



# Case study – Cleaning up production

Intricate Fashions is a factory employing around 1000 operators, making sewn garments for a number of well known buyers from the US and Europe. When first visiting the factory, the FIP team found a production system in complete disarray and unnecessarily complex manufacturing systems. According to the production manager, before taking part in FIP “every process seemed complicated, confusion reigned and these complications were causing a drastic drop in productivity.”

The same problems were widely spread throughout each section of the factory. For example, the storage department was disorganized, making it difficult to locate and access raw materials. The cutting department was congested and workflow was frequently interrupted by bottlenecks in the cutting process. Sewing techniques used in the production lines were slow and tedious and work was slowed down even further every time machines needed repair. Bottlenecks along the production line left workers idle in the finishing department. Finally, due to a disorganized register in the sample room, samples were often delivered late, resulting in lost sales and lower profits.

## **FIP Recommendations:**

The factory had a major problem with general housekeeping and order, and items misplaced in the confusion of clutter were difficult to find. A basic system for maintaining order was missing, including standardization of material and tool use and placement. Based on this, the FIP team, led by a specialist in productivity enhancement, recommended a factory-wide programme of housekeeping, based on the Japanese approach of 5S. The key points of 5S include:

- Distinguishing the necessary things from the unnecessary. If something is unnecessary, it should be removed from the production area;
- Arranging the necessary items in an orderly fashion so they are easily accessed and selected for use.
- Cleaning your workplace to keep floors and equipment tidy;
- Continually maintaining the order, neatness and cleanliness.
- Training everyone in the workplace, including workers, supervisors and managers, to follow good work habits so that it is a matter of personal pride and self-respect.

These key points were explained to the factory and put into practice. The FIP team and productivity specialist stressed the importance of the process of housekeeping of a factory; in essence, it is really a first step toward any attempts at productivity or quality improvement. Without order in a production facility, it is difficult to implement other systems-based changes.

## **Changes undertaken by the factory:**

First of all, the factory created a number of teams representing various sections of the factory, consisting of workers, supervisors and managers, to push forward the housekeeping effort. The storage and cutting departments, the production lines, the finishing department and the sample room – all established teams to carry out the FIP recommendations. Specifically, the following took place as a result:

In the storage department:

- Thread spools were arranged by color and a standard location for each color was established to make it easier to find and evaluate the level of supplies. If a specific color was running low, this new system made it immediately evident to the storeroom clerks.
- Dividers were installed between rolls of fabric to better utilize space on the fabric storage rack. Prior to this, rolls were stacked on top of each other, making it difficult to identify those running short and difficult to remove rolls at the bottom of the pile.



## Case study-continued...

- The inventory management system was reorganised based on what is referred to as 'supply bin reference cards' to make it easier to locate specific references and monitor bin contents.
- A rule was established where materials could not be left in the aisles, as was often the practice previously.

In the cutting department:

- Handling of raw materials was improved. In the first place, the materials receiving area was moved from the centre of the cutting room to the entrance to improve materials flow. Then a stacking system for new materials was instituted, where shelves and dividers were used to clearly organize raw materials.
- Table-mounted knives were introduced instead of scissors to speed up large cuts, while also increasing cuts to two to three layers of fabric at a time instead of single layers. Workers were trained to use these table-mounted knives to cut sheets more quickly, thus increasing their productivity.
- There was a focus on better use of leftover fabric to cut smaller parts needed elsewhere in production, increasing the productivity of materials.

In the production lines:

- Rods were installed to hold rolls of Velcro used in the garments produced, to ensure Velcro could be quickly unrolled and cut.
- Machine repair time was calculated and standardized machine breakdown sheets were introduced to facilitate recording of information and follow-up.
- More efficient methods for timing operations, including the use of hourly target sheets and speed gauges, were implemented.
- Training and guidance was provided to operators on how to maintain their work area as well as how to increase their output. Specifically, workers were trained on how to sew the outline of items in one fluid motion, as well as how to sew longer lengths of fabric that could then be cut into smaller parts.
- Ergonomics issues were considered, in addition to cleaning up and ordering of the production floor. As an example, the factory improved lighting so that shadows on sewing stations, that hindered the workers' ability to see sewing needles, were eliminated.

### **The results and impact:**

Intricate Fashions greatly simplified its manufacturing processes and cleaned up its production floor. Material and work-in-progress was in much less evidence when walking through the factory. The store rooms appeared ordered and neat, in recognition of the considerable value represented by raw materials. The cutting room had piles of materials scattered about and the flow of production appeared more ordered. Production targets, whether for the facility as a whole or for those of an individual operation, were set based on reliable information versus the guesswork that went into previous estimates.

These changes resulted in a considerable reduction of the factory's costs and a dramatic increase in productivity. For example, waste in the cutting department was reduced by more than 50%. The factory was also able to reassign six operators from the cutting department to other areas, while also reducing the number of workers performing counting, bundling and heat cutting.

According to the factory's production manager, "after applying the methods taught by FIP, every process became easier to handle, workers became focused and confident about their work, and most importantly, we saw a steady increase in productivity."