enCompass℠ Implementation Execution

Aerospace Composite Manufacturer

Our Client is in the aerospace industry and manufactures composite panels. The process is shown to the right in Figure 1. A bottleneck occurred in Lay-up, and the scheduling mechanism was backward scheduling via MRP. The scheduling seemed simple enough: MRP would determine when to start carving core and cutting cloth. The cores and cloth kits would be pushed to Lay-up, which had its own MRP-generated schedule where the core and cloth plies would be "assembled." After lay-up, the panels would be pushed to the autoclaves, and so on.

There were major logistics problems, however. First, cloth kits had only a short period in which they could be exposed to room temperature. Second, Lay-up could not always work to its schedule because tooling was not always available.

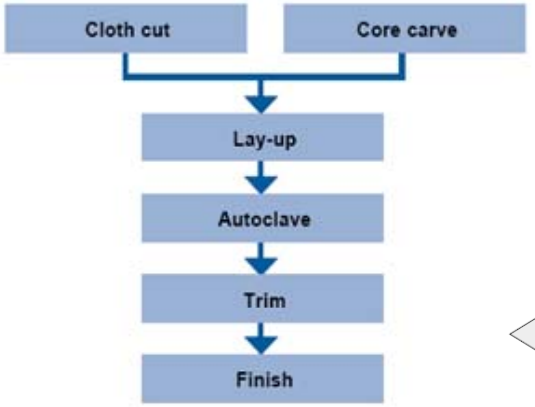

Figure 1

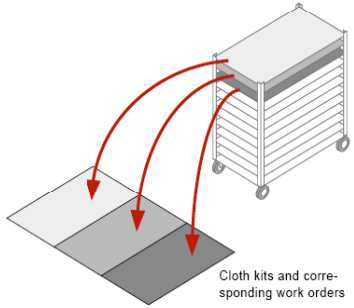

Figure 2

Objectives

Improve throughput, reduce inventory, reduce floor space, and eliminate confusion in the scheduling process.

Approach

First, we defined the Kanban that would signal the need for a cloth kit. The signal was a 12-shelf rack with wheels from lay-up. On each of the 12 shelves would be a work order document. The number of racks in the system influenced the following:

- The turnaround time from when the rack was taken to cloth cutting to when the rack was filled with cloth and could be returned to lay-up
- The exposure time of the cloth
- The level of work-in-process inventory

The 12 shelves on a rack gave cloth cutting the ability to "nest" 12 orders, thereby minimizing offal while completing the set of 12 orders. The signal to work was similar for the core-carving department. However, instead of the Kanban being a rack with 12 shelves, it became a set of 12 cards that matched the 12 work orders on a cloth-cutting rack. So at the same time the Lay-up planner took the empty rack to cloth cutting he also took the set of 12 Kanban cards to the core-carving department.

Results

- 5 fold reduction in lead time.
- 50% reduction in planning personnel.
- Elimination of emergency expediting of parts.
- Better control of the product as it moves through the factory.
- 30% Less inventory.
- 20% Faster throughput.