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Lifting Evolution

When it comes to moving very heavy loads in tight conditions, a crane is not always the best solution. **C&A** caught up with Tjerko Jurgens of Hydrosplex, to talk about alternative lifting.

Self-propelled jacking systems have been on the market for some time and have proven their worth in applications such as the installation of large heavy machinery in low headroom situations. A particular company based in Holland has developed a name for itself in this field and has taken the alternative lifting concept well beyond the typical industrial lift-and-shift market.

In the past ten years, Tjerko Jurgens has transformed Hydrosplex from a small producer of hydraulic cylinders to a leading manufacturer of heavy lifting equipment. Hydrosplex developed the lifting gear and control software for the lifting of the London Eye and the salvaging of the sunken Russian submarine, the Kursk. These extremely high-profile applications have helped to give the company a reputation as a pioneer of advanced alternative lifting systems.

"I feel that all our alternative lifting solutions were initiated by a customer saying 'I have a lifting problem that I can't solve with traditional equipment'," says Mr

Jurgens. "When I took over Hydrosplex in 1994, we were making hydraulic cylinders and strand jacks and the electronics to control them. Our customers were becoming increasingly safety conscious, especially when heavy objects were required to be moved. Most of the existing systems were a tricky business, were hard to operate, and were complicated and unstable.



Tjerko Jurgens of Hydrosplex.

"We felt that customers' concerns over the lack of safety could only be solved with an improved control system, so we explored the possibilities and built the first



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reliably-controlled strand jack system. Customers like Mammoet, PSC and Lastra were pleasantly surprised. They found our solution relatively simple and easy to use."

Strand jack maturity

Mr Jurgens claims that the simplified strand jack system that Hydrosplex developed helped convert many sceptics from traditional lifting methods and led to the invitation for the company to participate in the London Eye and Kursk projects.

"The exposure from those jobs helped to boost the acceptance of this type of lifting," he says. The demand for the jacking systems increased, allowing the company to manufacture and sell them at more attractive prices and bring them closer into the mainstream market.

"In 1995 we estimated to build and sell 40 to 50 strand jack systems in total, but over the years the situation has drastically changed," says Mr Jurgens. "Today, our customers can get 800-tonnes of lifting capacity for

€200,000, which has opened up new markets for us. At the end of 2004, we sold our 500th strand jack system. The ease of operation is the most significant advantage of our strand jack lifting systems."

When delivering a new system, Hydrosplex provides training for the operators and claims that even when they face language barriers, such as in China, operators need no more than two days of training to be able to control the system and work with it safely.

As Hydrosplex became known for its solutions to difficult lifts, demand increased for other alternative lifting equipment. "One of our customers challenged us by saying that it was impossible to build a safe telescopic lifting gantry - he called them suicide legs," says Mr Jurgens. "We first took a good look at what was offered at that time and had to agree with him. We concluded that to build a reliable telescopic lifting gantry, the whole thing had to be re-engineered. We came up with a system that used spindle jacks, instead of hydraulic cylinders, controlled with electronics

"One of our customers challenged us by saying that it was impossible to build a safe telescopic lifting gantry - he called them suicide legs"

similar to the ones in our strand jack systems.

"A customer in New York gave us the chance to show that it could work. He commissioned us to build a system with 24 simultaneously operated and synchronised spindle jacks. 1000 tonne loads had to

be lowered with a tolerance of 5 millimetres per leg. Safety and liability were written all over this project. In our view synchronisation is equal to stability, and stability is equal to safety. The New York project proved us right. And again it attracted a lot of attention.

Since then, our 4-point telescopic lifting gantries have sold all over the world.

"We were then asked if we could build a telescopic lifting gantry with linear propulsion," says Mr Jurgens. "Now this question was all about footprint load. Our calculations showed that it would be impossible to build a reliable system. But then we stumbled over the concept of the tank roller. That got us started again. We built a set of self-propelled tank rollers and tried to move a 200-tonne load with it. A group of visiting customers saw this

prototype in motion and was impressed. But, their next question was, 'could you also do a load-out operation with it? Looking back, this marks the turning point in the development of our skidding systems that are now widely applied. In fact, they are a modern version of the system used to build the pyramids.

"I don't know what's next in alternative lifting," says Mr Jurgens. "But there's one thing I am sure of - all we need is someone saying it's impossible."

What happened to all the fairies?

During the 1960's, most large industrial establishments had at least one pick-and-carry crane in their yard, while most crane hire companies owned a number of units. But what of this market today? **C&A** reports.

One thing is for sure, Britain's manufacturing base has certainly shrunk, but even more significant are the changes production plants have made to eliminate all non-essential material handling and the preference for palletising loads. Hire companies now do much of all this 'Iron-fairy' work with small all-terrain or big knuckle boom cranes.

While the industrial pick-and-carry crane market has diminished beyond all recognition, considerable demand for compact, or specialised, units is still there. So what choices are available for the pick-and-carry crane buyer or user? One thing that quickly becomes clear is

that, with few exceptions, pick-and-carry cranes are only produced in Italy and the US. And very few of the US carry-deck products are now marketed in the UK. A buying choice is likely to be one focused on one of the many Italian products available.

The company offering the widest range is UK market leader Valla Cranes. The Valla range runs from units hardly larger than a pallet truck, to a massive 90-tonne pick-and-carry electric-powered machine.

Valla recently upgraded its popular two-tonne model, the 20E, with a number of refinements, mostly the result of input from the firm's



Valla Cranes currently offers the widest range of pick-and-carry cranes in the UK, running from units hardly larger than a pallet truck, to a massive 90-tonne pick-and-carry electric-powered machine (pictured).

For general pick-and-carry and yard work, Terex Demag offers the Australia-produced Frana range with lift capacities from 10 to 25 tonnes.



dealers. The new 20E still offers a 400-kilogram capacity at almost three metres radius, or 800 kilograms to four metres hook height. With tremendous manoeuvrability, smooth quiet operation and simple controls, the 20E, as with other small to mid-range Vallas, is ideal for the 'in-plant' handling of suspended loads.



Italian producer, Ormig, offers a pick-and-carry crane line that starts at 10 tonnes capacity and is capped at the 60-tonne 60 TM (pictured).

For applications where ground conditions are soft, steep, or for work on delicate floor services such as marble, Valla UK has worked with the manufacturer to develop the 20E TRX. This unit incorporates the 20E's superstructure on rubber tracks and with a diesel-power option. The TRX has proved very popular in a range of applications including the resetting of gravestones (see news story on page 12).

The Valla range climbs in small increments up to the massive 90-tonne 900E, which is unmatched for pick-and-carry capability and an unbeatable unit for moving heavy machinery into place.

Another big pick-and-carry producer to recently enter the UK market is fellow Italian firm, Ormig. Ormig's range starts at 10 tonnes and stretches up to 60 tonnes. These pick-and-carry units are largely diesel-powered, although electric-powered versions are

available up to 35 tonnes lift capacity. Ormig also offers a Bi-Energy package, combining both diesel- and battery-power for both indoor and outdoor lifting duties. Crowland Cranes of Peterborough has taken on the distribution for the UK. The company aims to offer the Ormig units for both sale and rental.

For general pick-and-carry and yard work, Terex Demag offers the Frana range produced in Australia. With lift capacities from 10 to 25 tonnes, the Frana range, with its high-speed travel capability, probably comes closest to replacing the old 'Iron Fairy'. These

units are ideal for machinery movement and other yard-based duties.

Terex Demag UK has so far only delivered a handful of these units but interest is steady enough for the company to bring in stock and demonstrator units.

Oh, and what did happen to all the Fairies? Well, many can be found working in small boatyards, big equipment dealerships and the like. And yes, many went overseas where they are still working.



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