

of all departments that they, like the musicians in a band, while doing their individual shares of work in the right manner, can justly pride themselves in the concerted accomplishment.

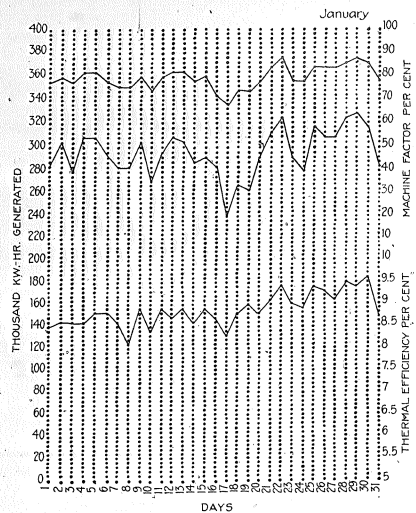


FIG. 22. Bulletin Board Showing Load, Thermal Efficiency and Machine Factor by means of Colored Strings Stretched between Nails.

#### SUMMARY

26. To sum up, the planning of power-plant work is the most important function of the management. It comprises and harmonizes every activity, controls and directs every function, every process, every method. While the process of generating power is

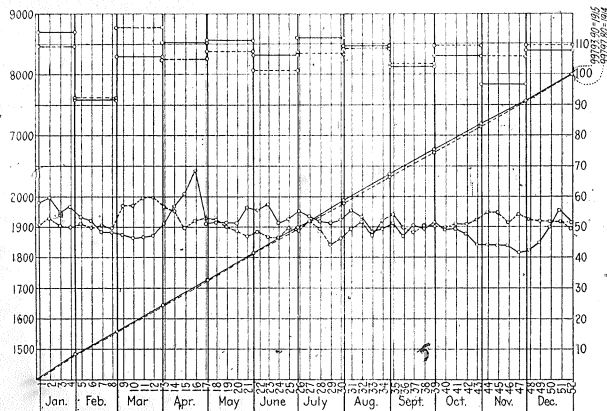


FIG. 23. Diagram showing Total Pay-roll before and after Planning Department was added to the organization.

a complicated thermodynamic process, conditioned by laws of chemistry, physics, etc., no management can succeed unless it is thoroughly familiar with all underlying principles. Yet no matter how thorough is the knowledge of the physical side of the game, the success of securing the best results depends not on the perfection of equipment and supplies, but on the value of methods used.

In a power plant whether small or large, the following managerial functions must be performed:

- A. Planning to meet the requirements of operation and maintenance, including schedules, standards, etc.
- B. Superintending, including task determination, bonus, inspections, discipline, etc.
- C. Recording, including time and cost keeping, balance of stores, engineering records and logs.

In order to successfully carry the routine work of the planning office, it must be provided with all necessary standards as to methods, materials and equipment. For the majority of plants this work may best be done by an outside organization, or staff of specialists. Once the work is started right, the perpetuation of researches, revision of standards and the like, must be carried out by a special engineering bureau embracing an information service.

In a large plant the cost of the planning department, although large, cannot be noticed on a payroll, as it simply means that all the planning work formerly done in the boiler room, coal pockets, switchboard gallery and repair shop is now centralized in one place, and properly coordinated. The diagram, Fig. 23, shows the payroll for a large electric-railroad central station. Although during the first

year on record here was no planning department and during the second year such a department was organized, equipped and manned, the total payroll remained practically the same for both.

In a small power plant for a factory, it is possible to carry on practically all the planning work by a clerk directed by a high-class experienced engineer, or even from an outside consulting office, thus requiring only a very moderate appropriation compared with the large savings accomplished through such an organi-

zation. Figs. 24 and 25 show a 34000-kw. plant and its planning office, Fig. 26 a work-order route board, and Fig. 27 the ticket side of a planning board.

In conclusion the writer wishes to emphasize the fact, often obscured by details pertaining to scientific management, that it is not forms, nor time studies, neither store system, nor classifications, however excellent, that are important in bringing about the desired result, but the scientific and humanitarian attitude in which all these detail problems are solved.

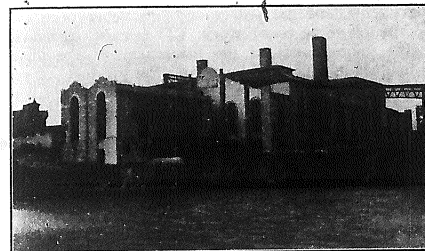


FIG. 24. A 34,000 K. W. Power Plant.

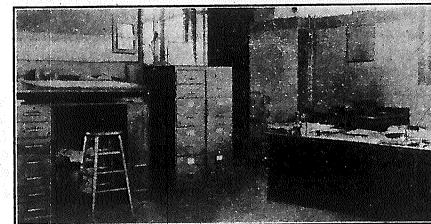


FIG. 25. Planning Office for plant shown in Fig. 24.

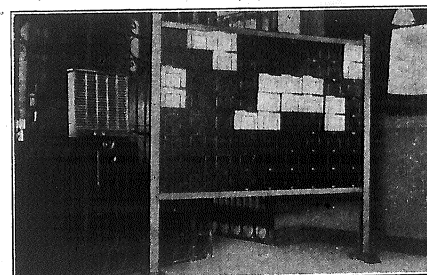


FIG. 26. Route Board in Planning Room, work order side.

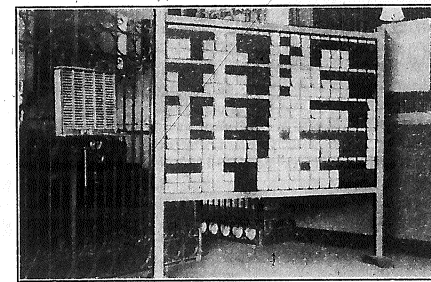


FIG. 27. Route Board in Planning Room, time ticket side.