

# Improving Your Lubrication Program with 5S Principles



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**W**ith increased economic pressure for companies to keep equipment running at peak performance and endurance, ensuring high-standard lubrication practices is critical to capturing hidden profit potential. Applying 5S principles (Sort, Set in order, Shine, Standardize, and Sustain) to your program can improve efficiency, productivity, safety, and profitability.

When determining how to create sustainable efficiencies in a lubrication program, we don't need to reinvent the wheel (or the process to make it). Instead, we can learn from concepts that have been proven over several decades and adopt and amend them to overcome typical challenges in our lubrication programs.

## Manufacturing Process Improvements

In the manufacturing processes of the 21st century, the Toyota Production System (TPS) methods are well renowned for eliminating waste. From the more recognized JIT, Lean, and 5S principles to Value-Stream Mapping, Kanban, and SMED (single minute exchange of dies), the Toyota processes have been widely recognized for improving manufacturing around the globe.

Many people often fail to realize the roots of TPS are connected to American soil. When Toyota began producing cars in the 1930s, its foundation for continual improvement and waste elimination was Henry Ford's principles that began two decades prior. Looking further back, Ford gave much credit to Benjamin Franklin and his writings in *Poor Richard's Almanac* and *The Way to Wealth*. So while Toyota's Taiichi Ohno and Shigeo Shingo, have fairly been given the lion's share of the credit for the advancements of the TPS system, the work is a culmination that began with two great Americans.

## Lubrication: Applying 5S Principles

Instead of covering all aspects of lubrication, this article focuses on select areas that are often weak spots in lubrication programs and utilizes 5S principles for our improvement strategy.

While conducting lubrication program assessments, I consistently see weaknesses in efficiency creation, sustainability, general organization, and cleanliness/order. So let's discuss how Sorting, Setting in Order, Shining, Standardizing, and Sustaining can be used to correct these weaknesses.

Often when we attack one weakness, the overlaps mean we inherently will be working on others. That's why I prefer to focus first on gaining efficiency, because that can buy a little extra time in other areas and make teammates less burdened with these "extra methods."

To gain efficiency in our lubrication program, we often need first to eliminate counterproductive tools (**Sort**). By this, I mean remove the tools that enable less-than-preferred practices. Funnels, open-faced top-up containers, hand pumps (especially with no means of filtration), dipsticks, and inadequate OEM breathers should all be discarded. Next, we go about getting the right things in place (**Set in order**.) For lubrication programs, this primarily means to get complete control on lubricant tagging and identification (on all critical control points), optimize equipment setups, and redesign the lube room.

To simplify the view of these changes, I often like to say that the equipment should be set up to "make right easy." For example, a stamping press that needs periodic oil additions and/or top-ups can be outfitted with quick connects at the fill and drain ports so we can efficiently add and/or filter oil while not opening the system

to atmosphere. The ideal setup transitions from slow and bad practice of invasive oil additions to quicker oil additions with less contamination ingress. Another example of “making right easy” would be the utilization of mini-mess sample ports in lieu of drop-tube sampling practices.

Shine, Standardize, and Systemize are particular 5S methods to help our initial decisions and actions endure the test of time.

To continually **Shine** (or clean) an area both exemplifies and creates pride in the program. For a lubrication program, this may be the only obvious visualization of the professionalism of your group, at least for those looking from the perimeter of your efforts.

When we **Standardize** processes, procedures, and decisions, the gain in consistency helps us avoid mistakes, determine failure causes, record and capitalize on our knowledge, and make future decisions with solid information. Be sure to provide your team with specific details regarding common tasks like re-grease methods and calculations, oil dispensing, taking samples, PM route notes, etc. Pay careful attention when using CBM technologies to make decisions. The old adage, “garbage in, garbage out,” really hits home with oil analysis. Inconsistencies in pulling oil samples, and other data-based decisions, can easily lead to a decision based on invalid data.

A major benefit of standardizing is to avoid mistakes, in TPS this is known as poka-yoke [poka joke]. Poka-yoke is simply a method or mechanism that either prevents, corrects, or quickly draws attention to human mistakes. In fact, the translation is “avoid mistakes.” Common ways to use this method in a lubrication program include color and shape-coded lubricant tagging on all critical control points, PMs with binary check-off completion boxes, and labeling sample bottles with complete machine identification before taking on the sampling route. To take error-proofing to the next level in lubricant handling, consider utilizing different types and/or sizes of connections. Perhaps use ISO B one

inch connections for your gear oil and ISO A three quarter inch connections for hydraulic oil, for example. This way, using the wrong oil would be prohibitively difficult.

To **Sustain** means maintaining and reviewing standards. Once the previous four S's have been established, maintain focus on these new ways, refuse regression to lesser practices, and actively pursue continual improvement to your processes. The likeliness of sustaining a lubrication program is dependent on both the ‘buy-in’ and the knowledge level of your team. To gain improvement recommendations from those doing the daily work, the team needs to be knowledgeable, both technically and about goals and metrics their efforts influence. For these reasons, the best lubrication programs are typically those with the most knowledge from top to bottom.

As you know, some metrics to consider in a lubrication program include: OEE, percentage uptime, percentage of oil analysis reports within targets, MTTR, and PM on-time compliance percentage. Metrics allow us to easily recognize achievement and notice weaknesses that need improvement. This is a good area to have some creativity and base posted metrics on what drives desired results.

Fortunately, the first steps of the 5S program (Sort and Set in order), tend to bring out the pride and heartfelt ownership of a program. With such a level of ownership in place, continuous improvement becomes more natural. During times of transition, having already documented decisions, actions, and the reasons for them will greatly increase the likeliness those efforts endure the test of time.

## Summary

Implementing 5S principles will increase your efficiency, productivity, profitability, and pride in the program. And you never know, it may even lead to the Shingo Prize for Operational Excellence, the premier award for operational excellence in North America.

A great mentor told me many years ago, “Because staying the same is too boring, you’re either getting better or you’re getting worse.” Which direction are you taking your lubrication program? **S**

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