

must use initiative. These exceptions are sometimes the rule, in small offices.

This criticism is not intended in any way as a refutation of the principle he has laid down. I thoroughly agree with it; but it must be used with discretion.

There is another point that is to be considered, and that is whether or not what the company is interested in is lowness of cost, or service to their customers. In some places they use what they call the unit system. They have each one of the operations (all of the operations connected with, say, an order, or with putting something through) all together in a small unit. In that way the work travels through all these units very quickly, much on the progressive assembly style. This method gives quick service, but it is not cheap. When the work is sent from one department to another, it sometimes takes a great deal longer than it should for the work to go through and get it on its way, if it is to go back to the customer. This method is cheap, but it doesn't give the best service. In this connection I might say that I at one time found that in a manufacturing office it took an order to get from the sales department into the factory an average of ten days. There were some cases where it took twenty-five or thirty days, which was not on account of consecutive operations, however. This "horrible example" emphasizes the importance of not letting red tape run away with this class of operations.

Since Mr. Fuller has not described the planning department, it would appear that he has reference in his paper mainly to operation of fixed routine. It has been my experience that the scientific methods of analysis described by him result in operations which require initiative and judgment. In fact it is in such cases that the great value of scientific management is shown.

There are many offices which are so full of irregularities that they seem almost planless; yet, standardization of methods, principles and policies, act magically in straightening out what appears to be a hopeless maze.

There is just one word in Mr. Fuller's paper that does not strike a responsive chord in my philosophy, and that word I notice he has cut out of his paper since I first had the pleasure of reading it. But I am not going to let him shut me off that way. That is, where speaking of procedure for standardization, under "special time" and "idle time," he said in the original outline of the paper, "Watch out for camouflage" I do not deny that it exists, but whatever may be the case in factories, I believe that by far the great-

er loss in office management is due to the manager's faults rather than to those of a stalling or shirking clerk.

It is so easy to condemn a worker, and so hard to increase his efficiency. It is so easy to call him a staller and so hard to plan work so that idleness cannot exist except in rare instances. Many managers adopt the easy course. For this reason, perhaps to be different from the mob, I adopt the difficult course. I never allow my assistants to give me that excuse; I always assume that the worker wants to do a good day's work, and in fact I believe that under proper conditions almost everybody does. When I find a clerk who evidently is not doing as well as he should, I assume either that the work is not interesting or the clerk is not interested in the work. In the former case I endeavor to find the point of interest for the worker, or in some way to make him more interested; and in the latter case I endeavor to find the kind of work that the clerk is interested in and if possible transfer him to it. One of the greatest opportunities of managers today is in learning how to get the worker interested in his job. It can be done and it pays bigger dividends than a still hunt for shirkers.

I have found that one of the greatest incentives in office work is pride and emulation. The star chart mentioned by Mr. Fuller, and any other methods of bringing out the team spirit, are excellent.

On account of lack of time, Mr. Fuller has dwelt rather lightly upon his methods of training. This is a point in which we would all be interested. He has, however, gone so fully into other matters and has covered so much ground, that we shall perhaps have to wait for another time to hear about this all-important subject.

Neither has Mr. Fuller told us any of the wonderful things he must have discovered in his motion study. To me this is one of the most interesting parts of my work. So often do we find great opportunities for savings in the most unexpected places.

In all the trades, and many of the mechanical operations performed in industry, there has been for years a process of elimination, which makes for skill. If students of motion have found it possible to still further improve these operations, it is much more possible to make a showing in the office. Clerks do not have to serve an apprenticeship; there are few places where they are scientifically trained, and few trainers.

If I may add a word of mine to corroborate the facts pointed out in Mr. Fuller's paper, I will give, as briefly as possible, some of the things that have come

under my observation which prove the essential correctness of the statement that scientific methods can be applied with profit to office management.

Dr. Taylor's four principles of scientific management have had a great influence on my work. My experience shows me that they are applicable not only to office management, but every day I see examples which emphasize the fact that they are applicable to management of all sorts.

These principles are:

1. The development of a true science.
2. The scientific selection of the workman.
3. His scientific education and development.
4. Intimate cooperation between the management and the men.

There is no need of my endeavoring to prove the correctness of these principles to members of the Taylor Society. It may be interesting, however, that I have found that most of the mechanical parts of scientific management, used by Dr. Taylor, are applicable with very little modification to management in the office.

For example, *Time Study*. Dr. Taylor in his book "Shop Management," page 176, says:

"There is no class of work which cannot be profitably submitted to time study by dividing it into its time elements, except such operations as take place in the head of the worker; and the writer has even seen a time study made of the speed of an average and first-class boy in solving problems in mathematics.

"Clerk work can well be submitted to time study, and a daily task assigned in work of this class which at first appears to be very miscellaneous in its character."

It is a never-ending subject of interest to see what can be accomplished by this form of analysis. Not only is it applicable to motions of the hand or body, but to many motions of the brain, or mental effort.

Mr. Fuller's statement that the average clerk is 50% efficient is not at all exaggerated. It is perfectly simple to double the efficiency of the average stenographer or typewriter operator. Few know how to insert a piece of paper in the machine without loss of effort; few write more than two or three words without consulting their copy; few know anything about conservation of muscular effort. Analysis not only shows that the worker can accomplish more, but actually with less effort, both manual and mental.

In one place I found twenty girls in the circularizing room using ten different methods of gathering and inserting circulars. The output varied from 400 per hour to 800. With the method evolved by time study, a standard of 1,000 was set, and some few workers

found it possible to perform as many as 1,500 an hour.

In a mail-opening department time study analysis made it possible to increase the operation of opening letters (taking them out of the envelope, marking and pinning) from 100 an hour to 250. By the use of a specially designed table, this was still further increased to 310 per hour.

Addressing of envelopes is usually performed at the rate of about 100 per hour. Time study made it possible to increase this to 240 an hour.

In many operations, supposedly entirely mental, analysis shows that the same thoughts, the same decisions, are repeated many times, and standardization makes it possible to save much mental effort. Analysis shows that a large proportion of the time required on office operations is consumed in making decisions. For some reason the mental reaction is slow. It is possible to teach clerks to decide quickly and thereby increase output.

*Standardization*. This great principle has so many applications that it would be impossible even to mention more than a small number of them.

Standardization of printed forms, in size, shape, color, paper, etc., will save some concerns many thousands of dollars annually.

Standardization of methods of performing work of all kinds is especially applicable in the office.

Standardization of tools and equipment, of furniture, of surrounding conditions, all mean much in the office.

*The Planning Room*. In small offices, a special planning room of course would be ridiculous, but planning itself is not.

The average office is planless. The average executive has no definite plans. Coordination does not exist in thousands of offices.

A planning room is not only feasible in large offices, but becomes almost as indispensable as the factory planning room, though of course its functions are somewhat different. In all large offices there is a waste of time due to scarcity of work in one department or another. The planning room can utilize this idle time by placing the clerks where they are needed.

*The Exception Principle*. This principle is of the greatest value to office as well as to factory executives, and also of the greatest value in handling much clerical routine work. For example, in one place the addressing of inquiry letters was a very uncertain operation, due to the fact that many letters in the customers' handwriting were indecipherable, or nearly so. We established a Nixie clerk, similar to the Nixie depart-