

SCHEDULING MODEL SUBSTANTIALLY IMPROVES FOUNDRY PRODUCTIVITY

ABOUT BATESVILLE PRODUCTS INC. Batesville Products, Inc. (BPI) is an aluminum/zinc foundry, polishing, and machine shop based in Lawrenceburg, Indiana. The family-owned business has over 60 employees, including second- and third-generation family members. The company supplies complex castings complete and ready to assemble into its customers' production lines, and is known for its family-oriented values and high-quality craftsmanship.

THE CHALLENGE. After implementing a new ERP system and establishing a sales growth target of 18 percent, BPI identified a bottleneck in the scheduling of permanent mold casting operations. Through Purdue's Manufacturing Extension Partnership (MEP) program, part of the MEP National Network™, BPI invited a Purdue Industrial Engineering graduate student to lead a project to develop a more optimal schedule for the foundry.

MEP CENTER'S ROLE. After modeling the operations, its processes, and the associated cost, the Purdue engineering student developed a multi-objective heuristic algorithm to produce a scheduling tool for BPI. The tool initially applied to the most common foundry processes. However, the effectiveness of the model led BPI to consider alternative applications, and the Purdue student built flexibility into the design to allow for expansion to other areas. The technology factored in the routing of material/semi-products, setup times, cycle times, resource utilization, temperature, and gas level to identify the best scheduling method.

"The Purdue Industrial Engineering graduate student who led the project was a sharp mind, quick study, and very intuitive," said Len Weber, BPI President and COO. "He was able to understand the constraints of our process and the objectives we were seeking to achieve. Because of this understanding he was able to build features into the tool that we did not initially know we needed."

Through the utilization of this "scheduling model optimizer" and its proposed schedule, BPI increased pounds poured by worker hours and decreased the completion time to meet due dates. The process has allowed for better labor and inventory management, and more organized production scheduling has improved equipment uptime and maintenance. Greater casting availability has minimized production interruptions for secondary operations, and BPI reduced the number of foundry rejects by half. The economic impact of these improvements has been positive. The company greatly reduced the time spent on scheduling and achieved its targeted growth goal.

"I would highly recommend any Indiana-based manufacturer to investigate the Purdue MEP program. BPI's ability to meet our growth goals has been substantially improved through our relationship with this high caliber team."

-Len Weber, President and COO

RESULTS



Achieved sales growth target of **18%**



Improved productivity by **30%**



Reduced foundry rejects by **50%**



Minimized the completion time to meet due dates



Improved labor and inventory management, equipment uptime and maintenance

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