



Best Practices For a Preventive Maintenance Program

Are you going through the Preventive Maintenance (PM) motions, but behind the scenes there is nightmare of overdue tasks, emergency repairs and a frazzled engineering team? Or worse, maybe you're not even sure what's happening behind the scenes?

Did You Know?

Most maintenance departments operate at 10-40 percent efficiency, and nearly 70 percent of equipment failures are self-induced. How does your building team measure up?

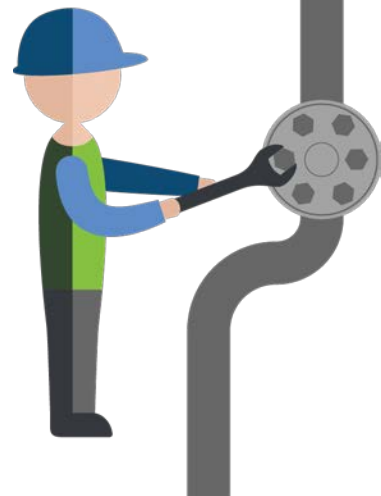
"If you don't measure and track maintenance efficiency, and accumulate and analyze data on equipment failures, you probably have no idea if you are the same as, better than, or worse than the averages," said Ricky Fox of Facilitiesnet.com.



Avoiding PM Debt

The biggest sign of a problem with your scheduled maintenance program is **PM Debt** –when more scheduled tasks remain uncompleted than are completed. Once this occurs, tracking loses its meaningfulness, tasks begin to pile up, and the PM program begins to disintegrate. Building teams fall into this situation for many reasons, including:

1. They don't have the right systems in place.
2. There are too many tasks scheduled per piece of equipment.
3. There is not the right amount of dedicated staff to manage maintenance.
4. Teams spend too much time responding to work orders than scheduled maintenance.
5. The building's legacy PM library is outdated and redundant.





Benchmarking PM Completion Rates

In a recent sampling of BEI customers, we compiled some common PM benchmarks and completion rates by industry.

** All numbers are averages from customer sample group using Property Management Software to schedule and track PM tasks.*

INDUSTRY	# PMs Fired	Average # PMs Fired	% Completed	Average # Equipment
Commercial Office	65,517	40	75%	75
Industrial	488	6.5	20%	10.45
Long Term Care	150,595	550	94.50%	334
Medical Office Building	1,574	28	36%	27
Residential	18,864	555	99.60%	181
Retail	627	8.25	37.50%	22



TAKEAWAYS FROM THE STUDY

- *The highest completion rates were directly related to those organizations and property types with the highest volume of fired PM tasks- indicating the importance of scheduling, tracking and completing tasks in a timely manner in larger scale environments. i.e. staying out of PM debt.*
- *Best-In-Class commercial office organizations have an average completion rate of 75%.*
- *Organizations with the highest volume of equipment also had the highest completion rates- indicating the importance of a comprehensive system in place to track more robust programs.*
- *Industrial properties still struggle with PM tracking, mostly due to the nature of their business. i.e. Most work is assigned and completed by outside contractors and a majority of PM's are the tenant's responsibility.*
- *Residential properties remain focused on high maintenance completion rates, mostly do the importance of tenant satisfaction in an arena with shorter lease terms.*



PREVENTIVE MAINTENANCE CHECKLIST



Requirements for a Modern PM Program

- Web-Based System.** Do you have modern property management software that provides the Preventive Maintenance (PM) tools, automation and visibility needed to assure that 80% or more of maintenance activities are planned and scheduled at least one week in advance - making dispatching tasks simple and ensuring timely completion?
- Established Equipment Library (Based on Industry Standards).** Are you using a task library based on recommendations from the General Services Administration (GSA)? Many legacy libraries offer equipment guides with aggressive frequencies of PM tasks that are often redundant & inefficient. The GSA recommendations are designed with more relevant target benchmarks to help with staff levels and productivity assessments.
- Mobile Access.** Is your team able to create and complete maintenance tasks from any mobile device or tablet? Can they work offline in areas of little or no service? Are they easily able to view prioritized task lists and equipment histories from the palm of their hand? Your mobile component should also seamlessly connect (and send data) to other areas of your operations like Work Order and Inspections.
- Performance Management.** Can you set standards and maintenance schedules that are regularly monitored? Do you have the ability to analyze work order history and equipment breakdowns? Basic reporting is critical. You should be able to pull equipment summaries, completion summaries, inventory reports, warranty expirations and more.
- Automated Alerts and Notifications.** Scheduled maintenance notifications and assignments should be automated. Are yours? This is where a native Mobile App becomes really effective, with immediate and clear notifications delivered to your team wherever they are in the building.
- A Centralized View.** The number of tasks involved with effective PM can be overwhelming. Do you have an easy-to-read dashboard to provide a clear overview? At any point in time you should be able to see what tasks should be worked on first, which are critically overdue, and what's coming up next.
- Link to Purchasing & Inventory Tracking.** Are you able to simply track your inventory, and set automatic re-order alerts when supplies are low? Can you create purchase orders directly from a PM task to reduce work order "on hold" time? Ideally, you should be able to select materials to order, indicate quantity, update "expected costs," and print purchase orders to deliver to your vendors.

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Score Card: Count your checks.

If you said no to even one of the evaluation questions above, your PM Program could be holding you back - and costing you money.



Three Best Practice Equipment Task Lists

Have you reviewed your Preventive Maintenance Program this year? Freshen up some of your frequently-used PM schedules to ensure that you're not overloading your team with unnecessary tasks and following updated industry standards.

DOWNLOAD NOW:

[Three best-practice task lists based on General Services Administration \(GSA\) standards for Air Compressors, Air Handling Units and Heat Pumps.](#)



BuildingEngines

Air-Conditioning Machine Package Unit Template

[Insert Date]
 [Insert Property Name]
 [Insert Inspector Name]

General: This PM template applies to units that may have the evaporator, compressor, fan coil components, and condenser within a single housing. Take photos of identified issues, where appropriate.

Equipment Information			
GSA Code	Number of Equipment	Equipment Category (Name)	General SE Name
A-4	Air Compressor	Air Handling Equipment	Air Compressor #1

Instructions

Semi-Annual

Special Instructions (Notes): Review manufacturer's instructions and equipment history record.

Coordinate motor PM on an annual basis.
 Tank should be inspected and tested by qualified inspector.
 Be energized, tag, and lock out circuits. Review the Standard Operating Guide on 1

Tasks (Check Points):

- Perform normal tour checks and operations. Perform a visual inspection of the air side on 1
- Check compressor crankcase oil.
- Clean or replace air intake filter.
- Check air dryer, automatic condensate drains, and air tank for proper operation. 1
- Inspect belt alignment and condition. Adjust or replace belts as required.
- Check for corrosion and scale on water cooled units.
- Clean heat exchange surfaces.
- Check accuracy of gauges with calibrated test gauge.
- On two stage compressor, check intermediate pressure.
- Test relief valves, replace if leaking or if setting of the relief valve is incorrect. Do not readjust
- Check operation of compressor unloader, repair or replace if not loading and un
- Check compressor suction and discharge valves for proper operation. Replace les
- Check in and out of compressor pressure controller, readjust if necessary
- Check to make sure belt guard is installed prior to putting air compressor back in
- Do not pressure vessel is to have its hand hole or manhole covers removed unless
- Check if air compressor is running excessively or frequently cycling on and off (p
- Perform an air leak check of the compressor and air distribution network in the d
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The General Services Administration (GSA) recently launched brand new recommendations for PM guides designed with more relevant target benchmarks to help with staff levels and productivity assessments



Did you know?

Building Engines has upgraded its current [preventive maintenance](#) (PM) library to one based on recommendations from the General Services Administration (GSA).

The GSA library is more frequently updated with new equipment types, suggested schedules, and parts and materials, as well as recommended time for completion.

New BEI clients will now receive:

- A library of over 400 building equipment types along with suggested maintenance schedules and task lists, detailed by frequency
- Unique, pre-configured libraries available by property type – Office, Industrial, or Retail
- A list of recommended tools to bring for each task
- Lockout/tagout identifiers.
- Estimated, best-practices completion times per task
- Less frequent but more thorough schedules and tasks

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