

## Harvard-Cherokee helps power the internet with fast, reliable manufacturing system

From contact to implementation, the system took just 37 days to create

Harvard Cherokee manufactures Alcatel Litespan 2000 telecommunications cabinets for Southwestern Bell Communications (SBC). The Litespan cabinets are digital-analog converters and relay systems designed to operate in outdoor environments. The cabinets convert digital signals from fiber-optic carriers to analog signals carried on copper lines. They are the basic framework that allows SBC to offer broadband connectivity including Digital Subscriber Lines (DSL) to its customers. This connectivity in turn provides SBC's customers with high-speed Internet access. In the rapidly changing world of telecommunications, Harvard knew it needed a reliable, fast, scalable assembly operation.

### The Situation

Harvard Manufacturing Texas, an Austin based company specializing in value-added distribution as well as Engineering, Furnish, and Installs of telecommunications equipment, desired a location in the Dallas area for expansion. The company had an empty building and needed to become operational in a short amount of time. Harvard's plans specified that the empty facility had to be operational in 37 days. "In



order to satisfy the customer, we had to be up and running in a short amount of time. The timeframe was very critical to our success," said Bud Davis, Harvard Cherokee's Engineering Manager.



### The Desired Solution

Harvard wanted to implement efficient assembly processes and meet an aggressive schedule. "We're currently geared to assemble more than 1,250 Litespan cabinets a year," said Harvard's Operations Manager Marcus Fechenbach. "But this year, we'll double our output." This meant that the company needed a scalable, flexible assembly operation able to handle the anticipated higher workload.

### A focus on one, efficient shift

One of the goals of the design was to avoid a second working shift. "We'd much rather focus on one, very efficient shift than deal with a second one," Fechenbach said. "It's just more effective to handle the same workload in a single shift. We needed an operation that allowed us to do the work without the additional shift."

### The Solution Implemented

Harvard uses a central assembly lane fed by subassembly lanes on both sides for the Litespan Cabinets. The cabinets are rolled down the line on high capacity dollies between two rows of storage racks. The racks are equipped with grav-

# Overhead rail systems support tool balancers, making the subassembly process efficient and ergonomic

ity carton flow track on the lower level. Channel banks, fuse panels, rectifiers and other assembly components are fed from both sides of the central lanes by sub-assembly lines. In total there are seven work cells on the line, and each cell requires about 90 minutes to complete. Workers along the assembly line are protected from pallets or boxes that could potentially fall into their work area by safety netting that was installed along the backside of higher-level pallet positions.

The side subassembly lines are on Hytrol gravity conveyors, allowing workers to easily move product to various stages of completion. The conveyors are laid out to allow the shortest possible distance between the subassembly area and the flow racks. Overhead rail systems support tool balancers, making the sub-assembly process much more efficient and ergonomic.

## Detail-oriented manufacturing

Details are vital, and much of the process is focused on making sure things are tested and properly packaged to be easy for the field technicians who will eventually have to work on the Litespan units. For instance, Harvard stresses details like the need to clip plastic bundle ties so that there are no sharp



edges present inside the cabinets, since technicians must frequently access the interior of the cabinets.

## The results

Cisco-Eagle and Harvard worked together to create the operational system in just 37 days from initial contact to completed installation. The manufacturing system is able to easily handle Harvard's current workflow, and will be able to accommodate the projected doubling of production.

The company's business partners took notice of many of the ways that Harvard designed its assembly processes and are redesigning facilities to take advantage of the methods and equipment Harvard employed in its operations.

## Tight deadlines met

"We really had a timeframe issue," said Harvard's Fechenbach. "It meant a lot to us that the various elements could be put into place so quickly. We were also impressed with the wide variety of products and services Cisco-Eagle has to offer. Cisco-Eagle accepted a large portion of the workload which allowed my staff to concentrate on the other numerous aspects of making a start-up venture fully operational"



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