

# Case Study

## Indy Composite Works



### Highlights

- ✓ Saving up to 15% material over previous nests
- ✓ Nest cutting path optimization delivered greater throughput on the machine
- ✓ By far the easiest to use of packages evaluated. Also the most competitively priced
- ✓ Powerful and customizable reports
- ✓ Ability to 'cross nest' patterns of current orders to further improve material yield
- ✓ Staff were able to easily train new staff
- ✓ Minimal support requirement
- ✓ Return on investment within just six months

Indy Composite Works, based in Indianapolis, Indiana, design and manufacture composite structures for a wide variety of industries, including defense, security, sport and aerospace. Their previous nesting software did not optimize nest patterns and was difficult to use, forcing staff to manually nest. Said Dave New, Vice President; *"The old software did not perform consistently or effectively. It didn't easily cross nest patterns from multiple designs, and once a layout pattern (nest) was determined it was a manual process to generate the cutting path."*



In 2013 the company set about evaluating nesting systems and spoke with JETCAM's US distributor NestOne Solutions, along with several other companies. They provided a set of plies of their highest volume projects to each vendor. When they assessed the results they found that JETCAM's nests were

between 5-15% better than all of the competing nests. Furthermore, when they evaluated each system's ease of use JETCAM stood out above the rest. Russ Polak, Process Engineer noted; *"JETCAM was far and away better than the other software systems we evaluated. It was easier to use, generated better material yields and provided the best reporting for management. It was also very cost competitive in comparison to the other systems we reviewed."*

The decision was made to purchase JETCAM Expert, a postprocessor to drive the Gerber Knife Cutter and JETCAM's free form high performance nesting module. Indy Composite Works also purchased JETCAM Orders Controller (JOC) to easily create work lists of plies to be nested and to take advantage of its powerful reporting capabilities. Staff were trained on the system over 2 days. Of the training Dave commented; *"Our engineers immediately saw the benefit of JETCAM and proactively sought more information and guidance on how to use the software. With great support from NestOne they quickly learned how to use the software to its full advantage and have since trained others in the facility."*



**Software:** JETCAM Expert Premium  
High Performance Nesting  
JETCAM Orders Controller

**Machines:** Gerber CNC knife cutter

The system went live in August 2013. Immediately staff began to see benefits. The material utilization seen during benchmarking followed through to



their existing and new nests, along with a further benefit - they were now able to create nests of mixed orders, spreading multiple nests. This added a further 5% to material efficiency. Although the Gerber CNC was running for the same number of hours per day, the combination of highly optimized nests and more efficient cutting paths meant that in real terms machine runtime improved in line with the material efficiency savings.

Indy Composites use SolidWorks to organize their plies, but can quickly pass them to JETCAM for processing. Component files can be quickly and automatically created with profiling information using JETCAM's SCAP (Single Component Automatic Processing) facility, making them immediately ready for nesting.

Dave found the software posed no problem for staff to get to grips with; *"The software was surprisingly easy to use. Unlike other software we use, we don't have to continuously contact*

*customer service to work through issues or seek assistance to navigate the system."*

JETCAM Orders Controller (JOC) is used to create cutting schedules for the Gerber. It can remotely use JETCAM Expert to create component files from SolidWorks using SCAP, and then single plies or complete assemblies of parts can be dragged and dropped onto work sheets, ready for nesting. Russ added; *"JOC has allowed me to easily set up the various kits that we need to cut. Once I pull in the plies it's a simple process to get a table set up. I can use SCAP to create components and then just specify '2 of this, 3 of that' etc."*

Reporting also improved drastically. In addition to a range of standard reports, Indy Composites were now able to design and style their own custom reports using JETCAM's advanced report designer.

Support from US distributor NestOne has been superb. Russ said; *"Anytime I have had a question I am able to call or email our reseller and within minutes I have a response with a solution to the question or a timeline of when it can be answered or fixed"*

***Indy Composites now have a system in place that creates more efficient nests much quicker than before that also run faster on the machine. They have greater flexibility with nests and better reporting. Dave finalized; "We believe that we will have completely recouped our costs within 6 months. Nests are now consistently over 90% efficient."***