

ization, its relation to all the others and the lines of responsibility covering each part and the whole. It is not an organization chart or a definition of duties but it can quite readily be used for both. It forms a basis for budgeting, accounting, cost keeping, stores control, material and tools supply, records of expenditures, sales requirements and financial needs. Far too little attention is paid to this most vital instrument of control. It is frequently provided last instead of first. It is often looked upon as an adjunct of accounting only. As a matter of fact it is indispensable to a simple, clear and accurate picture of what is happening, one that the chief executive or those delegated by him may refer to at frequent stated intervals. For the purposes that are contemplated in this paper the mnemonic system as utilized by Taylor is the most satisfactory. Other methods based on the use of figures, decimals, etc., cannot be used with the same facility and cannot be so easily comprehended and understood. Even at the risk of reviewing something very familiar to most of you it will be profitable to consider how essential the mnemonic classification is to our purpose. The entire alphabet, or as much of it as is necessary, is used. The first four or five letters are used for expense, the last three for investment expenditures, the letter S for stores and as many of the intermediate ones as are required are used for product.

Some valuable uses of the classification can be illustrated by considering, for example, the first group of letters mentioned. A, B, C, D represent Auxiliary, Business, Selling and Departmental activities. These are all expense activities or accounts. Some one individual executive is directly responsible for one or more of them and his authority is delegated to others under him. Assume that the manufacturing manager is responsible for A and D. Now take A—Auxiliary—composed say of AE, AG, AP, AM. They are respectively, Employment, Engineering, Planning and Maintenance—each one a department with a responsible head or possibly with one individual responsible for more than one department; it matters not so long as the lines of authority and responsibility are clearly indicated. AP—Planning Department—is composed of APB, APK, APM, APN, APP, APR, APS, APT, APX—Balance of Stores, Scheduling, Methods, Assignment, Payroll, Routing, Stock, Time Study, Statistical—each one a division headed by some responsible foreman. Finally APB, the Balance of Stores Division, is further sub-divided into APBA—Salaries, APBB—Wages, APBS—Stores and Supplies, etc., etc., for any further division of the expenditures of

the Balance of Stores Division.

Again in the other major letters; take B—Business—there may be activities other than those of departments or divisions, such as BB—Interest on borrowed money, BD—Depreciation, BX—Taxes. These latter are strictly expense activities. On the other hand BK would be the Accounting Department and it would be again subdivided by the addition of letters into its various items.

Look at a few others:

- A—Auxiliary
 - AM—Maintenance Department
 - AMH—Heat and Light
 - AMHF—Fuel
- B—Business
 - BU—Insurance
 - BUF—Fire Insurance
- C—Selling
 - CL—Selling Expense
 - CLT—Salesmen's Traveling Expense
- D—Departmental
 - DS—Sponging Division
 - DSB—Wages, Sponging Division

All these various symbols from the classification, taken at random, have been presented at some length, even at the risk of boring you, for the purpose of emphasizing an extremely important point; namely, that the classification furnishes a positive and definite place in which every possible expenditure for product, expense or investment may be entered; that there can be no hesitation as to where any item belongs; that it is impossible to enter it in one place at one time and in another place at another; that it definitely fixes the responsibility for that expenditure on the individual who has authorized it; and that it does away with the use of such ambiguous terms as "overhead," "burden," "indirect," "non-productive," "supervision," "miscellaneous,"—each of which means almost as many different things as there are people who use the term.

What better basis than the classification from which to start, if it is intended to make the planning function an instrument of executive control? Is there any other basis from which we can start?

Here then is first of all the executive's dependable and reliable source of information as to an analysis of his expenditure in the office, in the shop and for marketing. He can ascertain exactly what has been spent in every activity of his business and just who has been responsible for that expenditure. Not alone that; but equally important, he can have this information promptly and regularly—every week, every two weeks, every month or at whatever intervals the needs of the business require. In any event he does not have

to wait for the yearly or half-yearly closing of the books to know or not know where the money has gone, and why, and through whom.

Next it is obvious that the classification furnishes the only basis on which it is possible to start in setting up and defining standards for expense items whether they be in the nature of auxiliary departments, selling expenses, business activities, or of charges for various services or of other necessary—or possibly unnecessary—expenditures. Just as scientific management sets standards for quality and quantity of work to be done in a stipulated time at a predetermined cost at a machine or workplace in the shop, so shall scientific management set up standards for what is to be accomplished in the office and on the road. How much work of a clerical nature will be necessary under various conditions? How many people—and of what qualifications—will be necessary to do it? How may our quotas of sales be set and what shall be the requirements established for training and disciplining salesmen? How long should it take them and what will it cost? Standards must be set for all work of every kind after scientific study and analysis of the job and scientific selection of the personnel. Not only this, but other necessary disbursements which are not directly expended on the product, either in the shop or in the office, such as taxes, insurance, depreciation, telephone, telegraph, lawyers' and engineers' fees, interest, special services and other items too numerous to recall without the aid of a classification, must also be standardized.

After standards for all expenditures have been established from the classification, a budget for each item and each group of items is compiled. The standard represents the ultimate degree of efficiency that can be attained if all conditions are ideal; the budget represents the reasonable expectation of attainment. A careful comparison of expenditures with both standard and budget, furnished by the planning department at regular intervals with explanations of any unusual variations after these have been thoroughly investigated, affords a reliable guide as to what particular activities require special attention and consideration.

You are probably familiar with Mr. John H. Williams' paper read before the Taylor Society at the annual meeting in New York, December, 1921. If not, you should read it in *Bulletin*, Vol. VII, No. 2, April, 1922. In this paper, Mr. Williams divides all expenditures into two great classes which he calls "variable" and "fixed." "Variable" are those like materials and direct wages which increase in proportion to the volume

of the output or the amount of business. "Fixed" are those which remain constant within certain limits and do not vary with the amount of business. He gives a very simple formula by means of which it is possible to predict with mathematical accuracy just what amount of business it is necessary to do to break even, just what losses will be suffered or profits made when the volume falls below or rises above this breaking point in given amounts, and exactly what effect any percentage of increase or decrease in cost of materials or rates of wages will have on profits. You are referred to the article for details. The classification, with the standards and budgets of expenditures, permits the division in accordance with Mr. Williams' method and makes the use of his formula possible and valuable.

The planning department must collect and preserve all cost records. It is astonishing to see how comparatively few industrial organizations have reliable information as to the cost of their output. It is even more astonishing to find how many executives have in the past been unconcerned as to the details of cost provided the final balance was on the right side of the ledger. However, the discovery of the final balance on the right side of the ledger during the past two years was such a rarity that business was compelled to know the reason why and to make more of a study of costs. Banks have discovered that if they are to make secure loans to industrial corporations, it is essential for them to have very accurate information as to costs of production, plant capacity and the ultimate probability of success or failure, as well as to have figures on which to make an estimate of the managerial ability of their patrons. This situation has placed the able executive in a position where he demands not only a general accounting of his financial situation but a frequent and intimate scrutiny of costs, in order to know long before his accounting gives him final figures just what he may expect those figures to show and why. As previously indicated costs are accumulated on the basis of the classification and the analysis of expenditures.

Again, if the executive is really to control his business today instead of being at the mercy of every kind of fluctuation in conditions, he must be able to figure with considerable accuracy what the demands for his product will be, how he may stimulate those demands in case they are not adequate, and then base his production program accordingly. To do this he must have recourse to past history of sales in the shape of statistical information arranged for him so that he may be able to draw conclusions that will be safe guides in his