Sometimes, It's the Little Things

Many of today's businesses, facilities, and plants have become involved with (sometimes obsessed with) "improvement programs." And it seems as if many of these programs have come and gone over the decades only to return with a morphed identity or a new name. Considerable time is spent preparing the organization to address their performance problems using the tools and terminology of a "new program" that is going to revolutionize their business. All the while, many of the causes of poor equipment performance and equipment downtime are overlooked. Often, they are not glamorous enough to rate the radar screen of the latest improvement program. No, I am not beating up on Six Sigma or Lean this or Lean that. Often times, these commonly used improvement methods are focused on "higher level" problem solving.

What I am truly concerned about is that many of today's equipment-related losses are truly preventable using a mix of common sense, time, minimal resources, and experienced coaching. Let's call these the fundamentals, the basics for addressing equipment performance losses. Facilities maintenance resources are often spent addressing chronic problems in a reactive manner leading to higher and higher maintenance costs. Manufacturing flow interruptions are most often caused by equipment-related losses (downtime, speed, and yield) in an equipment-intensive operation. Improvement programs coupled with reactive equipment repairs can also put an added burden on already limited maintenance resources. Sustainable gains can be extremely difficult to achieve. Here are a few case examples from different companies of how **the little things can make a big difference**.

Case Example One

The plant leadership and floor personnel were frustrated by equipment performance despite their continuing heroic abilities to meet production quotas. The target of their frustration was an integrated process of about 10 machine sections, which was a constraint in the manufacturing process closest to the customer and the most troublesome processing line in the department. Some of the products that ran on the line would jam or not feed right. At times, the case packer would jam and destroy packing boxes. Products would fall out of the machine and jam up the chains and sprockets. Not all of the PLC control screens used in the operation of the line had a stop button displayed, causing time-consuming delays returning to other screens to shut the machine off during jams or other problems. Because of this PLC difficulty, the emergency stop button was used frequently to stop the machine during jams, causing additional out-of-cycle delays and other problems.

The net result of all of these **little things** was lost production, damaged product, lower production yield, high maintenance trouble calls, and lots and lots of fixing and tweaking just to make it run right for a short time. All of the major problems observed, recorded in the production downtime tracking, and written in the maintenance logs targeted only two of the 10 sections of the processing line. The solutions were straightforward.

Case Example Two

A relatively new automated cutting and assembly process would not cut properly, causing quality defects or destroying product. At times, these improper cuts would cause damage to the shear section by exerting too much pressure in the wrong direction. Shear blade screws were found to be loose and worn out, unable to hold torque. An oil film trapped behind the blade created a hydraulic pressure zone, preventing the blade from properly seating metal to metal. Long runs of

consistent cuts were rarely possible. These seemingly **little things** contributed to extensive production delays, lost yield, and increased cost per unit produced.

In both of these case examples, **basic conditions** for proper operation were not being met. Until the basic conditions were met, the equipment and the processing lines would not be reliable, no matter what the "improvement program" was. No matter how good the 5S workplace organization and orderliness program… no matter how good the Six Sigma process… no matter how good the operator-performed maintenance was… until these basic conditions were established and sustained, the equipment will be labeled problematic. And problematic machines, equipment, and processes generate lower output at higher costs resulting in lower revenue, and more plant floor personnel frustration.

Case Example Three
Product jam-ups were commonplace on the discharge side of a high-speed manufacturing line. These jams caused line shutdowns, lost product yield, costly quality problems that had to be sorted out, and delivery delays. There were no less that 20 individual adjustments on the discharge mechanism to get everything aligned for proper high-speed delivery. To avoid jam-ups, the operators would often run the high-speed line slower. (So, what good is a high-speed line if you have to run it slower?) Another seldom-used, high-speed line within 50 feet of the problematic line had half as many adjustable elements. It was simpler, and by operators' testimony, more trouble free. When asked, "Why does the other line have a simpler discharge mechanism than this one?" the answer was, "I don't know. It's always been that way." Given a mechanic, a few wrenches, a couple of C-clamps, and minimal discussion, the simpler unit was moved to the problematic line for a trial. Production records were set! Now, the simpler delivery element is common to several high-speed lines instead of just the seldom-used line.

Case Example Four
The highest repeat maintenance trouble calls in the facility were on five equipment items. Upon analysis, we discovered that these five items were identical, just installed in different locations. The major problems among the five were the same. A root cause analysis pointed out simple solutions related to proper lubrication, correct bearings for the application, and drive belt tension adjustments. By addressing the root causes of the chronic problems, the maintenance trouble calls ceased, freeing up maintenance resources for more preventive maintenance tasks.

Sometimes, it's the little things that CAUSE big problems. And sometimes it's the little things that we can do that will ELIMINATE big problems. In each of the case examples cited above, there were no comprehensive preventive maintenance tasks that addressed the problematic sections of the equipment. Nor was there sufficient time allowed to identify the causes of the **little problems.** Shift production output was much more important than taking time to properly address the causes, and fixing things fast became the goal. In these cases, the maintenance planner became the maintenance dispatcher (no time for planning or scheduling).

The good news, in each of these cases, management eventually bit the bullet and allowed sufficient planned shutdown time to solve the problems. In the production operations, a truly cross-functional team was formed in each case comprised of mechanics, electricians, operators, supervisors, technicians and others. Over several days, they learned the basics of equipment care and upkeep, dug into their equipment data, and searched for the root causes of the chronic problems with their equipment. They developed, tried, and refined solutions to the problems in a few hours or less. They have set production records and now achieve sustainable, consistent

production goals. More importantly, they all learned that problems can be eliminated by taking the time to address the causes—the foundations for a new work culture—a pocket of excellence in action.

Right the First Time, Every Time

After more than 15 years studying NASCAR race shops, talking with their leaders and crews, and studying race team pit crew methods, I see over and over again the basic principles that make them competitive in the pursuit of 100-percent reliability: **Go slow to go fast**, **do it right the first time**, and **speed is a result of doing things right**. The thought here is that it takes longer to do it over again than it would take to do it right to begin with. And if going slow to make sure that the task is done correctly is necessary, so be it because the consequences of not doing things right can be costly and often times dangerous. Then, once you figure out how to do it right consistently, figure out how to make it better and faster; but never compromise what is right for the sake of speeding things up.

Here is another principle I have learned from NASCAR teams: The more complicated the mechanism, the more chance for problems and the more variables you have to control—whether equipment-related or shop productivity management related. These race teams know that "simpler is better" when trying to solve problems and improve performance. I call that **world-class simplicity**. They also make extensive use of detailed checklists in all stages of building and setting up a racecar to communicate and to make sure everything gets done right and on time—a standard practice in all competitive race shops.

Sometimes, it's the little things we should focus on in our operations to eliminate problems, free up maintenance resources, and reduce costs. So, what's wrong with taking the time to look at those pesky **little things** that keep cropping up over and over again and taking the time to engage those closest to the problems to figure out what causes them? What's wrong with providing some higher-level equipment troubleshooting expertise in the form of an engineer, a process technician, a mechanic, or a consultant to work with those closest to the problems? What's wrong with looking for the simple solutions to seemingly complex problems? And what's wrong with learning along the way to solving the problems—proper operation, proper maintenance proper setup, proper adjustment—to sustain the gains?

Sometimes, it's the little things that get overlooked because we are so intently focused on new programs to implement or major activities to improve plant performance that we forget about the little things that affect the necessary basic conditions for equipment performance and reliability improvement. The little things, if addressed, can yield huge gains not only in output and lower costs but also in developing a new work culture of **teamwork focused on common goals**. And that is a prescription for success in today's increasingly competitive marketplace—whether competing for sales or competing for top-skilled talent in an era of skills shortages.

Robert M. Williamson
Strategic Work Systems, Inc.
PO Box 70
Columbus, NC 28722
RobertMW2@cs.com