

Program-Wide Implementation

"The decision to invest in Third Wave Systems software was an easy one."

— GERALD HENDERSON, Bell Helicopter Director of Manufacturing

The Background

In 2007, the Bell Helicopter Drive Systems Center had maxed out their machining capacity, yet delivery pressures for the V-22 continued to mount. Manufacturing engineers could not make process improvements without the risk of adversely affecting delivery target dates; instead, they had to find a way to achieve higher productivity levels using existing equipment. Bell decided to investigate whether NC program optimization software could help them close the gap.

The Test Part

The V-22 carrier component was selected as a representative test part due to its high percentage of material removal (nearly 30 percent) and challenging workpiece material (titanium forging).

The Approach

- ▶ TWS staff train Bell Helicopter NC programmers and engineers on Production Module capabilities.
- ▶ Bell staff team optimize V-22 carrier's roughing operations using Production Module's load-leveling approach: spikes reduced, low forces raised.
- ▶ TWS and Bell conduct machining trial to validate optimization results and ensure part quality and tool performance have been maintained.

The Results

- ▶ Machining time reduced by 30% for test part.
- ▶ Bell Helicopter purchased six seats of Production Module and have since upgraded to add six seats of the software's NX interface.
- ▶ Production Module software used for program-wide analysis of approximately 250 V-22 components, as a V-22 Cost Reduction Initiative.
 - To date, an average of 25% cycle time reduction achieved on V-22 components.
 - Tool life and wear resistance improved.
 - Highest return on investment of any V-22 Cost Reduction Initiative.

