

# Tool Box Talk – Maintenance Backlog



*“Managing the Backlog is a Must in Proactive Maintenance”*

## Question?

Which of the following groups is overloaded with work, and which one can handle more work?

- A work group with 250 work orders
- A work group with 50 work orders

Which work group had better performance?

- A ten-person crew that completed 40 work orders
- A ten-person crew that completed 17 work orders

**The Answer:** It depends; one cannot gauge the workload facing a group by a simple count of work orders. Not all work orders are equal; each requires a different amount of effort and resources.

Accurately measuring backlog is the trick to answering this question.

## What is Backlog?

Backlog is a method of calculating the workload based on required resources and available resources. The formula for calculating backlog is:

- Backlog = Required Hours / Available Hours
- Backlog is expressed in weeks of backlog.

## Example:

Suppose you manage a 10-person organization (8 mechanics and 2 electricians) and when you add up the required man-hours on all work orders, you arrive at 2000 hours total. To make the math simple, let's suppose that everyone works 40 hours per week (in reality we would subtract lunch, breaks, training, etc.).

- 10 People X 40 hours = 400 Available Hours Per Week

- 2000 Hours / 400 Hours = 5 Weeks
- Backlog = 5 Weeks

## So What?

So your next question is going to be so what? What do you do with this backlog calculation?

Our experience shows that you should strive to maintain 4-6 weeks of backlog at all times. There are two factors driving this number:

- Having enough work identified to keep the workforce gainfully engaged
- Moving work off the backlog so that requestors see action being taken on their requests

If the backlog is too large or too small, then you will not be able to satisfy both of these requirements.

## Making Decisions Based on Backlog

As you can see from the example, the final backlog number can be affected by adjusting either of the two variables:

- Adjusting Required Hours
- Adjusting Available Hours

Given the two choices, adjusting the available hours component is always the better choice. This can be accomplished through overtime, contracted labor, and strategic changes in the staffing levels.

## Derivations of Backlog

The base formula provided for backlog calculation (Backlog = Required Hours / Available Hours) can be adjusted to measure different aspects of the organization.

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Take a look at the various permutations of backlog listed below. Each is derived by filtering out the required hours and available hours based on the requirements of the individual work order.

Derivations of the Backlog Calculation Include:

- Total Backlog (calculated in our example)
- Mechanical Backlog
- Electrical Backlog
- PM Backlog
- PdM Backlog
- Corrective Backlog
- Outage/Turnaround Backlog
- Ready (WSCHED) Backlog

How would you adjust the base backlog formula to calculate for each of these derivations?

## Planners Remain Focused on FUTURE WORK

I never like to miss an opportunity to make this point. The prime measure of the planners output is ready backlog – total amount of work that has been planned, parts obtained, and ready to be placed on the schedule.

When people ask me if it is ok for the planner to do x,y,z – my first answer is always **“as long as we have 2-weeks of ready backlog, then maybe.”** 2-Weeks of ready backlog will allow the scheduling team the data they need to project a schedule 1-week in advance. Of course if we are attempting to project further into the future, then we will require even more ready backlog to pull this off.

If we believe that planners are focused on future work, then the ready backlog is a solid way to measure our execution on this belief.

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