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Achieving World Class Fleet Management Means Viewing Maintenance in a Different Light

Are you happy with the performance and cost of your fleet maintenance program?

Or is asking that question like asking "Are you happy with how much you have saved for retirement?" A construction company's operation is only as successful as its ability to provide effective bids and deliver cost-effective and productive work within the confines of that contracted amount. However, unforeseen delays and exceptional costs caused by failed equipment can delay jobs and eat away at profit margins. Certainly, equipment maintenance is not the only variable when laying a base down, building a bridge, or paving a large section of highway, but it can be an impactful one.

Having had the opportunity to work with many World Class organizations over the years as a consultant, I would like to share the common characteristics of a World Class maintenance organization. In this article, I will start by describing what constitutes good maintenance practices. In the next article, I will further explore good maintenance practices and the systems used to support those practices. In future articles, I will get into the financial impact of good maintenance practices and take a look at improvement strategies that can turn a "mediocre" maintenance operation into a World Class maintenance organization. I will also go into greater depth about how to optimize a Computerized Maintenance Management System as well as shop organization, budget management, and life cycle cost.

Starting at a high level of understanding maintenance, I have seen maintenance costs in this industry range from 15% to 40% of estimated replacement value (ERV). Best in Class (within this industry) has averaged at 8% of ERV, while World Class (across all industries) is 2.5%. Clearly, a range of 15-40% is too high for a heavy equipment fleet. That means considerable money is not hitting the bottom line, but it seems that little is known about how to reduce it outside of cutting costs. However, there are tools and techniques to drive this cost down.

Maintenance, like accounting, should follow certain recommended practices; it is a science and not an art. However, just like accounting practices at Enron or Global Crossing, sometimes things can get too creative with disastrous results.

The maintenance organization of today, like many departments, is under continued pressure to cut costs, show results, and support the mission of the organization. After all, it is a logical expectation from the business standpoint—that's why we pay them. Unfortunately, many equipment managers have had little to no

formal training in how this is done. They often see their job as "keeping it going" rather than "keeping it from failing." This inability to understand the systems of maintenance is compounded by senior management's lack of understanding as to how to provide overall oversight of these activities. Lack of metrics to measure performance as well as not knowing what knobs to turn to change that performance is a constant issue. To make matters worse, it is now getting more complicated.

In more and more cases, organizations are challenging their fleet maintenance operations by supporting the broader efforts of World Class Operations, or what many refer to as ***Operational Excellence***. I see increased use of contemporary improvement techniques like Six Sigma, Lean, and other major improvement initiatives, normally applied to manufacturing, now being used to improve heavy equipment performance. However, any operational improvement process can only be successful if it provides a "review and improve" cycle that examines the practices and systems that make up the maintenance function. It is not just what we do; it is how well we do it that counts.

In fact, regardless of who does maintenance, whether it is a specialized skilled or multi-skilled tradesperson, outsourced contractors, or a highly trained operator/mechanic, solid maintenance practices are the keystone to World Class Maintenance, which leads to World Class Operations.

According to Paul Thomlingson, in his book ***Effectiveness Maintenance***, the objectives of a good maintenance function are to:

- Support operations by keeping production equipment in good condition so that production targets can be met
- Maintain the plant facilities by keeping the plant site and its buildings, utilities, and grounds in a functional, attractive state
- Conduct engineering projects like equipment modifications, construction, installation, and relocation
- Develop a program to carry out maintenance services
- Organize the maintenance function to support the equipment maintenance needs of production while conducting essential engineering projects
- Execute maintenance programs while utilizing resources productively
- Perform quality work
- Anticipate and prepare for future work
- Achieve continued improvement by evaluating performance, taking corrective actions, and measuring progress
- Prepare for future changes by anticipating needs and organizing flexibly
- This would be in addition to conducting those proactive activities to prevent failures from occurring.

Cost-effective maintenance has its foundation in Best Maintenance Practices. Those practices include the following twelve areas:

1. Leadership and Policy Deployment
2. Organizational Structure
3. Inventory Control
4. Computerized Maintenance Management Systems
5. Preventive Maintenance
6. Predictive Maintenance
7. Planning and Scheduling
8. Work Flow
9. Financial Control
10. Operational Involvement
11. Staffing and Development
12. Continuous Improvement

Leadership and Policy Deployment

World Class Maintenance relies on superior leadership providing direction, focus and support. This usually means changing the status quo rather than preserving it. This requires management to establish a clear mission and vision supportive of the organization's direction and goals. The goal of maintenance is to enable operations to do their job in an efficient and cost productive manner by providing equipment in a reliable state. However, to do this, operations must accept some responsibility to maintain their equipment (more on this in the next article). Only senior leadership can make that happen. Leadership, in this case, is not confined to the equipment or fleet manager. It includes his/her superiors and the methods they use to provide visible and focused support for improving equipment system efficiencies.

Leadership is also responsible for establishing the policies and expectations that serve to guide maintenance and the organization in supporting maintenance activities. Once policies are developed, they must be

deployed, communicated, and monitored. Policies are the "law" of the organization, and are therefore, the foundation to what we hold dear and expect. We know that un-posted speed limits leave much to interpretation; that's why we have those little "policy reminders" posted along the side of the road. It *is* important to communicate rules and expectations clearly.

Part of the responsibility of leadership is to set the framework for maintenance to improve its effectiveness and efficiency. This may often be in the form of formal improvement efforts or programs. Improvement does not usually occur without goals and a focused plan. We always recommend a formal steering council be launched, which is made up of the key stakeholders needed to lead a major improvement drive. Management support is not optional, it is required to launch and support a significant maintenance improvement process. To accomplish that goal, many people will have to "unlearn" many of their reactionary practices in exchange for proactive ones.

A 10% reduction in maintenance costs is a 10% addition to the bottom line

Leadership should help to identify and address resource issues that could prevent improvements from taking place. This can be accomplished through auditing or other forms of monitoring to ensure successful implementation.

Organizational Structure

Maintenance organizational efficiency depends upon many interdependent variables. Some of these include: organizational structure, goals and objectives, communications processes, policies and procedures, work processes (methodologies) and employee systems. Maintenance organizations function at three major levels: organizational (functional and structural relationships), process (work activities done like PM) and job performer (individual worker).

The ineffectiveness of one level could negatively impact another level. For example, poorly defined work activities, such as the lack of maintenance planning and scheduling, can seriously hinder an individual's performance and attitude. The old adage, "Throw a good person into a bad system, the system wins every time" applies here.

It is critical to develop a process to conceive and communicate the maintenance philosophy including the refined mission, goals, direction, focus, purpose, etc. Employees (or contracted services) need to understand

the expectations of the enterprise as well as their role to support the mission of the enterprise. They need to understand the big picture and what is expected of them to achieve it.

An often-used strategy involves allocating maintenance resources closer to the actual work area such as "zone" or "field" coverage. This approach maximizes familiarity with the equipment, the operations personnel in that area, and encourages "ownership." Proper oversight by supervision needs to be conducted to ensure those resources are "gainfully" applied and are productive.

We should also examine the benefits of decentralization of maintenance to partial or full control by operations personnel. This places maintenance control directly under operational management versus traditional centralized control under an Equipment Manager. There are pros and cons to this, but it can work well with the proper plan and execution. Maximizing productivity and labor utilization is important, and various reporting relationships should always be examined to find the most optimal one for the organization.

In Part Two, I will discuss inventory control. We will also explore Computerized Maintenance Management Systems, preventive and predictive maintenance, planning and scheduling, workflow, financial control, operational involvement, staffing and development, and continuous improvement.

Article prepared by:
Preston Ingalls, President
TBR Strategies LLC