

Fundamentals of

# Preventive MAINTENANCE



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# 2

## ESTABLISHING SCHEDULING



*One for the money, two for the  
show, three to get ready, and  
four to . . .*

### WHY DO I NEED TO SCHEDULE?

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Why do I need to schedule my guys—we're too small, my guys know what they need to do, and I'm too busy! These are just a few of the reasons that people give for not planning and scheduling. They also sow the seeds for equipment failures, late-night calls, distrustful production people, and irate bosses. Instead, maintenance managers should view scheduling as the cornerstone of successful maintenance operations.

Scheduling involves planning the activities of the maintenance crew. It does not mean planning the minute-

by-minute schedule of each technician. Planning means assigning workorders by shift, by day, by task importance, by material availability, by manpower availability, and by production downtime.

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## ESTABLISHING THE CONCEPT OF PRODUCTIVE WORK

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This book centers on the concept of total productive work (TPW)—or maximizing the productive activities of the maintenance team through proactive professional maintenance management. Total productive work means scheduling your crew to handle the daily troublecalls while maximizing the number of completed workorders. You eliminate mechanics standing around waiting for breakdowns because they are busy with workorders. TPW also allows you to plan for those daily problems that seem to pop up.

Once you accept that you have only so many resources available for all the activities you would like to get done, then scheduling becomes very appealing. Scheduling lets you plan for the daily troublecalls while still completing workorders.

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## HOW DO I GET STARTED?

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First, if you don't have workorders, then you need to get some. Appendix 4 shows several examples of workorders that I have used. If you don't like these sample forms,

then create your own workorder forms or check if your local printer has examples. To create your own form, simply use the format options available on most spreadsheet or word processing programs to develop a form that meets your needs.

Once you find a form that suits you, then make copies and distribute. Copies should, however, only be a short-term fix. To create a professional-looking form, have a printer make a two-part carbonless form. With a two-part form, you get the original and the originator (or author) of the workorder can keep a copy.

If you already have workorders (or once you have created them), then follow the steps in Figure 2-1 to establish a scheduling system. These steps will create a structure for scheduling workorders and allow you to identify how much available time you have for completing workorders. Throughout this chapter, Helpful Tips have been included to guide you through the rough spots that can slow down or stop the program.

#### SET UP SHIFT FILES

The first step toward setting up scheduling is to set up files that allow you to organize the workorders for each

*Figure 2-1. Steps for establishing scheduling.*

1. Set up shift files.
2. Calculate available scheduling hours.
3. Sort the workorders by priority.
4. Develop a schedule by day and by shift.
5. Keep scheduling.

shift. To set up the files, purchase 105 folders (simple letter-size manila folders will do just fine) and label them as follows:

- ◆ Label a folder for each day of the month and shift.  
For example:

Label	Meaning
1-1	First shift on the first of the month
1-2	Second shift on the first of the month
1-3	Third shift on the first of the month

- ◆ Label the rest of the folders the same way for the remaining thirty-one days of the month (e.g., 2-1, 2-2, 2-3 . . . 31-1, 31-2, and 31-3).
- ◆ Label the last twelve folders for the months of the year for those workorders that you cannot do immediately, but will do later.

You now have a rotating set of scheduling folders for organizing and storing your daily workorders. Once you start scheduling, then your supervisor or team leader simply goes to the files, pulls the appropriate file folder (by day and by shift), and distributes the assigned workorders.

#### CALCULATE AVAILABLE SCHEDULING HOURS

If you want to truly schedule your people, then you need to know how many hours you have available for scheduling on each shift. To figure available hours, first calculate how many total hours exist on each shift. To calculate the total available hours, use this formula:

$$\text{Total available work hours} = (\text{Number of technicians} \times \text{Number of hours/shift}) - \text{Time for breaks and lunches}$$

Next, estimate how much time your technicians devote to troublecalls. Once you have this number, then

subtract it from the total available work hours to calculate the total available time for scheduling preventive maintenance instructions (PMs) and projects. The formula is:

$$\begin{aligned} \text{Total available time for scheduling} = \\ \text{Total available work hours} - \text{Time for} \\ \text{troublecalls} \end{aligned}$$

For example, if you have a ten-person crew working eight hours a day, and each person gets two ten-minute breaks and thirty minutes for lunch and devotes half their time to troublecalls, then you have 31.7 hours/day available for scheduling. Figure 2-2 shows the detailed calculation for arriving at this number.

What is the benefit of making these calculations? First, by calculating the total available time, you'll realize just how much time you really have to get things done. It also highlights how much time your crew devotes to answering troublecalls (i.e., fighting fires). Once armed with this information, you can start to sort through the pile (or piles) of open workorders and begin to determine how and when you can schedule them.

#### **SORT THE WORKORDERS BY PRIORITY**

In the beginning, simply take your open workorders and begin sorting them by level of importance. If you do not already have a set of priorities in mind, then use these:

- 1 Safety hazards
- 2 Repairs affecting safety
- 3 Repairs affecting operations
- 4 Preventive maintenance
- 5 Projects

As you sort the workorders, assign an estimate of the time and the number of people required to complete the

Figure 2-2. Calculating total time available.

<b>Givens:</b>	
Crew Size	= 10 people
Number of Hours/Shift	= 8 hours
Number of Length of Breaks	= 2 breaks, 10 minutes each
Length of Lunch Break	= 30 minutes
Estimated Time Spent on Troublecalls	= 4 hours/person (or half of the shift)
<b>Calculation:</b>	
Total Available Work Hours	= Total Work Hours – Time for Breaks and Lunches
Total Work Hours	= 10 people × 8 hours/shift = 80 hours
Time for Breaks and Lunches	= 10 people × (2 × 10 minutes) + 10 people × 30 minutes = 500 minutes/shift = 500/60 minutes/hour = 8.3 hours/shift
Total Available Work Hours	= 80 hours – 8.3 hours = 71.7 hours
Total Available Time for Scheduling	= Total Available Work Hours – Time for Troublecalls
Time for Troublecalls	= 10 people × 4 hours/shift = 40 hours/shift
<b>Total Available Time for Scheduling</b>	= 71.7 hours/shift – 40 hours/shift = 31.7 hours/shift

requested work. You will need this information later when determining where the workorder fits in the schedule. At this point, don't get hung up on trying to assign numbers with deadly accuracy. Instead, focus on getting the workorders sorted so you can get started scheduling.

#### DEVELOP A SCHEDULE BY DAY AND BY SHIFT

Once you have completed the sorting, then the fun of scheduling all those workorders starts! As complicated as some people want to make scheduling, it boils down to simply figuring out where everything fits within the constraints of time, people, and materials. To help this process, use decision rules, such as those listed in Figure 2-3, for scheduling.

Before beginning the scheduling process, always think about how many available hours exists on any given shift. When you schedule, match the amount of scheduled work to the available hours. If you put a bunch of workorders in the file without determining how many work-

*Figure 2-3. Suggested decision rules for scheduling.*

1. Where do you have available hours (i.e., manpower)?
2. Is this workorder urgent (e.g., a safety hazard or an impending equipment failure)?
3. When will the equipment be available?
4. Which shift has the necessary skills to perform the work?
5. When will all the parts be available?



orders can actually be completed, you risk creating a smorgasbord mentality among the members of the crews. When this happens, your technicians will pick the workorders they want to complete. (Be advised that their choices may not match your needs or desires.)

Another obstacle to avoid is scheduling all your number-one priorities in the first week. Mix and match small priorities with the big ones. If all the scheduled workorders have top priority, then you severely limit your flexibility and ability to adapt the workorder schedule for the crisis that always seems to occur. Take a long-range view of scheduling and make use of all of those new folders to spread out the workorders. You will be amazed how much more manageable the workorder pile becomes when you spread them out over all the shifts in a one-month period.

### HELPFUL TIP 1

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**If you get a workorder you do not know how to complete (but it sounds like a good idea), then schedule it as a two-part workorder.**

**Part 1 Planning**

**Part 2 Execution**

**This technique keeps the workorders moving and does not make you personally responsible for developing every repair solution. This approach also starts the empowerment process by forcing your mechanics to start thinking about how to fix the plant's problems.**

The final step in setting up your scheduling system is to decide if you want to schedule the workorders by shift

or by specific people on the shift. The main factor in making this decision should be the type of leadership you have on each shift. The best situation is to assign the workorders by shift—letting each shift decide who gets which workorders. This approach makes each shift part of the process. Scheduling by shift also makes your schedule less dependent on the right people being at the right place at the right time.

#### KEEP SCHEDULING

Once you begin to schedule your crew's work, then you need to *just keep doing it!* The Helpful Tips offered throughout this chapter will make the job easier.

### HELPFUL TIP 2

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**Set up a two-week scheduling board that allows you to plan where and when you perform the workorders. The board's objective is to create a visual management tool to use in planning your daily and weekly schedule. Setting up a scheduling board is simple:**

- ◆ Buy a "dry erase board" from a local office supply store.
- ◆ Buy pinstriping from a local auto supply store.
- ◆ Using the pinstripes, mark off grids for each shift covering fourteen days.

The scheduling board allows you to work through "what if" situations while preparing a weekly schedule. You will find scheduling is not so overwhelming when you can move the workorders around on the board and see what happens to the schedule if the work is moved up a day or two or pushed back a week. Once you have decided on

the schedule, you have a visual record of the plan for your review. The completed board will also help in dealing with all those people who want to know when their workorder is scheduled.

Figure 2-4 is an example of a scheduling board where the maintenance manager has chosen to set up the schedule on half of the board and leave the rest for notes. The number of boards used will vary by the size of the organization, but typically most organizations use one to two boards that are  $3 \times 5$  or  $4 \times 8$ . I worked with a large organization that used two boards, each measuring four-feet by eight-feet, for scheduling.

### HELPFUL TIP 3

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If you experience a large percentage of troublecalls, assign specific technicians on a rotating basis to respond to

*Figure 2-4. An example of a scheduling board.*



them. Give the float technician small, low-priority workorders to complete between calls. This tactic lets you keep fighting the fires and still get some PM and project workorders done. (Remember: If you want to get out of the firefighting mode, then PMs and projects are key.)

Use the form for Work Performed Without a Workorder, shown in Figure 2-5, to keep track of the troublecalls rather than forcing everyone to write a million after-the-fact workorders. (Appendix 4 contains a blank copy of this same form for your use.) Technicians fill out one of the blocks on this form when they respond to a troublecall. Someone then enters these forms into your computerized maintenance management system (CMMS) program as completed workorders.

If you use this form, then tailor its format to be compatible with your CMMS workorder entry screen.

#### HELPFUL TIP 4

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Set up workorder bins to hold parts for scheduled workorders. Number the bins and write the appropriate bin number on the scheduled workorder. By putting parts in the bins, you eliminate the need for technicians to hunt for the parts required to complete a workorder. The bins help you keep track of incoming project or repair parts and you create a place to store parts required for ongoing long-term projects.

#### HELPFUL TIP 5

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Create a filing system for workorders placed on hold while awaiting parts. This “system” can be as simple as a clipboard with the workorders and copies of the purchase orders stapled together. The workorder comes off the clip-

Figure 2-5. Work performed without a workorder.

WORK PERFORMED WITHOUT A WORKORDER

**BE SURE YOU RECORD DOWNTIME FOR MACHINE**

DEPT# _____ EQPT# _____ LABOR HRS _____ MACH DOWNTIME _____ DATE _____	TECHNICIAN: _____ EMP # _____ EQUIPMENT DESCRIPTION: _____ PROBLEM: _____ ACTION: _____
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Make sure you capture this information.

Write down a simple description of the problem and the corrective action.

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**BE SURE YOU RECORD DOWNTIME FOR MACHINE**

DEPT# _____ EQPT# _____ LABOR HRS _____ MACH DOWNTIME _____ DATE _____	TECHNICIAN: _____ EMP # _____ EQUIPMENT DESCRIPTION: _____ PROBLEM: _____ ACTION: _____
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A technician fills in a block every time he responds to a troublecall.
 

- Collecting this data will allow collection of trend data on individual equipment pieces and equipment groups.
- Using this form also avoids the problem of chasing after-the-fact workorders.

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**BE SURE YOU RECORD DOWNTIME FOR MACHINE**

DEPT# _____ EQPT# _____ LABOR HRS _____ MACH DOWNTIME _____ DATE _____	TECHNICIAN: _____ EMP # _____ EQUIPMENT DESCRIPTION: _____ PROBLEM: _____ ACTION: _____
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**BE SURE YOU RECORD DOWNTIME FOR MACHINE**

DEPT# _____ EQPT# _____ LABOR HRS _____ MACH DOWNTIME _____ DATE _____	TECHNICIAN: _____ EMP # _____ EQUIPMENT DESCRIPTION: _____ PROBLEM: _____ ACTION: _____
--	--

board when you receive the parts and they have been placed in a workorder bin.

## HELPFUL TIP 6

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Allow your technicians to fill out purchase requests for your review and approval. Allowing technicians to identify the required parts not only prevents you from becoming a bottleneck, but improves their knowledge.

## HELPFUL TIP 7

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Cross-reference your workorders and purchase requests to reduce confusion. Cross-referencing ensures that incoming parts get used for their original purpose. The cross-referencing process works like this:

- ◆ Write the workorder number on the purchase request.
- ◆ Write the purchase request number on the workorder.
- ◆ Have the workorder number listed on the address header of the shipping receipt.
- ◆ File the workorder in the system created in Helpful Tip 5 and wait for the part to arrive.

If you use the cross-reference, when a part arrives, the workorder number is right in front of you on the purchase order. You can now use the information on the shipping receipt to identify the intended use of the part.

## HELPFUL TIP 8

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Forward-schedule the weekend (or plant shutdown) workorders. To forward-schedule, put workorders that require downtime in the day shift folder of the next nonwork day

(e.g., Saturday, Christmas, or whenever). By forward scheduling, you can forecast the workload for these days. Additionally, you get the workorders off your desk and into a place where they will not be lost. As the holiday or nonwork day approaches, pull the file and schedule the workorders.

### HELPFUL TIP 9

Develop a summary sheet to track the scheduled workorders for each shift. This summary sheet should list the scheduled workorders and the names of the technicians scheduled for that shift. Figure 2-6 is an example of a daily shift log. Place this sheet in each schedule folder once you complete the schedule. By reviewing this sheet on the following day, you'll know at a glance what you scheduled and how it matches against what really hap-

Figure 2-6. Daily shift log used to track the scheduled workorders.

Date		Shift	Total Hrs Available / Total Call Hrs	Areas Cleaned:	Maint. Shop	Welding Area	Tech Room	Manuals	Parts Bench
	Schedule each shift.								Identify areas to be cleaned each shift.
WO.#	WO.DESCRPTION	Estimated Time							COMMENTS
	COMPRESSOR CHECK								

pened. Likewise, you'll know if a workorder does not come back. (Appendix 4 contains a blank copy of a daily shift log for your use.)

*Do not* let technicians hold on to workorders. By requiring technicians to return all workorders to the schedule folder at the end of the shift, you prevent lost workorders and you can track the shift's accomplishments.

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## HELPFUL TIP 10

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Coordinate your schedule with the production folks. Yes—I mean talk to the production scheduler, supervisor, or manager to make sure your plan does not conflict with their plan. In the best-case scenario, you can develop a schedule that meets both of your needs. In the worst-case scenario, you will avoid the frustration (and possible pain) of having production short-circuit your perfectly planned schedule.

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## HELPFUL TIP 11

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If deciding on priorities becomes a nerve-racking experience, then use the prioritization system proposed by Alec Mackenzie in his book *The Time Trap*.<sup>1</sup> In his book, Mackenzie recommends ranking tasks by long-term importance and short-range urgency. To use this method, look at each task and give the task a rank (e.g., 1–3) for importance and urgency. Next, add up both scores and then schedule the lowest numbers. There is one exception: Do all the safety hazard workorders immediately.

If time management is a personal productivity issue, then I recommend reading *The Time Trap*. This book will help you improve your time management skills by identi-



**fyng personal time-wasters and by helping to develop a personal improvement plan.**

## WHAT DO I DO WITH WORKORDERS ONCE THEY'RE COMPLETED?

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Like some of life's other activities, the job's not done until the paperwork is complete. When the workorders come back completed in the daily files, then close them out. Closing them out can mean closing the workorder in the computer or sending the workorder out for sign-off by the originator in a manual system.

If you have a computerized system, then (for PM workorders) update the appropriate file on the system and throw away the workorder. Yes—throw away the workorder. Your computer program files will serve as the historical record. These files will also satisfy management system audits for ISO-9000 quality system programs or the automotive industry's QS-9000.

For project or corrective workorders, close the workorder out on the computer and send the workorder to the originator for sign-off. The originator should only return the workorder if there's disagreement with the closure actions.

By not holding on to the old workorders, you free filing space and avoid duplication. You also save the time required to file the paperwork.

In a manual system, create a separate file folder for each piece of equipment on the factory equipment list. (You'll learn how to develop this list in Chapter 4.) These folders will serve as the historical record of all your maintenance activities. As workorders get completed, then

they should be filed in the appropriate file folder. You now have the supporting documentation to track trends and to show proof of workorder activities.

For project workorders, send the completed workorder to the originator for acceptance of the work. When they return the signed workorder, then file the workorder in the appropriate file folder.

For a large factory, the size of the files and the upkeep requirements will be huge. The amount of effort required to successfully complete this activity serves as another justification for a computerized PM program.

## HELPFUL TIP 12

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**When reviewing potential computerized PM programs, ask the vendor to show you how the program handles opening and closing workorders. A cumbersome system can tie up a lot of administrative time in trying to manage the workorders. A cumbersome system can also prevent you from using the full power of the program. When this situation occurs you will eventually stop entering the workorders until they are complete. When selecting an automated program:**

- ◆ **Be sensitive to the number of screens needed to open and close workorders.**
- ◆ **Check if the program allows you to close the workorders from a single menu screen.**

## DO NOT LET THE WORKORDER SCHEDULING SYSTEM CRASH AND BURN

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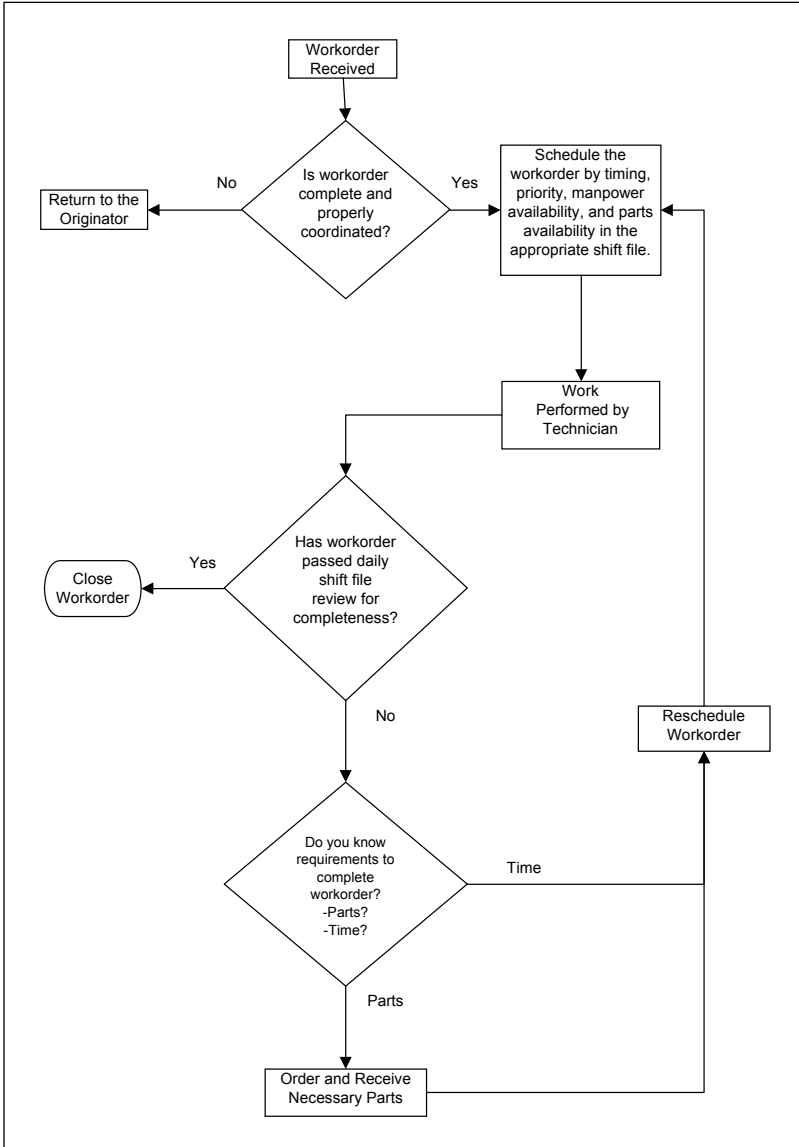
What could possibly go wrong with such a well-thought-out and logical scheduling system? Answer: You stop

managing all those little pieces of paper called workorders! If you do not continually track and keep the workorders moving through the system, then they become another millstone around your neck.

To keep the system operating, use the flow we've created in this chapter. This process (shown in Figure 2-7) allows you to keep up the workorder flow, which is key to the success of scheduling. Also, use the following steps on a daily basis to prevent a fatal crash of your workorder scheduling system:

- ◆ Review the shift files from the previous day and take care of the workorders—close them out, re-schedule them to another shift, or put them on hold for parts, planning, or coordination.
- ◆ Use the shift summary sheet (see Helpful Tip 9) to track the workorders sent out.
- ◆ Ask what happened if all the planned workorders did not get completed. Was there an emergency breakdown? Were there production problems, or just too many coffee breaks or people working on their own pet projects, etc.?
- ◆ Check the filing system created in Helpful Tip 5 to track the on-hold workorders. As part of this check, identify and follow up on those workorders with past-due dates for parts.
- ◆ Do not create “special” workorder piles on your desk.
- ◆ Forward-schedule workorders. For example, if an incomplete workorder comes back on Tuesday, but you know you cannot get back to it until Thursday afternoon, then immediately put that workorder in the Thursday afternoon file.

Figure 2-7. Workorder scheduling flow.



Also, avoid becoming the plant's maintenance secretary. If someone wants something done, then hand them a workorder.

I once visited a plant that had this problem. During my opening meeting I discovered that managers didn't use workorders, did not schedule, and never did preventive maintenance—they just fought fires all the time. My first recommendation—start a workorder scheduling system. Upon further discussion about workorders, I discovered they *had* used workorders and they even had a box containing 1,000 workorders. When I asked the maintenance manager what happened, he stated that the plant stopped using workorders because no one would fill them out or they (the production folks) always wanted him to fill them out. With this type of response, you do not have to be a brain surgeon to figure out why they were always fighting fires. Don't fall into this rut. Make everyone responsible for writing their own workorders!

Finally, do not be afraid to reject workorders. Just because someone has a pen and can write doesn't mean all their ideas, wants, or desires should be implemented. If a workorder does not make sense, then send it back. If you receive a workorder that has not been coordinated, then send it back. If you do not think you have the authority to execute a particular workorder, then send the workorder to the appropriate level. Rejecting workorders will not create problems if you follow one rule: Tell the originator why you sent it back!

It's never acceptable to reject a workorder just because "It's the dumbest idea I've ever heard," or "We do not allow line workers to write workorders." It is, however, *acceptable* to reject a workorder if:

- ◆ It is unsafe.
- ◆ It will create quality problems.
- ◆ It has not been coordinated properly.

Most of the workorders I have “kicked back” in my career were for lack of coordination. Save yourself a boatload of problems and make the workorder’s authors do their own coordination when you encounter this situation. Do not put yourself in the position of explaining why you did something that everybody else hates. (When this situation arises, you will probably find out that you now *own* this *great idea* and will receive all of the heat. Congratulations!)

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## SUMMARY

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If you do not implement any other recommendations in this book except the ones in this chapter, then you are already money ahead. Scheduling the maintenance crew’s daily work will let you set the department’s agenda and squeeze out those extra drops of productivity.

To implement scheduling, set up the shift files, calculate available hours, sort through the current backlog, and schedule these workorders based on priorities and available resources. On a daily basis, review the previous day’s shift files, process the workorders, and finalize the next day’s schedule. Review the Helpful Tips for suggestions on how to improve your scheduling activities. Finally, do not fall into the traps of being the plant’s maintenance secretary or workorder coordinator.

Also, always remember that not all workorders were

meant for execution (thank goodness). However, when you reject workorders, always provide a reason, such as decreased safety, lack of coordination, or reduced quality.

If you have made the decision to schedule workorders, then remember this process will take time for you to master. In the initial phases of scheduling, you may even make one or two little (or big) mistakes. Welcome to the real world. Learn from these mistakes and keep on scheduling!

## NOTE

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1. Alec Mackenzie, *The Time Trap: The Classic Book on Time Management*, 3rd edition (New York: AMACOM, 1997), pp. 38–39.

## APPENDIX 4

# BLANK FORMS

If you don't currently have workorders, then this appendix compiles examples for your use. To create a professional-looking form, have a printer create a two-part carbonless version. With a two-part form, you get the original and the original author of the PM can also keep a copy of the workorder.

The following forms are offered in this order:

Work Performed Without a Workorder

Workorder, 8 1/2 × 11 Basic

Workorder, 8 1/2 × 11 Coordination

Workorder, 8 1/2 × 11 Drawing

Workorder, 4 × 8 Size (Short Form)

Troubleshooting Guide Form

PM Quality Assurance Form

Parts Requisition Form, 8 1/2 × 11 Size

Parts Requisition Form, 4 × 8 Size (Short Form)

Daily Shift Log

Action Plan



WORK PERFORMED WITHOUT A WORKORDER

BE SURE YOU RECORD DOWNTIME FOR MACHINE

DEPT# _____	TECHNICIAN: _____ EMP # _____
EQPT# _____	EQUIPMENT DESCRIPTION: _____
LABOR HRS _____	PROBLEM: _____
MACH DOWNTIME _____	ACTION: _____
DATE _____	_____
	_____

BE SURE YOU RECORD DOWNTIME FOR MACHINE

DEPT# _____	TECHNICIAN: _____ EMP # _____
EQPT# _____	EQUIPMENT DESCRIPTION: _____
LABOR HRS _____	PROBLEM: _____
MACH DOWNTIME _____	ACTION: _____
DATE _____	_____
	_____

BE SURE YOU RECORD DOWNTIME FOR MACHINE

DEPT# _____	TECHNICIAN: _____ EMP # _____
EQPT# _____	EQUIPMENT DESCRIPTION: _____
LABOR HRS _____	PROBLEM: _____
MACH DOWNTIME _____	ACTION: _____
DATE _____	_____
	_____

BE SURE YOU RECORD DOWNTIME FOR MACHINE

DEPT# _____	TECHNICIAN: _____ EMP # _____
EQPT# _____	EQUIPMENT DESCRIPTION: _____
LABOR HRS _____	PROBLEM: _____
MACH DOWNTIME _____	ACTION: _____
DATE _____	_____
	_____





### Work Request (Drawing)

Put Your Company Logo Here

- Priority: (Check One)**
- Safety
  - High Priority Downtime
  - Normal Maintenance
  - Project

<b>Request No:</b>	<b>Cost Center:</b>	<b>Date:</b>
<b>Equipment Number:</b>		<b>Equipment Name:</b>
<b>Originator:</b>		<b>Need Date:</b>
<b>Coordination Signatures:</b>		<b>Date:</b>

**Work Requested (include additional sheets):**


**Include Drawing (If Appropriate)**

<b>Action Taken:</b>	<b>Technician:</b>	<b>Date:</b>	<b>Hours:</b>

**Parts Used:**


Work Accepted: \_\_\_\_\_ Date: \_\_\_\_\_

**Work Request (Short Form)**

<b>Date:</b>		<b>Priority: (Check One)</b>	
		<input type="checkbox"/> Safety	<input type="checkbox"/> Normal Maintenance
		<input type="checkbox"/> High Priority Downtime	<input type="checkbox"/> Project
<b>Request No:</b>	<b>Cost Center:</b>	<b>Date:</b>	
<b>Equipment Number:</b>		<b>Equipment Name:</b>	
<b>Originator:</b>		<b>Need Date:</b>	
<b>Work Requested (include additional sheets or drawings if required):</b>			
<b>Action Taken:</b>	<b>Technician:</b>	<b>Date:</b>	<b>Hours:</b>
<b>Work Accepted:</b>			<b>Date:</b>



**Preventive Maintenance Quality Assurance Review**

Date: \_\_\_\_\_

Technician Reviewed: \_\_\_\_\_  
Clock No: \_\_\_\_\_

Reviewer: \_\_\_\_\_

PM Workorder Reviewed: \_\_\_\_\_

Workorder No: \_\_\_\_\_ Interval: \_\_\_\_\_ Equipment No: \_\_\_\_\_

Time Work Started: \_\_\_\_\_

Time Work Completed: \_\_\_\_\_

Workorder Quality:

Circle one:

- Were all safety procedures followed?            Y        N
- Did technician have all required tools?        Y        N
- Did workorder provide sufficient information?
  - logic flow?    Y        N
  - required parts?                                    Y        N
  - timing and alignment?                            Y        N

**Please provide additional information on all NO answers and recommended changes:**

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Technician Performance:

Circle one:

- Demonstrated understanding of safety requirements?            Y        N
- Demonstrated understanding of procedure?                    Y        N
- Any additional training required?                Y        N
- Cleaned area upon completion of work?                            Y        N

**Please provide additional information on all NO answers and required training or improvements:**

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### Parts Requisition Form

Requester: \_\_\_\_\_ Date: \_\_\_\_\_

Equipment Number

or

Workorder Number: \_\_\_\_\_

Need Date: \_\_\_\_\_

Cost Center: \_\_\_\_\_

Part No:	Description:	Vendor	Qty:

Reason Required: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Approvals: \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_

Is this an Emergency: Yes: \_\_\_\_\_ No: \_\_\_\_\_

Safety: \_\_\_\_\_

Production: \_\_\_\_\_



**Parts Requisition Form (Short Form)**

Requester: \_\_\_\_\_ Date: \_\_\_\_\_

Equipment Number

or

Workorder Number: \_\_\_\_\_ Need Date: \_\_\_\_\_

Part No:	Description:	Vendor	Qty:

**Reason**

**Required:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Approvals:** \_\_\_\_\_ **Date** \_\_\_\_\_  
 \_\_\_\_\_ **Date** \_\_\_\_\_



