

Proactive Planning and Scheduling

How to make it happen

“TOOL BOX TRAINING”

| Benchmarking | | | | | | | | | | |
|--------------|-------|--------|-------|-------|--------|-------|----------|-------|-------|---|
| QUARTILE | MANE | STRESS | % | N/E | N/E | % | ANALYSIS | NOT | % | % |
| Top 1st | 1.4% | 8.7% | 88.5% | 71.8% | 100.0% | 38.1% | 31.8% | 29.8% | 71.8% | |
| Media 1st | 2.1% | 8.1% | 82.0% | 63.9% | 91.0% | 35.2% | 22.0% | 23.0% | 63.9% | |
| Top 3rd | 4.1% | 9.5% | 68.0% | 51.2% | 81.0% | 29.5% | 24.5% | 24.5% | 51.2% | |
| Media 2nd | 5.7% | 1.7% | 51.2% | 42.2% | 63.9% | 24.2% | 25.9% | 22.8% | 42.2% | |
| Top 5th | 7.1% | 2.9% | 44.4% | 34.8% | 78.8% | 19.8% | 22.8% | 28.8% | 34.8% | |
| Media 3rd | 8.3% | 4.1% | 28.2% | 21.2% | 68.8% | 15.4% | 18.7% | 31.8% | 21.2% | |
| Bottom | 10.2% | 3.9% | 18.0% | 10.2% | 61.8% | 10.8% | 12.2% | 25.8% | 10.2% | |
| Media 4th | 12.7% | 7.4% | 8.2% | 3.8% | 38.7% | 5.1% | 8.2% | 37.8% | 8.2% | |
| Bottom 5th | 17.2% | 12.2% | 2.9% | 0.8% | 48.7% | 1.8% | 4.1% | 38.8% | 2.9% | |

The Role of the Maintenance Planner

Maintenance Planners are one of the most misused resources in the maintenance organization. We must always remember that the Maintenance Planner represents that single resource in the organization who is strictly dedicated on preparing for the future. Without this focus, we fall victim to the typical maintenance wastes associated with a reactive organization.

The above statement by Mike Gehloff has been proven by all of companies who have seen the results of their proactive maintenance model. Here is the data from one of those organizations. I worked at this facility and it continues to this day as a proven proactive maintenance organization.



Figure 1: Workflow

- Next is the work planned effectively with enough time that it can be scheduled with minimum or no interruption to production or operations? You must be able to plan the work using repeatable and effective procedures. (See Figure 2: Proactive Planning and Scheduling Figure 3: PF Curve-Urgency of Work).

| | <u>Mt. HOLLY</u> | <u>TYPICAL</u> |
|---------------------|------------------|----------------|
| Planned / Scheduled | 91.5% | 30-50% |
| Breakdowns | 1.8% | 15-50% |
| Overtime | 0.9% | 10-25% |
| Inventory Level | 1/2 Normal | Normal |
| Call-Ins | 1/Month | Routine |
| Off-Shift Work | 5 People | Full Crew |
| Backlog | 5.5 Weeks | Unknown |
| Budget Performance | Var. 1-3% | High Var. |
| Capital Replacement | Low | High |
| Stock outs | Minor | Routine |

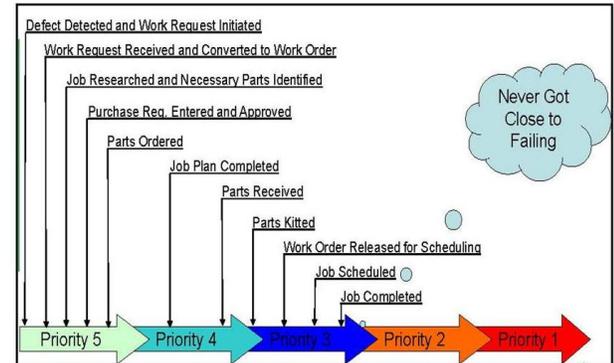


Figure 2: Planning and Scheduling

People ask me how I can improve my maintenance scheduling, which cannot be done without proactive planning. Here is my answer:

- Does the work you schedule mainly come from PdM or PM, based on specific failure modes, along with conducting the actual PMs and PdMs themselves? (see Figure #1 - “Workflow”)

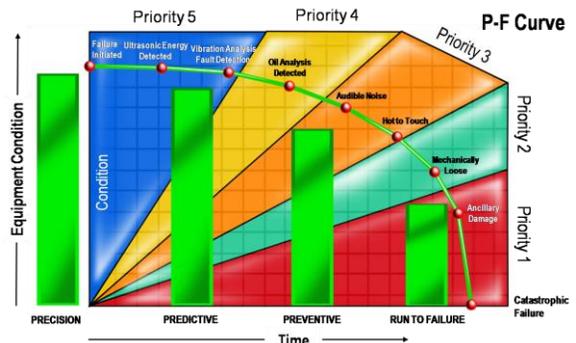


Figure 3: PF Curve-Urgency of Work



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| DEPARTMENT | WRENCH TIME | MTBF | MTTR | PLANNING | SCHEDULING | MANAGEMENT | TOOLING | TRAINING | SAFETY | QUALITY | ENVIRONMENT |
|------------|-------------|-------|-------|----------|------------|------------|---------|----------|--------|---------|-------------|
| Top 1st | 1.4% | 8.7% | 88.5% | 71.8% | 100.0% | 38.7% | 31.8% | 29.9% | 71.8% | | |
| Bottom 1st | 21.1% | 8.1% | 12.2% | 43.9% | 31.2% | 32.7% | 42.2% | 22.2% | 43.9% | | |
| Top 2nd | 4.1% | 9.9% | 64.9% | 51.2% | 81.8% | 29.8% | 34.9% | 24.9% | 51.2% | | |
| Bottom 2nd | 5.7% | 6.7% | 31.2% | 42.2% | 83.9% | 24.2% | 25.9% | 22.8% | 55.9% | | |
| Top 3rd | 1.1% | 2.9% | 44.4% | 34.8% | 78.8% | 19.8% | 22.8% | 24.8% | 44.4% | | |
| Bottom 3rd | 8.9% | 4.1% | 22.2% | 21.2% | 61.8% | 15.4% | 12.7% | 31.8% | 43.8% | | |
| Top 4th | 28.2% | 3.9% | 15.4% | 13.9% | 41.8% | 10.9% | 12.2% | 25.9% | 41.8% | | |
| Bottom 4th | 12.7% | 7.4% | 4.2% | 2.8% | 34.2% | 5.7% | 4.2% | 21.8% | 28.2% | | |
| Bottom 5th | 12.2% | 12.2% | 2.9% | 5.8% | 48.7% | 1.8% | 4.1% | 31.8% | 28.2% | | |

- Next you want to ensure wrench time correlates to MTBF which means you are maximizing the use of your maintenance workforce with minor delays. (See Figure 4: Wrench Time to MTBF Correlation Chart recently completed for a company).

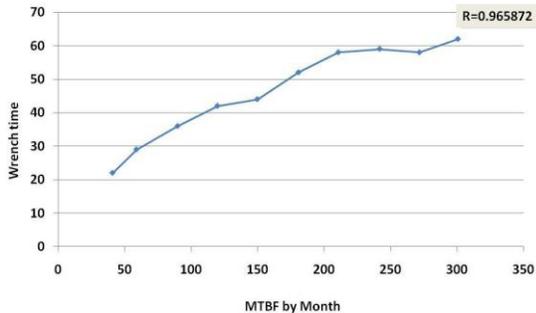


Figure 4: Correlation Chart – Wrench Time Vs MTBF

Planners Efforts Contribute to Wrench Time Improvements

- 30 - 35% wrench time is typical of good “traditional” maintenance organizations
 - In a 10 hour shift, this is 3 ½ hours
 - 6 ½ hours spent on indirect activities
- 50 – 55% is best practice
- Planners Move the Team from 30% to 50% Through Their Efforts
- 5 man crew at 30% wrench time
 - Yields 12 m-hrs work in an 8 hr day
- 4 man crew (with planner) at 50% wrench time
 - Yields 16 m-hrs work in that same day

Conclusion:

If you continue to believe you cannot optimize your maintenance resources through proactive planning and scheduling and see it as a serious barrier then take me up on the following offer:

In 2011 (date to be determined) – Bring your manager for a 2 day session in Charleston, SC to

visit a World Class Maintenance Plant and see proactive planning and scheduling yourself.

Here is what you will see and hear:

- What does the World Class Maintenance Model look like with effective planning and scheduling by John Day, PE, former engineering and maintenance manager at Alumax, Mt Holly (rated the best in the world for over 18 years while he was manager) You will love this guy. He is in his 70s but full of fire and tells it like it is.
- We will visit a “World Class Maintenance” organization (they typically charge \$1000 a visit to see their program – it will be at no charge). You will hear from their leadership and planners about how they conduct planning and scheduling. They received the North American Maintenance Excellence Award in 2007.
- The next day we will have a short presentation on proactive maintenance focused on a Failure Mode Driven Strategy and how planning and scheduling impacts this organization.
- Next, open discussion about where your organization is and how do you move from current state to future state.

If you are interested the cost is **\$995.00** for 2 people as long as one is your manager.

Location: Charleston, SC.

Date: To be determined. Sometime in 2011

Contact me at rsmith@gpallied.com if you are interested in changing your life. If you want to stay an extra day for me to help you, no problem, no charge it will be no problem. “First come, first serve”

