



## POINT OF VIEW

### Cobot Welding Triples Productivity and Upskills Employee

Family owned and operated since 1967, Mohawk Northeast Inc. in Groton, Conn., fabricates and constructs large-scale structures for both land-based and waterfront projects.

Due to the nature of the high-mix, low-volume project work, traditional robotic welding options hadn't been the right fit for the fabricator in the past. But with the skilled labor market shortage, the company's team knew they had to find a way to automate to increase weld shop productiv-

ity. To that end, they turned to Vectis Automation in Loveland, Colo., to co-investigate the viability of utilizing its portable, flexible, and easy-to-use Cobot Welding Tool.

#### The Right Automation Tool for the Job

Mohawk was able to call upon the Vectis team's 130-plus years of combined experience in robotic welding

to collaboratively determine the right applications, system configuration, and keys to success for implementing automation. Together, a number of manually tedious, low-hanging-fruit weldments with ¼-in. single-pass fillets up to ½-in. multipass fillets were identified as the right applications to start with, along with some complete joint penetration weldments as future possibilities. These starting weldments were for a specific Mohawk project but were also representative of future work, serving as a good baseline for a holistic application evaluation.

With the starting weldments identified, the fabricator brought in a heavy-duty, water-cooled Vectis system with multipass software (Fig. 1) in the Spring of 2021, and at a low risk to boot; Vectis offers a 30-day return policy as a money-back guarantee.

#### Upskilling a Cobot Champion

Sam Guinn has been a grinder/finisher at Mohawk Northeast for three years. Guinn is passionate about his work and holds a "work smarter not harder" mentality. When he saw the Cobot Welding Tool arrive, he was instantly attracted to the idea of championing its implementation — even with minimal experience or practice in the art of welding. Guinn reviewed the cobot tool's instructional videos and training materials on his own, then consulted with the expert welders on-staff at Mohawk to learn more about parameters, technique, discontinuities/defects, and characteristics of a good weld. By combining the know-how of experienced welders with the easy-to-program system, he was quickly laying down high-quality beads with the machine. Shortly thereafter, Guinn passed Mohawk's internal welding qualification procedures and is now a certified welder to American Welding Society D1.5, Bridge Welding Code, for Connecticut and Massachusetts bridge work.

"I love this story," said Josh Pawley, vice president of business devel-

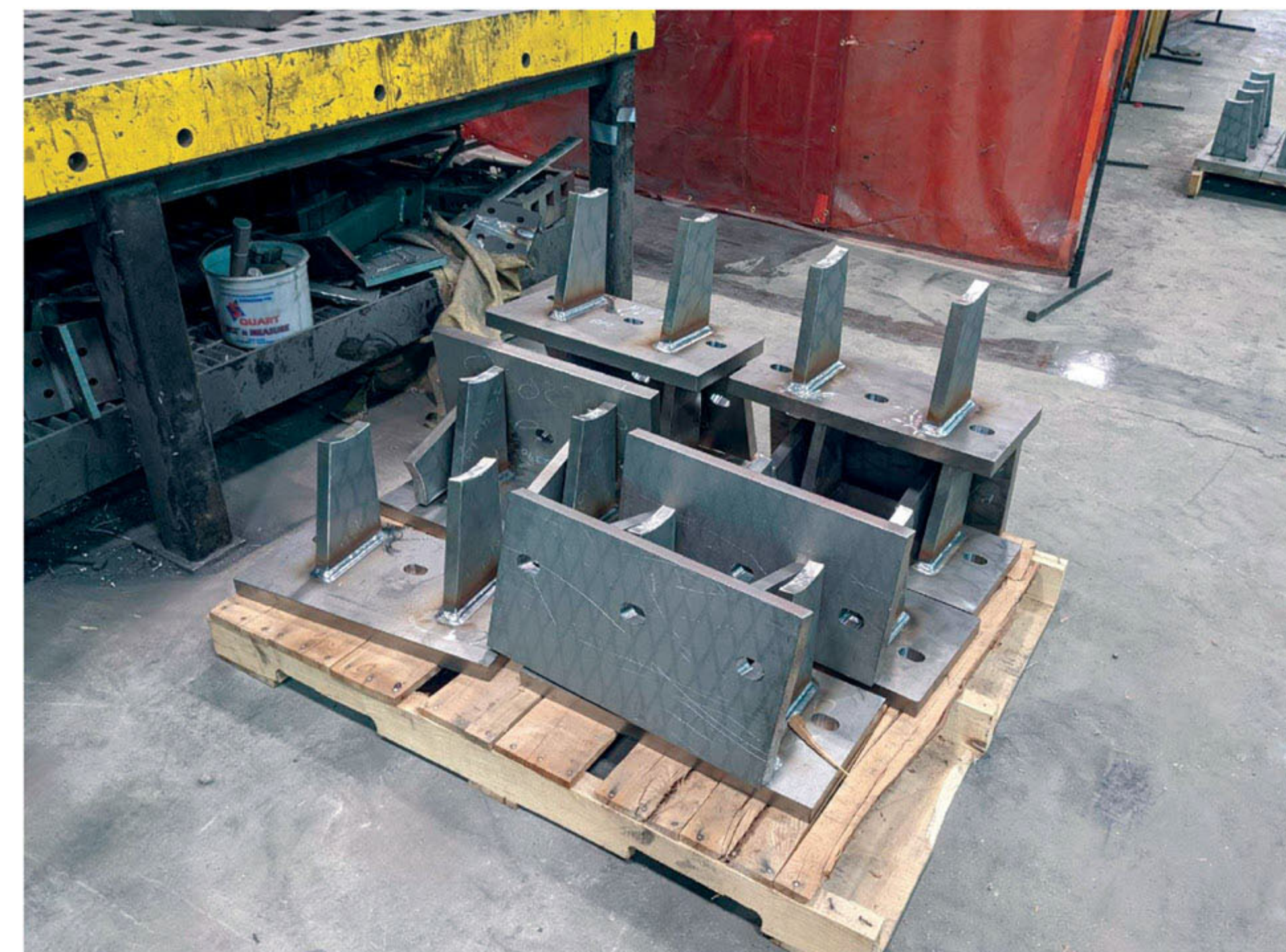


Fig. 2 — Productivity was boosted 3.5 times when the cobot tool was leveraged.

opment and founding partner at Vectis Automation. "We talk with many new customers about the importance of eagerness and ownership in a cobot champion. Mohawk's story is a tangible reflection of the power of those character attributes in a company culture that welcomes them. The sky is the limit for anyone willing and eager to learn."

Pawley also noted that "the ownership aspect is particularly relevant for high-mix, low-volume operations like Mohawk or job shops, as the cobot champion needs to determine which weldments could/should go on the cobot, how to fixture them, and how to efficiently program them. It takes a bit of an 'owner's mindset' to make the cobot crank out parts in that scenario — more so than in our medium/high-volume customers."

#### Impactful Productivity Boost

Along with upskilling a team member, Mohawk is realizing a significant productivity boost on the various weldments that Guinn chooses to weld with the machine. On a recent project, productivity was increased by 3.5 times, going from 10 parts manually welded per day to 35 by leveraging the cobot tool — Fig. 2. The system is powered by a Universal Robots UR10e cobot, with Vectis welding features

like multipass and a heavy-duty, water-cooled package enabling more applications to be quickly and easily programmed and then welded at a high deposition rate and duty cycle. The multipass feature, for example, allows Guinn to teach the root pass as he would a single-pass weld and then just manually drag the cobot arm to the starting point of subsequent passes to determine the offset for that next pass. The software then does the math to extrapolate that starting offset along the whole path, saving a significant amount of programming time. This feature enables even smaller batch sizes of multipass parts to provide an economic return when welded on the cobot tool.

#### Summing It Up

"The Vectis system and [its] expert team allow us to do more with less — enabling us to be even more cost-effective for our customers, complete jobs quicker, and provide our weld shop with a pressure-relief valve for medium-volume high-arc-time weldments," said David Schill, vice president of business development at Mohawk Northeast. "It's been a real value add in our business." [WJ](#)

Article provided by Vectis Automation (vectisautomation.com), Loveland, Colo.

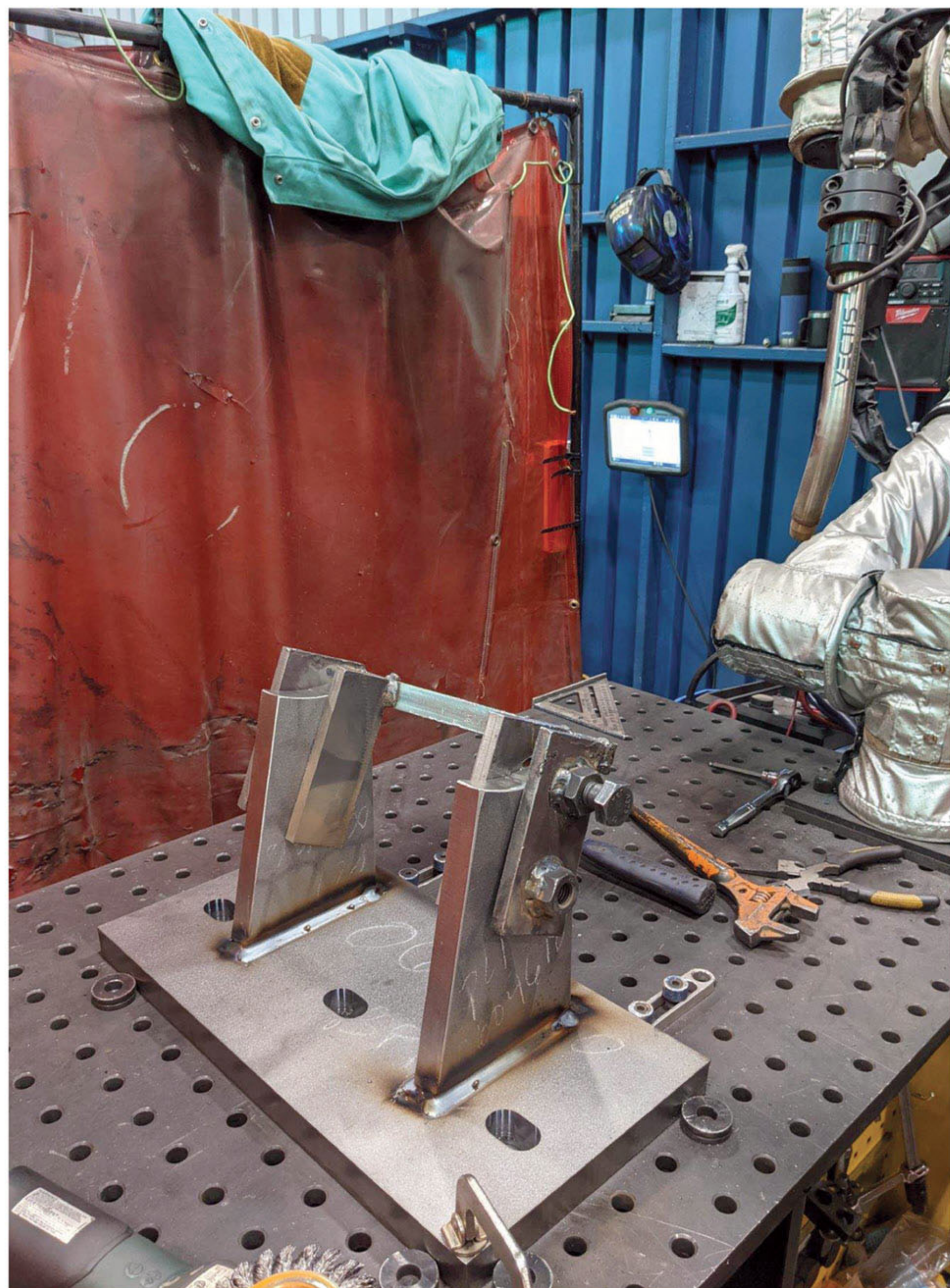


Fig. 1 — The Vectis Cobot Welding Tool finishes the first pass of a multipass weld.