

Getting a Grip of things @ Sugar Australia



In their latest cycle of improvement activity, **Sugar Australia's Croydon** site in Victoria, have implemented further developments in striving for Operations Excellence.

Their cycle of improvement activity included teams such as:

- Macro Focused Equipment & Process Improvement (FE&PI) Team on the Behn & Bates 25 kg bag Industrial Packing Line;
- Mini Micro New Equipment Management (NEM) Team for the new Rovema Retail Pack Machine; and
- Frontline Problem Solving Teams focused on the:
 - Excessively noisy Industrial Rotary Valve (3.20) after the sifter; and
 - Give away of sugar at the #2 Stick Machine.

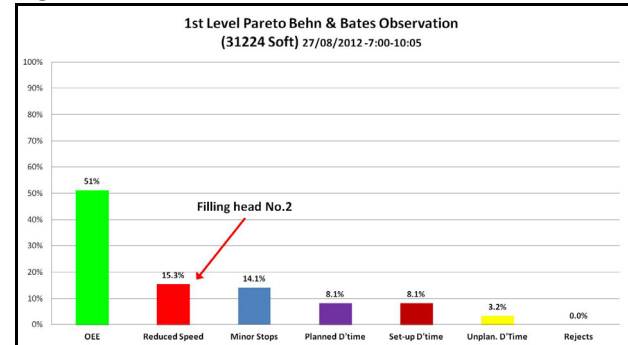
"That's not my Bag Baby!"

The Macro FE&PI Behn & Bates Team "*That's not my Bag Baby!*" was comprised of:

- Mandip Signh – Team Leader;
- Richard Callow – Operator;
- Brijesh Patel – Operator;
- Terry Thorpe – Maintenance Fitter;
- Claire Ennever – Quality Administrator; and
- Syed Ehsan – Process Engineer.

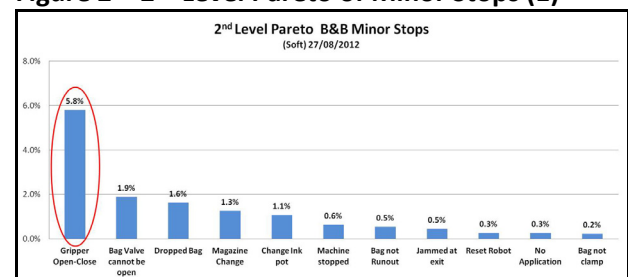
Their mandate was to identify all the Overall Equipment Effectiveness (OEE) losses and improve the % OEE from 58% to 67%. The team first conducted an initial 3 hour OEE observation and identified two main losses, 15% Reduced Speed loss and 14% Minor Stops (refer to Figure 1).

Figure 1 – 1st Level Pareto of OEE Observation (1)



The Reduced Speed (Rate loss) was due to the second filling head of the Behn & Bates being starved of product (Soft Icing Sugar). The 2nd Level Pareto chart of Minor Stops in Figure 2, identifies that 5.8% loss of OEE was due to the "*Gripper Open / Close*" fault. This problem occurred 24 times in the 3 hour observation, which meant that every 7.5 minutes on average the operator had to open the machine, pick up the bag, close and reset the machine (which took around 30 seconds).

Figure 2 – 2nd Level Pareto of Minor Stops (1)



Investigation of this problem had found that a small nut had become loose on the Gripper assembly affecting the ability of the Gripper to hold the empty bag during the transfer to the Filling head, hence dropping the bag and stopping the machine. The team came up with the simple improvement of replacing the existing nuts with nylon insert lock nuts to avoid this problem reoccurring.

The second observation was conducted some months later to validate the improvements (refer to Figure 3 and 4). As you can see the Minor Stops loss had reduced from 14.1% to 2.8%, but the Reduced Speed loss had increased from 15.3% to 21.6%. **Why had this occurred?**

Figure 3 – 1st Level Pareto of OEE Observation (2)

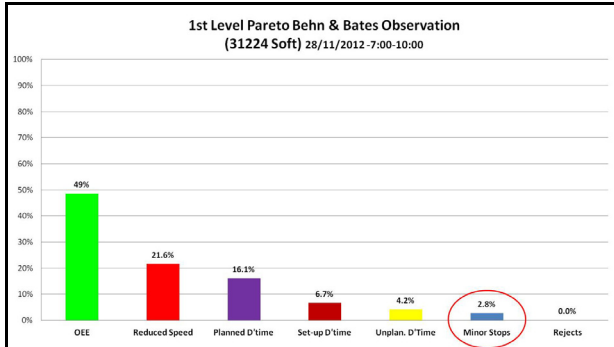
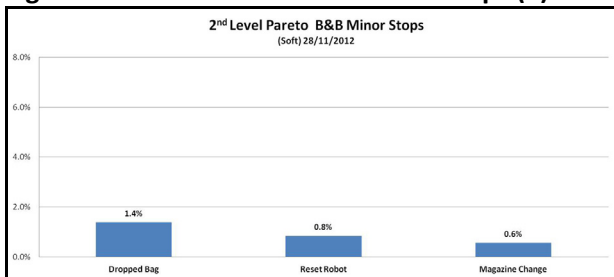


Figure 4 – 2nd Level Pareto of Minor Stops (2)



The team concluded that while the machine was stopping so regularly, it was masking the true impact of the second filling head being starved. As the Behn & Bates machine regularly stopped, the blending process and transfer to hoppers continued to run.

Solving the problem of the second Filling head being starved was going to be difficult. The team identified that there were two key issues:

1. The blending time was too long; and
2. The design of the product transfer from the blender to the Fill Hoopers was bias to Filler Head 1.

The team decided to focus on reducing the blending time, rather than redesigning the Fill Hopper, which was a big enough issue to have a separate Cross-functional team appointed.

So the team started to conduct trials on reducing the blend time while not effecting the product specification. They were confident that the blend time could be reduced by 25% and thus reduce the rate loss. However, the trials will take some time as samples need to be analysed externally.

CTPM congratulates all the improvement teams in this cycle on an excellent effort and result.

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