

Passion for Performance

Everyone wants a silver bullet to address the competitive environment pressuring profits and ultimately, jobs in North America. Having transitioned from a Controls Engineer to a Maintenance Manager to an Operations Manager, I can attest to the quest for that silver bullet. Reality is that few levers exist for you to pull that will radically improve the profitability of your organization. With global markets and price supports, commodity costs are generally fixed. The same applies to prices received for your company's products or services. Labor markets and costs are somewhat fixed as well. With the exception of fuel surcharges, logistics costs are generally set. As a Maintenance or Operations Manager, your span of control is bound by the four walls of your site. With energy prices, some opportunities exist for cost reduction in pursuing energy audits and savings activities. The largest opportunity is focusing your efforts on improving equipment effectiveness by targeting the 11 major losses. In targeting these losses, it's not uncommon to return more than 400% and improve employee engagement in the process. The 11 losses are divided into 4 major categories of planned shutdown, downtime, performance-efficiency, and quality losses.

Planned shutdown losses: This category is not often considered a loss and can be a hidden opportunity to produce product.

Loss 1: Lost capacity due to production not being scheduled, equipment shutoff for breaks, and shift changes.

The plant may only run Monday through Friday, leaving Saturday and Sunday available. In a 3 shift operation, the third shift may be dedicated for maintenance. At one site, the operators in an area would shut down baggers as they went to break. Enforcing a break schedule to ensure every machine was covered during breaks solved the loss. In another area, the ability existed to automatically trend the bagger performance. Thirty minutes before every shift change, the bagger would be shut off to change the code dates. The baggers would not restart until the next shift came onto the floor and got the handoff from the previous shift. Bringing a heightened awareness by posting the trends solved this loss.

Loss 2: Capacity lost to planned maintenance.

Does it take an entire shift every day to do planned maintenance? Proper planning and scheduling procedures with audit and continuous improvement loops are utilized to address this loss. The Maintenance Supervisor should target 65% of their time on the floor ensuring the jobs are moving along and removing any obstacles. Take NASCAR in 1950, a pit stop took nearly 4 minutes. Today, the pit crew takes less than 20 seconds to put the car back on the track.

Downtime loss includes the following areas of loss:

Loss 3: The obvious equipment failures or breakdowns. If your not tracking downtime or don't believe the numbers, focus on the major events. To start, document the critical events that lose 2 hours or more. Create a simple root cause analysis form to track them. Empower a cross-functional team of maintenance and operations to determine the root cause and not blame. Action the findings to ensure the event never occurs again.

Loss 4: The setup and changeover to change from one product or lot to another. Empower your employees to develop new methods that reduce these times. In one area, reducing the time required for Clean IPlace (CIP) cycles yielded the same cleaning levels but reduced the overall changeover time by over 1 hour.

Loss 5: The time required to make the tool changes and part changes. Tools like Single Minute Exchange of Die (SMED) break down these changeovers into single steps. In the changeover on a flow wrapping system, there were 247 steps identified requiring 2.5 hours. After initiating SMED, the changeover was reduced to 15 steps and the time to 30 minutes. The approaches used in NASCAR are very similar.

Loss 6: The startup and shutdown of equipment and processes. Develop startup and shutdown sequences everyone must follow based on best practices from equipment operators. Create a chart that sequences every task on the startup/ shutdown. Look for opportunities for parallel tasks. Empower a maintenance and operations team to reduce the amount of time required for each sequence. Determine the feasibility of automating all or portions of the events in the control system.

Performance-efficiency losses are losses where equipment speed, output, or capacity is not met.

Loss 7: Equipment minor stops such as paper tearing out of wrapper or film not tracking correctly can add up over time. These machine hiccups are not generally tracked but when totaled are amazing. Minor stops of 6 minutes each shift occurring over a 3 shift, 5 day operation add up to 75 hours lost in a 50 week year. Fix this to return almost 10 shifts of capacity for one machine alone.

Loss 8: Lower output (productivity) from equipment that is operated at less than design speed or cycle times. With age and wear, machines tend to run slower. A 10% loss is a common occurrence. Operators run the equipment slower, compensating in the belief of reducing the failures or minor stops. Lack of communications can play a role with this type loss. Maintenance slowed a case packer until a repair was made. After the repair was complete, operators were running the equipment at the lower rate weeks later.

Quality losses make up the final category. Quality products can't be made from poorly maintained equipment nor can quality be maintained from equipment that is consistently out of spec. If the equipment is running at design rate and is available on demand, yet not producing quality product, it's just making waste at rate. Not only do you lose capacity and labor, you lose the material costs.

Loss 9: The losses generated in waste or scrap is straightforward. It's not just waste, it is lost capacity.

Loss 10: Product that is defective or not saleable is a major loss. Even if it can be reworked or recycled, it costs valuable labor and capacity.

Loss 11: Startups and shutdowns create yield or transition losses. During the startup or shutdown, quality product is not produced and is wasted. Solutions identified in Loss 6 above can be utilized to reduce the ramp up or down losses.

Armed with this knowledge, challenge yourself by walking around your site and determine where the opportunities for improvement are available. You might be surprised when flipping over the unturned stones. Stop these losses by developing a

program of maintenance for your equipment to assure capacity. Require support from all groups involved with the daily use of the equipment and solicit input from employees at all levels within your company. Using these engaged employees, create a passion for performance and provide quantifiable results.

References:

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