

HUMAN ERROR IS HIGH BECAUSE OF A LACK OF EFFECTIVE MAINTENANCE PLANNING AND SCHEDULING

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“Human Error in Maintenance is High because of Lack of Effective Maintenance Planning and Scheduling”



By John Day PE
Former Engineering/Maintenance Manager
at Alcoa Mt Holly (World Class Maintenance)



My interview with John Day on December 22, 2021

John Day and I have been good friends for over 35 years and Alumax / Alcoa Mt Holly is where I learned what “World Class Maintenance” looks like and if applied correctly reaps tremendous benefits. My years in Maintenance at Alumax / Alcoa Mt Holly set the foundation for who I am today. I spent time with John this week to wish him Merry Christmas and to listen to his words of wisdom. (I visit with John once or twice a year to hear his words of wisdom, this year’s visit made aware of Human Error being caused by ineffective Planning/Scheduling). Never thought about this issue so I had to think about his statement before I wrote this article.

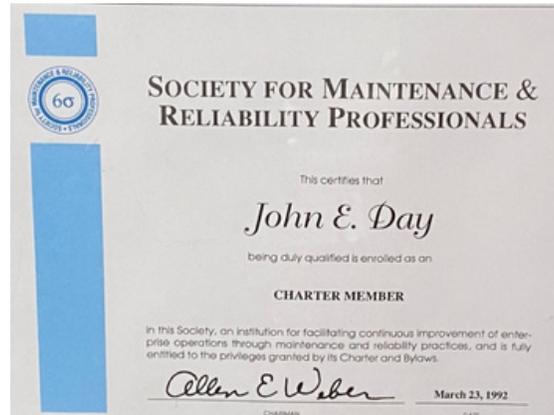


Alcoa-Mt. Holly (formerly Alumax of South Carolina) has been recognized as a proactive maintenance benchmark for over 18 years. Organizations designating Alcoa’s Mt. Holly operation as among the best in maintenance execution include PLANT ENGINEERING Magazine, A.T. Kearney, Inc., Hartford Steam Boiler Reliabilities Technology Division, and Life Cycle Engineering.

Category	Typical Maintenance	World Class Maintenance
Maintenance Cost as a % RAV	5.6 – 11%	2.0-2.5%
Budget Compliance	Less than 60%	100%
Planners per Craftsperson	No Planner or No Proactive Planning Process	1 - 20
Absenteeism	10% plus	+/- 5.0 %
Ready Backlog in Weeks	Unknown	2-4 weeks
% Planned Work	15% or less	90%
Schedule Compliance	50%	90-100%
PM Compliance	60%	95-100%
Inventory Accuracy	Unknown	95% plus
Maintenance Training Cost	No Budget	6% of Budget
Maintenance Rework	High	Low
Accurate Maintenance Dashboard	Not Available	100%

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In March 1992 John Day became a “Charter Member of SMRP (Society for Maintenance and Reliability Professionals).



John was truly a pioneer in “What is World Class Maintenance and proved through dedication and discipline that the rewards as a result of this process are many”.

Based on John’s philosophy from a basic point of view there are only two maintenance approaches. One approach is reactive, and the other is proactive. In practice there are many combinations of the basic approaches.

The reactive approach responds to a work request or identified need, usually production identified, and depends on rapid response measures if effective. The goals of this approach are to reduce response time to a minimum (the computer helps) and to reduce equipment down time to an acceptable level. This is the approach used by most operations today.

The proactive approach responds primarily to equipment assessment (preventive maintenance/predictive maintenance). The overwhelming majority of corrective, preventative, and modification work is generated internally in the maintenance function as a result of inspections and predictive procedures.

The goals of this method are continuous equipment performance to established specifications, maintenance which ensures capacity, and continuous improvement. Alumax of SC (Alcoa Mt Holly) practiced the proactive method. The comments which follow are based upon the experience and results of pursuing this vision of maintenance.

MAINTENANCE MANAGEMENT PHILOSOPHY

Alumax/Alcoa Mt Holly of SC began development of the maintenance management concept with the idea that maintenance work would be planned / scheduled and managed in a way that always provides an efficient continuous operating facility.

Add to this that maintenance would also be treated as an investment rather than a cost, and you have the comprehensive philosophy on which the maintenance management system was built.

An investment is expected to show a positive return, and so should maintenance be expected to improve the profitability of an operation. The management philosophy for

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Maintenance is just as important as the philosophy established for any business operation. For most industry, maintenance is a supervised function at best, with little real cost control. But it must be a managed function employing the best methods and systems available to produce profitable results that have a positive effect on profitability.

The development of a philosophy to support the concept of proactive planned and scheduled maintenance is important. It is believed that many maintenance management deficiencies or failures have resulted from having poorly constructed philosophies or the reliance upon procedures, systems, or popular programs that have no real philosophical basis.

Based on the statement concerning Planning and Scheduling John stated to me that The #1 Reason why companies do not meet their expectations is because of "Human Error" which is caused by a LACK OF EFFECTIVE MAINTENANCE PLANNING AND SCHEDULING.

Effective Maintenance Planning and Scheduling is a process which results in:

1. Higher Wrench-Time

Top 5 Reasons Why Maintenance Planning does not increase Wrench-Time?

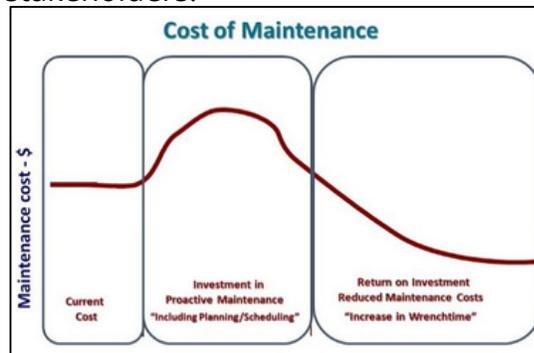


1. No one at the Plant / Organization has ever seen Proactive Planning and Scheduling
2. Maintenance Planning and Scheduling Function is not measured with Leading and Lagging KPIs (no scoreboard/dashboard)
3. No time to plan and schedule because we have too many equipment problems and failures
4. Maintenance Planner is pulled into today's reactivity
5. Maintenance Planner has never been formally trained in Planner and Scheduling

- World Class Wrench-Time = 55-65%
- Typical Wrench-Time = 15-25%
- Worst in Class Wrench-Time = 5-10%

- **Wrench-Time** is a measure of crafts personnel at work, using tools, in front of jobs.
- **Wrench-Time** does not include obtaining parts, tools or instructions, or the travel associated with those tasks.
- **It does not include** traveling to or from jobs.
- **It does not include** time spent obtaining work assignments.

2. Proactive Planning and Scheduling reduces cost however it requires an investment in training and coaching of all stakeholders.



3. Reduces "Human Induced Failures" (Human Error) however it requires discipline in Maintenance Execution of Proactive Work through use of well defined "Roles and Responsibilities" which aligns everyone towards a common goal.

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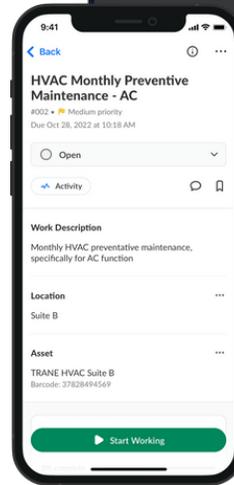
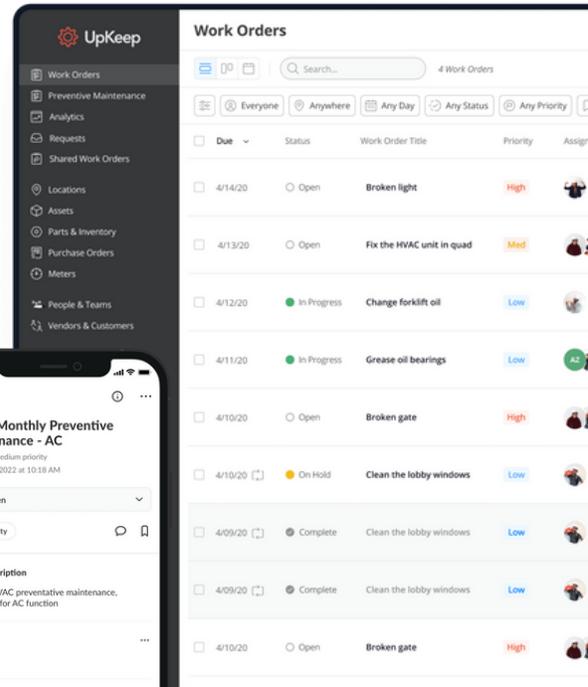
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★★★★★ Paul D, Health and Safety Coordinator



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The Maintenance Community Coalition was founded on the belief that working together will benefit everyone within our community

Committed to helping each other thrive in our individual professional journeys by sharing resources and expertise, granting scholarships, hosting events, and unlocking knowledge – always at no cost.

