

Coopers roll the Dice on their Bottling Line!

Due to the replacement of machines and the continual introduction of new products to the Bottling Line, the Site Leadership Team at **Coopers Brewery, Regency Park SA**, has been committed to conducting a Macro Focused Equipment and Process Improvement (FE&PI) Team in the first improvement cycle of each year to update the Overall Equipment Effectiveness (OEE) Loss Analysis so to continually improve the Bottling Line's performance.

Known as the **"Box & Dice"** team, their mandate was to improve Bottling Line %OEE for:

- Ales and Stouts (375ml) OEE 80% (2200 cartons/hr); and
- Bright OEE 70% (1875 cartons/hr).



As always the team commenced by analysing the current situation, which involved for the first time using the new **MES** (Manufacturing Execution System) data to help conduct the OEE Loss Analysis and identify opportunities to improve the lines performance. The MES OEE Pareto Loss charts and data, highlighted that the team needed to focus on the Rinser-Filler-Crowner (RFC) and the Innoket Labeller.

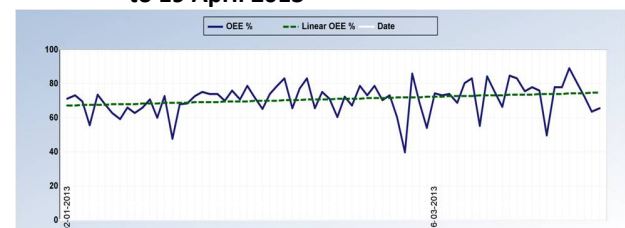
To develop a better understanding of OEE losses on these two machines the team conducted a 4-hour OEE Line Observation. An Operator Survey was also conducted to ensure all the Bottling Line Operators on both shifts had a say on what needed to be improved.

From the above analysis the team focused on 13 improvement projects which included:

- Detect when a carton has turned off line by installing two new sensors;
- Eliminate Crowns jamming with new machine;
- Stop the Speed Loss from RFC machine from ramping up and down;
- Increase run out speed on Innoket Labeller machine from 25,000bpm (bottles per minute) to 35,000bpm;
- Improve and where possible remove the 90° Conveyor Bends to also stop bottles from falling;
- Replace Neck Label Sensor with Fibre Optic Sensor; and
- Optimise mass flow to Filler Conveyor Speed (ongoing).

As a result of the above and other improvements, the Bottling Line %OEE for Ales and Stouts (375ml) was **treanding to 80%** as per the MES chart seen in Figure 1 below.

Figure 1: %OEE Chart – Ales and Stouts (375ml) 2 Jan to 19 April 2013



The team concluded during the cycle that more Line OEE Observations were needed for each different Bright Beer product to fully understand all the problems and losses. Therefore the team recommended to the Site Leadership Team that a Micro FE&PI Team on Bright Beer be conducted in the next improvement cycle.

As recommended by the **"Box & Dice"** Bottling Line team, a Micro FE&PI Team was needed to focus on problems and losses on the Bottling Line

when running Bright Beer products. Hence ***“The Bright Sparks”*** team was formed.

Their mandate was to:

- Identify all equipment and process losses and wastes for the Bottling Line when running Bright Beer; and
- Improve Bright Beer %OEE to 70%.

Once again using the MES data and OEE Line Observations for 3 main bright beer products, the team identified and implemented the following improvements:

De-palletiser Machine

- Re-program layer sweep to stop the end bottle from occasionally falling over.

RFC Machine

- Change bowl level fluctuations on Bright Beer tank;
- Overhaul of Rinser grippers;
- Jetters not reaching temperature on start up;
- Bottle stop has to be manually operated after a Pasteuriser stops to restart the line (still under investigation); and
- Level Singuliser conveyor and replace wear strips (to stop the odd bottle from falling).

Pasteuriser Machine

- Fallen bottles on out-feed (replace dead plate with new system in shut down).

Topmatic Labeller Machine

- Re-design of bottle in-feed worm gearbox to accommodate 330ml bottle (trialling new design with square drive shaft);
- Improve Rejector reliability (under investigation); and
- Reduce glue splashing around label pallet station.

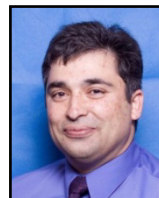
Packer Machine

- Replace worn cams to stop packs jumping grouping pins.

A number of improvements were being installed during the August shut down. Therefore the team is planning to conduct more OEE Line Observations to ensure the improvements have been successful and conduct their final presentation in the first half of the next improvement cycle.

CTPM congratulate the Improvement Teams at Coopers on another successful cycle with great results.

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