

Strategies for maintenance

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Several strategies are available to the management of the maintenance effort in our mills. Two of these strategies are:

- ***Saving costs***, and
- ***Contributing to profits***.

The same you say?

Saving Costs

It can be verifiably argued that saving costs will contribute to profits, but in this context saving costs means reducing the overall maintenance effort. Long-term, this can mean serious degradation of production capability, i.e., inhibiting profitability. Saving costs has to be achieved by a reduction in personnel (or in their paid time) or by reducing material usage, or a combination of both. The point is elimination of some resource currently being used.

- ***Reducing Labor Costs***

For example, some expenditure is justified by saying that this capital project will reduce maintenance labor costs. This means that the maintenance effort on this particular piece of equipment or process will be reduced. In reality no personnel will be released from the active payroll. No costs then are saved only redistribution of work effort. Are savings achieved? Maybe yes...and maybe no. Redistributing work hours to another 'cost center' does not save money. This action merely reallocates ongoing costs. A justification sort of like a 'shell' game. Now you see it now you don't, it really depends upon where you are expected, or directed, to look.

Reducing overtime can however, save real labor costs. Reducing overtime can be an extremely misleading and potentially dangerous gamble. That overtime may well be necessary to:

- ***Maintain the current level of production***, or
- ***Preserve the facilities at a desired level***, or
- ***Offset outside contracting*** normally used for capital projects.

A reduction in overtime (to save labor costs) can, however, lead to:

- less productivity,
- degradation of the mill's infrastructure,
- increased project length and costs.

Continuation of this situation can lead to the future requirement for massive capital expenditures in order to bring the productivity back to profitable levels. It can require an infusion of funds to bring the mill facilities up to a level of preservation deemed acceptable by the company's 'shareholders'. It can mean a tremendous influx of outside contractors to 'catch-up' the workload neglected during the 'less overtime' initiative.

- ***Reducing Repair Material Costs***

Another common 'cost saving' process is to reduce the level of material inventory. This tactic assumes that the repair material inventory is out of control and needlessly excessive.

Not uncommon is an edict to reduce repair material levels "across the board" by some percentage. This action is generally taken without regard to the mill's needs. The common practice of 'consigning' inventory of spare parts, notably bearings, whereby a local vendor maintains the inventory supposedly at a cost savings to the mill, is a direct result of these attempts to reduce repair materials. Another common practice is 'integrated supply chain management' through a long-term association with a nationwide supplier of MRO materials. It is believed, in some circles, that these practices actually reduce the cost of

repair materials. Others, mostly vendors, know that materials cost competition is thrown out, all to ease someone's peace of mind and allow a good bit of laziness on the part of those responsible for sensible MRO control.

What has been saved?

- *Has the purchasing department been reduced?*
- *Has the staffing of the Stores area been reduced?*
- *Has the in-house material handling staff been reduced?*
- *Is there directly corresponding decreases in downtime?*

Where is the cost saved?

The savings will show on the balance sheet. The argument is that savings were achieved by a reduction of 'tied up', e.g., 'working' capital, money that is no longer just sitting there without a return (on its investment). It is argued that instead the 'partner' across the street is tying up his working capital. Or the nationwide 'partner' is eliminating excess clerical effort associated with commodity MRO across the enterprise. That is a valid business case but what are the strategic implications for the mill and its production costs?

Has the loss of productivity been considered?

Formulas do exist that 'evaluate' the risk of not carrying a certain repair part in stock. When you do not have the part and the machine goes down for an extended downtime harsh reality sets in, you, the Maintenance Manager are the person taking the heat, not the financial wizard that thought of the idea to reduce inventory.

Mills located painfully long distances from major industrial urban centers feel the impact of the corporate edict of reducing stores inventory even more severely. Imagine trying to maintain a mill when your closest source of everyday supplies is an hour or two away by truck or car. Does it make sense to issue the same inventory reduction demand to this mill as it does to one located only minutes away from every conceivable service and product available? No? Well, it happens.

What of the situation where you are now dependent upon an outside organization for procurement of your commodity MRO? Is this 'integrated supply chain management' in fact limiting your ability to choose (and control) the most effective price, delivery and performance?

Maintenance costs must be reduced

Maintenance costs can and should be reduced. Too many mills still carry a large maintenance work force, pay for too many hours, use too much material and receive too little improvement in exchange. This is due in part to the tendency to allow the practice of 'caretaking' and not demanding or, at least, encouraging 'professional' maintenance management.

How many maintenance managers are hired because they have shown good management skills, or, because they view their effort as strategic to the organization? On the other hand, how many are promoted because they 'know' the specific technical tasks and how to get the equipment running again after a failure?

Caretakers do the *same thing*, over and over again while **managers**, improving upon existing practices, procedures and methods, do *things right*.

Professional managers contribute to the profitability of the business by focusing upon productivity. While caretakers continuing the same old practices stubbornly refuse to change anything. Of course upper management must take some responsibility for the actions, attitudes and expectations of their managers. Paraphrasing the theme of a popular movie, "Build the (expectation) and they will (conform)." People tend to respond to stimuli. "Attaboys" and accolades for rapid response to a failure that need not have occurred in the first place is just such a motivator and is very common.

Contributing to Profits

Even maintenance, a cost center, has a 'product'. The products are 'reliability', the constant effort to improve the production quality and quantity; 'resource management', the ever present pursuit of the most economical and effective resource to accomplish the work at hand; and 'preservation', continuous action in maintaining the assets including the knowledge present in the mill. Even maintenance can contribute to profits when the strategy is improved productivity, controlled costs and preservation. The unfortunate image of maintenance as a necessary 'cost' does little to evoke support as a profit generator, yet their objective is to produce a product, a profitable product, while preserving its manufacturing future.

Any function that can significantly contribute to production uptime (without major expenditures of capital) must be in the forefront in any profit improvement program. When that same function also contributes to lower costs and long-term future needs the contribution to the corporation is significant.

PM a tool

Preventive maintenance, of which one element is predictive maintenance, is by far the best possible economic solution to improved productivity. This fact, widely known and followed by some paper producers is clearly demonstrated by the near absence of sophisticated, dedicated 'predictive maintenance' technology in these mills.

"NO PREDICTIVE MAINTENANCE!!!!" What is this, a joke?

No joke, just plain common sense. Each of these mills has, instead, a commitment to the prevention of maintenance failures.

- ***Equipment failures are eliminated.***
- ***Equipment downtime is used for preventing rather than correcting failures.***
- ***Any equipment failure is considered a failure of the maintenance effort.***
- ***Effort is redoubled to prevent a similar occurrence.***

This approach is quite different than the not unusual practice of the 'pat on the back' for a quick return to production following an accepted (and soon forgotten) failure. Even the widespread use of predictive maintenance practices and technology to reduce 'unexpected' failures, in lieu of adequate PM adherence in fact condones *acceptance rather than prevention of failures*.

A simple example.

Water (even in minute amounts) in lubricating oil is one of the major contributors of bearing failures on paper machines or any other piece of rotating equipment. Detection of this moisture (as low as .05%) in the lubricating oil for paper machine circulating oil systems is desirable preventive maintenance technology.

Yet when this maintenance prevention technology is suggested, as a preventive measure, the response is typically:

"Oh, we don't need that, we have a great predictive maintenance program that will predict those bearing failures before they fail."

In order for the deficiency to be detected by any diagnostic device the failure has already occurred, predictive maintenance helps reduce 'catastrophic' effects of premature failure.

Paper industry

The paper industry has improved productivity of its mills in a world market with bouts of serious deteriorating economic conditions in some regions.

Much of this competitiveness is a result of 'continuous improvement', either by debottlenecking or application of breakthrough technologies or practices, for example, the phasing out or upgrading of older, less productive equipment.

Appropriate maintenance actions can add to this competitiveness by focusing upon the elimination of unnecessary downtime, improving the effectiveness of the resources available and preserving existing assets. Not 'cheaper' maintenance but the 'wise' use of the maintenance resources, e.g., labor, material, knowledge and proper application of technology.

So, *cost saving* or *profit contributing*? Not necessarily the same, but you decide which is the right pursuit.