

Streamlining Work Order Processes

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Are your work order processes as effective and efficient as possible? Does management have the accurate, comprehensive data they need to make sound decisions? Is your staff completing only the amount of paperwork and data entry that's necessary? Not many maintenance operations can answer 'Yes' to all these questions.

In today's world, using a computerized maintenance management system (CMMS) or enterprise asset management (EAM) system is essential. However, as a trainer, consultant and project manager for CMMS and EAM systems, I keep hearing a common concern—the time involved with entering needed data.

Many have the perception that maintenance employees will spend a large part of their day filling out work orders and entering data. While this perception can become reality, a little careful planning will avoid that problem. Instead of wasted time, you can streamline your work order processes while gaining more accurate and complete data.

Know the Data You Need

The first step in streamlining your data entry is knowing what data to enter. Never waste time entering data you'll never use. Everyone in your organization should have a clear understanding of the purpose of your CMMS/EAM system and what data to enter. I help my clients understand and define this before they ever install their software.

Knowing the data and reports you want to get *from* your system will help you define what to put *into* the system. You'll know how to populate your data tables and eliminate the entry of superfluous data. The result will be less data for your staff to enter, yet more accurate data in your system.

An example of this would be tracking equipment downtime that's due to maintenance failures. If the amount of downtime is important to track, then everyone must clearly understand that downtime must be entered on a work order. Conversely, you may not really need data on minor repairs or adjustments that take less than 20 minutes and don't require a part. If so, then everyone should understand that a work order is not needed for those types of activities.

One way to determine the data you need is to concentrate on activities that yield the biggest payback and problems that cause the largest pains. Focus on the data that will help you manage those issues effectively.

Use Defined Procedures

Using defined procedures for common problems or breakdowns can be a real time-saver. It's not always cost effective to change out every component that routinely fails. For instance, pumps or small horsepower motors routinely fail. But, if the failure does not present a safety or quality issue, it may not be the best use your time and money to change them out on a set schedule.

A procedure can be established that identifies the parts, labor and task steps that are needed to make replacement go more smoothly. When a replacement is needed, a standardized procedure ID is entered on the work order and all the needed information will be automatically applied. This eliminates having to enter all that data in the system each time a failure occurs.

An added benefit to creating these procedures is that you capture and document the expertise in your maintenance group, creating an 'encyclopedia' of knowledge.

A Structured Coding System

Another efficient method of capturing data in your system is the use of codes. Standard codes can be used on work orders to identify problems found, work accomplished, systems worked on, readings, parts used, actions taken, causes of problems, types of failures and calibration performed. Practically any type of data can be tracked or recorded using a structured coding system.

Without a coding system, a craft person may enter detailed and subjective comments about the work performed, problems found and parts used. Another person doing the same work will enter the same information in a different manner. For example the adjustment or tracking of a conveyor belt can be entered in many ways:

Mechanic 1: Belt slipping, Made adjustment.

Mechanic 2: Tracked belt back to proper alignment.

When information like this is not standardized in your CMMS/EAM system, it won't really be useful data—it will just be comments. With a coding system, the two employees always enter data in a consistent manner indicating the problem found and action taken:

Problem = SLIP

Action = ADJ

In this example both employees would use the code SLIP to identify the problem—a slipping belt—and the code ADJ to indicate the corrective action taken for the repair—made adjustment.

Entering one or more simple codes will capture the same information in a fraction of the time it takes to make comments. A well-designed coding system will also gain you more accurate data and reports.

For example, you could establish EF as a code for electrical failures and use it on every work order where an electrical failure was the cause, or one of the causes, of equipment breakdown. This would allow you to quickly build a history of all electrical failures, which you could use to pinpoint trouble spots and avoid future problems before they occur.

One industry that has mastered the use of coding is vehicle fleet management. Since 1970, the fleet industry has used standard VMRS (Vehicle Maintenance Reporting Standards) codes to identify, record and report on virtually every activity associated with maintaining vehicles and equipment. By consistently applying VMRS codes, fleet managers can generate reports to help them identify which vehicles or systems need attention, set benchmarks, improve warranty collections, prepare more accurate budget forecasts, and much more.

A very basic use of VMRS codes would be running a report on Code 13 (Brake System) for a particular vehicle number. You would see a history of all brake repairs done on that vehicle, including a detailed breakdown of parts and labor.

By applying a little thought and creativity, manufacturing maintenance and facilities maintenance departments can develop a simple and effective coding system that's just right for their needs. Codes can be simple number or letter combinations that represent work accomplished, cause of breakdowns or failures, type of downtime, whether parts were replaced or repaired, or any other type of data you require in your system.

Bar Coding

The single most effective way to streamline data entry is to use a bar coding system. Manually entering data in a CMMS/EAM system requires time, typing skills and follow-up to ensure effectiveness. Manual data entry is also subject to errors. Bar coding can significantly reduce those problems.

Some people misunderstand how bar codes work, so we'll briefly review what it can and can't do. A bar code usually does not contain descriptive data, just as your car's license plate number does not list your name or address. Data in a bar code is simply a reference number, which a computer can cross-reference with associated records which do contain descriptive data and other pertinent information. In CMMS/EAM systems, that reference number is the ID field.

For example, individual bar codes can be created for parts and affixed to the parts bin, parts box or the part itself. When a part is needed for a work order, the bar code for that part is scanned. The CMMS/EAM system automatically uses the part ID to lookup the description, vendor, location and other information. The quantity issued is charged

against the work order deducted from inventory. Bar coding of parts also aids with conducting physical inventory, relocating and reordering parts, and other inventory management functions.

Since a bar code can be created for any ID, bar coding gives you a great deal of flexibility in creating and entering work order data. Equipment or assets can be labeled, allowing them to be quickly and accurately scanned into a work order. Employees can have their IDs bar coded and scanned into a work order. Bar coding can be used to capture meter readings, labor hours, standard comments, and even procedures and codes. Combine all this with scanning bar codes for parts, and you can dramatically increase the speed and accuracy of work order creation and completion.

While bar coding is an efficient method of data entry, you still must ensure that the data entered conforms to the data standards you have established. If you are entering more data than you previously determined you needed, you are simply entering useless information more efficiently.

There are several advantages to entering work order information on a hand-held scanner or PDA (on CMMS/EAM systems that support it). The data is entered once and doesn't need to be re-typed into the CMMS/EAM system, saving time and eliminating errors from double-entry of data. And because the information is entered at the work location, data and readings are likely to be more accurate.

You must also consider the durability of the bar code hardware you select. If the hardware is not rugged and reliable, you'll defeat the purpose of quick, accurate data entry.

Conclusion

The time needed to enter work order data and the accuracy of that data will depend on many variables, including the capabilities of your CMMS/EAM system, the keyboarding skills of your staff, and the amount of data you want to capture. Each of the methods outlined in this article will help you streamline your work order processes and capture the important data needed to make informed decisions about your maintenance operations.

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