

Strong start for the Sugar Fugals



The end of 2012 brought about the completion of Sugar Australia – Yarraville's fourteenth cycle of improvement with 12 teams successfully completing their Improvement Activities. A cycle being a 12 – 14 week program where teams come together for ½ hour meetings and 1½ hour activity each week to help improve the current state of their workplace, equipment and processes.

One of these successful teams was the **"The Fugalmisers"** (as seen in Figure 1) a Refinery Cross-functional Improvement Team. The mandate of the team was to optimise fugal settings for each grade of massecuite, while maximising throughput without compromising quality. They also were to then standardise the approved settings across all shifts.

Figure 1: "The Fugalmisers"



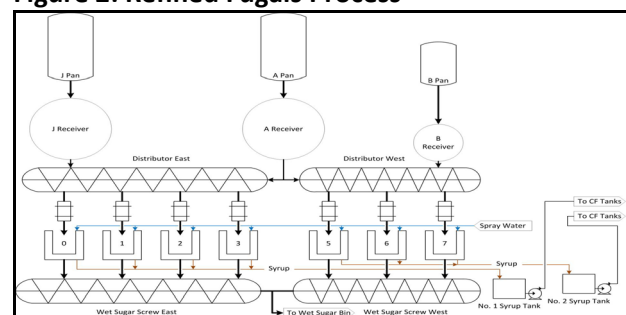
L to R: Adam Ericson, Daniel Grima, Robert Radulj, Fery Halim, Janeven Runghen, Sam Spiliopoulos and Charles Garrow

Before we discuss the team's activity and improvements, let's first briefly explain the refined fugalging process. Prior to the "Fugal" process, clear liquid sugar is concentrated by boiling it in a vacuum pan. It is then seeded with fine sugar crystals which are grown to the required size by adding more liquor.

When the crystals are large enough, the crystals and syrup are discharged from the pan. This mixture of crystals and syrup is called a "massecuite". The massecuite is then

processed through large electric centrifuges called centrifugals where the crystals are separated from the syrup (refer to Figure 2). It is in this process the team was mandated to optimise and then standardise.

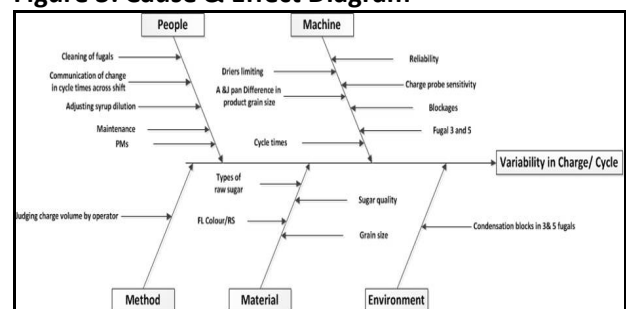
Figure 2: Refined Fugals Process



As always the team first carried out the most critical step in the Cross-functional Improvement Activity, **Step 3 - Analyse Current Situation**. It includes reviewing relevant production data / information and establishing baseline measures to quantify any improvements. The team confirmed that at 95% utilisation of all fugals, the average charge / cycle theoretically can be 1.15 tonnes.

This output was not able to be consistently achieved, so the team conducted a brain storming session to identify all the possible causes of why this was happening. They then arranged all the causes into a Cause & Effect Diagram as shown in Figure 3.

Figure 3: Cause & Effect Diagram



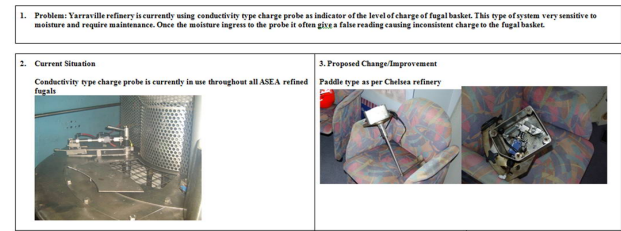
After some further investigation and analysis, the team identified that there were four main causes:

- Charge probe sensitivity;
- Extended cycle times;
- Judging charge volume by operator; and
- Fugal cleaning.

Currently the Fugals have a conductivity type of charge probe that indicates the level of massecuite in the fugal basket. This type of system is very sensitive to moisture and requires a lot of maintenance. Once the moisture ingresses into the probe, it often gives a false reading causing inconsistent charges (mainly under filling of the basket).

The team has sourced a different type of probe, “Paddle” type as used by the Chelsea Refinery in New Zealand to help solve the problem (refer to Figure 4).

Figure 4: Charge Probe Improvement



The team has also identified other improvements for achieving standard cycle times. Due to the cycle finishing very close to Christmas they were not able to complete all the improvements identified. Therefore, **“The Fugalmisers”** will continue their great work in the next cycle early in 2013.

CTPM congratulates the **“The Fugalmisers”** team on their achievements so far and wishes them continued success in cycle fifteen.

For further information please contact:



Larry Mazza

Director

Phone: 0408 743 214

Head Office: +61 2 4226 6184

Website: www.ctpm.org.au