

## ORGANIZATION OF THE MAINTENANCE DEPARTMENT

(Part 4)



Albert K. Fletcher  
CEO/PM Consultant  
(Dataman System Consultancy)

### SPAN OF CONTROL (continued)

In addition to these responsibilities which cannot be transferred, there are variety of staff “assignments” which the first line supervisor must undertake whenever they are not provided with by others. These include auditing and control reporting; machinery and machinery restoration knowledge; determination that the right work has been described and assigned; that the individual jobs are planned properly; in the proper stepwise fashion and using the proper methods; and that the proper tools, machines, materials and parts are available when and where needed.

With these responsibilities the supervisor is limited in the number of employees he can control even when needed staff work is provided by others. This “span of control” can vary from one or two craftsmen per supervisor when every action requires a new judgment determination to twenty-five or so when the job is highly repetitive and work quality is easy to determine.

A supervisor’s “span of control” will depend not only upon the individual supervisor but also upon the experience and skill levels of his craftsmen; upon the geographical area he must cover; upon the type of work involved (repetitive vs. once only as in new construction); and upon the amount of his own staff work he must perform. Generally, the maximum

number of craftsmen the average experienced supervisor can control will average about twelve although it may vary somewhat. This maximum can be reached only when adequate staff assistance is available. The work sampling technique of an Industrial Engineer can, and should be adapted to determine whether the number of supervisors is optimum for the number of hourly employees.

Certain staff activities can be related to the number of hourly or craft employees. One Planner/Scheduler is generally about optimum for every 30-40 craftsmen. Other staff activities vary with the type of plant, its age, the complexity of the process and the reliability needed in each section. A careful review of the functional outline can be used to estimate how many line, and how many staff people are required for the optimum organization.

### MAINTENANCE FUNCTIONAL OUTLINE

Regardless of plant size, the maintenance organization must be able to accomplish all of the following, which suggest types of effort covering the line activities of the Department.

A. **SERVICE** effort is intended to describe activities of the Maintenance Department which aid flow of the product and which are not related to Repair and Maintenance (R & M), (equipment restoration) or to capital work or to rearrangements and other forms of facilities improvement. Service work includes but is not limited to activities as utilities generations, raw material handling and storage, etc. Sometimes Service work is assigned to maintenance as a matter of convenience, sometimes because of the skills and tools of the Maintenance Department.

B. **FIELD** effort is primarily restoration work with the production areas as the “fields”. The tools are brought to the

work rather than the vice versa. Ideally, field effort is **major maintenance, preventive maintenance and replacement** of those units which have been restored in shops where environment, tools and equipment are better and supervision is easier.

When the formal organization involves area forces, the plant is generally too large to be maintained solely from central shops. Sometimes, of course, equipment is of such size that removal to a central shop is impractical. In addition to reasons of geographical or equipment size, field or area organizations may be established for psychological reasons. A maintenance organization parallel in pattern to the production organization not only develops a high level of knowledge and familiarity with the equipment but tends to “demonstrate” to each production unit that there is a corresponding maintenance unit solely concerned with the problems.

C. **PROJECT** work may be restoration in large units of effort, as in an overhaul, or it may be field construction as in the generation of new facilities. When normally assigned field crews are inadequate because of the size of the overhaul, they may be augmented by drawing from the project forces. In such instances, responsibility for the work resides with the field or area maintenance people. The project crew and its supervision are in effect “sub-contractors” to the area people.

Additionally, the project organization is a proper “home” for those craft specialists who may be needed anywhere in the plant but not on a continuing basis. These include the civil trades – carpenters, masons, painters, as well as such specialists as riggers, scaffold men, boilermakers, mechanics, plumbers, etc.

(End Part 4 – To be continued)