

to follow that one wonders why the inventor of the Dewey system did not hit upon it. It is unfortunate that he did not, as a great many uses to which the Dewey system has been put, especially in the field of statistics and accounting, might otherwise have been much better served. The Bureau of the Census is an example. Two things have favored the use and extension to new fields of the decimal scheme of classification: first, through its application to library work many persons of widely varied interests became acquainted with it before Taylor's scheme was developed. Even today the Taylor method has been given publicity in such limited circles that very few of those who might profit by its use know anything about it. In the second place, tabulating machines, originated to handle census returns, were devised to use the decimal system. As the large corporations came into a realization of the possibilities of these machines in the fields of commercial accounting and statistical work they adopted them and with them, as a matter of course, the decimal system with all its limitations. We of the Taylor group were obliged, at least until recently, in our work for clients whose transactions were sufficiently voluminous to warrant the use of tabulating machines, to devise makeshift schemes for setting up on cards, designed for the decimal system of classification, symbols made up of letters and figures variously combined. A new development appears in part, if not completely, to have removed this difficulty. While the schemes to which I have referred as makeshifts were not all that could be desired they nevertheless were reasonably successful from a practical standpoint.

The classification for a business should be made up of the following sections:

Section I. This section should embrace the functions or activities of the business as set up along lines of organization. In this way a classification of activities will at the same time provide a classification of accounts to which the expenses incident to the corresponding activities are to be charged. For this reason the classification has been frequently referred to as the Classification of Expenses. This section of the classification should outline the organization, set up and define in, an orderly and logical fashion its departments, their subdivisions and the purposes for which they exist. It is in effect an organization chart plus!

Section II. This section should embrace the various products of the company, grouping them in broad

classes which are in turn broken down into subclasses and further subdivisions until the individual item or unit is reached. Each product should be designated by a mnemonic symbol which tells the whole story to the people regularly using it and enables anyone not so familiar easily, quickly and accurately to interpret it by reference to a copy of the classification. From an accounting standpoint these classes and their subdivisions serve as the accounts to which costs of work in process are charged and also as the subdivisions of inventory, sales and income accounts.

Section III. This section should do the same as the above for all of the purchased materials used in the manufacture of the company's products or as supplies in the offices and shops.

Section IV. This section should classify and group the company's plant and equipment in a similar manner. This includes real estate and buildings, machinery and tools, fixtures and appliances, patents, etc.

As these sections of the classifications are for certain purposes used more or less independently, it is customary in a plant to think of them as several separate classifications. For example, Section I is the Classification of Indirect Expenses or Departmental Activities; Section II, the Classification of Products, or Worked-Material Classification; Section III, the Stores (purchased material) Classification; Section IV, or at least those portions covering machinery and tools, the Tool Classification and the Machine Classification respectively. In these two instances it is customary to drop off in every-day use certain letters at the front of the symbol which locate it in the main classification.

In working up a classification it has been the practice to allocate the letters A to F to what I have referred to as Section I for the primary designation of organizational divisions. The letters G to W, except S, are allocated to Section II for the designation of primary classes of products. The letter S is assigned to Section III for stores. The letters X, Y and Z are assigned to Section IV to designate respectively tools, appliances and fixtures of a comparatively short-lived character, machinery and apparatus and real estate and buildings.

It would be more consistent with the basic principles of classification if instead of arbitrarily assigning a certain range of letters for the groups of things to be classified and symbolized we were to use an initial letter to designate each of the sections. It would also result in symbols that might possess a greater mnemonic

quality. In practice, however, this is rarely found to be necessary or worthwhile.

The following is a typical set-up of the primary classes in Section I. The classification proper will indicate concisely for each major division of the business, the nature of its function, its scope and limitations, and its relation to other divisions. It does this also, on successive pages, for the subdivisions and their components. The major divisions are designated by an initial as in this typical set up:

A. *Auxiliary Departments*, operated for the benefit of several manufacturing departments. Among these are light, heat and power, stores, planning, maintenance, internal transportation, buildings and grounds, etc.

B. *General Business or Administrative Departments*, including executive (the office of the general manager), accounting, legal, purchasing, traffic. This major division is in the main composed of departments either concerned with activities of the business as a whole or with its relations to individuals, agencies or other organizations who render the company services.

C. *Sales Department*, consisting of general sales administration, advertising and sales promotion, sales research and development, sales planning and control, etc.

D. *Manufacturing Departments*, comprising all those departments in the works which are organized mainly for the production of goods to be sold as merchandise. This section of the classification is intended to provide for everything pertaining to such departments except their equipment and the specific operations directly performed upon products.

E. *Experimental or Product Research and Development Department*, embracing all activities connected with the development of new products, regardless of the source from which they may originate, the conduct of experiments and tests, improvement of existing products, their modification and adaptation to new uses, co-operation with other departments in the improvement of processes or the elimination of difficulties calling for special technical investigation and research, establishment and maintenance of standards of quality of products, and investigation of serious complaints in regard to products.

For each of these major divisions of the company's activities there should be a sheet setting forth the primary subdivisions; for each of these another sheet setting forth the secondary breakdown, and so on until the final subdivision is reached. Each of these steps

extends the definition of the function or its subdivisions in a concise but comprehensive manner. For each department or its subdivisions it is desirable that there should be a standing order describing clearly, and in complete detail, the duties comprising its function, its responsibilities and authority and its relation to other departments and functions.

The departmental arrangement must, of course, be worked out to suit the particular business and will vary from what I have set up as an illustration according to the size and character of the business and the relative importance of the various activities.

The Taylor classification is valuable in a company operating a number of plants when it is desirable that each show its own set-up of expenses, costs and profits or losses, while at the same time a comparison of similar expenses and costs with those of other plants is made possible. Furthermore it permits consolidation without rearrangement for purposes of the business as a whole.

I shall not in this article attempt to illustrate completely the further working out of symbols for the various departments, or for other sections of a classification, as these are available in previously published papers.

I earnestly hope that I may make clear the fact that a classification is essential to an orderly arrangement of the facts relating to a business and to the orderly conduct of its activities. It is especially helpful to a proper visualization and understanding of the business and its problems. The purposes and advantages of a classification may be summed up as follows:

1. *Organization.* It defines the plan of organization, the function, the scope and limitations of the activities of each department and subdivision thereof with their inter-relations and responsibilities.

2. *Accounting.* It provides for all the requirements of, and greatly facilitates, accounting and the setting up of reports and statements in the most effective manner for the management. This includes:
 - a. Analysis of indirect expenses coupled with budg-

¹Thompson, C. B., "Classification and Symbolization," in *Scientific Management*, edited by C. B. Thompson, Harvard University Press, Cambridge, 1914.

²Williams, John H., "On the Index as a Factor in Industry," *Bulletin of the Taylor Society*, Vol. II, No. 2, July, 1916.

³Hathaway, King, "The Mnemonic System of Classification," *Industrial Management*, Vol. LX, No. 3, September, 1920.

⁴Swan, John J., "Classification and Symbols," in *Management's Handbook*, edited by L. P. Alford, The Ronald Press Company, New York, 1924.

⁵Cooke, Morris Llewellyn, "Classification and Symbolization," in *Scientific Management in American Industry*, edited by H. S. Person, Harper & Brothers, New York, 1929.