Job Instruction – Manufacturing, Food Industry

Train staff quickly to use equipment effectively

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Oscar Roche, November 2013

Brief

Variation in standard work was the root cause for considerable losses in the 2kg filling and packing line Performance (the "P" of Overall Equipment Effectiveness, OEE). Increased sales demand meant production must increase. The required throughput increase could come from existing equipment and process.

The above was a typical situation in manufacturing. Before spending capital on new equipment, maximum Return On Investment from existing equipment was gained by building the skills of the operators. Supervisors and Senior Operators, with Production Management drive and support, were able to reduce filler downtime via building adherence to operator standard work.

This case study details how Training Within Industry (TWI) Job Instruction (JI) contributed to the "P" (Performance) of the 2kg filling and packing line increase from <60% in December 2012 to an average of 82% by July 2013.

Challenges included:

- *The intermittent skill requirement of writing the Job Instruction Breakdowns which created resource issues.*
- *The JI 4-Step Method of delivery was an investment in time which was not always readily prioritised for by all Supervisors.*

INTRODUCTION

Approximately $8M in capital was spent on the Cream Cheese production and packaging equipment upgrade. At the time of the upgrade planning, senior site management recognised the importance of investing in the people (operators and leaders) as well as equipment.

Toward the end of 2012 the focus was on the 2kg packing line due to increased sales in 2kg. It was clear that the increased sales demand could be met via improved line performance.

CONTENT

The pattern for improvement of performance via reduced variation in standard work was straightforward:

- Review downtime data. Identify points where downtime root cause was variation in standard work.
- Develop "training blocks" - training timetable, Job Instruction Breakdowns (JIBs).
- Work through training timetables applying the JI 4-Step method to each operational task.

Progress was monitored via:

- Weekly, review of downtime data to verify actions were having the desired impact.
- Daily, 1.15pm review of "P", considering "variation from standard work" issues.

The downtime data immediately showed a need to focus on the Vertical Form Fill and Seal filling operation and Bag in Box operation, both operations done by one machine. More particularly the initial focus was on set up tasks and then adjustment tasks in both operations.

"Training blocks" were established for each group of tasks within each operation, again priority driven by the downtime data. Each training block consisted of:

- A Training Timetable.
- In some cases a "knowledge block".
- Job Instruction Breakdowns (hyperlinked to the Training Timetable), 1 per task.
- A list of operators requiring training and dates by which their training in the task was to be completed.
- Finally, the skilled JI Instructor who would deliver the training.

A system of monitoring of progress and mentoring the JI Instructors was established which was driven by Rob Sarkady (Assistant Production Manager) and reviewed weekly by myself, Rob and the Production Manager.

In December 2012, the start of exercise, the Performance of the 2kg filling and packing line was < 60%. A target was set of P=75% by September 30 2013. By mid July the average was 82%, the September target was already achieved. A new target of P = 90% was set.

Possible the most notable thing that occurred was the operators job became less chaotic. Kevin (operator) was asked by me "what have you done in the last 10 minutes?" "Nothing, the lines run beautifully. Isn't that the point?".

The approach confirmed that JI is a tool that is very successful in addressing variation in standard work. It requires a reasonable time investment in the actual delivery of the skill training by the JI Instructor. It thus needs to be "lead" by data that shows where it will make a difference. The development of the system in "training blocks" allowed limited resources to be focussed in small pockets which then enabled maximum results.

Rob Sarkady and Troy Guest (Production Manager at the time) are willing to discuss this case directly. Both roles have been made easier in terms of the 2kg line as production targets are now more frequently met. The same JI approach is now being applied in outpack where a lot of casual staff work.

CONCLUSION

JI improved operator skills in applying standard work, particularly on the Form, Fill, Seal and Bag In Box machine. OEE results reflected this improvement. JI is being extended on "as needs" basis, "training block" by "training block". I.e. where quality or productivity failure is caused by variation in standard work.