**Setting the stage**

**Why does everyone hate maintenance activity?**  Is it possible that this has to do with conversations about maintenance work that we and others in our business community hear and repeat to ourselves? What if the reason we look at maintenance the way we do is because there are disempowering conversations traveling around the organization?

The problems to which I am referring are ones concerning receptivity of the people who need to embrace TPM to make it successful (operations/production management). Many if not most of those people seem to be looking for a solution but resisting maintenance as an answer..

There are all kinds of conversations within organizations just as there are all kinds of conversations among people. Most obvious are the out-front or visible conversations on everyone’s lips which are part of the entire structure of the organization. These may be about the industry, profit levels: visible conversations are all the things about the company that people say out loud to each other.

There are also behind-the-scenes conversations. The invisible conversations are just as powerful (sometimes more so) as the visible ones, but they are significantly harder to change. They include corporate-wide assessments such as “Maintenance is wasteful.”

These behind-the-scenes conversations have tremendous impact on the conduct of maintenance activity and how personnel who do maintenance (either operations or maintenance people) are treated.

One example of a conversation is “that maintenance activity is a necessary evil”. Let’s deconstruct this. What impact does such a conversation have? How do you act if you are a necessary evil? Is this kind of conversation the basis for a healthy attitude? How do you contribute if what you are doing is a necessary evil; indeed, why would you even want to?

“The necessary evil” conversation comes from the simple fact that maintenance activity doesn’t contribute directly to the manufacture or delivery of anything. In modern parlance maintenance do not add value to the product. But modern organizations also agree that maintenance is necessary. So the conversation “necessary evil” gets created.

Like my friend Mark Goldstein told me: “more customers are being lost to businesses like yours due to equipment reliability problems, than quality issues. Today, too many companies are losing valued customers because in their rush to service increasing customer demand, their management overlooked the fact that Just-In-Time delivery depends on full plant equipment availability. Simply availability is dependent on companies maintaining full plant equipment capacity! Too many senior company executives overlooked their responsibility to strengthen their maintenance knowledge and activity. The result: Customer Loss!”

There is a problem here. On top of the existing conversation about being a necessary evil, talking about full plant capacity seems like putting lipstick on a pig. That is why these reframing exercises rarely work. All the positive thinking in the world cannot overcome the fact that the pig (maybe even an extremely attractive pig) is still a pig.

If maintenance work is an expense only, how does an expense contribute to the success of the enterprise? A good expense is a dead (zero) expense. Do you see the uphill battle implicit in changing that conversation? We are just talking about a conversation here. There are no personalities, no people involved and it is not in any way personal.

When we look at other businesses we can see this idea at work. It would be pretty crazy to look at your 40 man football team and tell the defensive players that they don’t add value to the product (value in this case being the points on the score board). The owner could save some real money on salaries without all those defensive line men (not to mention the reduction in catering costs if you don’t have to feed them).

OK, let’s admit it would be crazy to run a football team without defense. If we translate the way companies view maintenance to the way football is managed, we would want as few defensemen as possible, pay them as little as possible, maybe even be creative and make one defense squad play for 2 different teams. By the way if the team loses we would downsize the defense. Also as they moved to the top of the salary range we would scheme to get rid of them through buyouts or outright dismissal.

Plays would be handled differently because of course we wouldn’t try to design defensive strategies. If there is any defensive design it would be done by the defenders themselves without resources or support from management. From a management point of view when the ball is snapped the whole squad should run howling toward the ball (they are sure the howling would help morale).

Forget training and recruiting; just hire bodies. Especially forget respect. These folks don’t contribute toward the score on the scoreboard. If times get tough, get rid of them altogether. It seems pretty silly in football. It’s not silly in companies; unfortunately it is a way of life.

The all-too-frequent conversation of being a necessary evil greatly limits the contribution of maintenance activity to the success of the enterprise. We have to think up new conversations to take the place of the old. We have to think up new conversations that make more sense.

We could try out some new conversations right here. What if the conversation went something like this: We have different activities that support production and each contributes their specific expertise. The only issues are, “Does each activity’s specialized contribution add more to the bottom line than their cost? Is the expertise essential to the long term success and enhanced profitability of the organization?”

Let’s look at a few of the players in a typical corporation. Lawyers contribute legal expertise. Accountants contribute accounting expertise. This seems pretty simple. If you have an accounting question you ask one of their experts. Likewise if you have a process question, an environmental question, or even a question about trash, you go to the person who covers that area. The trend today is to get rid of the expertise and use outside consultants. The outcome is the same; you want the specialist’s advice to be more valuable than what you pay.

Of course at different sizes of organizations different expertise becomes important. In the 1980’s I worked on a project to computerize the fleet maintenance operation of Federal Express. At the time FedEx operated 47,000 light trucks. They bought software from COSTROL designed by Jay Butler and it was the most advanced package of its day. Yet FedEx spent the money and time to ongoing tweak the package in order to wring out a few more percent of benefits. After all a small increase in the savings for 47,000 vehicles was quite a bit of money. In the case of large companies the specialized knowledge was worth it since the potential savings was so large.

The whole issue of using experts is not black and white. Business needs may trump expertise. For example the lawyers say that such-and-such is the way to structure an acquisition deal. The president decides to structure the deal differently. As long as the decision is within the law, the lawyers will support the CEO.

We have to answer the question what does maintenance activity contributes to the success of the organization? Once we identify the contribution, are we positioned to make a maximal contribution based out our present skills, knowledge and attitudes? We also return to the question, “Does this specialized knowledge and skills contribute more to the bottom line than its cost?”

**Discussion: What is your maintenance department really experts at?**

Some departments represented in this room are experts in repairing breakdowns. This is the historical role of maintenance. They can fix just about anything. They have deep and subtle expertise in broken things, how things break and how to put them back together. And especially they know how to do that in the shortest time and with the least cost. There is no dishonor in contributing this expertise to the success of the organization. Fixing breakdowns is a real, valuable and essential expertise that is duplicated nowhere else in the company.

Consider this: most doctors are also experts in breakdowns. They troubleshoot the problem and if it is possible, propose a fix. They are done with their work (you are discharged) when the disease is gone from your system. In truth, very little of a doctor’s training or practice is concerned with health. Mostly they wrestle with and hope to cure disease. And often that’s enough; believe me when you are sick you don’t want a lecture on preventative maintenance telling you that you should have given up smoking 10 years ago. You want action now.

Yet medicine is changing, as is maintenance.

The new, improved conversation might revolve around the idea that the contribution of maintenance departments to the success of the company is their expertise in asset, machine and unit health. We know how fast and how long to run the equipment in order to maximize profit. We are the folks who know what should be done for maximum equipment life, minimizing long term cost. In short we are the high priests of the balance between production and equipment integrity.

In fact part of this is already happening. In maintenance there is a burgeoning sub-field in machinery health. Machine health sub-fields include TPM, PM, PdM, RCM. Our conference rooms are full when the focus of the talk is on detecting failure before it happens and how to extend the life of the asset. Advanced maintenance departments are becoming experts in machinery health.

Join me in Joel Levitt’s fantasy world and imagine that over the door is a sign, “Department of Equipment Health.”

What is missing for us to be able to expand into this role? There are three parts. The first part is that we continue to build expertise in machine health and push to change the focus from reactive to proactive maintenance. We continue to get really good at predicting what will occur based on historic data. Several things being discussed here at IMC are important to master including the alphabet soup: CMMS, RCM, FMEA, RCA, PM, PdM and CBM. Almost all maintenance departments are already either working on this or saying that they are working on this.

The second part of this new expertise is to master the operating modes and conditions of the equipment. We know what happens in the operation and how it is likely to impact the life of the equipment. We must be able to answer the question “What will happen if we double the capacity of the feeder” or “What if we speed up the conveyor?” This requires deep knowledge of process, additional knowledge about engineering and some knowledge of the market.

The third expertise is in accounting and economic modeling. We may need to become experts in economic models that include run-to-failure, run-with-shutdown, run-with-PM or run-with-whatever scenarios. Right now the decision to run-to-failure is made in most organizations by default without data and without expert input from the Department of Equipment Health.

We have to be able to answer: given the facts of the value of the production, the impact on the customers of missed or late shipments and the costs of the additional deterioration what direction should we go? Should we run all out or stop for maintenance? We want to be at the table when “which is the better business decision” is discussed.

We have to be able to look at the life cycle cost per part made or gallon shipped. What would be the impact of increasing production with the existing equipment? If we do this what additional maintenance will be needed and when will they be needed?

**The million dollar question: How would you start up this conversation in your company?**

If that is the conversation we want to create, how do we do it? Why is it hard to change the behavior of an organization or an individual? It is hard to change a company culture (or even a families’ culture). The reason it is difficult is that the fundamental conversations have not been understood and dealt with. These old stories and assumptions still run the show and any new cultural changes are merely smeared on top.

In order to permanently change the status of maintenance we have to begin by noticing the existing conversations. The old culture is anchored in place by structures, incentives, memory and custom. As such it takes no extra energy to keep the old culture in place. The next thing is to disassemble the structures that hold those conversations in place while at the same time creating new ones.

Right now the work is to see what conversations are going on in the company about maintenance. We have to look below the surface, turn over rocks and listen without getting mad. The next step is to see what reports, customs and incentives hold the old conversations in place. Once the field is cleared out, we are free to invent new conversations. The final step is to begin building new reports, incentives and customs to support these newer, healthier, more successful conversations.