

tively improving standards. They have to do with the relation between the consulting engineer and the resident production manager, and the stability of the work begun by the engineer, after he leaves the plant and the production manager takes over the entire responsibility. If the installation has taken place thru the instrumentalities of superstandardization, provision is automatically made for the maintenance desired and requisite. The superstandard adequately applied builds up a superstandardized practice that insures maintenance of that which is best until superseded by proved, better superstandard practice.

#### *Superstandardization in Practice.*

Altho founded on a better and more definite theory, superstandardization is no less practical than is standardization. Wherever standards are based on and are the outcome of accurate measurement and are in actual use, superstandardization exists. It has been applied not only in all kinds of industrial work but in many types of outside engineering activities as well. It is important not only where it has shown results in a single type of work or in an individual process, for the results of superstandardization are cumulative and nothing is too small or unimportant to be considered or to be worth while to file for review and possible group installation later. The members of this Society and of similar societies should be encouraged to turn in results *no matter how narrow the field of application*, in order that these may be filed and available to all and may be built into a standard common working practice. Also, as has been stated, such measured elements make possible skill transference and fatigue elimination.

#### *Value of Definite Examples of Superstandardization.*

An important means toward arousing interest and cooperation in superstandardization consists of definite examples of its application. The plant, the industry, the entire population must be made to *think* in terms of standards. They must be made fashionable and fascinating; they must inspire the beholders with a desire to imitate, the user with a desire to exhibit them and extend their use, for personal and national economies and the consequent reduced cost of living and national prosperity. The standards of method are especially useful here as action is always interesting and leads naturally to imitation.

The cross-sectioned desk, with standard equipment, the standard pencils and supplies rack, the standard rack for inks, the one motion tool room painted white—these have all proved themselves extremely simple, in-

expensive thought detonators. Used by many, of general interest, yet seeming to designate no special person as a target for criticism or an example of inefficiency, they furnish admirable starting points as definite concrete examples of superstandards for changing the attitude of an organization toward *methods of work*, and for making motion study a fascinating game.

Such illustrations, because of their elementary nature, prove that superstandardization is simple as well as profitable, and the results have demonstrated an immediate and also a cumulative value, particularly because they cause all types of individuals to think in terms of the variables of elements of motions.

It is extremely important that examples of superstandards and methods of attack of superstandardization be installed that are available to all office and production departments, that the principles be applied in office and shop alike. It is necessary—yes, vital—that papers and meetings that consider standards unify the interest, experience and problems of purchasing, sales, accounting, and production managers, of "office" and "shop" men, and serve as unifying interests and liaison procedure between the various professional groups.

#### *Relation of Superstandardization to Costs.*

Finally, we come to the discussion of the relation of superstandardization to the all-important matter of cost. It must be understood that superstandardization is a method of attack. It need not prescribe a new program. It does not attempt to outline a hard and fixed sequence of installations. It does not necessarily attack present practice in any revolutionary manner. It is in no wise a disorganizing or disturbing element. It is a method of stabilizing and securing results. In first cost, like the accurate measurement upon which it rests, it can compete successfully with the too usual and too customary inaccurate methods. In ultimate cost it need fear no possible competition. Because it is a method of attack, it may be applied first where most needed. Its direct product will be the solution of the immediate difficulties. Its indirect product will be a demonstration of its value as a method of attack and the consequent influence as a teacher, making all members of the organization think along these lines. It is not and never can be the possession solely of one man, of one group of men, of one profession or of one nation. It is not merely for current use. It has no boundaries of time or space. The only boundaries or limitations must be those of knowledge. It accumulates all improvements. It is free and available to all who desire to use it. It is true that knowledge of the

proper units, methods and devices of accurate measurement are the greatest tools in effecting superstandardization, but many such tools already exist and are available, and as the demand increases, the supply will increase also. The *practice* of superstandardization in a special field of management is a problem for intensive investigation by those best trained for the work. The *theory* of superstandardization is, or should be, a world possession accepted and increasingly used by everyone everywhere. It is the duty of the management engineer who has had experience with standardization, and now with superstandardization, to explain their benefits and to put his experience at the service of thinkers and doers everywhere toward the solving of today's problems and the stabilizing of today's conditions for the benefit of tomorrow. Moreover, an intensive study of standardization in America shows that unless the management engineer takes his natural place as leader in this work he will lose a great opportunity, perhaps forever.

#### *Recommended Practice.*

We believe that superstandardization is the One Best Way for obtaining lower production costs and high wages simultaneously. It is the One Best Way and an immediate way, to reduce the cost of living.

This paper is to be followed by another, giving in detail the recent developments in superstandardization,

both the latest practice and the theory on which it is founded, and also taken from data at present being collected by personal investigation in England and on the Continent. This will emphasize more strongly the imperative demand for *immediate* superstandardization in this country. It will supplement this present argument, based largely on the inherent need by a more extended review of the external competition.

We would summarize the immediate necessities as follows:

1. The evaluation of existing standards, as to:
  - a, immediate usability.
  - b, place in general plan and development toward perfection,
  - c, accuracy,
  - d, maintenance and full benefits of that which is installed.
2. The promulgation of superstandards in every field of activity.
3. The instruction of young engineers in the making of standards and of superstandards.
4. The advance of those skilled in standardization into superstandardization.
5. The development of the standard, thru accurate measurement, to that point where the "superstandard" of today becomes the "standard" of tomorrow. We cannot afford to stand still.

A RECENT circular of the American Engineering Standards Committee calls attention to the fact that Belgium is another European country which is making great strides towards standardization, particularly in the construction, metals, mining and electrical industries. According to the Association Belge de Standardization, standards for the construction of the following have been approved for issue; steel roof trusses, steel tanks, galvanized and corrugated roofs and partitions, steel bridges, shafts and pulleys, bolts and rivets, requirements for electrical machinery. An electrotechnical vocabulary has been issued and a tentative list of additional proposed standards has been published for criticism.

INDUSTRY in the United States has been in the lead with respect to certain phases of standardization—the interchangeability of parts which enter into mechanical equipment. But that is only the beginning. It will not do for the United States to remain satisfied with past achievement; the movement towards standardization in European countries since the war promises to include standardization of products and of operations involved in their fabrication. What plants with Taylor methods in the United States have been doing for themselves individually, is being done for entire industries in several European countries. It will ultimately give a power in international competition which cannot be ignored.