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Planning Work Is Essential

Information, actions, and communications prior to the start of a job lead to the performance of quality work without delay.

By John Rasberry, Performance Consulting Associates

In the baseline article for this series, "Be Brilliant With the Basics" (MT 3/00, p 41), six basic elements of maintenance were proposed. The third of these basic elements was to make work planning an integral part of the maintenance process.

That article posed the following questions for this element of maintenance where the answers gauged a facility's adherence to the basics:

- Are there permanently assigned maintenance planners?
- Are there identified and trained back-up maintenance planners?
- Is the planner's "product" a well-developed job package, which clearly details the scope of the work to be done?
- Do the maintenance planners plan for the future and not engage in day-to-day activities such as expediting parts for emergency work?
- Do maintenance planners have access to a complete and accurate bill of materials for the facility assets?
- Do maintenance planners have an accurate and active backlog of work?
- Are maintenance planners' contributions to the maintenance organization equal to or greater than their costs?
- Is the effectiveness of maintenance planners measured?

The job planning process is that portion of the overall planning function that focuses on the efficiencies of individual work orders. In reality, job planning only provides the opportunity to achieve efficiencies and to avoid delays. Taking advantage of opportunities created by job planning requires coordination and cooperation of production supervisors, maintenance supervisors, and maintenance craftspersons to use job planning in ways that actually reduce the time it takes to complete each job.

Although it is recognized that not all work orders need to go through the entire formal job planning process, all jobs actually get planned to one extent or another—either before or after the work starts. Depending on the nature of the job and its affect on safety or production, it is most often an advantage to plan work before the job actually begins.

Planning adds value

Why have maintenance planners, a planning organization, and a planning structure that drives proactive maintenance? Well-established and trained planning organizations bring value to businesses in excess of their costs. More maintenance work is accomplished in less time using the same resources than would be the case if the planning function did not exist. If the bottom line is not improved by having a planning function, it is usually the result of poorly defined roles and responsibilities, an absence of understanding of the planning role and its value, a lack of support from management, insufficient planner training, or having the wrong people in the planning role.

The way work is planned in industry varies widely. In some plants it is a process driven by the culture of the facility. At others, it is a blend of culture and a formal system. In some facilities, it is strictly a process-driven function. Some plants do not feel the need to have a planning organization. Others have tried to implement planning, but have not been successful for a variety of reasons and have dissolved the planning organization.

Some organizations have maintenance planners in place and functioning within a planning model that is structured and controlled. In this environment, planners plan. Their focus is the future, one to two weeks out. Their days are consumed with the fundamentals of producing planned job packages, and then working with maintenance and production to schedule the most appropriate date and time to implement the work package. The planners in these organizations own the backlog. They keep the backlog clean through periodic scrubbing to eliminate duplicate work, work that has been accomplished and not reported complete, or work that is no longer desired to be done.

Others have organizational charts that show planners who, in reality, are mostly parts expeditors for current work activities. These individuals do not produce work packages that improve the efficiency of the craftspersons because they do not have time. The planner in this type of organization is reacting to current events instead of planning for future events, which is a fundamental violation of the basics of maintenance. It is well recognized that someone needs to perform the expeditor role but it is always recommended that it not be the planner. Some organizations do not have trained back-up planners so a gap caused by vacation or illness is filled by the maintenance supervisor or one of the craftspersons.

Some organizations have the area maintenance supervisor perform the role of planner. In this situation, the supervisor is rarely the one who does the planning activity. It is pushed down to the craftsperson. The results are that several individuals (the craftspeople) are performing tasks they were not trained to perform and wasting productive time trying to figure how to resource each job. Each is

identifying the work to be performed, the parts needed, and craft or contractor support requirements. Eliminating the craftsperson's time in planning efforts and concentrating that time on completing planned work is where the intrinsic value of the planner is realized. A basic of maintenance management is that planners plan and supervisors supervise.

There are appropriate circumstances for the maintenance supervisor and the craftsperson to be engaged in planning issues. The maintenance supervisor and craftsperson should be planning reactive emergency work. This work cannot wait to be processed through the normal planning cycle to be addressed. The planner should not be tasked to address this type of work because it is not in the future, it is now.

How to plan work

The actual job of planning begins with selecting a job from the planning backlog and validating the requested work:

- Is the work request clear on what is to be done or is more information needed?
- Is the priority coding for the work request correct?
- Is the equipment properly identified?

If any of these are in error, the planner should make the correction before proceeding. The planner also should examine the equipment maintenance archives for same or similar jobs and print out the previously used job plan if one exists.

The next step is job scoping and estimating. Work cannot be entirely planned from behind a desk. The planner must visit the job site and further validate the requested work. The planner evaluates each request independently. Using a facility-developed scoping and estimating check sheet, the planner determines if:

- The requested work is what really needs to be accomplished.
- Pre-work can be accomplished to expedite the repairs and minimize the equipment downtime.
- The work impacts other equipment. The planner looks for opportunities to accomplish conjunctive maintenance to other equipment.
- There is interference to be removed to make the repairs.
- Repair parts are needed to accomplish the work. An accurate and complete bill of materials for all critical equipment is necessary for the planner to efficiently plan.
- Craftspersons, contractors, or vendors need to be involved in the work, and how long the job should take for each craft, contractor, or vendor involved.

- Permits will be required to accomplish the work.

To continue the job scoping and estimating the planner should:

- Take pictures (digital cameras are a wonderful planning tool) and draw sketches.
- Consult with maintenance craftspersons, maintenance engineers, operators, and anyone else who can contribute to the job plan.
- Map the major steps of the job: shutdown, isolate, remove, repair, replace, test, and restore to service.
- Evaluate previously used job plans for applicability in the current situation. If it fits, reuse the job plan. If it does not fit in its entirety, look for opportunities to leverage reusable information.

Set up the job plan

Next comes the detail job plan development. The purpose of the job plan is to provide all of the information that the craftsperson needs to accomplish the job safely and efficiently. Every job package should consist of enough information and identified materials to enable maintenance craftspersons to complete the job without having to spend additional time searching for information or material.

A packet should be provided for each job with the following information, included as needed, to carry out the assigned tasks:

- Copy of all purchase orders for material
- Bill of materials list for equipment
- Copy of the work order
- Drawings required
- Job scope/estimating sheet
- List of stores stock parts
- Feedback and history information
- Special tools required
- Permits required
- Equipment location directions or sketch
- Safety procedures
- Special instructions on equipment

- Lock-out tag-out procedures
- Equipment inspection sheets
- Job procedures (detail tasks)
- Alignment cards if required

The amount of detail that goes into a job plan is largely dependent upon the qualifications of the maintenance team. If the team is composed of highly skilled, equipment knowledgeable individuals, then little detail is necessary. However, if the team contains a mix of skills and equipment knowledge or the facility plans to hire maintenance novices, then more detailed job plans are desirable. Well-written maintenance plans are an excellent training tool. Consider this the new standard job plan for this work activity.

Now that the job plan has been developed, the work order moves from the planning backlog to the ready-to-schedule backlog. Coordination between the maintenance planner, the production supervisor, and the maintenance supervisor is required to select the most appropriate opportunity to execute the job plan. The planner plays an essential role in bringing together the mutually agreeable equipment availability and maintenance resource availability. At this point, the job plan is turned over to the maintenance supervisor for implementation, which is the subject of the next article in this series.

It is recommended that each facility undertake a critical examination of its planning organization. Identify shortfalls and take the steps necessary to realize the intrinsic value of maintenance planning. A facility's bottom line will be improved by this effort and maintenance craftspersons will thank you.

Previous articles in this series include "Be Brilliant with the Basics" (MT 3/00, p 41), "Know What It Is You Have To Maintain" (MT 5/00, p 33), and "Identifying and Approving Work" (MT 7/00, p 27). Future articles will cover work hand-off, quality and safety, and information capture.

[John Rasberry](#) is an associate with [Performance Consulting Associates, Inc.](#), 3700 Crestwood Parkway, Suite 100, Duluth, GA 30096; (770) 717-2737.

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