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Critical chain on the runway

- **By Patrick Marshall**
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The hottest idea to move from the think tank to the real world of project management is called Critical Chain project management.

Kevin O'Connor, deputy director of the 76th Aircraft Maintenance Group at the Air Force's Oklahoma City Air Logistics Center, said the method is producing dramatic results.

Critical Chain is a project management method that emphasizes the resources required to execute a project, as opposed to traditional methods that emphasize task orders or rigid scheduling of project tasks. Developed by Eliyahu Goldratt, an Israeli physicist and business process analyst, Critical Chain was first introduced in 1997.

O'Connor said the maintenance group became aware of Critical Chain through a variety of sources, including Goldratt's writings, the University of Tennessee's Aerospace Master of Business Administration program and some experimentation with the method at another Air Force facility.

In light of increasing demands on the maintenance group and shrinking budgets, O'Connor's group was eager to find any way to increase efficiency. Each year, the group performs maintenance on 48 tankers, 11 to 17 B- 52 bombers, 13 B-1 bombers, 48 C-135s and other aircraft. "We had to look for a tool that would help us execute smartly," O'Connor said. "That tool is Critical Chain." He said the method was first implemented in March 2006 on the unit's B-1 maintenance line, largely because that line had the most predictable work structure. "We wanted to demonstrate success early and build upon that success," he said.

Success has been demonstrated. The cycle time for B-1s was reduced by 22 percent, from 183 days to 143 days. O'Connor said that means more than 1,200+ days of additional B-1 availability for our customer. "Critical Chain is an excellent tool to expose our bottlenecks," he said. It was Critical Chain that allowed O'Connor's team to discover, for example, that waiting for sheet metal work delayed the whole maintenance process. "Critical Chain reduced the queue of sheet metal work from two weeks to zero," he said.

About the Author

Patrick Marshall is freelance technology writer for GCN.