Strategic Maintenance Management 101: An Introduction to What, Why and How

An Online Continuing Education Course for Engineers

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Strategic Maintenance Management 101: An Introduction to What, Why and How

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Overview

If a business exists to produce or deliver some kind of product or service, it is essential that there be as much strategic planning in the maintenance of the equipment upon which it relies as there is in any other part of the business plan. Obviously, efforts taken and costs involved to maintain their machinery or equipment have a direct impact on everything that affects the overall health and welfare of any manufacturing or other capital-intensive industry.

Unfortunately, many organizations see equipment maintenance as an expense instead of an investment. They take a "least-we-can-do-to-get-by approach" of doing just enough to keep things running or assume a much worse "band aid" mentality of temporary repairs to keep things going with some wire and duct tape. These "just-get-by" quick fixes are always temporary and may fail before correction.

"Working from can to can't" is a common refrain among operating engineers and maintenance technicians when employers reduce workforce-staffing levels to rein in costs farther.

Ultimately, this leaves the remaining staff to deal with an increasing workload. Morale and productivity continue to decline, as those still on the job cannot conduct preventive maintenance and enter a reflexive mode of running from one problem to the next as the downward maintenance spiral and workforce morale deepens.

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This course provides two solutions to that situation:

- A fundamental guide to understanding the need for, and a blueprint to create, a strategic maintenance management plan for your employer

- A guide to developing the internal talent necessary to provide the machinery and equipment maintenance necessary for the continued life of the business

By adopting strategic maintenance, companies can shift from reactive to proactive maintenance, such as predictive maintenance, which prevents failures before they occur. This approach is particularly valuable in high-risk sectors like oil and gas, where a case study showed a major producer ***improved efficiency by 5-10 times*** using advanced asset strategy management[i].

Learning Outcomes

After taking this course, the student will at least:

1. Learn how to integrate your maintenance program into the business plans of the company
2. Be able to identify the four broad generational stages of the evolution of maintenance
3. Know how to develop the internal talent necessary to maintain the equipment and machinery of your business
4. Be able to identify several major changes in the external business environment that present an increasing challenge to maintenance professionals today
5. Be able to identify four reasons why people are one of the major changes in the business environment
6. Be able to identify two reasons why processes are one of the major changes in the business environment
7. Be able to identify three reasons why plants are one of the major changes in the business environment
8. Be able to list four reasons for the "WHAT" of strategic maintenance management (SMM)
9. Be able to list six reasons for the "WHY" of strategic maintenance management.
10. Be able to list four reasons for the "HOW" of strategic maintenance management
11. Be able to ask several relevant questions about talent *development* issues
12. Be able to ask several relevant questions about talent *deployment* issues
13. Learn to analyze the cost/risk relationship graph beyond the generic responses
14. Identify at least 12 miscellaneous planning issues to consider regarding SMM
15. Construct a three-step model for building a strategic maintenance plan
16. Learn how to construct a functional jib description that can act as a foundation for internal training
17. Identify common problems to avoid when attempting to develop an internal training program
18. Develop a training curriculum for maintenance operators

The WHAT of Strategic Maintenance Management

Strategic (business) planning is the *process of determining a company's long-term goals and then identifying the best approach for achieving those goals*[ii].

Strategic maintenance management (SMM) is latest generation of the age-old need of maintaining your equipment or machinery. (About twenty-five years ago, around the turn of the century, the term was Enterprise Asset Management – EAM.) This new name for an existing process appears to fit a trend of "when something doesn't work, rename it, and try it again." [iii]

Basically, the concept of strategic maintenance management is the *integration of your maintenance program into the business plans of the company for the least amount of production disruption while maintaining the equipment*.

Success in a market requires an ability to orchestrate many business functions simultaneously. Companies must integrate the functions of financing, marketing, supply chain management, data collection, workforce training and development, new hire recruiting, and retention programs to keep production humming along at optimal capacity. SMM means that those who maintain the physical means of production must have a seat at the business-planning table because the company cannot sell what the machinery cannot produce.

When the industrial age began, it was enough for the machinery maintainers to make sure it stayed sharp, they kept it well-oiled and tightened all the nuts and bolts when they were loose enough to notice. They knew that good maintenance paid off and the reliability of their equipment improved while their cost of owning it declined.

We consider the cost of ownership as part of the cost of production.

(Other costs include raw materials, fixed costs of the facility, wages, insurance, distribution, marketing, product development, etc.)

For example, if a machine cost $1000 and made 1000 products, the ownership cost of each product is $1.00. However, if it produces 10,000 products, the ownership cost of each drops to $0.10 per unit.

The Evolution of Maintenance Management

This is a broad review of the evolution of maintenance management. (These are time estimates given only to identify broad changes.)

	1st generation < 1940-1960	2nd generation 1960-1985	3rd generation 1985-2000	4th generation >2000
Intentions	Downtime was a fact of life	Greater plant capability, definite equi…	Greater plant reliability, lon… quipment life,	Greater on-demand reliability, long… quipment life, greater …, control complexity …ty, near zero waste, …ance on safety and …ental issues, greater …ols and business
Methods				…plant and …lesign for …lity" by lesser …cians, improved …anagement …duces …owntime and …uipment life …gration into …tegy, greater …uters