

# Bring Some Order to Maintenance Management

Work orders help keep track of work done on the fleet, but they also give equipment managers data on labor and other maintenance costs

By G.C. Skipper, Contributing Editor

One of the most effective management tools in tracking maintenance costs, measuring shop efficiency, scheduling equipment repairs, and performing a multitude of other vital managerial functions isn't a complicated formula devised by some Harvard MBA. Rather, says Preston Ingalls, president of TBR Strategies, it is the simple work order.

"And if you are running a maintenance facility without work orders," Ingalls says, "you are more likely to stay in an emergency state – what we call RTE, or run to failure. Without work orders, you can't get a handle on your work and you can't control or manage it."

Ben Tucker, CEM, equipment manager for Barriere Construction in New Orleans, agrees. It's Tucker's responsibility to manage a fleet of 150 off-highway vehicles and 25 on-road units used for asphalt work, highway construction and industrial projects.

"Before we implemented a work-order system, I knew 30 percent of the time what my people were doing," Tucker says. "After we started using work orders, I knew what my people were doing 99 percent of the time, and knowing what's going on is critical. Scheduling your work orders daily and knowing where your labor is

going each day are essential to good management."

Although a work order is a fundamental control document in a work-management program, it serves a multitude of purposes, Ingalls says. Among them:

- **To request work.** Anyone – an operator, foreman, supervisor or mechanic – can request work, so a work order is the document that instigates the work cycle.
- **To identify work.** Work orders specify the work that is to be performed, such as preventive maintenance, brake job, or bulb replacement. "In many cases, you not only have to request work, you have to identify the nature of the work," Ingalls says.
- **To prioritize work.** All work is not of equal value, so priorities must be assigned. Priority one, for example, might be for work that needs to be completed within 24 hours, priority two for work that needs to be finished within 72 hours, and so forth.
- **To approve work.** Some work should not be done. It may be frivolous, redundant or not cost-effective. "I've literally seen people put in a work order to replace an entire piece of equipment," Ingalls says. "That's a solution, all right, but not necessarily one that will be

approved." Work orders provide a means of establishing an approval cycle.

- **To plan work.** One of the fundamental steps of any work-order system is to determine what is going to be done and how it will be done. "If I have a work order in front of me, I can start thinking about how I'll actually implement it," Ingalls says. "Planning is a fundamental step in the whole thing."
- **To schedule work.** Once you plan the job, you must schedule it. "You might think of planning as the 'what' and the 'how' and scheduling as the 'who' and the 'when,'" Ingalls says. "Scheduling basically determines who will be assigned to do the job and when he or she can perform it."

As important as these six functions are, the most important role of a work-order system is to help the fleet manager collect costs on labor, materials and services, Ingalls says. "Once you have a work order in place, you can look at how much maintenance costs in labor and how much it costs in materials, but without a work order you don't always know how your costs are being applied."

Such a system also enables the manager to analyze problem areas.

"If you have a piece of equipment that continuously requires work, your question ought to be, 'Why? What's wrong here?'" Ingalls says. "By tracking your costs, you can tell if there's a problem with parts usage, for instance. Suppose you notice that a piece of equipment keeps blowing a circuit board and

has to be replaced often. Without a history, without the information a work order provides, it's really difficult to pinpoint the specific problem."

Consider this: A fleet manager should be able to point to an excavator, dozer, scraper or rock truck and, in short time, be able

to say how much the unit cost to maintain last year or for the past five years. Without a work-order system, you usually don't know that, Ingalls says. "Mechanics and fleet managers often act on a sense of intuition without any facts or dates to back them up."

The need for immediate

## Ten Items to Track

Barriere Construction's work orders have specific fields that help equipment manager Ben Tucker, CEM, track maintenance and machines. This example shows some important data collected for Barriere.

**1** If the company has multiple shops, the work order indicates where the machine is located. This field allows sorting by location to isolate problem areas.

**2** The description tells the technician what work needs to be done.

**3** The technician can see how many hours are on the machine and determine if additional work might need to be done if the machine is near a scheduled PM interval, for example.

**4** Work is classified as maintenance, operational, safety, or production. The manager can sort to see where the work comes from.

**5** Work is prioritized, which allows the technician to see how soon the work must be done. Emergency work, for example, must be completed within eight hours.

**6** This is noted upon completion of the work and enables the manager to do root-cause analysis.

**7** This identifies the owner of the machine.

**8** Special instruction pertaining to the task can be input here.

**9** This tells the technician what to do, including the time allotted for the work.

**10** Each type of labor has a different rate assigned.

Equipment:		BC15 BOBCAT
Make:	BOB	
Model:	T300	
Serial Number:	525411158	
Warranty Expiry:	12/17/03	
Priority:	SERIOUS CON	
Work Order Type:	PRODUCTION	
Repair Class:	Corrective from	
Failure Type:		

  

Machine Age:	1639
Division:	EH
Last Service Date:	07/25/05
Description:	Install new tracks

  

Work Order:	0506527
Repair Location:	Field Mechanics
WO Date:	08/11/05
Start Date:	08/12/05
Estimated Complete Date:	
Assigned To:	DUHON
Hour Meter:	1040.00 HR
Odometer:	.00 MI
Tons:	.00 TN
Fuel:	.00 GL

  

Component	Task	Parts/Labor	Quantity	Date Un Completed
J01 UNDER CARRIAGE		TRACKS	1.0000	EA
Complaint:		NON 570 Mechanic	4.0000	HR
Reason:				
Last Service Date:				
Last Major Repair Date:				
Warranty Expiry:				

## Work-Order Musts

Although the following is not an all-inclusive list, here are a few elements that should be on a work order:

- **The originator:** the person who requested the work
- **The planner:** the person who schedules the work. Sometimes the originator and the planner are the same person.
- **Space for the supervisor to approve the work**
- **List of work requested,** including name of equipment, equipment number, and a general description of the problem – not the solution. For example: “Seals are leaking.” Not: “Replace leaking seals.”
- **Date and time requested.**
- **Date and time received.**
- **Date and time repaired.**
- **Date the equipment needs to be back.**

information confronted Deborah S. Clark, CEM and equipment maintenance coordinator for the Alabama Department of Transportation, when a new governor was elected. One of the first questions from the new administration was why half-ton pickups used in the fleet of 2,500 on-highway vehicles and 1,500 off-road units were turned over at 55,000 miles. Why weren't they kept longer, she was asked.

Thanks to the work-order system that was in place, “I was able to show them where and how we were saving money,” Clark says. “I went back 10 years and pulled data in five-year increments. I showed him what it cost us to operate and why we did things the way we did. Since taxpayers want to know where their money goes, we made that information public. Without that kind of data, that history, from a work order, you can't provide that information. If you can put it on paper, then you

have something to back you up.”

Tracking and compiling key data is the biggest reason why any fleet of any size, public or private, needs a work-order system, Clark says.

“It gives you a way to track the cost of operating your fleet and for tracking such things as PM schedules,” she says. The system allows a manager to evaluate the efficiency of the shop; the productivity of individual mechanics; and the parts mechanics use, which in turn, aids in tracking inventory. In addition, outsourced repairs are tracked.

Such a system also helps the manager decide when to replace equipment and what brand to buy. “If I have 10 [motor graders] in my fleet and one needs replacing, I can look at all 10,” Clark says. “Suppose I notice that one is costing me more money to operate than the one I'm about to replace. I might take the one that's costing me more money and get rid of it

first and save the one that is less costly. A work order lets me track every bit of data on that piece of equipment.”

By focusing on costs, fleet managers also can make improvements on labor and material applications. “If I notice that a particular mechanic takes twice as long as others to do a job, I need to find out if it's a skill issue or something else,” Ingalls says. “Maybe the mechanic doesn't have the necessary troubleshooting skills.

“On the materials side, work-order data shows where I'm really using my parts,” he says. “For example, if I'm utilizing multiple parts on a repair job, maybe the mechanic doesn't know exactly what's causing the failure, so he's putting parts in and out to find the problem. Work orders tell me when the work was requested, when the work was completed, and shows the amount of time it took to perform the work. And it can isolate problems.”



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