



# NEWS RELEASE

FOR IMMEDIATE RELEASE

High-resolution photographs provided

Media Contact: [Melissa Hicks](mailto:Melissa.Hicks@mosaicmarketing.com), Mosaic Marketing, 484.888.6766

## Engineered Rigging Combines Knuckle Boom Cranes, Robots and Ingenuity to Solve Global Shipping Facility's Upgrade Challenges

**VALPARAISO, IN, March 31, 2021** — Engineered Rigging leveraged the extended reach of its fleet of knuckle-boom cranes and creative engineering to help install a new high-performance package sorting system at a global shipping company's facility in the Midwest. The heavy lift experts designed and fabricated a 30-ton, self-propelled hybrid lifting solution (see photo below) that safely moved along a self-erecting track and crisscrossed the sorting facility's exposed superstructure — while millions of packages flowed below.

The main challenge Engineered Rigging faced was that 50 percent of the vast two-story facility was constructed of open structural steel that could not support the weight of a mobile hydraulic crane. The plant also featured concrete-covered steel members that could not be disturbed. Further complicating matters, the facility continued to sort packages on the first floor, directly below the conveyor being replaced.



“The contractor did not know how it was going to remove the old conveyor or position materials to build the new sorting system,” said Engineered Rigging’s President Christopher Cox, P.E. “Their team envisioned having to build an enormous, costly and labor-intensive scaffolding system to lift materials.”

Instead, Engineered Rigging applied unconventional thinking to develop a heavy lift solution that could be operated remotely and would not require scaffolding—two features that improved safety. Their creative design could also efficiently reposition itself when needed which was an important time-saving benefit.

### **Knuckle Boom Cranes Extend Reach**

The company’s engineers spent five months designing and fabricating a mobile lift system that maximized the capabilities of its fleet of PM 65 SP knuckle boom cranes. These cranes use a compact counter-weight system that requires a footprint that is a fraction of the size of most cranes. They also feature high-tech electronic monitoring via a Stability



Power System, dynamic load control and real-time diagnostics. The onboard computer system can manage millions of operations per second, which guarantees immediate response from the machine to maximize control and productivity.

The crane’s 70-foot reach was critical to accessing every part of the package sorting facility. Engineered Rigging positioned three cranes inside the facility to achieve a 150-diameter swing radius without interference. This extended reach meant less time wasted repositioning cranes which expedited the lifting of materials. A fourth crane (see photo left) located outside the

building lifted equipment and supplies to the elevated worksite.

### **Self-Erecting Track Provides Stable Surface**

Another unique aspect of Engineered Rigging’s hybrid lift solution was its mobility. Normally, knuckle boom cranes are stationary — mounted to a truck, floor or roof. In many places onsite, there was no floor, just an open cavern traversed by the old package conveyor, and the roof wasn’t strong enough for a crane.

To solve that problem, Engineered Rigging fabricated 200 feet of steel track, in 10-foot by 10-foot sections, each weighing 3,000 pounds. The cranes positioned this self-erecting track along the exposed steel superstructure, thus dispersing the weight and providing a

platform upon which the cranes could secure themselves prior to a lift. It took roughly five hours for a knuckle boom crane to self-erect up to seven pieces of track then move along the 70 feet of track to relocate.

### **Wireless Robot Positions Cranes**

To move the cranes along the track, Engineered Rigging designed and fabricated a steel, four-legged outrigger for each crane. These outriggers attached to and folded up around the cranes for relocation. Positioned underneath each outrigger was wireless, remote-controlled electric robot. Six onsite operators used the robots to move the cranes along the track. When correctly positioned for a lift, the operators unfolded the outriggers and secured the crane to the building's steel framework. The entire assembly weighed approximately 30 tons. If a crane came to the end of the track, it could reach behind itself (or vice versa), pick up a piece of the track, and place it in front, thereby accessing a new part of the facility.

“We couldn't have engineered and fabricated a better solution,” said Cox. “The lift solution worked flawlessly.”

Engineered Rigging also supplied two-man baskets and fabricated a quick-connect adaptor to attach the baskets to the crane's boom. Operators used the baskets to lift contractor personnel to the 40-foot ceiling to install new lighting. Constructing scaffolding for such an application could have taken three days to erect and another three days to tear down—all for an hour's worth of work.

“The basket was a huge time saver for our customer,” Cox said. “We could have their personnel at the lighting location in five minutes. They could complete their work and then be lowered to ground level.”

Engineered Rigging has been working on the project for approximately 18 months and completion is estimated in April 2021. For this project, Engineered Rigging provided engineering design, fabrication, equipment rentals and on-site technical support. To learn more about Engineered Rigging's projects around the world, visit <https://engineeredrigging.com/news/>.

### **About Engineered Rigging**

Engineered Rigging (ER) is a global innovator in heavy lifting solutions. By leveraging decades of experience and a wealth of technical knowledge, ER overcomes the most complex logistical challenges for a variety of industries. The company provides equipment rentals and sales, engineering services and the design and fabrication of custom lifting technology. For more information, visit [www.EngineeredRigging.com](http://www.EngineeredRigging.com).

###