Aerospace Case Study

SUMMARY

As a large manufacturer of aerospace structures and assemblies with facilities in California and Kansas, company "A" uses a variety of indirect materials in their operations--primarily cutting tools, abrasives, and personal protective equipment (PPE).

This organization has embraced Lean Manufacturing and the principles of the Toyota Production System to drive waste out of all manufacturing and administrative processes. Using the tools of the Toyota Production System, company "A" was seeking a solution to eliminate waste in their inventory management processes for indirect materials at their facility in California.

Specific objectives of the solution included the following:

- Reduction in product consumption.
- Reduction in cycle time and lead-time.
- Reduction in labor activity for inventory cycle counts and tool crib transactions.
- Reduction in manual Purchase Orders for replenishment orders.
- Reduced inventory / Increased inventory turns.
- Improved 5-S scores.

CHALLENGES / ISSUES

Company "A" utilized a central Tool Crib for managing all indirect materials. Excess inventory was pushed to remote tool cribs to minimize the walk and wait time associated with traveling up to 1/3 of a mile to obtain supplies. This arrangement resulted in cluttered work areas, low 5-S scores, excess inventory, and higher costs due to larger lot sizes and more duplication of inventory. The central Tool Crib was only staffed during first shift.

Using the tools of the Toyota Production System, the company developed a "Current State Value Steam Map" that identified product & information flow for indirect materials. Once the Value Stream Map was complete, they realized their processes for managing indirect materials included several elements of waste as defined by the Toyota Production System:

- **Waiting:** Excessive lead-time in the supply-chain processes for indirect materials.
- **Transporting:** Relocating inventory from the central Tool Crib to remote Tool Cribs within the work cells then to the actual work area.
- **Processing:** Processing forms at the Tool Crib and processing replenishment orders in the Purchasing Department.
- **Inventory:** Excess inventory, in the Tool Crib, in the work cells, and on the workbenches.

Furthermore, the current process provided no visibility or information to *proactively* manage and improve the process.

The Company then created a "Future State Value Stream Map" identifying the least waste way for indirect materials. The Future State Value Steam required an effective lean manufacturing countermeasure to eliminate the waste. The countermeasure was SupplyPro® dispensing systems.

SOLUTION

SupplyPro systems automate the supply-chain through point-of-use dispensing systems that control inventory, manage information, and reduce costs. Paramount to the SupplyPro system is SupplyPort™ which processes information occurring at the dispensing systems, automates the replenishment process, and provides access to actionable information / reports through any standard web browser.

Company "A" initially chose to implement the technology in two (2) work cells. A summary of each work cell is noted below:

	WORK CELL 011	**WORK CELL 711**
Products	▪ Abrasives ▪ PPE	▪ Abrasives ▪ PPE ▪ Cutting Tools
Number of SKU's	▪ 65	▪ 92
SupplyPro Systems	▪ 1 Dual Cell Main	▪ 1 Dual Cell Main ▪ 1 Dual Cell Auxiliary
Number of employees	▪ 12	▪ 31

RESULTS

The Company measured and quantified the following improvements during the first 90-days of implementation:

- 10.4% reduction in consumption.
- 85% reduction in product retrieval time.
- 96% reduction in cycle time / lead-time.
- 97% reduction in Tool Crib transactions.
- 100% reduction in number of manual Purchase Orders.
- 130% improvement to work areas 5-S scores.
- 300% increase in inventory turns / 89% reduction in inventory units.

The Company continues to use the web-based reports from SupplyPort™ to monitor supply-chain performance metrics and drive continuous improvement activities.

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