THE FOSBURY

BY TAKING A NEW TWIST ON LIFTING A 14,000 TON CONVERTER PLATFORM, MAMMOET HELPED OUR CLIENTS REDUCE SAFETY RISKS, WHILE CUTTING THE TIME TAKEN TO REMOVE OUR EQUIPMENT BY AROUND A MONTH.
Dick Fosbury, of Medford, Oregon, the high jumper who goes over the bar backwards, is shown in his unorthodox manner during the Olympic high jump competition in 1968. Fosbury won the Olympic Gold Medal with a leap of seven feet, four and one half inches, breaking the Olympic record.
In 1968 athlete Dick Fosbury won a gold Olympic medal in the high jump with the ‘Fosbury Flop’, introducing it to a worldwide audience and changing the way high jumpers clear the bar to this day. Dick Fosbury’s unusual method was to fly backwards over the bar and land on his back. This completely turned around the conventional approach of straddling the bar and landing feet first. From that moment on, the high jumping bar was, literally, raised and Fosbury’s invention took the sport to a brand new level of performance. In 2014 Mammoet reversed the normal positions of our lifting equipment for an operation to raise a converter platform, saving approximately a month of turnaround time for the equipment removal compared to the conventional method. Removing the equipment in this new way also reduced the manual labor hazards. It was the first time this approach had ever been used.
TURNING CONVENTION UPSIDE DOWN

The conventional method involves installing strand jacks in the jacking house at the bottom of the legs.

For Mammoet’s method the strand jacks were installed on top of the platform legs.

In this position the strand jacks are turned 180° and pull the platform into place. The wires are wound onto the strand reel frames, enabling their easy removal once the platform lift was complete.
TenneT, an electricity transmission system operator, commissioned a new converter platform to be built by Siemens to service the DanTysk, Sandbank and Butendiek wind farms. The platform, named the SyIWin alpha, measures 83 meters in length by 56 meters wide and 26 meters high and weighs 14,000 metric tons. It is the biggest high voltage direct current, or HVDC, converter platform ever installed in the North Sea.

Siemens engaged the services of Seaway Heavy Lifting (SHL) to transport and install the platform and its jacket. Mammoet were commissioned by SHL to lift the converter platform by 15 meters once it had been placed on its jacket.

Twist in time
It can take as long as 50 days to complete this type of platform lift using the conventional method. Dismantling and removing the lifting equipment is very time consuming and hazardous, all while out in the inhospitable conditions of the North Sea. So Mammoet came up with an approach that took a new twist on the old method and dramatically reduced the time taken to remove the lifting equipment.

In a normal platform lift operation anchor blocks would be installed on top of the platform leg and strand jacks would be installed in a jacking house. Having to install a 4.5-metric ton, 2.5-meter tall strand jack in the confined space of a jacking house takes time and involves a lot of manual handling. The removal of all the lifting equipment is particularly difficult, especially removal of the wires used in the operation.

The new method involved installing the strand jacks on top of the platform legs rather than in the jacking house at the bottom of the legs. In total, 44 strand jacks were used for the operation and each one was installed with a special construction called a strand reel frame. These were designed just for this project and enabled the wires to be wound back onto the reel while the platform was pulled up into place.

At the other end of the leg, in the jacking house, the anchor blocks were installed where the strand jacks normally go. The anchor blocks weigh 850 kilograms and could be loaded onto a pallet truck and rolled into the jacking house. This method made both the installation of the anchor blocks in preparation for the lift, and their removal after the operation, very easy.

Mammoet spent a month at the yard, before the operation at sea, installing the lifting materials onto the legs. This included a walkway on the strand reel frame, which enabled maintenance on the strand jacks without the need for a crane. The 44 strand jacks Mammoet installed each provided 900 metric tons of lifting capacity to raise the platform.

Turning convention on its head
Using Mammoet’s unique twist on the conventional method it was possible to complete the platform lift and equipment removal operation at sea in just ten days. Due to the strand reel frames the strand jacks could be taken out without the need for time consuming wire removal. Then removing the anchor blocks was simply a matter of rolling them out of the jacking house on a pallet truck.

The new way of working proved successful and demonstrated the benefits of the ‘Fosbury Flop’ approach; turning an accepted way of doing things around to realize a significant improvement in results and raise the bar for future converter platform installations at sea.