

Failing to Plan Negates Maintenance Efficiency

Written by Terrence O'Hanlon, ReliabilityWeb.com
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How is maintenance work planned and scheduled at your facility? Is it based on reacting to emergencies and unexpected shutdowns? Is a great deal of time spent searching for spare parts? Are repairs rushed, making it difficult to perform a quality repair? Do maintenance craftspeople lack the skills and tools required to do the job? If you answered yes to any of these questions, there may be huge benefits available from implementing a basic maintenance planning and scheduling program.

Failing to plan and schedule maintenance is a common shortfall in many maintenance departments in a variety of industrial settings. The maintenance planning and scheduling function is often overlooked or poorly defined.

There is an urban legend about a group of people who built an entire house in only 24 hours. When asked how they could accomplish this task, the foreman answered that they had spent three days planning.

We interviewed a number of practitioners and consultants who all stated that any successful maintenance and reliability operation is built on the basic foundation of maintenance planning and scheduling.

According to Tracy Strawn, senior maintenance and reliability consultant at the Marshall Institute, Raleigh, NC, "Maintenance planners are change agents. Even though they typically have no direct authority, they have a great deal of influence over others through their conversations, their actions, and their attitudes."

What a planner and scheduler does

To understand these functions, look at two simple definitions:

- Planning-how a job will be done and what resources will be required
- Scheduling-when a job will be performed

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A maintenance planner and scheduler finds the best ways to minimize wasted travel time between jobs, makes sure all the required materials and procedures are available, and then schedules the tasks.

The importance of planning

Labor is one of the largest resource areas and expenses in the maintenance department. If this resource is not being utilized effectively and efficiently, a great deal of money is being wasted.

Ricky Smith, president of the Technical Training Division of Life Cycle Engineering, a Charlotte, NC-based training and consulting company, states that most North American maintenance departments operate at between 10 percent and 40 percent efficiency. He also reports that some maintenance craftspeople spend up to 75 percent of their time searching for repair parts and traveling to jobs.

Why is the importance of maintenance planning and scheduling often overlooked? When a plant is operating in a reactive mode, it is very difficult to see the value of placing a potential "firefighter" behind a desk with a computer. Neil Juhnke, corporate maintenance manager at American Crystal Sugar, Moorhead, MN, states, "It's the tyranny of the urgent. Today's issues overshadow longer term priorities."

Implementing a maintenance planning and scheduling function is also a major paradigm shift. Gross inefficiencies are identified and procedures will be changed as a result.

What is the standard ratio for maintenance planners to craftspeople?

There is no hard and fast rule; however, we found that an average figure of 20 maintenance craftspeople to one planner is standard. This figure should be adjusted depending upon issues such as highly regulated environments where procedures require extensive documentation, the age of the plant, or the maintenance program itself.

What other tasks should an effective maintenance planner and scheduler be responsible for?

None. The maintenance planner and scheduler should be dedicated to two

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functions-planning and scheduling of maintenance tasks.

Strawn adds, "Good planning requires that the planner go to the shop floor to examine and plan future jobs. Some supervisors load their planners up with additional responsibilities that make the planner desk-bound or unable to go to the shop floor to plan. An example would be a supervisor or manager who makes the planner a relief foreman in the absence of the regular foreman or volunteers the planner to attend different departmental meetings because he is conveniently available."

The maintenance planner who will produce the best results is allowed to focus on planning and scheduling. The planner will look ahead to maximize the utilization of people, which will produce the biggest gains.

Planning and scheduling tools

An effective computerized maintenance management system (CMMS) is the best tool to manage multiple repairs and work orders, craftspeople, and parts inventory and, most importantly, to track and report effectiveness and results. In smaller settings without a CMMS, a spreadsheet program such as Excel could be used.

Planning and scheduling is an information-intensive job and computers must be used to manage resources, track multiple tasks, and generate reports.

Measuring the effectiveness of a planner

A key ratio to measure the effectiveness of the maintenance planning function is the ratio of planned to unplanned work. If the planning function is working at peak efficiency, reactive work should fall to a low single digit percentage. Another important measure is planned/scheduled work compliance. An effective program will be above 90 percent.

Although planning and scheduling seems simple, it requires absolute management support on a level equal to the support that safety programs receive. In other words, it must be allowed a budget and dedicated personnel who will receive ongoing skills development training. Active management support is vital to the program's success.

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Benefits to an effective maintenance and planning function

"One of the biggest benefits has come from shutdown management," Juhnke says. "We had much tighter budgetary control and, for the first time, we were able to start up all five plants within two hours of our target. We also have been able to reduce our use of contractors because planning has freed up our maintenance craftspeople to perform the work themselves."

By its very nature, an effective maintenance and planning function will move away from reactive toward proactive maintenance work. The benefits to this type of environment are increased safety, worker morale, and job satisfaction.

Many planners and schedulers also serve a CMMS data quality assurance function as they close work orders as reported by maintenance craftspeople and ensure that the data is accurate and in the correct format.

Skills for a maintenance planner

One of the most important skills the maintenance planner will possess is the ability to communicate effectively with others. The planner serves as the center point on a hub between maintenance, operations, storeroom, supervisors, and engineering.

The planner usually will meet with the maintenance supervisor at least once per day to review past and future work and to deal with any required changes.

Once the maintenance planner is in place, a long-term training program should be developed that exposes the planner to various quality improvement skills such as the use of Pareto charts, root cause analysis techniques, and problem solving methods.

How to select training resources

It is important to gain a comprehensive understanding of what is required for a successful maintenance planning and scheduling program. A formal training program can be useful to everyone who will be involved, including management. Look for programs that cover the basics well. If you can implement the basics well, you will have

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an effective maintenance planning and scheduling program.

Be sure to ask the training company for customer references and follow up with the supplied names. Ask about the actual real world experience of the trainers in maintenance planning and scheduling.

Implement before anything else

There are many popular buzzwords and maintenance management paradigms such as reliability centered maintenance (RCM), total productive maintenance (TPM), predictive maintenance (PdM), and condition-based maintenance (CBM) that seem to hold many of the answers needed to improve machinery reliability and overall asset management.

Juhnke notes, "Most programs and technologies need to be applied on a planned and scheduled basis."

Without a solid foundation of maintenance planning and scheduling, many of these programs will fail or will not live up to their full potential. As Smith says, "If you think planning and scheduling won't work in your organization, you are right. If you think planning and scheduling will work in your organization, you are right. What do you think?" **MT**

Information supplied by Terrence O'Hanlon, publisher of Reliabilityweb.com