

Know What It Is You Have To Maintain

**Successful
maintenance
teams master
the basics
and apply
them
consistently.**

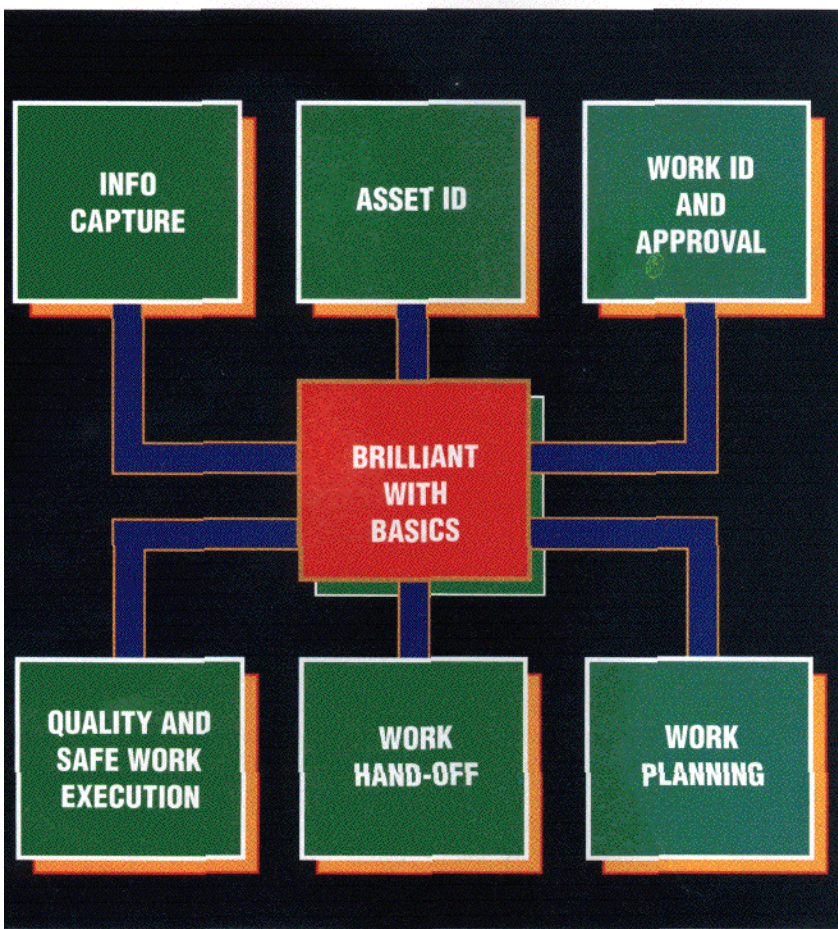
By John Rasberry, Performance Consulting Associates

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 first basic element was Asset ID- asset identification, configuration, criticality, etc.

That article posed a few questions for each of the elements where the answers gauged a facility's adherence to the basics. For Asset ID, those questions were:

- There is a master asset list that uniquely identifies each asset, its location, and criticality?
 - There is a complete description of each asset by manufacturer, serial/model number, and physical characteristics?
 - The people who initially identify the work can also accurately identify the asset?
 - The maintenance craft people can accurately identify the asset needing the work?
 - Asset configuration control processes in place and active?
- Basic, right? Everyone has this done, documented, and probably entered into the computerized maintenance management system (Cmms), right? But there are organizations that do not adhere to this maintenance fundamental. For illustration, the following actual observations are offered.
- The production manager for an oil production and gas compression field called the maintenance manager to say a compressor at location F-4 was out of commission. The maintenance manager turned to his big map of asset locations and quickly remarked, "We don't have anything at F-4." In an oil/gas compression field, it is not always obvious to which company a new installation belongs. This field was a crazy patchwork quilt with an assortment of owners. There was a compressor at F-4; a new installation had been accomplished but this was the first that maintenance knew of its existence. The contracted project engineer had not notified maintenance that a new compressor unit was being installed. During repairs on the unit, it was also discovered that the storeroom had not been outfitted with parts for it.
 - Following a repair-day shutdown at a paper mill, an operator noticed a maintenance mechanic standing by his machine. He asked the mechanic why he was there and the reply was "to observe the light-off and the results of repairs made to a hydraulic cylinder" (pointing to the cylinder). "That's real nice," replied the operator, "but that's not the one that was broken." The repair day was extended by 18 hours waiting for new repair parts to be flown in and installed.
 - A chemical manufacturer was anxious to get a new CMMS up and run-

THE SIX BASICS OF MAINTENANCE



scheme. Will there be an intelligent numbering system? Parent-child relationships? Choose a convention that is simple and easy to use when adding or deleting assets.

- Most assets stay in a single location for their life cycle and their location number alone is adequate. For assets that may change location, such as some pumps and motors, identify with a location number and an entity number. The identity of the asset will be maintained regardless of its location.
- Describe all assets the same regardless of the database in which they reside. The asset number and description for items in a loop diagram, P&ID, PSM, or ISO Instruction, etc., should match exactly that in the master asset list.
- Identification of asset criticality is important for the cmms to automatically assign the priority of maintenance activity. Best practice is to have production supervisors assign asset criticality.
- Physically identify each asset with its location number permanently attached. Be consistent in the placement of the asset location number.

Take the time to collect complete configuration information. Best practice is to collect configuration information at the same time assets are identified and numbered. A good gauge for how much information to collect is to answer the question: "How would I describe this asset to a vendor to order the correct repair parts?" Do not skimp on the resources needed to accomplish this task.

- Decide which CMMS or database/spreadsheet asset description fields to populate.
- Collect or validate the configuration information at the asset. The technical data provided does not always match the as-built installation.
- Set up hard files (by asset number) containing all of the configuration information collected. This may seem redundant but there will be hard copy information you will want to retain that is not or cannot be entered into a computer.
- Validate the asset configuration information annually.
- The commissioning phase for a new installation is the best opportunity to accurately identify assets.
- Configuration information should be provided by the project engineer.

ning; to save time he assigned all assets a criticality code of 5. He therefore gave everything equal weight in the queue for maintenance performance.

- A maintenance mechanic in a fabric plant was assigned to repair the No. 1 pump in a manifold group of three. The pumps did not have numbers physically attached to them and the mechanic counted in the wrong direction. The result: a lot of extra work, downtime, and parts expense for no gain.
- At a grease and oil blending plant an electrician received a serious but nonfatal shock because the drawing he used for lockout/tagout was not up to date. Another electrician had installed a jumper and not documented its existence.

These are only a few examples of why it is fundamental to have each maintenance-worthy asset accurately identified and documented in a readily available format.

Some basics

Take the time to identify and document all of the assets within your facility. Do not take the "we will do this later" approach. "Later" rarely happens.

- Appoint a single point authority for asset database and configuration documentation.
- If your facility has been operating without a master asset list, get one made. Use summer hires, co-op resources, or individuals within the organization who are medically restricted from performance of their normal duties to collect and enter the information.
- If you have a cmms, you probably have a master asset list. Check the list for accuracy and update as necessary.
- If you do not have a cmms, then use a database or spreadsheet program such as Access, Excel, or Lotus 123 to record your asset inventory.
- Determine the asset numbering

- Establish formal processes and procedures for project turnover of asset information.
- Train operators and maintenance craftpersons how to describe the asset in a work request. Do not assume they know how to describe their equipment.
- Establish the minimum requirements for asset identification when submitting a work request.
- Provide training on how to access the asset description data within the cmms.
- If you do not have a CMMS or the operators and craftpersons do not have access to the CMMS, provide a notebook of all area assets. Ideally, the notebook should contain a system drawing or an area floor plan with each asset identified by number. Following the drawing should be a complete list of all assets with their noun names, sorted by number.
- Establish processes and procedures to control the configuration of the assets. This is mandatory for items under OSHA 1910.119 rules for process safety management but few facilities apply the same structure to other assets. Do not assume that asset configuration changes made in the middle of the night or on weekends automatically find their way into the asset database, system drawings, loop diagrams, etc.
- Establish the processes and procedures for managing asset configuration.
- Define the trip points or triggers that invoke the need for configuration change control. Safety is always the first consideration.
- Train those who need to know on the requirements, processes, and procedures of configuration change control.
- Take immediate and positive corrective action when configuration control processes and procedures are not followed.
- Audit the configuration control process annually. Adjust the process and/or procedures as necessary to improve effectiveness and train the users.

Making the resource commitment to establish an accurate asset database offers a tremendous return on investment. If the requester can accurately identify the asset needing maintenance, the planner can accurately identify and order the correct repair parts, and the mechanic can make the repairs on the correct asset, everyone wins. Worker safety is enhanced, mean time to repair decreases, planner and craft utilization increases, asset reliability improves, and spare parts inventory is optimized. All of these gains begin with the basics of knowing what it is you have to maintain.

John Rasberry is an associate with Performance Consulting Associates, Inc., Duluth GA 30096; (770) 717-2737, email rasberry@pcaconsulting.com; Internet www.pcaconsulting.com

**For a complimentary copy of this article
and more information
circle103 on Reader Service Card**