intelligent work and for high production and few errors.

The answer to this need is the "Section Operation" plan. Under this arrangement each clerk assumes all work (all operations) within some definite section, either territorial or otherwise. The particular section becomes her absolute responsibility and her success or failure is judged by the results within the section. The unit in this case is some constant factor (as the number of accounts handled) although the clerk has many duties which are not always in direct relation to the unit.

It is necessary at times to make use of this plan. In our experience, however, we have found that the work can usually be broken up into a certain number of operations, each with its unit of production, and that in this way we can measure the production of the component parts of the work. The clerk has charge of her section but assigns her work to various operations. This allows a fair measurement of production and retains all the advantages of the sectional plan. The clerk's knowledge and memory of conditions does away with much duplication of effort and insures against errors. Responsibility for all actions is fixed.

The determination of production units is usually very simple; for instance in letter filing it is "one letter" and in setting type "one piece of type." At times it is necessary to have a point basis standard where there are two or three factors which are not sequential. Take an actual Curtis operation such as the entering of sales reports to ledger sheets, filling out a card and a letter and addressing letters to all agents who have fallen below their usual quota. The count is—one ledger sheet handled— 1 unit.

one letter and card —11 units.

The letter is a variable unit. It has been determined by time study that it takes eleven times longer to address this particular letter than to handle a simple sales report. In such circumstances a point basis standard is the only fair standard to adopt. Merely as examples of method I cite below operations in use at the Curtis Company on simple forms of activity:

Transcription

Operation—Transcribing.

Standard:
- 200 units (or 100 sq. in.) per hour—$10.00 for 44 hours.
- 220 units (or 110 sq. in) per hour—$11.00 for 44 hours.
- 240 units (or 120 sq. in.) per hour—$12.00 for 44 hours.

Unit—One meter unit (or ½ sq. inch.)

Subscription

Operation—Monthly Addressing.

Minimum Wage $8.00 per week.

Standard:
- $10.00 Salary—standard 63 per hour.
- $11.00 Salary—standard 69 per hour.
- $12.00 Salary—standard 76 per hour.

Unit—One envelope addressed.

After the essentials of the work are decided upon, standard methods settled, operations and operation units determined, and a way of securing and maintaining the records worked out, a report is written and submitted to the Manager. (This is really a sales brief.) If the suggestions even in a modified form are adopted, the analyst proceeds to put them into practice. The prime thing is to get the principle accepted; if this is done the details will care for themselves.

3. New Plan in Effect

(a) Write definite working instructions for each individual concerned.
(b) Give close personal supervision during installation.
(c) Gradual perfecting of plan.
(d) Scheduling.

The writeup of the plan and the drafting of working instructions and orders are two separate matters. The instructions must take the form of a brief but complete memo prepared for each individual affected by the change. Memos given to supervisors or managers are not sufficient. Instructions must be complete for the individual but should usually describe only his or her activities. They should not cover ground outside the field of the individual, except possibly to briefly describe the purposes of the work.

The analyst must personally supervise the installation and settle many matters involving questions of justice. After the plan goes into effect other slight changes may be found advisable. When the plan is in working order, a detailed description written up according to some set formula should be filed in a book or encyclopedia containing accounts of all office standard practice. The instruction sheets may be filed also but they will not take the place of the description written in a connected form and dealing with the work in its natural and logical sequence.

As the production increases it should be possible to regulate the flow of work through the department by a schedule system, routing the work so as to avoid a peak and valley condition both in the department under consideration and in allied departments. Properly scheduled work means no delays, the lowest cost and the fewest mistakes.

We now have a smoothly running plan, each person with certain set tasks to accomplish, and a definite measure of each clerk's production.

4. Establishing Incentives

It is perfectly obvious that a girl who does twice as much work as another should receive more remuneration. It is also perfectly obvious that if there is some incentive, more people will be efficient. No plan aiming for efficiency is complete until the problem of incentive has been solved. Average office workers under average office conditions may be relied upon to produce 50% or less of the volume of work which they can produce without undue effort, working under properly installed incentives. This statement applies to clerks and machine operators alike. Similarly they can be relied upon to make twice as many errors or even more when they have no idea of the money value of these errors. Whether the incentive to good work is some form of bonus, high salary or piece rate, is not material. The point is to know what production is and what it should be, and to accomplish the desired result. It is the Curtis plan to establish by time study and study of records a certain standard production for each operation which will be expected of each clerk working for a certain salary rate, a certain penalty for errors, and an incentive for good production. If the clerk does not reach the standard set, no deduction is made from her salary, but if she exceeds it she is paid for all production above the standard at a certain fixed rate.

Standards—Procedure

(a) Study past records.
(b) Study "Special Time" and "Idle Time" particularly. (Constant pressure should be kept here and both should be cut to the minimum.
(c) Make time studies of workers.
(d) Determine standards.
(e) Determine incentive — bonus or prize offer.
(f) Make offer, promote and follow up.

This is the usual procedure for all standardization. In setting these standards there are a few precautions which should be kept in mind. It is better to set standards too high than too low; it is easy to lower, but very difficult to increase them. Our experience has been that clerks under fairly good supervision are doing about 50% of what they can do without undue effort, and that the 100% mark is about 25% less than the peak which can be secured during a paced time study hour. These figures are general and are mentioned merely as an index to the situation. In settling standards we attempt to set the 100% point slightly below its true position. We have found that employees who can slightly exceed this figure have a pride in maintaining their record of over 100%, and that this pride often causes them to hold above the figure when conditions are such that otherwise they might show a considerable slump. I am purposely not quoting the standards or bonus rates which we use at the Curtis Company. We receive letters every week asking for this information, but the writers of these letters do not understand their subject or they would not ask the question. Standards vary with conditions and our conditions may be very different from those in another establishment. Standards can be determined only through time study, analysis of the work and of the records of past performance. To install standards set from another's experience would be almost an assurance of failure. The form which bonus offers take are legion. Conditions dictate requirements which are to be met and offers are planned to fulfill the need. The literature of scientific management contains many plans for the drafting of bonus offers. I shall, therefore, make no attempt to describe the different plans which we use at the Curtis Company.

The announcement of the offer, its installation and the publicity and follow-up work which must be carried out, are matters which vary with each different situation. It is exceedingly important, however, that effort should not cease with the announcement of the offer. Care should be taken that each worker understands the proposition and knows what her opportunity is. No matter how clear and explicit the announcement may be, there are always many who do not understand it and who do not sense the significance of the offer in dollars and cents.

In preparing bonus offers the problem of how to handle errors is constantly presented. There are two solutions. Either make a charge against bonus for each mistake or determine the volume of errors, establish a "standard" and offer bonus for reductions. Our experience has been that the first method is much better. When standards are set and the bonus offer is decided upon, the question of errors must be carefully considered. True cost is not merely the actual cost of the time spent in turning out a certain production; if there are errors it should include also the cost of handling and adjusting the proper proportion of mistakes