

Knowledge and Skill Development in Operations

Only the skill adds value in a business ...

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Brief

Operational “standard work” is the bedrock of any business. It is that work that creates value, a product or service that can be sold. Given this, how effectively and efficiently you develop the capability of the “doers” in doing the work is surely critical to any business. Too longer time creates cost, as does learning via mistakes.

If you are a leader at any level in an operation (Supervisor through to Site Manager) then the amount of “firefighting” (or follow up from firefighting) you do daily will be impacted by your system of capability development.

Gannon (contract packer of UHT beverage products in Vietnam), TetraPak and Visual Workplace Australasia combined in developing an operator training program with goals of:

- *Reducing training time (zero to competent) for a “brick operator” from 6 months to 3 months.*
- *Improving First Time Quality (FTQ) and productivity, reducing packaging waste.*

Staff knowledge on its own is of no value at all to a business. When a person uses knowledge to apply a skill, do work correctly, it is then that that person is being of value to the operation. The ability to apply the skill is the end goal, the knowledge is something required along the way.

In many organisations, knowledge is gained that is never used. Knowledge needs to be sifted then provided when needed with the skills requirement in mind.

Source for information: [Gannon Vietnam, Bin Hoa City, Vietnam.](#)

INTRODUCTION

Training of brick and DE (Downstream Equipment) operators was via a buddy system with no set path. The training path chosen varied and was at the discretion of the trainer (who was untrained as a "trainer"). The skills training material in some cases didn't exist. The knowledge based material was contained within documents supplied by TetraPak (and usually delivered by TetraPak). The training system produced variable results with varying levels of skills and knowledge, with no objective means of determining skill and knowledge level. The varying levels of skills and knowledge resulted in FTQ losses, productivity losses, packaging losses and caused Tetra Pak "avoidable reactive troubleshooting time". Other points were:

- Skills and knowledge training were seen to be independent, and they were delivered in random order.
- Accepted training time for a brick operator (zero to competent) was 6 months.
- There was a higher than desirable operator turnover.
- It was not always clear that the customer in the "training system" was first and foremost the operator.
- The "Need To Knows" were in some cases ambiguous and are sometimes "hard to apply" practically for an operator.

The Gannon Factory Manager, Ian Haberfield, wanted to strive to achieve sustained improvement in the capability of their people in a shorter time.

CONTENT

Skills matrixes were designed for 3 roles – QC, operator and engineer. "Knowledge Blocks" were created for each of the 3 roles, along with "visual standard work" for each task within each role. "Visual Key Points" strengthened the standard work. A Master Development Plan (MDP) was created for each role. This was a development pathway starting with basic tasks for each role. The Knowledge Blocks were introduced just before they were needed in order for a skill to be gained.

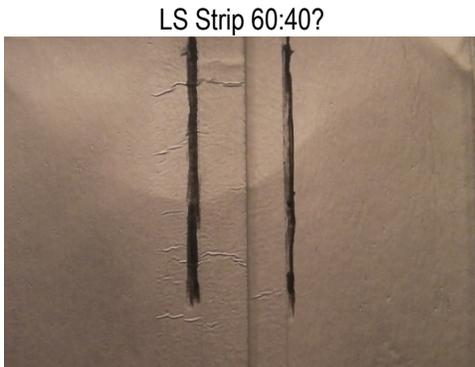
All of the content (knowledge blocks, visual standard work, MDP's, development process, implementation processes) were all captured via 4TQToolkit software (software available at Gannon) to create the Visual Training System (VTS as it was known).

The timing of knowledge delivery was one of the key achievements. Previously knowledge was delivered over 1 to 2 day sessions "in bulk" early in the operator's development. Most wasn't retained. The breaking down and sequencing of "knowledge blocks", some as short as 10 minutes, permitted knowledge to be gained just before it was actually needed, a "pull system" of knowledge if you like. This permitted much higher retention and thus skills were learnt quicker.

Visual Key Points permitted words and statements, often hard to interpret and, in one case, impossible to apply for an operator on a factory floor, to be communicated in a way that was very easy to understand. An example follows.

Every 15 minutes the operator does a "brik check". One of the checks is the position of the LS (longitudinal seal) strip (see photo page 3). If this strip is in the wrong place, the risk of product failure increases immensely. Before VTS the instruction was "60%:40%", see below. The strip is about 5mm wide so the operator was required to make a judgement on the 60:40 with no tolerance. So what happened? Exactly that, the operator made a "judgement" based on experience. One has to assume that "new operators" may not make such good judgement.

One of the operators and engineers involved in the project were tasked with making this “60:40”, a key point in the QC check, visual ... use “Visual Key Point” thinking. After 4 or 5 iterations they came up with this brilliant and simple (the two go together?!) device that allowed anyone to check the position of an LS strip with little or perhaps no training or experience. The red:green:blue device was designed to the 60:40 spec, with identified and agreed tolerance.

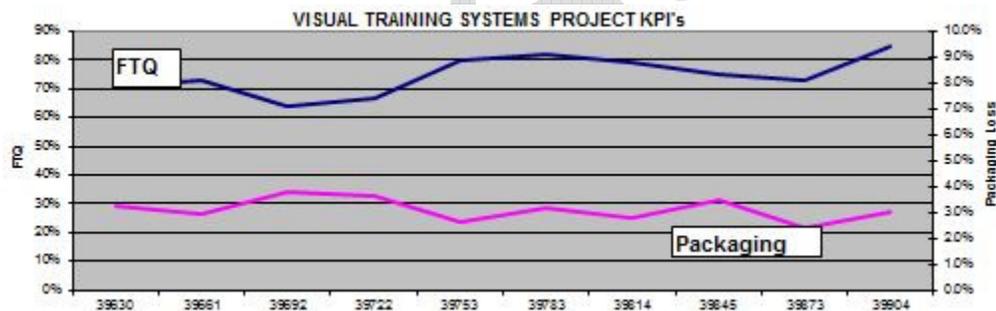


The LS “split” must fit in the green zone



Via the VTS system training time for an operator was reduced to 3 months. Training could be undertaken anytime of the day or night facilitated by the Shift Supervisor. All personnel had access to the VTS.

FTQ increased over the period of the project, packaging waste dropped marginally.



The key factors for success in this project were:

- Involvement from all levels of the business, especially the Factory Manager, Supervisors and Leading Hands; Engineer involvement.
- Supplier (TetraPak) involvement.
- A documented system of development and robust principles and methods.

CONCLUSION

The VTS system introduced at Gannon Vietnam was an efficient and effective system for building capability in understanding and following standard work. Ownership of operator capability by the Supervisors increased. The efficiency lead to a halving of operator training time and the effectiveness lead to an increase in First Time Quality.