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HEAT and PRESSURE

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HEAT and PRESSURE

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Rick Wohlfiel of Florida-based PAW Materials Inc. knows a demolition challenge when he sees one. When commissioned by Tampa, Fla.-based contractor Cone & Graham Inc. to demolish the Cross Florida Barge Canal Bridge in Inglis, Fla., Wohlfiel was certain of two things: First, that this was, indeed, a demolition challenge; and, second, that his company would overcome any obstacles presented with its unique combination of experience, expertise and innovative equipment.

The section of the Cross Florida Barge Canal Bridge slated to be demolished by PAW stood 55 feet high with a width of 36 feet. It spanned the canal at 1,320 feet long, divided into 22 sections.

The project involved removing all 22 bridge sections along with the caps, columns and two end-bents. According to Wohlfiel, “Each deck section was 60 feet long with four beams that sat on a 150,000-pound cap. Each section was supported by two 48-inches in diameter concrete columns.”

MORE CHALLENGES

In addition to the challenges presented by the sheer dimensions of the bridge itself, PAW was further challenged by the presence of an active access road to a nearby marina running parallel to the bridge. Another nearby roadway contained a newly constructed bridge built by PAW’s customer, Cone & Graham Inc.

The proximity of these road-

ways presented the team with a challenging hurdle because they had extremely limited space for the steel and concrete bridge material being removed. To further add to the complexity of this project, the marina access roadway sat at ground level, 55 feet lower than the Canal Bridge section, requiring PAW to employ surgical demolition methods during the demolition process to ensure the safety of the job site personnel as well as the nearby traffic.

In addition to this mix of challenges, PAW had demanding time constraints and had to meet several thresholds by specific dates to



Above, from left, Rick Wohlfiel, president and CEO of PAW Materials Inc. and Alan Pendleton, the company’s site supervisor. At left, an Allied-Gator MT 20 processes decking from the Cross Florida Barge Canal Bridge.





keep the job on schedule. Because the demolition of the existing Canal Bridge was being immediately followed by the construction of a new bridge, Wohlfiel and his crew were under pressure to clear the way as quickly as possible.

“We needed to allow the pile driving to start at the new end-bent locations,” says Wohlfiel. “This had us juggling equipment and working in several areas on the job site at once.”

EQUIPPED TO SUCCEED

PAW Materials set about its task armed with two MT™ Series Multi-Tools made by Allied-Gator Inc., Youngstown, Ohio. One was a model MTR 40 (weighing

7,000 pounds) with a Quick-Change™ cracker/crusher jaw set in an extended reach configuration. This tool was mounted on a 345 model excavator made by Caterpillar Inc., Peoria, Ill.

The other tool was an Allied-Gator model MTR 20 (weighing 4,000 pounds) with the cracker/crusher jaw set configured as a third member on a Caterpillar 325 excavator.

PAW also came to the job site with several other excavators and loaders for moving and loading materials and began to tackle the project.

PAW utilized the Allied-Gator MTR 20 and MTR 40 units to demolish the bridge wall and

decking, while another excavator with a hydraulic hammer was used to start chiseling away at the caps and columns after the decking sections were dropped, processed and removed.

“We started by pulverizing the top parapet walls with the MTR 20, then we pulverized the deck beams in a sequence with the MTR 40 to ensure safety during the drops,” says Wohlfiel. “Next, we pulverized the entire concrete deck, including the support spans, with the MTR 20 to separate the steel reinforcement. Later, we weakened each standing column with a hydraulic hammer and pushed the cap and columns over. We then repeated the procedure



22 times,” Wohlfiel says of the demolition process.

MEETING THE DEADLINE

PAW began the bridge demolition

project on April 1, 2010, and was finished on July 15, 2010, completing this entire project in two-and-one-half months and yielding more than 12,000 tons of pro-

cessed and recycled materials.

When describing how he and his team overcame the logistical, safety and time challenges presented by this job, Wohlfiel says one of the factors that helped PAW adapt to the job was the way it used its Allied-Gator MTR 40 C.

He says the excavator-mounted tool was able to reach the 55-foot high sections of the bridge, and then the tool was used in an inverted position to strategically weaken the underside of each decking span to accomplish a predictable and controlled collapse of each section.

The four columns previously supporting each deck section were used to guide each collapsing section straight down to the ground. The standing columns also served as a means of containment to keep each collapsed section precisely within its own footprint.

Coordinated teamwork and effective communication from site supervisor Alan Pendleton also played a tremendous role in PAW's success on this project, says Wohlfiel. “We had to communicate and work with our customer as well as other sub-contractors, such as D.A.B Constructors Inc., on the job in order to keep harmony and limit issues.”

Wohlfiel says PAW's team has repeatedly impressed its customers with its ability to coordinate and execute its demolition goals while maintaining the flexibility and versatility to adapt to the changes and challenges that may arise on each project.

When such challenges do arise, PAW relies on the versatility of its equipment. Wohlfiel says innovative technology such as that offered by Allied-Gator allows the company to work differently, and much more effectively, than contractors without the advantages of such technology.

Wohlfiel says the unique design of the MT, specifically its completely enclosed and protected single cylinder with links (instead of cylinders hooked directly to a jaw) facilitated a new and innova-

tive approach to the canal bridge project. “We have liked the MT’s sleek design from the beginning, which keeps the tool’s hydraulic components out of harm’s way,” he states.

Because the MTR 40 was used to perform most of the bridge demolition work in an inverted position, the tool was constantly pelted by large concrete chunks. Some other tool cylinder arrangements are extremely vulnerable when working in this position, Wohlfiel comments. In those cases, this type of inverted work would have compromised the cylinder components and resulted in downtime that could not be afforded under PAW’s tight project schedule.

In addition, the heavy-duty power of the MT allowed PAW to use smaller base machines on the project, Wohlfiel says. “We were able to use a lighter machine with the MTR 20 to demolish the wall, which had to be done from on top of the bridge.”

Wohlfiel says the features found on the MT Series enhanced his team’s performance through every phase of the project.

With the versatility offered by Allied-Gator’s patent-pending Universal Coupling System™ (UCS), PAW was able to use its Caterpillar 345 excavator with the MTR 40 and additional Allied-Gator boom components to reach the bridge deck and caps with ease and to safely control the deck drops. Wohlfiel says, “The speed and power of the MTR 40 helped tremendously.” He adds, “Allied-Gator innovation also allowed us to lengthen or shorten the reach of the tool by using the UCS boom components.”

Wohlfiel, who also says the fast cycle times of the MTs positively affected PAW’s job performance, sums up his experience with the Allied-Gator MT Series technology by referring to it as “great outside-the-box thinking.”

Wohlfiel and his team at PAW Materials have moved on to the next job, taking with them a posi-

tive reputation, a fleet of innovative demolition equipment and all the experience and confidence gained by overcoming the challenges of the Cross Florida Barge

Canal Bridge demolition. **CDOR**

This story was submitted on behalf of Allied-Gator Inc., Youngstown, Ohio, www.alliedgator.com.