materials--None

(2) Work in Process--20 units completed in Department A and ready to enter Department B. The following tabulation shows the costs incurred in Department A on the Work in Process Inventory.

	Basic Standard	Current Standard	Actual
Material "X"	40.00	50.00	50.00
Labor	30.00	32.00	32.00
Burden	20.00	28.00	28.00

(3) Finished Goods--Product I 50 units

Cost	525.00	605.00	610.00

(b) Purchases:

Purchased 2,000 units Material "X" at $ .26

(c) Work started (Put in process):

In Process I--Material for 100 units of Product I.
(See next page tabulation of cost data)

(d) Sales:

75 units of Product I at $20.00 per unit.

(e) Units finished (To finished goods):

110 units of Product I

(f) Ending inventories:

(1) Material "X" 900 units

(2) Work in Process--10 units completed in Department A and ready to enter Department B

(3) Finished Goods--85 units of Product I

TABULATION OF UNITS COSTS
FOR THE ILLUSTRATIVE PROBLEM

	CURRENT STANDARD (Set at Practical Capacity)			BASIC STANDARD			EXPECTED ACTUAL			ACTUAL		
	Units or Hours	Price or Rate	Amount	Units or Hours	Price or Rate	Amount	Units or Hours	Price or Rate	Amount	Units or Hours	Price or Rate	Amount
Material "X"	10	.25	2.50	10	.20	2.00	10	.25		11	.26	2.86
Labor:												
Department A	2	.80	1.60	2	.75	1.50	2	.825		2	.90	1.80
Department B	3	1.10	3.30	3	1.00	3.00	3-1/4	1.10		3-1/4	1.16	3.77
Burden:												
Department A	2 (Fixed .50) (Var. .20)	.70	1.40	2 (Fixed .35) (Var. .15)	.50	1.00	2	.75		2 (Fixed .50) (Var. .45)	.95	1.90
Department B	3 (Fixed .75) (Var. .35)	1.10	3.30	3 (Fixed .70) (Var. .30)	1.00	3.00	3-1/4	1.12		3-1/4 (Fixed .72) (Var. .358)	1,078	3.854
Totals			12.10			10.50						14.184

Possible Hours At Practical Capacity:
Department A--250
Department B--400

Journal Entries and Ledger Accounts

The journal entries on the following pages are so arranged that they may be readily compared. Since the problem is being illustrated with two solutions, there will be two journal entries and two accounts where there would normally be one. Each entry is numbered for cross reference, and will be made on corresponding sections of each page. For example, entry number 2b (b--basic standard) and 2c (c--current standard) will be found in the same relative positions on the next two pages, etc. These same numbers will be noted in the ledger accounts showing the data posted thereto.

BASIC STANDARD COST ENTRIES

	At Actual		At Basic	
	Debit	Credit	Debit	Credit
Entry 1b--To record the beginning inventories; credit not shown as the beginning inventory is assumed to be on the books.				
Work in Process--Material "X"	50.00		40.00	
Work in Process--Labor	32.00		30.00	
Work in Process--Burden	28.00		20.00	
Finished Goods	610.00		525.00	

(Note in basic standard cost the accounts show both actual and basic standard costs as previously explained.)

Entry 2b--To record the purchase of 2,000 units Raw Material "X" at $ .26.

Raw Material "X"	520.00			
Vouchers Payable		520.00		

Entry 3b--To record requisition for Material "X" for 100 units for Product I.

Work in Process-Material "X"	286.00		200.00	
Raw Material "X"		286.00		200.00

Computation: (Actual 1100 units @ .26)
(Basic 1000 units @ .20)

Entry 4b--To record direct labor "used" on 100 units completed in Department A, and 110 units completed in Department B.

Work in Process--Labor	594.70		480.00	
Accrued Payroll		594.70		480.00

Computation:	At Actual			At Basic		
	Hours	Rate	Amount	Hours	Rate	Amount
Department A--100 units	200	.90	$180.00	200	.75	$150.00
Department B--110 units	357.5	1.16	414.70	330	1.00	330.00
			$594.70			$480.00

CURRENT STANDARD COST ENTRIES

	At Actual Debits	At Actual Credits	At Current Debits	At Current Credits
Entry 1c--To record the beginning inventories; credit not shown as the beginning inventory is assumed to be on the books.				
Work in Process--Department A			110.00	
Work in Process--Department B			none	
Finished Goods			605.00	

(Note that in current standard the inventories are normally carried at standard.)

Entry 2c--To record the purchase of 200 units of Raw Material "X" at $ .26.

Raw Material "X"	520.00			
Vouchers Payable		520.00		

(Frequently the price variation is taken out at this point.)

Entry 3c--To record requisition for material "X" for 100 units of Product I.

Work in Process--Department A			250.00	
Material Variation	36.00			
Raw Material "X"		286.00		

Computation:

Actual--1100 units	@ .26 =	$286.00	
Standard 1000	@ .25	250.00	
Variation		36.00	

Entry 4c

Work in Process--Department A			160.00	
Work in Process--Department B			363.00	
Labor Variation	71.70			
Accrued Payroll		594.70		

Computation:

Actual Labor Costs		594.70
Current Standard		
Department A--100 U @ 2 hrs = 200 hrs @ .80 =	160.00	
Department B--110 U @ 3 hrs = 330 hrs @ 1.10 =	363.00	523.00
Variation		71.70

BASIC STANDARD COST ENTRIES (Continued)

	At Actual		At Basic	
	Debits	Credits	Debits	Credits
Entry 5b--To record actual expenses (Burden).				
Factory Burden	575.40			
Miscellaneous Accounts		575.40		
Entry 6b--To apply burden.				
Work in Process--Burden				
Department A	190.00		100.00	
Department B	385.40		330.00	
Factory Burden		575.40		430.00

Computation:

		AT ACTUAL		AT BASIC	
Department A--100 units	200 hrs @	.95 =	$190.00	200 @ .50 =	100.00
Department B--110 units	357.5 hrs @	1.078	385.40	330 1.00	330.00
			575.40		430.00

Entry 7b--To record 110 units completed and transferred to finished goods.

Finished Goods--Product I	1506.88	1155.00	
Work in Process-Material	308.00		220.00
Work in Process-Labor	608.85		495.00
Work in Process-Burden	590.04		440.00

Computation:

			AT BASIC		AT ACTUAL
Material	110 U	@ 2.00	220.00	220.00 x 140%	308.00
Labor	110	4.50	495.00	495.00 123	608.85
Burden	110	4.00	440.00	440.00 134.1	590.04
			1155.00		1506.89

CURRENT STANDARD COST ENTRIES (Continued)

	At Actual Debits	At Actual Credits	At Basic Debits	At Basic Credits
Entry 5c--To record actual expenses (Burden).				
Factory Burden, Department A	190.00			
Factory Burden, Department B	385.40			
Miscellaneous Accounts		575.40		
Entry 6c--To apply burden at the current standard rate.				
Work in Process--Department A			140.00	
Work in Process--Department B			363.00	
Unabsorbed Burden	72.40			
Factory Burden		575.40		
Computation:				
Actual Burden Costs				575.40
Standard Burden				
Department A--200 hours @ $ .70 = $140.00				
Department B--330 hours @ 1.10 = 363.00				503.00
Unabsorbed				72.40
Entry 6ac--To transfer Department A process costs on 110 units to Department B at standard.				
Work in Process--Department A			605.00	
Work in Process--Department B				605.00
Computation: Material 1100 U @ .25 = $275.00				
Labor 220 hrs @ .80 = 176.00				
Burden 220 hrs @ .70 = 154.00				
605.00				
Entry 7c--To record 110 units completed and transferred to Finished Goods.				
Finished Goods			1331.00	
Work in Process--Department B				1331.00
(110 units completed at standard cost of $12.10)				

BASIC STANDARD COST ENTRIES (Continued)

	At Actual		At Basic	
	Debits	Credits	Debits	Credits
Entry 8b--To record the sale of 75 units of Product I.				
Accounts Receivable	1500.00			
Gross Profit		515.63		
Finished Goods		984.37		787.50

Basic Cost--75 units @ $10.50 = $787.50
Actual Cost--$787.50 x 125 (variance rate) = $984.37

Cost of Sales account omitted as it would add nothing to the problem for illustrative purposes.

CURRENT STANDARD COST ENTRIES (Continued)

	At Actual		At Basic	
	Debits	Credits	Debits	Credits
Entry 8c--To record the sale of 75 units of Product I.				
Accounts Receivable	1500.00			
Gross Profit				592.50
Finished Goods				907.50

(75 units at current standard cost of $12.10 = $907.50)

Cost of Sales account omitted as it would add nothing to the problem for illustrative purposes.

BASIC STANDARD ACCOUNTS

RAW MATERIAL "X"

(2b)	2000 U	$520.00	(3b)	1100 U	$286.00

FACTORY BURDEN

(5b)		575.40	(6b)	575.40

WORK IN PROCESS--MATERIAL "X"

		Actual	Standard	Rate		Actual	Standard	Rate
(1b)	Inv.	$ 50.00	$ 40.00	125%	(7b) Fin.Gds.	$308.00	$220.00	140%
(3b)		286.00	200.00	143				
		$336.00	$240.00	140%				

WORK IN PROCESS--LABOR

		Actual	Standard	Rate		Actual	Standard	Rate
(1b)	Inv.	$ 32.00	$ 30.00	106.67	(7) Fin.Gds.	$608.85	$495.00	123%
(4b)		594.70	480.00	124%				
		$626.70	$510.00	123%				

WORK IN PROCESS--BURDEN

		Actual	Standard	Rate		Actual	Standard	Rate
(1b)	Inv.	$ 28.00	$ 20.00	140%	(7b) Fin.Gds.	$590.04	$440.00	134.1%
(6b)		575.40	430.00	130				
		$603.40	$450.00	134.1				

FINISHED GOODS--PRODUCT I

		Actual	Standard	Rate		Actual	Standard	Rate
(1b)	Inv.	$610.00	$525.00	116%	(8b) Sale	$984.37	$787.50	125%
(7b)	Mat.	308.00	220.00	140				
	Labor	608.85	495.00	123				
	Burden	590.04	440.00	134.1				
		$2116.89	$1680.00	125%				

GROSS PROFIT

		(8b) Sale of 75 Units of Product I	$515.63

CURRENT STANDARD ACCOUNTS

RAW MATERIAL "X"

(2c) Pur. 2000 U	$ 520.00	(3c) 1100 U	$ 286.00

MATERIAL VARIATION

(3c)	$ 36.00		

LABOR VARIATION

(4c)	$ 71.70		

FACTORY BURDEN

(5c) Dept A Actual	$ 190.00	(6c)	575.40
(5c) Dept B Actual	385.40		
	575.40		575.40

UNABSORBED BURDEN

(6c)	$ 72.40		

DEPARTMENT A--WORK IN PROCESS

(1c) Inv. 20 U	$ 110.00	(6ac) To Dept B Process	$ 605.00
(3c) Material	250.00		
(4c) Labor	160.00	Inventory down	55.00
(6c) Burden	140.00		
	660.00		660.00
Inv. Work in Process 10 U	55.00		

DEPARTMENT B--WORK IN PROCESS

(6ac) From Dept A Proc.	$ 605.00	(7c) To Fin. Gds. 110 U	$1331.00
(4c) Labor	363.00		
(6c) Burden	363.00		
	1331.00		1331.00

FINISHED GOODS--PRODUCT I

(1c) Inv. 50 U	$ 605.00	(8c) Sale 75 U	$ 907.50
(7c) Finished 110 U	1331.00		

GROSS PROFIT

		(8c) Sale 75 U Product I	$ 592.50

ILLUSTRATIVE PROBLEM

COMPARATIVE TRIAL BALANCE (PARTIAL)

	BASIC STANDARD ACCOUNTS				CURRENT STANDARD ACCOUNTS	
	At Actual		At Basic			
	Debit	Credit	Debit	Credit	Debit	Credit
Raw Material "X"	$ 234.00				$ 234.00	
Material Variation					36.00*	
Labor Variation					71.70*	
Unabsorbed Burden					72.40*	
Work in Process:						
Material "X"	28.00		20.00			
Labor	17.85		15.00			
Burden	13.36		10.00			
In Dept A					55.00	
In Dept B					none	
Total Work in Process Inventory	58.85		45.00		55.00	
Finished Goods Inventory	1132.52		892.50		1028.50	
Gross Profit		515.63				592.50

*Normally closed to Profit and Loss as a loss (if debits) for the period.

A study of the above trial balance will reveal considerable differences between the two methods; these differences may be summarized as follows:

(1) Inventory valuations

a. Basic Standard--valued at actual cost.

b. Current Standard--valued at standard.

(2) Gross Profit

Difference due to valuations of both beginning and ending inventories of work in process and finished goods; also different valuations of cost of goods sold

(3) Variations

a. Basic Standard--not carried to variation accounts, profit and loss, or financial statements.

b. Current Standard--Variations are segretated in separate variation accounts and closed to profit and loss. Financial statement valuations of inventories at standard.

Variation Analysis

On the next page is an analysis of the current standard variation accounts. The material variation of $36.00 has been analyzed to show the excess quantity used, in this case 100 units. The value of this usage analysis is to bring it to the attention of management. Investigation will reveal the cause of the excess usage and will usually be found to be due to spoilage, waste, defective materials, theft, or some other similar cause which can be remedied. The price variation indicates to management that the purchasing department has not come up to the standard in respect to price.

Labor has been analyzed to show loss due to productivity of workmen. This analysis places responsibility. Management will want to know why productivity is not up to standard. This variance (labor efficiency) may be due to waiting for materials, working on defective materials, using defective equipment, doing corrective work, general inefficiency, lack of training, etc. The wage rate variation indicates that the price variation with respect to standard is out of line. This variation may be due to union activity, labor shortages, etc.

The Burden analysis in current standards indicates to management considerable information of a statistical nature. Activity variation indicates the fixed expense of "idle capacity." This is one of the most valuable analyses provided by current standards (at practical capacity) and is not provided by basic standards. Expense variation indicates to management

ANALYSIS OF VARIATIONS
CURRENT STANDARDS

	Variation From Standard		Net Variation From Standard	
	Over	Under	Over	Under
Materials				
Material Usage Variation (Quantity-100 units over @ 25¢)	$25.00			
Material Price Variation (Price--1¢ over on 1100 units)	11.00			
NET MATERIAL VARIATION LOSS			36.00	
Labor				
Department A				
Labor Efficiency Variation (None)				
Wage Rate Variation (10¢ over for 200 hours)	20.00			
Department B				
Labor Efficiency Variation (Time-27.5 hrs over @ $1.10)	30.25			
Wage Rate Variation (6¢ over for 357.5 hrs)	21.45			
NET LABOR VARIATION LOSS			71.70	
Burden				
Department A				
Burden Efficiency Variation (None)				
Activity Variation (Possible hrs 250 less actual hours 200 @ .50)	25.00			
Expense Variation (Actual 190.00 less budgeted of 165.00)	25.00			
Department B				
Burden Efficiency Variation (27.5 hours @ $1.10)	30.25			
Activity Variation (42.5 hours @ .75)	31.88			
Expense Variation (Budgeted 425.13 less actual $385.40)		39.73		
NET BURDEN VARIATION LOSS			72.40	

the excess (over or under standard) of variable costs which are generally controllable. A variation of any consequence should lead to an investigation and corrective measures. Burden efficiency variation primarily explains that part of burden balance that is due to the variation from standard of the direct labor hours if burden is applied on this basis.

Basic standard variation analysis is generally expressed in percentages of the basic standard. The analysis usually consists of the following:

(1) Actual is compared with the basic standard to show trends therefrom.

(2) The actual costs are compared with expected actual to indicate variations between them for cost control purposes, such variations generally being expressed as a percentage of the basic standard.

The analysis shown on the following page by no means exhausts the analytical possibilities; however, only those analyses that will presumably aid management need be made. It is important to note that the variations are expressed in percentage relatives (dollar amounts shown here for clarity) which, it is sometimes asserted, will not be confusing once management gets accustomed to them and understands their meaning.

The labor cost ratio of 120 per cent in Department A is of limited significance by itself. It is used to compare the trend of this performance with previous performance. For instance, if the labor cost ratios ran 110, 112, 115, 118, 120, it is clearly evident that the trend of labor costs is definitely and steadily upward. The labor cost ratio is further analyzed into (1) the labor output ratio and (2) the hour pay ratio. The labor output ratio of 108-1/3 per cent in Department A indicates that actual

ANALYSIS OF VARIATIONS
BASIC STANDARDS

	Variation between basic and actual		Variation between expected and actual	
	per cent	dollars	per cent	dollars
Materials				
Materials Use Ratio	110	20.00	113	26.00
Materials Cost Ratio	133	66.00	105.5	11.00
Total Material Variation	143	86.00	118.5	37.00
Labor				
Department A				
Labor Output Ratio	100		100	
Hour Pay Ratio	120	30.00	110	15.00
Labor Cost Ratio	120	30.00	110	15.00
Department B				
Labor Output Ratio	108-1/3	27.50	100	
Hour Pay Ratio	117-1/3	57.20	106-1/2	21.45
Labor Cost Ratio	125.6	84.70	106-1/2	21.45
Burden				
Department A				
Burden Time Ratio	100		100	
Burden Rate Ratio	190	90.00	140	40.00
Burden Cost Ratio	190	90.00	140	40.00
Department B				
Burden Time Ratio	108-1/3	27.50	100	
Burden Rate Ratio	108-3/11	27.90	104.5	15.00*
Burden Cost Ratio	116.8	55.40	104.5	15.00*

*Gain of actual over expected actual.

is 108-1/3 per cent above basic standard which is considered as 100 per cent. This 108-1/3 per cent, when compared with previous performances, indicates the trend in this particular aspect of labor costs. The other percentages are read in a similar manner. The analyses in Basic Standards appear to be somewhat vague as to usefulness. Very little understandable information as to their use and interpretation is available, probably because the use of basic standards appears to have been limited and is on the decrease.

It is beyond the scope of this study to explain in detail the derivation of these percentages. Reference is made to Basic Standard Costs by Eric A. Camman, published by The American Institute Publishing Company, Inc., of New York.

In summarizing and comparing the analysis provided by each of the two methods, one must keep clearly in mind what will be of most value to management. A casual study of the two sets of analyses may lead one to believe they are somewhat similar in analysis results. This certainly is not true when one recalls that the point (standard) from which measurement of variations is made in each case is considerably different. In setting the standard lies the heart of variation analysis. Measurement from an incorrect standard tells us little; in fact, it may be worse than no information at all. It is believed by the writer that the practical capacity (current standards) concept of standard costs provides the most useful and economical methods to arrive at and analyze variations in costs.

CHAPTER V

COMPARATIVE SUMMARY AND CONCLUSIONS

Since the development and use of standard costs is relatively new, one is confronted with differences in the interpretation and use of terms, and with some differences of opinion concerning methodology and principles. Such differences are, of course, to be expected along with the development of a new idea. Such differences are considerably less serious than in the past, and consequently it is reasonable to assume that in the near future one will see a more definite crystallization of the various concepts.

The areas of disagreement have been discussed fully in the previous chapters and are summarized and compared on the next two pages in tabulated form.

CONCLUSION

This study is based wholly on references to periodicals and texts written on standard costs. Such a broad review of literature written over the past twenty-five years certainly points to a need for more definiteness and consistency in terminology and methodology, especially for the benefit of the student.

There has been considerable writing on the various aspects of the subject of standard costs, but no effort to prepare a comprehensive overall statement or discussion of the subject that would give a picture of the whole. To date most writings have been concerning "parts" and "controversial areas" rather than a comprehensive discussion of the "whole." In order to understand the parts as they relate to one another, one must have a good perspective of the whole.

With respect to basic standards, there needs to be more clarification of the meaning, calculation, and interpretation of the resultant variations.

ITEM	CURRENT STANDARDS	BASIC STANDARDS
Financial Statements 1. Balance Sheet 2. Profit and Loss	Used for Balance Sheet valuations Used for Profit and Loss valuations	Not used for Balance Sheet valuations Not used for Profit and Loss valuations
Revision 1. Price 2. Quantity or time	Revised to reflect overall price changes Revised to reflect changes in methods and specifications of manufacturing	Very seldom revised Revised to reflect changes in methods and specifications of manufacturing
Use	To measure variation between actual and what performance should be, also idle capacity	As a yardstick or measure from a fixed base
Results	Usually expressed in dollars	Usually expressed in per cent
Comparisons	Current standard with 1. Actual	Basic standard with 1. Actual 2. Expected actual
In the accounts	Replaces actual costs	Both actual and basic standard costs are entered
Level at which set	May be 1. Actually expected 2. Normal 3. Ideal	May be 1. Actually expected 2. Normal 3. Ideal
Miscellaneous	Shows expense of idle capacity and not trend	Shows trend and not expense of idle capacity

FIGURE 8

COMPARISON WITH RESPECT TO APPLICATION

ITEM	EXPECTED ACTUAL	NORMAL	IDEAL
Production (quantity)	Actually expected	Long time average	Theoretical capacity or theoretical adjusted
Prices	Anticipated or expected	Long time average	Those expected under efficient and economical operations
Variation due to--	1. Actual volume different from expected 2. Actual prices different from expected 3. Efficiency of production different from expected	1. Output volume above or below normal 2. Actual prices above or below normal 3. Performance efficiency above or below normal	1. Idle capacity 2. Variations of prices from standard 3. Variations of quantities from standard 4. Performance efficiency variation
Variation balances	May be debit or credit	May be debit or credit	Normally debit
Prevalence	In the past the most widely used	Seldom used except for overhead expenses	Being used more in last few years, perhaps preferred to others at present (especially adjusted)

FIGURE 9

COMPARISON AS TO LEVEL OF PERFORMANCE

This is important not merely from the viewpoint of the student; how can management, for instance, benefit from a maze of percentage figures unless they have been properly educated as to their meaning. The advocates of such standards should feel this responsibility and provide more readily understood information thereon.

There is definitely a need for more agreement and less disagreement such as would come about by more literature in the realm of standard costs with a view to presentation of an overall perspective and toward a better crystallization of the meaning and use of terms.

Standard costs developed primarily because of the desire of management to be informed when costs are out of line and where such variations occur so that they could effectively control costs. If standard costs are to meet this test, such figures must effectively measure what management wants to know. Therefore, it is important for the cost accountant to see the need from management's point of view. The need is to devise a system of standards that will inform management when costs are out of line, where they are out of line, and why. It is apparent that many writers and advocates of some of the various methods of computing standards lose sight of just what should be measured and indicated to management.

An analysis of the two types of standards, i.e., current and basic, in view of what management needs to know indicates to the writer that current standards more nearly meets the need. Of what significant value to management is it to know, for example, that labor costs of Product A are 150 per cent of what they were five years ago? Does this tell management whether labor is efficient or not and if not, why? The obvious answer is no. It is true that trend is indicated, but it must be admitted that the increase may be wholly due to changing value of the dollar.

Through current standard costs set at practical capacity, management is informed of the variations between what the product should have cost and what it actually did cost. Is this of value to management? The obvious answer is yes. Is it unreasonable for management to ask and want to know of such variations? Certainly management does not expect costs to be below a certain level; but should they be above a certain level, management has a right to know about it, as well as the reasons therefor. Current standards, if properly set and analyzed, will reveal these variations to management in such a manner that effective cost control can be used. It is of no value to know that costs are higher than some previous period; the important point is, are they above what they should be, and why.

With respect to the various suggested levels of performance for standards, it is obvious that the concept of what management needs to know is frequently lost sight of. Another important point to be observed is that management should be provided with a correct measure, for it is frequently true that incorrect information is of less value than no information. Standards incorrectly set are dangerous to management, since a decision based on them may be wholly incorrect and financially disastrous to the firm.

In determining a level of performance at which to set a standard, there are two possibilities to be explored. One possibility is based on the theory of past and/or future performance. The advocates of normal or average capacity look to the average production over a period of time that supposedly covers a complete business cycle. The advocates of expected actual level of performance look to the immediate fiscal period for the level of performance. In either case the level does not consider the plant capacity; hence, the expense of idle capacity is inadequately measured.

Also, variations may or may not be indicated when actually the exact opposite is correct, due to current conditions being different from the average. The other possibility is to look to the plant and analyze its potentialities. For example, in a plant where the machine, from an engineering viewpoint, is capable of producing 5,000 units per month, certainly that is the theoretical capacity. Some writers use the term, "ideal level," to mean practical capacity, which, if common usage of the term, "ideal," is accepted, means that the standard level should be this theoretical capacity. Such a level is certainly impractical, but when adjusted for unavoidable delays, etc., to a practical capacity level, a performance level is attained which when properly used will reveal variations to management which are correct and of value. Assume, further, that the machine mentioned above can be expected (by management) to produce 4,900 units (practical capacity) and that for a particular month the actual production was 4,500 units. Which analysis would provide management with the most useful data, the variation in costs between 4,500 and 5,000 units or between 4,500 and 4,900 units? It would seem that the knowledge of the 100 units cost variation between practical capacity and ideal capacity would be of no value; in fact, if included, it would tend to hide the variations that should be revealed. Why and of what use would a measure of that which is not practically possible be of value to management? The answer appears to be none. If production were always at 4,900, management would have no cause to worry; only when it is below that figure would they want the "bell" to ring. It therefore appears to the writer that the practical capacity level of performance is the one that most nearly meets the test of what management needs in standard costs.

The current trend among writers seems to be toward current standard

costs, using the practical capacity level of performance as the most desirable. More thinking and writing in the future, keeping in mind (1) the needs of management and (2) the basic reasons for the development of standard costs, would result in more agreement and a better understanding, with a consequent benefit to the student, management, and the accounting profession in general.

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