Maintenance Management and Control

The management and control of maintenance activities are equally important to performing maintenance.

"Maintenance may be described as the function of providing policy guidance for maintenance activities, in addition to exercising technical and management control of maintenance programs."
– Department of Defence, USA

Generally, as the size of the maintenance activity and group increases, the need for better management and control becomes essential.

In the past, the typical size of a maintenance group in a manufacturing establishment varied from 5 to 10% of the operation force (Neibel 1994).

These days, the proportional size of the maintenance effort compared to the operating group has increased significantly.

The prime factor behind this trend is the tendency in the industry to increase the mechanization and automation of many processes.

Consequently, this means lesser need for operators but greater requirement for maintenance personnel.

<u>Maintenance department functions and organization:</u>

A maintenance department is expected to perform a wide variety of functions including:

1. Planning and repairing equipment / facilities to acceptable standards.
2. Performing preventive maintenance; more specifically, developing and implementing a regularly scheduled work program for the purpose of maintaining satisfactory equipment / facility operation as well as preventing major problems.
3. Preparing realistic budgets that detail maintenance personnel and material needs.
4. Managing inventory to ensure that parts / materials necessary to conduct maintenance tasks are readily available.
5. Keeping records on equipment, services, etc.
6. Developing effective approaches to monitor the activities of maintenance staff.
7. Developing effective techniques for keeping operations personnel, upper-level management, and other concerned groups aware of maintenance activities.
8. Training maintenance staff and other concerned individuals to improve their skills and perform effectively.
9. Reviewing plans for new facilities, installation of new equipment, etc.
10. Implementing methods to improve workplace safety and developing safety education-related programs for maintenance staff.
11. Develop contract specifications and inspecting work performed contractors to ensure compliance with contractual requirements.

Many factors determine the place of maintenance in the plant organization including size, complexity, and product produced.

Some guidelines useful in planning a maintenance organization are:

- Establish reasonably clear division of authority with minimum overlap.
- Optimize number of persons reporting to an individual.
- Fit the organization to the personalities involved.
- Keep vertical lines of authority and responsibility as short as possible.

Centralized or decentralized maintenance function?

One of the first consideration in planning a maintenance organization is to decide whether it is advantageous to have a centralized or decentralized function.

Generally, centralized maintenance serves well in small and medium sized enterprises housed in one structure, or service buildings located in an immediate geographic area.

Some of the benefits and drawbacks of centralized maintenance are as follow:

Benefits:

- More efficient compared to decentralized maintenance
- Fewer maintenance personnel required
- More effective line supervision
- Greater use of special equipment and specialized maintenance persons
- Permits procurement of more modern facilities
- Generally allows for effective on-the-job training

Drawbacks:

- Requires more time to and from the work area or job
- No one individual becomes totally familiar with complex hardware or equipment
- Higher transportation cost due to remote maintenance work

Past experience indicates that in large plants, a combination of centralized and decentralized maintenance normally works out.

Managing a maintenance program effectively.

Improving a maintenance management program is a continuous process that requires progressive attitudes and active involvement. A nine-step approach for managing a maintenance program effectively is presented below:

1. Identify existing deficiencies. This can be achieved through interviews with maintenance personnel and by examining in-house performance indicators.
2. Set maintenance goals. These goals take into account existing deficiencies and identify targets for improvement.
3. Establish priorities. List maintenance projects in order of saving or merit
4. Establish performance measurement parameters. Develop a quantifiable measurement for each set goal. For example, number of jobs completed per week and percentage of cost on repair.
5. Establish short- and long-range plans. The short-range plans focus on high-priority goals, usually within a one-year period. The long-range plan is more strategic in nature and identifies important goals to be reached within three to five years.
6. Document both long- and short-range plans and forward copies to all concerned individuals.
7. Implement the plan
8. Report status. Preparing a brief report periodically and forward it to all involved individuals.
9. Examine progress annually. Review progress at the end of each year with respect to stated goals. Develop a new short-range plan for the following year by considering the goals identified in the long-range plan and adjustments made to the previous year's planned schedule, resources, costs, and so on.

Self-evaluation of maintenance effort:

The U.S. Energy Research and Development Administration (USRDA) conducted a study on maintenance management related matters and formulated the following ten questions for maintenance managers to self-evaluate their maintenance effort:

1. Are you aware of how your craftpersons spend their time: i.e. travel, delays, etc.
2. Are you aware of what facility / equipment and activity consume most of the maintenance money?
3. Are you aware if the craftpersons use proper tools and methods to perform their tasks?
4. Have you balanced your spare parts inventory with respect to carrying cost vs. anticipated downtime losses?
5. With respect to job costs, are you in a position to compare the “should” with the “what” ?
6. Do you inspire that maintainability factors are considered properly during the design of new or modified facilities / equipment?
7. Are you aware of how much time your foreman spends at the desk at the job site?
8. Do you have an effective base to perform productivity measurements, and is productivities improving?
9. Are you aware of whether safety practises are being followed?
10. Are you providing the craftsperson with correct quality and quantity of material when and where they need it?

If an unqualified “yes” is the answer to each of the above questions, then your maintenance program is on a sound footing to meet organizational objectives. Otherwise, appropriate corrective measures are required.