

days everything that came to the file clerk was filed, regardless of its value. This study showed that a very large percentage of matter has little or no future value.

The inevitable question was, Why file it? The following standard practice instruction was issued:

With the hope of reducing the space and work required for the maintenance of general files, the following rules have been adopted:

1. No circular letters or advertising literature shall be sent to the general files.
2. The dictator's copy of the inter-office memoranda, except memoranda from branch offices, shall be the only copy which shall be filed in the general file, and then, only when in the opinion of the dictator there is a possibility of the memorandum having a future reference value. This means that the person receiving inter-office memoranda, except from branch offices, shall in no case send such memoranda to the general files.

3. Persons receiving correspondence from or sending correspondence to branch offices, shall send to the general files only that correspondence which, in such persons' opinion, may have a future reference value.

4. The general file clerk is instructed to destroy all memos, correspondence or other literature received for filing in violation of any of the preceding paragraphs.

5. Each executive receives and ordinarily files a considerable amount of material which has no future value in the files, but as a matter of routine and habit often goes into the files. Routine acknowledgment of payment and "Thank you" letters of various kinds are examples. These can just as well be destroyed when received. Judgment must be used and in doubtful cases the material should be filed; but by taking thought each executive can safely reduce to some extent the amount of material sent to the file.

As a result of these instructions, the amount of filing was reduced approximately twenty-five per cent, with a reduction in space, equipment and filing energy.

3. STANDARDIZATION IN THE DEPARTMENT STORE

Standardization in this store has proceeded much further than in either of the other institutions, and it will be possible to give, in our limited time, only a few typical examples.

One striking example was forced upon us as the result of a change of conditions. It becomes necessary to move the "Accounts Payable" division from one part of the building to another. A study of the new space allotted showed that there was not enough room for the department as organized and equipped. The bookkeepers were using high standing desks, six feet long. These huge desks were necessary because the books used were large and each bookkeeper used several. It was necessary to use a standing desk because the bookkeeper actually had to walk a step or two from one end of a book to the other. A study of the books showed that nearly two-thirds of each sheet was blank paper. The sheet was re-designed, waste space eliminated (on the unit of space—the page), and as a result the books

were reduced in weight sixty-two per cent and in size forty-four per cent. Low desks, size 60" x 30", were substituted for the huge standing desks, 72" x 36", and the department was easily moved into the allotted space.

Several clerical departments were consolidated and placed in one large room, and clerical tables of a special design were used instead of desks. These tables were designed at the time when office furniture was at its highest price. Instead of using the so-called standard office table, we had a substantial table made by a manufacturer of kitchen furniture, covered it with linoleum top, painted it green, and obtained a good-looking, serviceable table at a saving of about \$30 a table. \$30 x 150 tables equals a saving of \$4,500 on this item alone. A miscellaneous collection of possibly a dozen different sizes and styles of tables and desks of various ages was junked at an actual saving, because the new arrangement occupied less space and gave better working conditions.

To give detailed explanation of the application of standardization in this store would require more time than is at our disposal. A brief list of the accomplishments, however, will be of interest and will show the wide field covered.

By analyzing the causes of complaints and endeavoring to eliminate those causes, by establishing standard methods, complaints were reduced forty-two per cent, with a consequent improvement in service. One cause alone responsible for 1,000 complaints a month was eliminated when the cause was discovered to be something easily corrected.

Changes in the layout, management and methods of the pneumatic tube room resulted in an improved service at a saving of approximately \$18,000 a year.

In the delivery and returned goods room service was greatly improved by standardization and the cost reduced to \$.002 per transaction.

The packing department is handling seven and a half per cent less transactions with thirty-seven per cent less help, but improvements has only begun in this department. Much greater reductions are expected.

Standardization of forms enabled the store to eliminate ninety-three forms. Consolidation of forms meant also a reduction in the clerical work to be done thereon.

Standardization of mail opening resulted in increasing the output from 100 letters an hour to 240 letters an hour.

Standardization of billing resulted in a decrease of billing clerks from nineteen to thirteen. Hand book-

keepers have been reduced from thirty-one to twenty-five.

A decentralization of the adjustment office and a consolidation of the mail order, business promotion, correspondence and adjustment clerical offices resulted in an approximate saving of \$35,000 a year.

In standardizing operations we have felt the need of a comparable method of compiling accomplishment records.

We have used the following method to determine the percentage of efficiency of workers performing standardized operations. This method does not require a great deal of figuring, and it enables one to compare the efficiency of one clerk with another, whether or not they happen to be engaged on similar work.

		Date										
Name												
		6	12	18	24	30	36	42	48	54	60	
		1	2	3	4	5	6	7	8	9	0	
8												9
9												10
10												11
11												12
12												1
1												2
2												3
3												4
4												5
5												6
6												7
Total Units												

Fig. 5.

DEFINITIONS

Time Unit: A time unit is one hour. In an 8-hour working day there are, of course, eight time units.

Standardized Operations: Operations on which time studies have been made, and a standard production set, are called standardized operations. The bonus is paid only on standardized operations.

Unstandardized Operations: Operations which have not yet been studied, or which you consider not sufficiently important to study, are called unstandardized operations.

A Work Unit: A work unit is the standard production in one hour on an operation. For example, if Standard Number 1 is at the rate of 1,000 per hour, 1,000 is one work unit; 5,000 is five work units; and so on. If Standard Number 2 is only 500 per hour, then 5,000 is ten work units.

TO FIND THE RATE OF EFFICIENCY USE THE FOLLOWING RULES

1. One hour's production at the standard rate equals one work unit.

2. The actual production divided by the standard production per hour, equals the number of work units produced. For example: If 2,000 of Standard Number 1 are produced, and the rate on Standard 1 is 1,000 per hour, it is evident that two work units have been produced.

3. The number of work units produced, divided by the number of hours worked, or the time units, equals the percentage of average efficiency. For example: If the standard rate is 1,000 per hour, and 2,000 are performed in two hours, the method of figuring would be as follows:

$$\begin{array}{r} \text{Work units produced} \dots\dots\dots 2 \\ \text{Divided by time units worked} \dots\dots 2 \\ \hline = 1 \text{ or } 100\% \end{array}$$

Or, take another example:

$$\begin{array}{r} \text{Work units produced} \dots\dots\dots 1 \\ \text{Divided by time units worked} \dots\dots 2 \\ \hline = \frac{1}{2} \text{ or } 50\% \end{array}$$

Tables for Figuring Work Units Produced: In order that still more figuring may be eliminated, it is suggested that tables be prepared for different rates of production similar to the following:

STANDARD PRODUCTION PER HOUR

Work Units	125	150	175	200
.05	6	8	9	10
.10	13	15	18	20
.15	19	22	27	30
.20	25	30	36	40
.25	31	etc.	etc.	50
.30	37			etc.
.35	44			
.40	50			
.45	56			
.50	63			
.55	70			
.60	75			
	etc.			

Accounting for Unstandardized Work and Idle Time: Under this method it is unnecessary to account for any time except that spent on unstandardized operations, or in idleness; the balance, it is assumed, is spent on standardized work. For example, if an operator worked two time units—two hours—on unstandardized work, and was idle one-half time unit—one-half hour—while waiting for work, it is assumed that the balance of the day—five and one-half hours—was spent on standardized work. It makes no difference on how many different standardized operations the operator worked. The method shows exactly what her percentage of efficiency was.

Provide a slip of paper, similar to the attached sample, (Figure 5) for the operator when she begins an unstandardized operation.

This slip she takes to the head of the department, or some other person delegated for the purpose, who punches on this slip the hour the operator begins on the unstandardized work.

When the unstandardized work is finished, she again takes the slip to the head of the department and has it punched.

The space shown on the slip between the time the operator started on the work and the time she finishes is easily figured in tenths of an hour. One of these slips should be provided for each operator each day, to be turned in at night.

The operator should, herself, do the figuring of the number of tenths of hours, in order that this may not have to be done by some one else.

At the end of the pay period, these slips are totaled. The entire amount of time spent on unstandardized work and in idleness figured in time units, is deducted from the number of time units in the pay period. It is assumed that the balance represents the total time units spent on standardized operations.