

find out how many days the department is behind in its work and what the cause for the delay is. Record the result of your interview below:

- Dept. A. Up to date.  
 Dept. B. One to three days behind, no reason given.  
 Dept. C. One month behind, on account of vacations.  
 Dept. D. Up to date.  
 Dept. E. Up to date.  
 Dept. F. One week, vacations, statement work.  
 Dept. G. Two days, no reason given.  
 Dept. H. One week, undermanned.  
 Dept. I. One week, waiting on Dept. H.

#### B. OFFICE RATING SHEET

1. Uninterrupted flow of work.  
 a. Number of departments considered..... 9  
 b. Number behind in their work..... 6

Take each department under b, and deduct as follows:

Work up to date.....	No deduction
1 day behind.....	deduct $\frac{2}{a}$ points
2 days behind.....	deduct $\frac{4}{a}$ points
4 days behind.....	deduct $\frac{8}{a}$ points
8 days behind.....	deduct $\frac{16}{a}$ points
16 or more days behind.....	deduct $\frac{32}{a}$ points

The allowance for this subdivision is 40 points; a in this case is 9. The example works out as follows:

$$\frac{2 + 32 + 16 + 4 + 16 + 16}{9} = \frac{86}{9} = 9.55 \text{ points}$$

#### C. SUMMARY OF FINDINGS REPORTED TO CLIENT

When the office manager knows what work is to be done, and has his working force so arranged and adjusted that it can be done in a certain time under all ordinary working conditions and circumstances; and when he has his working force so well balanced and mobile that he can successfully cope with any emergency that may arise, such as seasonal or other fluctuations in the volume of work; then and then only can he be considered to have control of the clerical output.

This is a new idea, in the sense that it is more accurately and closely defined than before, and it is one of the chief features of scientific office management. The sort of control that is usually found in offices lacks this sharp definition, and is based usually on some method of driving or forcing work through, which al-

ways requires a greater expenditure of energy than is necessary. Once scientifically devised and applied, control should function more or less automatically and smoothly. A poorly designed machine may run, but generally with much clatter and waste of power, while a scientifically designed one performs its work smoothly, less noisily and with more economy of power, though it apparently is under no such strain or effort as the poorly designed one. In short, the scientific method always appears the easiest method—and it actually is.

The possession of this control is conditioned on exact knowledge of three fundamental facts: The office manager must have an exact knowledge of the capacity of the office force. This in turn means that he must also possess an exact knowledge of the standard time each operation should require and he must know exactly how much there is to do. It sounds very difficult, but aside from the basic analytical work necessary to establish it, it is not so. With these basic facts in his possession he can lay a solid foundation for the control of output. They are, in short, fundamental to successful and scientific management.

Our examination of the nine principal departments in your office, shows that six of them are behind in their work. These we enumerate, with the reason for the arrears, when such reason was given:

Dept.	Days Behind	Reasons Given
B.	1	No reason given.
C.	30	Statistical work behind on account of vacations.
F.	7	Statement work behind on account of vacations.
G.	2	No reason given.
H.	7	Department undermanned.
I.	7	Waiting on Dept. H.

In Departments A, D, and E, the work was reported up to date. We have been informed also that the present is a peculiarly busy season in view of the convention to be held by your company, in consequence of which your salesmen are particularly active in sending in business in order to qualify for this occasion. The existing condition, however, calls for a deduction of 9.55 points.

It should be remembered in connection with the above, that work which happens to be held up in one department necessarily checks the flow of the same work in other departments through which it must pass. Your Dept. I attributing its delay to that in Dept. H, is an illustration of this fact. As all the departments in an office are related to and dependent upon each other, the principle of co-ordination of effort, so that the office operates as one united whole, is seen to be of funda-

mental importance. The fact that a reason may be given for these delays, in no way mitigates the effect, and serves only to point the way to a correction of the condition. . . .

These three examples will, I trust, explain the working of the method and show that it is an actual scientific measurement of office management against definite standards.

#### VI. GENERAL CONCLUSIONS

The subject should be approached with a proper appreciation of its importance and its difficulties. It is not simple—as we very quickly discovered when attempting to work it out. Many months of study and calculation were required to develop fully the formulae and technic, and especially was it difficult to develop the latter so as to get the cost of production down to a reasonable sum. A similar examination made by one approaching the problem anew could not be completed in three times the length of time we now require to handle it. The time required is a most important element; it cannot be allowed to drag.

Mistakes made by the examiner are very quickly detected by the clients; therefore in order not to prejudice or invalidate the entire examination, the utmost care is required to avoid even the slightest error. The summary must contain facts only, and each fact, the examiner may be certain, will be checked up by the client.

To be successful, such an examination requires the possession of a wealth of data covering all possible contingencies. Though we have been collecting such data for years in our regular work, we found in a number of instances that our files were incomplete, and consequently we have been compelled to make many special investigations. I am firmly convinced that the experience gained so far in this respect has greatly improved the scientific character and reliability of our general work.

The method described, I am fully convinced, is correct and will stand with little or no change, though of course there will be considerable change in the technic and in the weighting of the subdivisions, as our experience grows.

Another remarkable and encouraging fact is the wide applicability of the method as it stands. Although we have made examinations in such widely-separated lines of industries, as candy manufacturers, cotton convert-

ers, mill agents, manufacturers' agents, paper dealers, photo engravers, office appliance manufacturers, music publishers, insurance companies, wholesale ribbons, and engineers, the method applied with equal correctness in each, and with no changes whatever. Its vindication by actual test in practice in such a widely different series of industrial fields is the best practical proof of its universal applicability.

Neither has the size of the office made any considerable difference. Of course it will be admitted that it would be more successful in a large office, but we have made successful examinations in offices with as few as ten clerks.

The following comparative study (Fig. 2) of all clients who have been rated may be of interest. The table shows, for each major section, the average rating of all clients, the highest rating of any client and the lowest rating of any client; also the average general rating for all clients, the highest general rating for any client, and the lowest general rating for any client. It is to be observed that the highest efficiency in office organization is in the use of mechanical equipment; the lowest efficiency in clerical output and personnel.

SECTION	AVERAGE	HIGHEST	LOWEST
Clerical Output	61.41	96.00	31.86
Personnel	61.82	91.00	30.00
Stockkeeping	60.91	93.00	34.00
Turnover	60.99	80.00	30.00
Arrangement of Office	68.28	94.95	47.90
Intercommunication	71.55	100.00	61.00
Organization	74.04	98.00	57.00
Control of Output	75.53	82.80	67.76
Routines and Methods	75.84	80.00	70.20
Filing	77.24	89.00	62.00
Salary Standards	78.82	100.00	57.00
Correspondence	79.09	100.00	61.00
Forms	82.13	100.00	68.00
Equipment (Desks, etc.)	87.17	99.00	74.20
Use of Office Machinery	93.75	98.40	80.62
Average of general ratings of all clients			73.23
Highest general rating given any client			86.43
Lowest general rating given any client			60.54

Fig. 2. Comparison of Clients Rated.