

words, while the unit itself may be very definite, the amount of effort involved in the detail varies considerably from time to time. I know that a constant variation one way or the other would lead to a revision of standards, but I am very sure that the fact that fluctuations in effort occur has not deterred Mr. Fuller and his Standardization Division.

It has been my experience that duplication of effort, lost motion and general inefficiency in large clerical organizations, are to be found principally in the inter-departmental routine and in those general activities which are common to all departments. A thorough analysis will point to the proper reorganization where in all of the general activities are consolidated in one department; this department may have as many as twelve distinct divisions. The organization of such a department, to use a common military term, is establishing an "Army of Manoeuvre," and under proper direction the force of such a department may be quickly shifted. This means that the peak load of any activity may be efficiently handled by a shifting of "reserves," and such an organization will result in economies. As I understand it, one of the first scientific principles to apply to any management is that of proper organization.

Too much stress cannot be laid upon the necessity for a thorough study of all routine and the written form of standard practice. It is surprising how many useless or duplicated operations develop when a study is made and the details are actually written. It seems that such items of inefficiency fairly protrude from the paper when they are in written form. Mr. Fuller has clearly emphasized this point.

Due to the rapid growth of many organizations, there are found in them evidences of inefficiency that may be traced directly to the lack of proper standardization of hours of work and rates of pay. Even though clerical operations may be standardized and the efficiency of the operators increased by incentive, if there is discrimination in the basic salary and the hours of work, there is a primary cause of dissatisfaction, which, whether it can be measured or not, results in lower efficiency than would otherwise obtain. I recall distinctly a large office organization of from 1200 to 1500 employees where one department in particular paid rates to stenographers which were in excess of those paid in other departments; and in addition to this, those same stenographers reported one-half hour later in the morning. They worked seven and one-half hours per day as compared with eight hours worked by the girls in the other depart-

ments. This, of course, is an injustice and the effects of such discrimination are very bad. It frequently occurs that different rates are paid for the same class of work in various departments or even in the same department, due either to the sentiment of the department manager or to the fact that a scheming clerk has gained an advantage by methods which should not be recognized. Until the hours of work are made uniform and the rates of pay properly classified so that all discrimination in these respects is eliminated, standardization will not bring the best results.

I like very much Mr. Fuller's organization of a Standardization Division composed of specialists who work with the departmental managers to improve conditions and obtain results. I entirely agree with him that the work of such an organization is lasting when once installed. However, there must be times of very great discouragement when the department manager is permitted by the general manager to be obdurate. So many department managers feel that a study of their routine by an outsider is a reflection upon their ability. To-day I think that department managers are becoming broader minded in this respect and are only too willing to secure every assistance possible in order to bring about the desired results. I note Mr. Fuller has stated that it is the job of the standardization force to "sell" their plans. I can fully appreciate that under some conditions and with some people such selling would require the greatest talent in salesmanship. It must, therefore, be necessary to give standardization plans executive backing, and this no doubt, Mr. Fuller secures.

I think that many companies are slow to introduce scientific principles into their office routine because they realize that it would appear ridiculous to make the attempt when their working conditions are so very poor or inadequate. I have recently had the experience and pleasure of seeing a large office force transferred from the poorest conditions to the best that might be obtained, through the advice of specialists unhampered by money restrictions. The increased efficiency resulting therefrom was noticed instantly, and the opportunity to reorganize and coordinate the routine of the various departments resulted in large savings.

There is one statement in Mr. Fuller's paper upon which it might be well to have further light, and that is the statement that an "occasional shake up in office arrangement is apt to have a good effect." I am not

sufficiently familiar with what he has in mind to agree entirely with this statement. Surely if the office arrangement is the result of analysis and is the best possible arrangement under the existing condition, Mr. Fuller would not recommend shaking it up just for the possibility of good effect. If operations of routine are standardized, I am inclined to think that any considerable "shake up" would affect the standards; or if the "shake-up" would simplify the routine then, of course, such rearrangement should be made before standardization if the conditions were known and would at that time permit.

There are many who object to the application of scientific principles and incentives to office workers on the ground that it will result in errors. This is absolutely false and it has been my privilege to prove it continuously. There is hardly an exception to the rule that upon operations properly standardized the more efficient a clerk becomes, the fewer the errors, or percentage of errors made. I have never experienced a case where this is not true, the reason being that under standardized operations and a proper incentive, there is a correspondingly greater amount of interest displayed and much greater concentration upon the details of the work. It isn't the volume of work that causes errors, it's the voluntary interruptions on the part of the worker. Where the proper incentive is offered, these interruptions are minimized and the conscientious, steady worker who may not be phenomenal as to speed will reach the goal of high efficiency.

One of the most important facts that Mr. Fuller has so ably brought out in his paper is that of the necessity for complete and accurate cost statistics before scientific principles are applied. I do not recall a case where it has not been advisable to have such figures available. Sooner or later surely one will be called upon to furnish comparisons. As a matter of fact, it is wise to plot such comparisons immediately and maintain a running record of results accomplished.

Mr. Fuller has drawn a very sharp line between repeat, or consecutive, operations and what he terms "sectional" operations. By a "sectional" operation I assume he means a considerable amount of detail assigned to one clerk, the product of which, however, might be definitely measured not as the volume of each detail but the completed result. Until this principle is thoroughly understood, I think we shall fail to grasp the possibility of applying clerical standards.

I feel sure there are many who would term the establishment of such standards as very unscientific, but it has been my experience that if we fail to group details to make a so-called "sectional" operation, the possibility of standardizing much clerical routine will continue to go begging. I have on numerous occasions seen the assignment of many minute operations to clerical workers, all of which are necessary and closely related to the final measurable result. If we try to standardize each of these minute details, the clerical effort involved in recording the results would be so great and intricate that the good to be accomplished by standardizing would be entirely lost. Therefore, let me emphasize the importance of grouping operations and establishing a unit based upon the completed result. In other words, if we are to make progress in standardizing operations, let's not be too scientific.

For many clerical operations, I am decidedly of the opinion that the standard should be set at one hundred per cent for the maximum efficiency to be expected, and that a plan of bonus incentive should be applied which rewards the workers for gradual increases in efficiency as they approach the maximum. It must be borne in mind that clerical operations are more easily affected by slight changes, and changes are so frequent in many clerical operations that there is not the same stability as one finds in manufacturing operations. And, when the maximum is standardized, if there is a sudden change which the Standardization Division has not anticipated and which they have not had an opportunity to restudy and re-standardize, the effects are less likely to be felt in the way of bonus improperly earned. Again, where there are certain assignments of clerical detail which may appear similar, that is, the same class of work involved, it will be found that there are always fluctuations in the actual effort required of one clerk as compared with another, and that during certain periods the assignment of one clerk will be handled more easily than that of another. This would, in most cases, under a maximum efficiency standard be negligible, because under proper incentive it is not long before the greatest number of clerks are up to or above one hundred per cent. This illustrates another phase of the work, where if progress is to be made, it is well not to be too strictly scientific.

Finally, I must take this opportunity to very strongly oppose the practice of extremely accurate detail time studies and the use of an arbitrary allowance.