

tellers' cages was standardized on the interchangeable unit plan. At the same time other special desks were designed as follows:

- A special bookkeeping machine desk for bank use.
- A special clerical table, previously described.
- A coupon sorting desk.
- Sanitary drinking fountains were placed at all convenient locations.

Indirect lighting was installed throughout, a washed air heating and ventilating system installed, linoleum floors, and No-noise sound deadening ceilings placed on all clerical working spaces.

When the plans were complete, it was found that there had been devised not only a highly desirable place so far as working conditions were concerned, but an actual saving in floor space of 8,800 sq. ft. over original estimates had been made; a saving amounting to \$52,800 per annum!

VII. MOVING AN OFFICE

When the building was complete and ready for release by the builders, there was the problem of the move. As this involved the moving of the equipment for over 500 clerks from two different locations to one new one, it will be readily understood that this required a great deal of pre-planning.

1. DETERMINING WHAT IS TO BE MOVED

Offices about to move usually take advantage of the opportunity to get rid of old equipment which has outlived its usefulness, and to purchase new standardized furniture. The bank mentioned was no exception. For ready reference, when preparing floor plans complete lists of all equipment were made as follows:

- A. A list alphabetically by users' names;
- B. A department list;
- C. A list by kinds of furniture and equipment.

All equipment was now checked against these lists and large printed cards with the words "DO NOT REMOVE" were fastened to those pieces which were to be left behind.

2. TAGGING THE FURNITURE

Each piece of furniture to be moved was tagged with a specially printed tag showing the number of the location as marked on the plan. There were four colors of these tags, a color indicating the floor in the new building on which furniture was to be placed. Bays were numbered and each tag bore in addition to

name of occupant, the number of desk on plan, the floor in new building, and the number of the bay in which it was finally placed. In the new building we suspended large cards 12" x 14" from the lighting fixture in the center of each bay, bearing the number of the bay.

3. THE MOVE ORGANIZATION

An organization chart was prepared showing the manner in which those connected with the job of moving were to function.

4. INSTRUCTION CARDS

Complete written instructions were furnished to all superintendents, guides and moving gangs. There were many of these instructions issued, but the following example will suffice to show the method.

INSTRUCTIONS TO PLACING GUIDES

You have been assigned to supervise the placing of all furniture and other equipment in bays number between and The furniture and equipment will be brought to the various bays by the moving gangs.

As each article is received you will instruct the movers as to the exact location at which the article should be placed. You will determine this location in the following manner:

(a) A tag showing the floor, bay and article number is attached to each desk. It is tied to the back of each chair. It is tacked or tied to each filing cabinet, and is attached at the most convenient location to all typewriters, adding machines and all other equipment.

(b) Refer to the proper bay on the plans and locate the article bearing the same number as appears on the tag of the desk, table or whatever article is to be placed. The location of this article on the plans will show the location of the article on the floor.

(c) The exact location of all articles is marked on the floor. Point this location out to the movers and see that the article is placed in its assigned place. If you receive any article not provided for on the plan, but tagged for your bays, place it temporarily in an aisle that will not be required, and call it to the attention of the floor captain. Please check off on the blueprint each piece of equipment when it is placed in position.

(d) Watch carefully and see that desks are set so that the drawers open in the proper direction. The front can usually be determined by the extra heavy lines which indicate the pedestal, or by the position of the chairs in front of the desk.

(e) Be on hand in the bays assigned to you promptly at the time shown, and remain in these bays until relieved. It is very important that you be on hand when any article is brought to one of your bays, otherwise several of the movers will be delayed.

(f) Guides on all except the last shift will turn over to the guides who relieve them the mounted plan and rule. The guides on the last shift will before leaving turn over to the Captain the mounted plans and rule.

(g) The Captain may find it advisable to assign you to other bays. You will be governed by his instructions at all times.

In addition complete instructions were issued to all employees.

5. PREPARING THE SCHEDULE

A large chart was made showing the scheduled times for moving each department. Photostat copies of this chart were furnished to each Superintendent. In operation, colored tacks were placed on the schedule chart in the General Superintendent's office to show the beginning and ending of each departmental move.

6. THE ACTUAL MOVE ROUTINE

The moving company's workers were organized into eight gangs.

- | | |
|--------|----------------------------------|
| | <i>Old Building</i> |
| Gang 1 | Clear room; |
| 2 | Put furniture on elevator; |
| 3 | Take furniture off elevator; |
| 4 | Load furniture on van. |
| | <i>New Building</i> |
| Gang 5 | Unload furniture from van; |
| 6 | Load elevator; |
| 7 | Unload elevator; |
| 8 | Put furniture in final position. |

Thus, it will be seen, we provided for a steady flow of the furniture from position in old building to position in new building.

7. HANDLING THE EXCEPTIONS

About a week before the actual move, a final canvas of the old building was made. Each piece or fixture which would require special treatment, such as detach wiring or knock down was noted. Working instructions were prepared, and experts did this special work in advance of the move.

All extra heavy pieces (for example thirty heavy safes) were moved the night before the regular move.

The floor plan was transferred with chalk to the actual floor. The exact position and number of each desk or cabinet, as shown on the original working plan, was marked. Thus all measuring during the move was eliminated.

8. THE ACTUAL MOVE

The move was scheduled to begin Saturday immediately after employees finished at 1 P.M., and to be completed at 11 P.M. Saturday—ten hours actual moving time. On account of a delay on the part of the safe movers we were unable to get the use of elevators in new building until 3 o'clock. We started the move,

therefore, practically two hours behind schedule, although work in the old building started on time. With this handicap of nearly two hours, the move nevertheless was complete only half an hour behind the schedule. Due to the fact that painters, plumbers, electricians and laborers were still at work putting on the final touches, we were unable to place all desks in exact final position until midnight Sunday. The bank was open for business and all clerks working at their desks at the usual opening hour, 9 A.M. Monday. Not an hour of working time was lost.

9. ESTIMATING THE COST OF THE MOVE

The bank had no information which would guide them as to the cost, neither had we previously on other move work we had done considered it a part of our work to bargain with moving companies; we had always suggested to our clients that a contract be made on an hourly basis. The bank, however, preferred a lump sum basis, and got a bid from one company of \$6,000 for the job. A hasty calculation showed us that deducting new furniture bought (which was delivered in place by the sellers), there were roughly about 600 pieces to be moved. This meant \$10 a piece, which we considered exorbitant. Bids were then asked from ten moving companies, and finally a bid of \$2,900 was accepted. Even this seemed too high, so we decided to prepare for such an emergency in the future. We time-studied the actual move. The studies were made by elements. Each element was planned and defined in advance and symbolized mnemonically, to facilitate rapid and accurate study. Then the studies were compiled and the elements figured. With the aid of these formulae we expected to be in a better position in the future to estimate the time taken for moving.

VIII. SUMMARY OF RESULTS

Because of the scope of this paper, it has been necessary to mention only briefly many subjects which are of great importance. A choice had to be made between treating the technique of some one phase exhaustively and mentioning briefly a wide range of subjects. The latter course was adopted for the reason that it is the writer's desire to show that scientific management is widely applicable to office work. There is a thought in the minds of many that the applicability is very limited indeed.

There is also a thought that it is applicable only to large concerns; but the factory office had only 60