

Fast-Erecting Tower Crane

81 K

Job-Report

America's Cup racing yachts

Unusual application gives boats a lift



LIEBHERR

Efficiency on board



Traveling through New Zealand, Italy, Portugal, the United Kingdom and the United States in 2012, AC45 racing boats and the Liebherr 81 K get from venue to venue on a 525-foot cargo ship.

The oldest trophy in international sport, the America's Cup was first contested in 1851. Today, the America's Cup World Series (ACWS) is an enormous global venture that includes 11 AC45 wingsail catamarans involved in high-flying races where speeds approach 30 knots (35 mph/55 kph). Helping the America's Cup organization get the boats in and out of the water every day, all over the world, is a Liebherr 81 K fast-erecting tower crane.

The ACWS travels from venue to venue on a 525-foot cargo ship that carries 1,500 tons of gear, including boats, equipment and 110 containers that transform into a full-scale village directly on the pier for boat repair maintenance, operations, storage and hospitality. Setup and teardown each take approximately one week.

One-man show

Once the ACWS arrives at its destination, Graham Goff, the organization's Wing and Platform Logistics Manager quickly and easily sets up the Liebherr 81 K along side the pier. The crane remains in place for the duration of the event and is used to raise and hold each sail so that it can be inserted into the housing. Then, the crane lifts each boat in or out of the water. This process takes about 20 minutes per boat.

"It only takes about two hours to set up or dismantle the crane and I can do it myself in most cases," says Goff. "That's short work for such key piece of equipment. When the boats are practicing and racing, we use the 81 K every day to get them into and out of the water. We couldn't keep on schedule without the crane."

Goff has even designed a special lifting system so he can release the hook from the sail after placing the boat without climbing up the mast.

***"Owning the 81 K is a cost effective way for us to remain efficient and self sufficient." –
Grahm Goff***

The Liebherr fast-erect tower crane model first hit Goff's radar when he was in New Zealand looking into renting a crane to lift the boats while on site there. The high cost of mobile crane rental compared with the cost of a Liebherr 71 K was the impetus to try out a tower crane. After placing boats for the ACWS with the 71 K for a month, Goff was hooked and he purchased the 81 K for use as the organization's permanent crane.



Graham Goff, America's Cup World Series Wing and Platform Logistics Manager assembles and operates the Liebherr 81 K at each racing event.

Built for smooth operation and safety



With an ideal packing size of 2.60 m x 4.00m, the 81 K can be easily transported by boat, truck or rail truck or rail. The crane is approximately 16.50 m.

Introduced at BAUMA 2010, the Liebherr 81K is the first model in its class to bring the drive and control technologies of a top-slewing tower crane to the fast-erect market. This includes stepless lift and lower capabilities. The 81K also allows for the option of highly precise slewing at low rpm or high torque and high handling capacity at high rpm and low torque.

“I love how smooth the machine operates with the frequency drive, especially when setting the AC45 sails onto the body and lifting the boats,” says Goff. “No matter what I’m doing, I know that the crane will be accurate even at full speed.”

With the Liebherr 81K, safe control is a given. The graphic display of the PLC control features a simple menu guide and shows important operational data in one view. In addition, the electronic monitoring system (EMS) provides information on loads, driving modes and many other operational functions.

Clear information at your fingertips

The pushbutton-selected fine positioning mode MICROMOVE reduces hoistspeed to 25 %, so that even heavy loads can be precisely positioned without the hoist gear brake being

Technical Data	
Maximum load capacity	6,000 kg
Lifting capacity at the tip	1,400 kg
Maximum radius	45.0 m
Slewing radius	2.75 m / 3.50 m
Hook heights	
Tower retracted	17.4 m
Standard	26.0 m
6 tower sections	40.4 m
Max. hook height at 30° luffed jib position	55.0 m

applied. In addition, the range of control lever movement always corresponds to the maximum possible speed.

“I haven’t used the older technology contactor control since we started using the frequency drive,” notes Goff who has crane operator certifications in several countries. “The controls on the 81 K simply improve my ability to do my job.”

The 81 K also features a well-designed cabin that offers optimum visibility and maximum working comfort for the operator.



The AC Village in San Francisco is the public venue for the 2013 America’s Cup Summer of Racing.

Efficiency any time, anywhere



The Liebherr 81 K is an important part of the America's Cup Village, lifting boats in and out of the water daily for practice and races.

The ACWS wanted a machine that could be certified to operate anywhere in the world using local power, whatever the voltage or frequency. The 81 K delivers, making access easy with a connection point located conveniently at the undercarriage.

"We've traveled all over the world with the 81 K since purchasing it," says Goff. "In the 2011-2012 AC World Series, we've made several stops in the United States, starting in Newport, Rhode Island and then in San Diego and San Francisco, California. The crane travels well by boat, road and rail."

As an operation constantly on the move, it's not surprising that the ACWS would think outside the box

and purchase its own crane. This solution is right on strategy for maintaining self-sufficiency.

"It's probably the most unusual application for a tower crane, but it was a viable option that enables us to contain our costs over the long run," comments Goff. "As someone involved in logistics, the efficiency we gain by using the 81 K to get the boats in and out of the water is invaluable. We haven't needed them yet, but parts and service are available all over the world."

The 81 K is just one of many models in the Liebherr tower crane line. With sizes and systems ranging from Flat-Top to High-Top to Fast-Erect, Liebherr has the right lifting technology for any application.

Liebherr 81 K advantages:

- + SPEED 2 LIFT: Pure two-line operation for maximum capacity at full speed
- + Unbeatable load capacity at the tip
- + MICROMOVE: Accurate fine-positioning mode at the press of a button
- + Safe working movement with load swing damping and wind force control