

Press information

ALL relies on two Liebherr cranes for dual pick at bridge in Cleveland

- LTM 1450-8.1 and 1250-6.1 used in tandem lift
- Pedestrian Bridge constructed over busy railroad track in Cleveland, Ohio, United States
- Successful run against the time in narrow time frame

Building bridges is never an easy job. Especially if this bridge runs over busy railway tracks. ALL Crane, one of the largest crane rental companies, relies on Liebherr cranes to place the bridge span in an ambitious time frame. The LTM 1450-8.1 and the LTM 1250-6.1 mobile cranes were the cranes of choice for this project in Cleveland, Ohio.

Ehingen (Donau) (Deutschland), 28. June 2021 – Maybe constructing a three-span pedestrian and bicycle bridge sounds easy enough. But what if it's going over the third-busiest set of railroad tracks in the United States, with estimated traffic of 100 trains per day? In that case, you have to work closely with the railroad to get the critical work-clearance time you need to set spans. And it's likely to be scheduled in extremely brief, single-hour increments. That would take a perfect combination of planning, materials, people, and cranes to get the job done.

That was the scenario as a new hiking and biking bridge was constructed in Cleveland's Wendy Park as part of an expansion of the Ohio & Erie Canal Towpath Trail. The 100-mile path connects Cleveland to the Cuyahoga Valley National Park and cities to its south. ALL provided several pieces of equipment for the job site, including various aeriels and a forklift, but the stars were the two cranes used to set bridge spans and the final arch that topped off the structure. The cranes were a 450 t capacity Liebherr LTM 1450-8.1 and a 250 t capacity Liebherr LTM 1250-6.1. Often, the units worked independently of each other in setting 38 m spans that weighed 38,5t. But, for one critical window, they came together to help set the two halves of the arch and hold them in position so Youngstown Bridge's ironworkers could execute a mid-air splice.

Narrow timeframe

Plans for the lift were submitted months in advance to Norfolk Southern Railway, owner of the tracks and ALL specified the cranes. Once the plan was submitted, no changes could be made to the lift. And, when the approved work time finally came, the team on the ground would likely have just an hour to complete the placement of the arch. That is usually the maximum amount of time a railway operator can halt train traffic for lifting work to be performed.

In the days leading up to lift day, Dan Lewis, project supervisor for Youngstown Bridge, had his team perform several pre-lift tests to make sure they would be ready to make the most of their time. "This gave our ironworkers the opportunity to fine-tune the rigging of each arch section, incorporating the actual crane configurations that would be used on lift day," said Lewis. "This was important, given the time constraints. The team could know, well before the lift, that the two arches would be within a degree or two of each other at the splice point." For these practice runs, Lewis also assigned zones on the arch to

each of his ironworkers so they would know exactly where to focus their efforts and what tasks to perform during the actual splicing.

The railway window was scheduled for mid-April then was suddenly moved up by three days. Lewis praised the flexibility of ALL Crane, noting how quickly they were able, on short notice, to mobilize the 250 t capacity LTM 1250-6.1 to have it assembled and ready for the lift. When the predetermined hour finally arrived to set the two arch sections, nearly eight months of planning came down to 60 minutes. The LTM 1450-8.1 was configured with 48 m main boom at a 15 m radius and the maximum of 134 t of counterweight. The LTM 1250-6.1 had 40 m of main boom at a 10 m radius.

Successful teamwork

In the days preceding, both cranes had already been quite busy. The two 38 m bridge spans were set on their respective abutments and temporary structures toward the middle, as well as a 75 m center span resting on the temporary structures. By installing the arch, which would assume the bulk of structural support duties for the entire bridge, the temporary structures below could be removed, and the bridge would be essentially complete. With the clock running, crane operators held each arch piece in position as a dozen ironworkers, six in man lifts and six on the ground, swarmed the area to install scores of bolts at critical splice points. There was a minimum number of bolts that had to be installed for the structure to support its own weight, and this became a crucial milestone. It meant that, should the work window start to close, the bridge would be stable enough to stand on its own. Otherwise, if the milestone wasn't met, ironworkers would have to reverse course and disassemble the arch so they could try again another day. Given the difficulty in scheduling work windows, no one wanted this.

At the 35-minute mark, when the threshold was reached, everyone breathed a sigh of relief. Just 23 minutes later, at minute 58, the work was completed. There would be no need to schedule a second work window. The new hiking and biking bridge was now a reality.

About ALL

The ALL Family of Companies is the largest privately held crane rental and sales operation in North America, with 33 branches operating under the ALL, Central, Dawes, Jeffers, and ALT names. Since 1964, the ALL Family has been a leader in the heavy lift industry, offering rental, sales, parts, and unparalleled service to customers. Our market strengths include commercial construction, roads & bridges, power generation, plants & processing, facility maintenance and more. With one of the largest and most modern fleets of equipment on the continent and generations of industry veterans who lend their experience every day, we are proud to say that no job is too tough for ALL.

About Liebherr-Werk Ehingen GmbH

Liebherr-Werk Ehingen GmbH is a leading manufacturer of mobile and crawler cranes. Its range of mobile cranes extends from 2-axle 35 tonne cranes to heavy duty cranes with a lifting capacity of 1200 tonnes and a 9-axle chassis. Its lattice boom cranes on mobile or crawler crane chassis deliver lifting capacities of up to 3000 tonnes. With universal boom systems and extensive additional equipment, they can be seen in action on construction sites throughout the world. The Ehingen site has a workforce of 3,600. Extensive, global service guarantees the high availability of Liebherr mobile and crawler cranes. In 2020, the Liebherr plant in Ehingen recorded a turnover of 2 billion euros.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a highly diversified product portfolio. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality and user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 140 companies across all continents. In 2020, it employed

around 48,000 staff and achieved combined revenues of over 10.3 billion euros. Liebherr was founded in Kirchdorf an der Iller in Southern Germany in 1949. Since then, the employees have been pursuing the goal of achieving continuous technological innovation, and bringing industry-leading solutions to its customers.

Pictures



liebherr-all-crane-tandem-hoist-pedestrian-bridge-1.jpg
Tandem hoist to place the huge bridge span over the railroad tracks.



liebherr-all-crane-tandem-hoist-pedestrian-bridge-2.jpg
The LTM 1250-6.1 from ALL Crane with the first part of the new bridge span.



liebherr-all-crane-tandem-hoist-pedestrian-bridge-3.jpg
The 450 t LTM 1450-8.1 from ALL placing the left part of the new span.

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