

The international factory crane magazine

# HOIST

## Electric chain hoists

We look at some of the latest developments available to end users from manufacturers in the electric hoist technology sector

## Erikkila

CEO Mikko Erikkila discusses the company's latest achievements and its involvement in a tender for a major automotive manufacturer

March 2015

[www.hoistmagazine.com](http://www.hoistmagazine.com)



**Safety first  
in entertainment**



# Putting on a safe show

**I**t was a brisk start to the year for hoist manufacturers and distributors supplying into the entertainment sector.

At Hoist UK, for example, Paul Jordan reported a pick up in business after the customary festive season slow down.

The company has seen good levels of business across both its industrial and entertainment operations over the last 12 months and has taken on more staff to cater for demand. It's also relocating later this year and will double the size of its premises.

The entertainment sector in particular seems to have been recession proof and for those companies operating globally, while one economy is in the doldrums, another may be buoyant.

"We had contracts in China and in India and that helped us during the recession in the UK," said Jordan.

Major events, particularly sporting ones, also went ahead, providing lucrative

Demand for hoists is healthy within the entertainment industry – as is the regard for safety within the sector. Sally Spencer reports

business – Hoist UK, for example, supplied equipment for the London Olympics. This year it is set to supply another significant sporting event although it's too soon in the contract to name names.

Fixed installations within theatres and arenas have provided the "larger monetary value" contracts over the last year, however, and the company is nearing completion on a project to provide London's National Theatre with crane systems and hoists for its NT Futures programme.

"For this we've been dealing with the theatre's requirements for entertainment hoists and aluminium trussing for above stage and rear/side stage mounting locations, as well as providing more industrial style cranes and hoisting

systems for the back stage area for the theatre's in-house carpentry, paint, metalwork and assembly facilities," said Jordan.

Hoist UK distributes the Stagemaker chain hoist products from Verlinde and says demand for the new SR series hoist has been growing throughout the year.

"The unit has been very well received by customers and meets all the relevant British and European standards as well as having all the properties a user requires with regard to weight, sound level, safety, design and flexibility – and it's great value for money," said Jordan.

Mantracourt, designer and manufacturer of BroadWeigh, a wireless load monitoring system for the entertainment sector, has also seen



healthy demand.

"We experienced significant growth in the UK and Europe in 2014," said Kelly Voysey, marketing manager. "Our UK distributor AC Entertainment, who supplies the sector with all kinds of rigging equipment, reports that demand has been broad from basic manual chain hoists through to advanced automated control systems. And the same can be said by our German distributor HOF Alutec."

Mantracourt is witnessing increasing demand for its smaller 3.25 tonne shackle, especially from the US and Europe, said Voysey, adding that all sectors of the entertainment market, from touring companies, to arenas, exhibition centres, theatres and hotels were providing regular business. The company has also seen growth in the rental market.

In terms of satisfying the evolving needs of the customer base, Paul Jordan said that the push from the market place had always been for high quality, fit for purpose and "economical" products that meet both British and/or European standards and said that during the last couple of years demand had grown for Hoist UK's own brand of winches and equipment.

"The requirement to custom build [systems] specifically for a set application has grown," said Jordan. "Years ago you used to go to a concert and see a musician standing on stage playing an instrument; now you expect to see a show, with pyrotechnics, video walls, flying effects and so on. There's a big push from production companies and performers trying to do more spectacular things and so the level of equipment we have to

**Hoist UK has undertaken a wide range of installations in the last 18 months**

provide needs to be higher, fit for purpose and safe."

This increased level of demand for bespoke products led to Hoist UK's sister company, Truss UK, acquiring a 100% shareholding in AJB Precision Fabrication, which was a subcontractor to both companies.

"We can now provide custom designed and custom built products through that link," said Jordan. "So along with providing the hoists, which we would buy in as normal, we can provide the other pieces of the jigsaw, including the structures. It's a one-stop-shop."

The demand for more spectacular sets at entertainment venues brings health and

Safety is paramount in the live arena



safety into sharp focus.

"Due to the type of lifting in the entertainment sector, with 90% of the lifting and suspending of loads over people, regulations, standards and codes of practice play a major part in what we do and how we do it," said Matt Millward, rigging manager of Mantracourt distributor, AC Entertainment.

Having said that, as both Jordan and John Williams, operations manager at the Lifting Equipment Engineers Association (LEEA) point out, the basic legal requirements for the entertainment sector are no different to those in other industries.

"If you pick up a load, whether it's in a factory or an entertainment venue you can't drop it," said Jordan. "But we risk assess the application and mitigate those

risks and that includes in the design of the unit for its intended use.

"We operate with higher levels of redundancy or increased level safety systems within the equipment when dealing with applications that would not be done in a normal industrial setting, such as moving and statically suspending loads above people's heads and flying people or objects around within a controlled environment - but in essence it's the same."

The Lifting Operations and Lifting Equipment Regulations (LOLER) legislative framework within which the industry works has raised safety standards without placing an unnecessary or onerous burden on employers, said Williams.

"Above all else it adopts a flexible, risk-based approach that correctly places

the emphasis on the 'human factor' but is not unduly prescriptive. For example, LOLER demands that lifting operations are properly planned, supervised and performed by competent people – but leaves it to the employer to determine precisely how this is done."

He added that the relative success of LOLER is reflected in the fact that it has been left unchanged by the UK Coalition Government's wide-ranging review of health and safety legislation.

"LOLER is also increasingly being adopted as best practice by employers working outside the UK, particularly in countries that lack sector-specific legislation," said Williams.

Jordan sees adherence to the legislation as a joint responsibility between the supplier and the customer. The onus is on

the supplier to provide equipment that's fit for purpose, while the owner and user must risk assess his own operations and ensure the kit is inspected and serviced on a regular basis.

The frequent challenge here, quite simply, is for employers in the entertainment sector to keep track of all the equipment that falls under the remit of LOLER.

"Crucially, LOLER defines lifting equipment as 'work equipment for lifting and lowering loads and includes its attachments used for anchoring, fixing or supporting it'," said Williams.

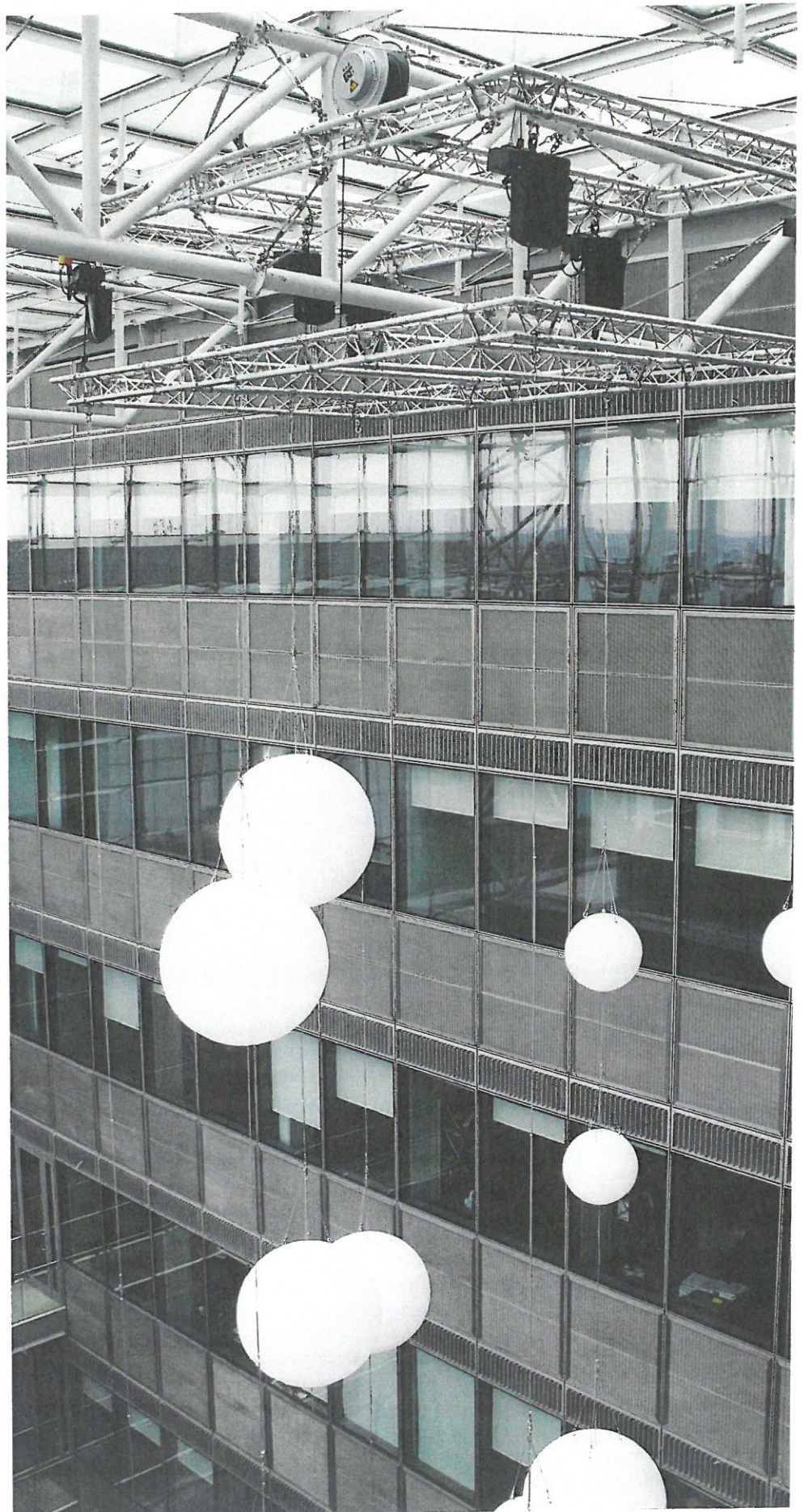
"As such it applies to a wide range of relatively simple items routinely used in theatres and the like. Being able to identify such items accurately is vital because LOLER requires that all lifting equipment is subject to periodic, thorough examination by a competent person (who will usually be employed by an independent inspection company). Clearly this is only possible if the employer can identify each item and maintain a comprehensive record of any thorough examinations it has been subject to."

He added that in many cases it's difficult to predict whether equipment will be in storage or in use when a thorough examination is due. Some inspection companies use colour coded tags to ease the process but there is no industry standard for these.

RFID tagging is now reaching the market, either embedded by the manufacturer or retrofitted, enabling all the relevant information to be programmed onto the tag and read with a hand-held scanner. However, said Williams, there's a long way to go before this becomes the norm and, until then, there's no substitute for the employer maintaining a well organised store of lifting equipment and keeping accurate records.

Williams points out that there is detailed guidance on legislation in the form of the Approved Code of Practice (ACoP) that accompanies LOLER (downloadable free of charge at [www.hse.gov.uk](http://www.hse.gov.uk)). And LEEA's own Code of Practice for the Safe Use of Lifting Equipment (COPSULE) is now in its eight edition. A User's Pocket Guide is also available. Industry itself also plays a key role in promoting safety standards.

"We're very active on the educational front and have regular free motor schools





Truss UK: Specialists in rigging

teaching entertainment riggers how to do basic maintenance and inspections on the Stagemaker unit," said Jordan.

"It doesn't give them competency to inspect their own equipment under LOLER but does give them an insight into procedures so they can ensure any problems with the unit are addressed and rectified by a suitably competent person."

Jordan added that all of Hoist UK's employees are currently going through the LEEA training courses and some are



Hoist UK: Diverse applications

present on the association's Technical Committee. Some are also involved with the Joint Advisory Committee for Entertainment (JACE), which is an HSE committee dealing with health and safety issues specifically for the entertainment sector.

"We can't directly deal with ongoing

HSE investigations but when they're finished we have the chance to talk to the inspector and can learn what has been found and how it's been addressed. Through representation on the JACE committee that can then be passed on to the people designing and operating the equipment." ■

### Application focus: Mantracourt technology leveraged at community ice rink

Mantracourt's BroadWeigh system played a key role at a community ice rink and ice hockey facility that required a display for a screen and scoreboard, to be suspended from a supporting roof structure. This required a safe lifting system including load cells for correct weight distribution and balance.

Suspension was by means of rated lifting points in each corner of the aluminium screen structure. Lifting power was provided by four independent 2-ton electric chain hoists that can be energised individually or as a group by means of a single "GO" button control. Final suspension was to be provided by adjustable static rigging hardware pre-installed in the roof beams.

Should one hoist not support its equal part of the load, that corner would drop and the structure would tilt on just two opposite suspension points, grossly overloading those two points. Catastrophic failure would follow.

An aluminium structure supporting four LED screen displays was to be permanently suspended over the ice rink from the roof



superstructure. The structure was lifted on four chain hoists. To ensure each hoist was supporting the required share of the load, BroadWeigh load cell shackles were placed between the four lifting hoists and the aluminium structure's lifting points.

The load data from each cell was displayed on a computer screen. Each hoist was energised individually until all four hoists were supporting correct portion of the weight as displayed on the computer. Once the load was suitably balanced, all four hoists were energised lifting the structure and screens to the correct trim height. Once at trim the



structure was connected to the permanent rigging hardware with a second set of BroadWeigh load cells.

The load was then lowered onto the permanent suspension points with adjustments having been made to ensure the load was suitably balanced on all four points. The load cells were removed from the permanent suspension hardware once the correct length for each suspension leg was set. Once the four LED screen displays were set onto the permanent hardware the chain hoists were removed along with their load cells.