

Blueprint for success

Crawford Tech student scores precision machining win

By Mike Crowley
MEADVILLE TRIBUNE

It took hours to fabricate, but the winning part was pretty tiny: a cylindrical chunk of carbon steel with precisely tooled features that fit comfortably into Jacob Jackson's hand.

The check Jackson received after crafting the metal part, on the other hand, was the big kind: big enough that Jackson's arms spread wide to hold the ceremonial display in front of him. Big enough, also, that the number inside the dollar box was easy to see from across the precision machining shop at Crawford Tech: \$2,500.

Jackson, a senior at Maplewood Junior-Senior High, made the part using one of the shop's lathes and a three-axis Bridgeport knee mill last week during the second annual Komatsu Manufacturing Skills Competition. Held last week at Crawford Tech, the day-long contest featured several of the best precision machining and welding students from technical schools around the state's northwestern region. In addition to the hands-on projects, contestants also participated in mock interviews and resume reviews.

In recognition of his first-place finish in precision machining, Komatsu, the global manufacturer of heavy equipment, will purchase \$2,500 worth of calipers, micrometers and other precision machining tools that Jackson currently borrows from Brian Piatt, owner of Mission Machining, the Saegertown tool shop where Jackson works in Crawford Tech's cooperative education program.



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Maplewood Junior-Senior High School senior Jacob Jackson demonstrates how to use a knee mill in the precision machining shop area of Crawford Tech.



LEFT: Brian Piatt, owner of Mission Machining in Saegertown, talks about the outstanding work that Jackson has done for his shop. RIGHT: Josh Mangel teaches precision machining at Crawford Tech.



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"I'm tired of him borrowing mine," Piatt joked as he and Jackson met with school officials Wednesday to recognize Jackson's victory. "Twenty-five hundred will get you a

good entry-level tool kit."

And the Crawford Tech co-op program will apparently get you just the help you need if you run a small but busy shop like Piatt's.

"He is what every employer seeks as a good candidate for hire," Piatt said, citing Jackson's punc-

tuality, ability to take constructive criticism, coachability and other characteristics in addition to his evident skill as a machinist. "You can build a good quality employee with quality training. You can't

SEE **TECH**, PAGE A6

Tech

CONTINUED FROM PAGE A1

teach people those character qualities — that's just in you, that's who you are. So if you don't have those good character qualities, you're going to struggle at my shop. I hold everybody to a high standard."

The same qualities make Jackson "a model student," according to Bonnie Stein, who coordinates the Crawford Tech co-op program and its 115 participating students.

In fact, staff members were impressed enough with Jackson that they had high expectations for the competition. The pressure was high, Jackson said, with Piatt and Crawford Tech precision machining instructor Josh Mangel joking that they would fire and disown him if he didn't win.

In the end, whatever pressure he felt seemed to have little effect.

"When third place came up and second place came up, and it wasn't his name, I knew instantly," Mangel recalled. "I told him, 'Get ready to stand up.'"

"We didn't expect anything less," Piatt added.

After beginning the precision machining program at Crawford Tech as a sophomore, Jackson's first professional experience in the industry came at Mission Machining the next summer. He returned in the middle of his junior year through the co-op program and has been there since with periodic returns to Crawford Tech, where he and other co-op students work on soft skills and other career-related material.

The school and the profession both seem like natural fits, according to Jackson.

"Getting to actually work with my hands — not having to do English? I mean, win-win," he joked. "You get to learn how to do a trade that will actually



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Kevin Spring, executive director of Crawford Tech, said he is proud to have talented students like Jacob Jackson attending the school.

get you a job and a valuable skill for your life so that, even if you don't use it, you have something to fall back on."

Even before beginning the program, however, Jackson seemed destined for the tool-and-die trade.

"For the longest time, my parents and my brother, when I was growing up, told me that I'd probably like machining," he said, "and here we are — and I suppose I do."

The depth of Jackson's interest in his trade is easy to see, according to Piatt.

"He must like it because whenever a new YouTube video comes out, he'll say, 'Did you watch that new video of this guy doing this...?'" Piatt said. "Whenever he doesn't have something to do, and it's TV time, he's watching machining videos."

The skills developed in school, at work and during his spare time paid off last week. The competition started, as so many machining jobs do, with a blueprint. And in another simulation of real life, this blueprint came with an intentional error embedded in it to test the students.

The blueprint, Jackson explained, called for a three-quarter inch groove, but a groove that wide would have extended off the end of the part.

"The math didn't math on this," Mangel joked as Jackson displayed the finished part.

The part itself was conceptual, not an actual piece of some larger assembly. Mangel said, and was designed to incorporate multiple features that tested the various skills needed to operate the lathe and mill within the required tolerances.

The contest is the latest example of regional manufacturers collaborating with technical schools in an effort to recruit more kids into the industry. Another recent effort was on display in the precision machining shop. Beyond the CNC machines, the far wall was lined from floor to ceiling with large metal signs displaying the names and logos of organizations that contributed to a project last summer that replaced the shop's flooring. Fundraising for the project generated well over the \$31,702 cost, according to Sprong.

"They were discussing ways to help to improve the program," Sprong said. "and one of the things they wanted to do was help dress up the shop and one of the things they wanted to do was dress up the shop to help recruit parents, students and community members — to show the clean environment that now exists in most of the tool shops, in contrast to the dark and dirty stigma of years ago."

For Piatt, who not only serves on the committee that advises the school's precision machining program but also graduated from Crawford Tech himself in 2002, the coordination between the school and local manufacturers has concrete benefits.

"That's one of the reasons Jake's a champion — quality training at Crawford Tech and Mission Machining," he said.

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