

INTERNATIONAL

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cranes

AND SPECIALIZED TRANSPORT

Below the hook

The knowledge

WCTS review

Safe view

ICm20

SPMT

Rough terrains

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Editor

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When writing this at the end of October I was just back from Amsterdam in the Netherlands where the World Crane and Transport Summit was held for the third time. A pictorial review appears on pages 33 and 34. It was great to meet so many leading players in the lifting and specialized transport industry from around the world. At the SC&RA Crane and Rigging Workshop a few weeks earlier it was the same story. A review of that event begins on page 55. A more optimistic mood about business prevailed at both events, albeit with talk of a few geographical areas where there is still little or no sign of improvement.

In a similar vein, our annual ICm20 ranking this month of the world's largest crane manufacturers by sales revenue, echoes the above, as do the crane manufacturer's third quarter results first mentioned last month. It is still all very much a mixed bag of performance highs and lows that has been similar for a year or so now. For full details see the ICm20 feature on page 40.

Having a positive effect are links to the energy sector which is a key theme in the industry. Link-Belt, Manitex and Manitowoc, to name just some, have seen strong growth largely attributable to this. In terms of equipment, the rough terrain crane sector benefits greatly. The feature on page 15 outlines developments that include product range expansion at the top end of the capacity scale and the rise of Chinese manufacturers in this sector.

Also linked to the energy sector is self propelled modular transporter, featured on page 23. Load out operations with large oil platform decks and similar constitute a large proportion of the work for this versatile and capable equipment. A couple of major orders recently for hundreds of lines of new SPMT, placed by Roll-Lift and Mammoet, and a landmark delivery to Sarens, underline the industry's confidence in this method of transport. Even the other two main features this month – on below the hook lifting equipment and Marco van Daal's The Knowledge, about alternative lifting methods – have a leaning towards the energy sector.

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ON THE COVER



A Grove RT9150E at the BASF Petrochemical facility in Grove, Texas, USA. For more on rough terrain cranes see the feature starting on page 15.

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MEMBER OF



HIGHLIGHTS

■ Marshalls, a manufacturer of landscaping materials based in Huddersfield, UK, has purchased 70 Hiab loader cranes. The hydraulic articulating cranes have Hiab's Operator Protector System and will be fitted to vehicles supplied by leasing company Contract Vehicles Limited. Guy Ripley, regional logistics and fleet manager at Marshalls, said, "A lightweight but high capacity crane is crucial to us because we need to maximise the payload on the delivery vehicle. Our Hiab cranes meet the variety of challenging unloading situations we encounter when delivering to builders' merchants, building sites, and residential properties."

■ Joint-venture crane company Palfinger Sany has opened a liaison office in Turkey to help develop business for its wheeled mobile crane sales in the country and in the surrounding region. Ersava Güdül, who has years of technical and commercial experience, will manage activities there as regional business development manager for Palfinger Sany, the company said. Palfinger Sany Mobile Cranes offers truck cranes from 25 to 130 tonnes capacity and all terrain and rough terrain cranes. It has input from hydraulic loader crane manufacturer Palfinger in Austria and construction equipment manufacturer Sany in China.

Manitowoc Q3 growth into double figures

Third-quarter 2013 net sales in Manitowoc's crane segment were US\$ 612.6 million, up 10.4 % from \$555.1 million in the third quarter of 2012. Primary drivers were continued growth in the Americas and in crawler crane sales. Also reported was ongoing success with the Manitowoc Crane Care product support division.

Crane segment operating earnings for the third quarter of 2013 were \$55.7 million, up

110.2 % on the \$26.5 million in the same period the year before. The operating margin was 9.1 % for the third quarter of 2013, up from 4.8 % in Q3 2012.

Order backlog was \$568 million on 30 September 2013, down by \$158 million from the end of the previous quarter. Third quarter 2013 orders, at \$450 million, were 23 % lower than the third quarter of 2012.

Growth in the Crane segment was largely

responsible for the combined Manitowoc Company (cranes and foodservice) increase of 7.1 %. Sales were \$1.015 billion, up from \$947.5 million in the same period a year earlier.

Looking ahead, based on results so far this year and the outlook for the final quarter, Manitowoc's forecast is for crane revenue to show mid single-digit percentage growth and for the operating margin to be a high single digit percentage.

Mammoet launches heavy lift terminal crane

International lifting and specialized transport service provider Mammoet, based in the Netherlands, has developed a new terminal crane.

The 600 tonne capacity (at 25 metres radius) Mammoet Terminal Crane 15 (MTC15) has a load moment rating of

15,000 tonne-metres. It can be installed in general ports to provide heavy lift capability, for example, for load ins and load outs of petrochemical vessels and other components and equipment. In addition, local resources, such as water or sand, can be used for the

containerised (7.6 x 6 metres) ballast and it can be assembled by one 80 tonne assist crane. Capability is comparable with a 1,200 tonne capacity crawler crane, Mammoet said.

Patrick van der Meide, Mammoet senior commercial manager, said, "With the successful testing of the MTC15 in Westdorpe, the Netherlands, Mammoet has engineered a technological breakthrough for our customers. Mammoet is also developing a skid track to move the MTC15 parallel to the quay."



The new 600 tonne capacity Mammoet Terminal Crane 15 (MTC15)

CARGOTEC LOWERS 2013 FORECAST

Crane and materials handling equipment manufacturer Cargotec said its performance will be lower than forecast for 2013. Sales and operating profit, excluding restructuring costs, are expected to fall short of 2012. Earlier guidance was for sales to be slightly below 2012 and operating profit excluding restructuring costs to be at or slightly below 2012, the manufacturer said.

Sales and operating profit for the second half of 2013 in the MacGregor marine crane division will be lower due to continued slippage in merchant ship deliveries, Cargotec said. In the Kalmar port crane division the third quarter was positive but cost overruns on some ship-to-shore crane projects had a negative effect.

Preliminary results show third quarter order intake at Cargotec of €724 million (US\$ 977 million), sales at € 752 million (\$ 1.014 billion) and operating profit, excluding restructuring costs, at € 35 million (\$ 47 million).



WCTS 2013



The World Crane Transport Summit 2013 opened on 29 October to a strong international audience in Amsterdam, Netherlands. Around 270 industry professionals gathered at the Hotel Krasnapolsky in the centre of the Dutch city.

It is the third time that the two day conference has been held. The event offers thought-provoking presentations to help generate debate on key issues facing the lifting and project transport industry worldwide. Speakers at this year's event included Léon Schöpping, senior construction engineer & PTE lifting & hoisting, Shell International Exploration & Production; Joel Dandrea, executive vice president, Specialized Carriers & Rigging Association (SC&RA); and David Collett, ESTA president and R Collett & Sons (Transport) managing director.

■ See page 33 in this issue of *IC* for a pictorial review of the event.

Liburnia Maritime Agency based in Opatija, Croatia, has transported two new build asphalt barges from Rijeka to Colombia. The barges weighed 650 tonnes each and measure 60 metres long. Following the transport of the two barges, Liburnia Maritime Agency said it now holds the Croatian heavy lift record.



Soft market hits Terex Cranes

Net sales at Terex Cranes for the third quarter of 2013 were US\$ 453 million, down \$63 million or just over 12 %, from the \$516 million in the same quarter of 2012.

Better was the MHPS segment that includes port cranes. Net sales there were \$461 million in Q3 2013, up 3.5 % from \$445 million in the same quarter of 2012.

Ron DeFeo, Terex chairman and chief executive officer, "Our Cranes segment continues to experience soft market conditions. Geographically, the global economy is best described as lacking a clear direction. North America remains the most stable market overall. Europe has seen slight improvements in certain products, mostly in our AWP

segment, and the Middle East continues to provide growth. However, overall weakness in Europe and Australia have offset the growth we have experienced in other markets."

Net sales for the whole of Terex Corporation were \$1,811 million in the third quarter of 2013, down 0.6 % from \$1,822 million in the same period a year earlier. Income from operations was \$140.9 million in the third quarter of 2013, an increase of \$9.0 million on the \$131.9 million for Q3 a year before.

"Our third quarter operating results were as we expected but with a better tax rate," DeFeo continued, "The current environment is mixed overall and remains challenging to predict."

HIGHLIGHTS

■ Chinese shipping company Nanjing King Ship Management has ordered 20 MacGregor cranes. The order includes five 36 tonne capacity cranes with an outreach of 26 metres, 10 twin-GL cranes and five 50 tonne capacity cranes. They will be fitted on four new 38,000 tonne deadweight general cargo ships which are currently under construction at Taizhou Kouan Shipbuilding, China. The vessels are scheduled for delivery in late 2014. Delivery of the cranes is planned between 2014 and the beginning of 2015.

■ PEMA Truck & Trailer Hire, in Herzberg am Harz, Germany, has added several new Nootboom semi-low loader trailers to its fleet. The 3-axle and 4-axle extendible Teletrailers and semi-low loaders are fitted with self-steering axles and hydraulic power steering.

Indian contractor takes on first Liebherr flat top crane

Indian developer and contractor Shantiniketan Buildtech, has taken on a Liebherr 71 EC-B 5i

flat top crane to work on the development of the Shantiniketan residential building in Noida, Delhi.

The tower crane has a capacity of 5 tonnes and a working radius of 50 metres, allowing it to lift 1 tonne at the jib end.

Construction of the residential building began in 2012 and is expected to be

finished in 2014. The building will have five towers and 18 floors. The 71EC-B 5i will be transferred to the second tower once the foundations have been completed. Project manager, B K Tiwari, said, "To ensure the highest quality of construction throughout we believe in buying the best equipment with top-branded products such as the Liebherr crane."

The Liebherr 71 EC-B 5i flat top crane on the development of the Shantiniketan residential building



Enterprise makes final journey with Bay Crane

Heavy lift and transport provider Bay Crane in the USA helped the Space Shuttle *Enterprise* complete its final journey from JFK International Airport to the Intrepid Sea, Air and Space Museum in New York, a retired aircraft

carrier *USS Intrepid*.

Enterprise was delivered to JFK International Airport on the back of a Boeing 747 aircraft carrier and then loaded onto Goldhofer THP/SL heavy duty modular trailer systems using a specially developed lift frame. Once loading was complete, the shuttle was transported on the Goldhofer axle lines by road to the Hudson River to the museum.

Kenny Bernardo, Bay Crane vice president operations, said, "In the last thirty years, space shuttles have frequently been loaded with the help of cranes.

We were the first to handle the loading and offloading with just a single crane. That's something we are very proud of."

Enterprise has a deadweight of 70 US tons (63 tonnes) and is 37.24 metres long with a wingspan of 24 m. In total 24 THP/SL axle lines and a 230 ton (208 tonne) low profile deck were used to move the shuttle from the airport to the river.

Stefan Fuchs, Goldhofer CEO, said, "For us, the Space Shuttle assignment is the crowning moment in our successful history."



PHOTO BY: Bay Crane

Loading the space shuttle onto a barge on the Hudson River

LIEBHERR IN THE BLACK SEA

A Liebherr TCC 14000-400 D Litronic lattice boom crane has been assembled in the port of Baku, Azerbaijan.

It can be configured for offshore and mobile harbour applications and was designed by Liebherr-Werk Nenzing. It has a dead weight of approximately 1,100 tonnes. When set up as an offshore crane it has a capacity of 400 tonnes at 21 metres. Its maximum under hook height is 68 m. In addition to this set up for offshore operation, it can operate onshore as a mobile harbour crane. Its undercarriage design includes four outriggers in a 22 x 22 m cross type configuration onto which are mounted 48 wheel sets. The crane uses tugger winches and has an obstruction area of 12.5 m.

HIGHLIGHTS

Australian heavy lift and transport company Universal Cranes used a 600 tonne capacity Terex CC 2800-1 lattice boom crawler crane to install a communications antenna at Canberra station, a NASA (National Aeronautics and Space Administration) facility in Tidbinbilla. The antenna is one of three to be installed for Canberra Deep Space Communication Complex (CDSCC). It is part of the Deep Space Station 35 (DSS35), a AU\$ 50 million (US\$ 48 million) 34 metre diameter beam wave guide (BWG) antenna. To lift the 114 tonne satellite dish, the CC 2800-1 was configured with a 36 m boom and a 36 m luffing jib. Including a 160 tonne capacity hook and 5 tonnes of slings and shackles, the lift weighed 126.5 tonnes. The dish was lifted at a radius of 26 m and slewed 300 degrees before being installed on top of a pedestal structure. Following this, the crawler lifted the upper quadripod antenna structure, which was placed at the centre of the dish.

Heavy transport company Laninco, based in Costa Rica, has moved cargo weighing a total of 2,800 tonnes from Port Caldera to Las Pailas in Guanacaste Province, in North-Western Costa Rica. The cargo consisted of 75 tonne condensers, which measured 17 metres long, and 65 tonne separators, measuring 12.5 m long. Other cargo units weighed up to 60 tonnes each. The units were moved for the Geothermal Binary Power Plant. The charter shipment handled weighed 1,600 tonnes. Including several other container cargo, the total weight moved by Laninco for the project was 2,800 tonnes. For the transportation from Port Caldera to the site in Las Pailas, Laninco used low-bed trailers. Despite challenges along the route, such as weak and low bridges, the cargo was delivered on time.

Phoenix Terex in the pink

Atlanta, USA-based Phoenix Crane Rental is flying the flag for breast cancer awareness, after taking delivery of its second pink-liveried crane from Terex.

The Terex T 340-1 hydraulic truck crane has a fresh paint job, donated by Terex, in time for the Breast Cancer Awareness month of October. Operating the new pink crane will be Jessica Ives, Phoenix Crane's first female crane operator.

As part of its commitment to It's The Journey, Phoenix Crane plans to donate a portion of the hourly rental revenues from both pink cranes to the organisation. "We

have every intention to keep both Terex pink cranes in operation for the lifetime of the equipment," confirmed Karen Barton, Phoenix Crane chief financial officer and

vice president. "Every dollar we can contribute yields a far greater personal and organisational return than anything else we could have gotten involved in."



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TNT sold to First Reserve

Crane rental company TNT Crane & Rigging will be acquired by its management team and global equity firm First Reserve. Financial terms of the deal with the First Reserve Fund XII were undisclosed. Completion is forecast before the end of 2013.

TNT, owned by Odyssey Investment Partners, has a fleet of more than 400 cranes and specialises in the oil and gas and industrial infrastructure industries in the United States.

Commenting on the deal,

Mike Appling, TNT CEO, said, "First Reserve's investment is an important milestone for our company. Our partnership will create additional opportunities for our employees and advance our capabilities to service our customers. We believe the outlook for our business has never been better, and we are excited to partner with First Reserve in the next phase of our growth."

Tim Day, First Reserve managing director, commented, "We have a

long and successful history of supporting and growing businesses providing services to the energy infrastructure end markets. TNT represents a continuation of that theme, and we are excited to partner with the highly talented management team of TNT and support them in their ongoing growth initiatives. We believe this platform is uniquely positioned for continued growth, both in terms of its existing served geographies and new markets."

McLeod recovers crane in NZ

Crane rental company McLeod, based in New Zealand, used three Grove all terrain cranes to salvage a collapsed boom on a ship crane.

The 16 US ton (14 tonne) boom collapsed while the ship was docked in the Port of Tauranga, New Zealand. To carry out the difficult lift a 170 tonne capacity GMK5170, a 130 tonne GMK5130 and a 75 tonne GMK4075 were used.

Challenges during the lift included tangled cables and an



Three Grove all terrain cranes salvage a collapsed boom on a ship crane

unknown centre of gravity.

Scott McLeod, McLeod Cranes managing director, said, "We brought three cranes to be sure we could carefully extract the boom without causing any further damage to the ship. We used lifting

eyes on the boom to carefully manoeuvre it clear. It was slow and cautious work, but we were as efficient as possible."

A team from Page Macrae Engineering worked with McLeod Cranes on the recovery operation.

A Sennebogen 673 R HD telescopic crawler crane was chosen by Himmel und Papesch to install electricity pylons between Hemmoor and Cuxhaven in Germany. HuP is headquartered in Bebra, Hessen. The crawler was configured with a 36 metre boom and was fitted with cameras and the Sennebogen Control System, SENCON.



NEW TADANO FOR CARPIN AUTOGRU

Crane rental company Carpin Autogru in Veneto, Italy, has taken delivery of a Tadano ATF 70G-4 all terrain.

The 70 tonne capacity ATF 70G-4 has a 44 metre five section telescopic boom and a 16 m double-folding boom extension. The crane has two Mercedes engines and can travel with full counterweight and equipment within the legal axle load limit of 12 tonnes, the manufacturer said.

Carpin Autogru purchased the four axle ATF 70G-4 for work in the earthquake-hit area of Emilia-Romagna in northern Italy. It was handed over to Leonardo Carpin and Vittorino Carpin, at the GIS Fair in Piacenza held from 26 to 28 September 2013.

The crane joins several other Tadano models in Carpin's fleet, including an ATF 30-2, ATF 50-3 and ATF 80-4.



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Mixed global messages

The shut-down of non-essential US government services in October did not cause much of a stir as far as stock markets were concerned. It may be surprising that the failure to agree a budget and a close encounter with the debt ceiling in the world's biggest economy was not cause for panic, but investors were unfazed.

In fact the Dow managed a moderate gain of 1.18 % between weeks 39 and 43, which included the shutdown period. There was a downward blip when the enforced furlough of some 700,000 public employees started, but the markets had recovered before they went back to work.

There was a similar reaction, or lack of reaction, in other parts of the world. In the UK the FTSE 100 was up 2.51 % over the same period and other European indicators also improved. Japan's Nikkei 225 was down 4.55 % however, bear in mind that it has seen phenomenal growth over the last year, with a rise of almost 60 %.

October, however, saw the crane sector miss out on growth once again. The IC Share Index was down 1.99 % to 53.91 points, with falls for all the Asian and European manufacturers depressing the sector. Growth in Manitowoc's and Terex's share price helped

to limit the damage. But the good news is that the crane sector continues to look better than it did a year ago. The sector was up some 11.44 % on its position 12 months ago, and the strong growth among Japanese manufacturers has been a key driver for this, along with solid improvements by US and European players.

Chinese manufacturers, however, still look depressed and their share prices may not have yet bottomed-out. Many of the larger players are still looking at double-digit

percentage losses in their stock market valuations compared to a year ago.

This indicates that while there is confidence in the wider economic picture, and major indices like the Dow are seen as a safe haven for investors, the global recovery is still relatively weak.

The softness in Chinese share prices is indicative of the on-going readjustment in the country's construction industry following the remarkable stimulus-driven boom of a few years ago. ■

The partial US government shutdown in October did not bother the stock markets, with many indicators eking out small gains. The lifting sector, however, was more mixed.

CHRIS SLEIGHT
reports

NOVEMBER IC SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
IC Share Index*		55.00	53.91	-1.09	-1.99	48.38	11.44
Legacy IC Share Index**		369.00	363.31	-5.68	-1.54	231.98	56.62
Dow Jones Industrial Average		15328	15509	180.91	1.18	13107.21	18.33
FTSE 100		6542	6706	164.03	2.51	5795.10	15.72
Nikkei 225		14760	14088	-671.88	-4.55	8841.98	59.33
Hitachi Construction Machinery	YEN	2244	2145	-99	-4.41	1300	65.00
Konecranes	€	25.39	24.47	-0.92	-3.62	24.04	1.79
Kobe Steel	YEN	185	176	-9	-4.86	68	158.82
Liugong	CNY	6.73	6.71	-0.02	-0.30	8.28	-18.96
Manitowoc	US\$	19.47	19.74	0.27	1.39	13.86	42.42
Palfinger	€	26.80	26.40	-0.40	-1.47	15.55	69.77
Sany Heavy Industry	CNY	7.49	7.20	-0.29	-3.87	9.08	-20.70
Tadano	YEN	1320	1179	-141	-10.68	587	100.85
Terex	US\$	34.09	35.59	1.50	4.40	22.04	61.48
XCMG	CNY	8.20	7.85	-0.35	-4.27	10.61	-26.01
Yongmao Holding	SGD	0.21	0.20	0.00	-2.44	0.08	140.96
Zoomlion	CNY	5.61	5.45	-0.16	-2.85	8.48	-35.73

*IC Share Index, 1 Jan 2011 = 100

**Legacy IC Share Index, end April 2002 (week 17) = 100

EXCHANGE RATES - US\$

CURRENCY	VALUE AT START	VALUE AT END	CHANGE	% CHANGE	VALUE 12 MTHS AGO	12 MTH % CHANGE
CNY	6.122	6.083	-0.0390	-0.64	6.25528	-2.75
€	0.7409	0.7237	-0.0171	-2.31	0.7733	-6.41
Yen	98.59	97.02	-1.57	-1.59	79.47	22.09
UK£	0.6408	0.6172	-0.0236	-3.68	0.6230	-0.93

Period: Week 39 - 43

Lifting your dreams



145
Tonne

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Specification for Crane

GR-1600XL

Max. lifting capacity:	160US t x 8ft
Max. Lifting Height	Boom: 201.1ft / Boom + Jib: 256.9ft
Max. Working Radius	Boom: 185ft / Boom + Jib: 220ft
Boom Length	42.8ft ~ 200.0ft
Jib Length	33.8ft / 59.1ft
Max. Counter Weight	64,600lbs

GR-1450EX

145t x 2.5m
Boom: 61.3m / Boom + Jib: 78.3m
Boom: 56.0m / Boom + Jib: 64.9m
13.1m ~ 61.0m
10.3m / 18.0m
29.3 ton

Specification for Carrier

Engine Model	Mitsubishi 6M60
Max. Output	200kW(267PS)/2,600min ⁻¹
Overall Length	Approx. 16,190mm
Overall Carrier Length	Approx. 10,155mm
Overall Width	Approx. 3,315mm
Overall Height	Approx. 3,785mm

Changing landscapes

Rough terrain cranes are undergoing some major design changes as they start to take on jobs traditionally done by other crane types.

LAURA HATTON reports

Rough terrains are a workhorse of the crane world, often staying on site for months at a time, being used on many jobs with different operators on a daily basis. In more recent years, rough terrains are even taking on tasks that would in the past have been assigned to other crane types, such as small tower cranes or all terrain cranes. Their popularity is mainly due to their greater capacity but compact footprint, fast setup time and tight turning radii, a spokesperson from Manitowoc points out.

"Rough terrains are built for general lifting duties and are referred to as the wheel barrow of the jobsite," Casey Smith, Link-Belt, adds, "You might use a rough terrain on a jobsite where you are using it as a helper crane or you might use a rough terrain where you have a jobsite that a crawler crane cannot enter."



The Locatelli GRIL8 is one of the newest rough terrain models from Locatelli since its acquisition by Media Finanziaria Group



A Grove RT9150E at the BASF Petrochemical facility in Grove, Texas, USA

To be able to complete such a variety of lifts on a single job site maintenance intervals for rough terrains need to be kept to a minimum and operating systems need to be simple and easy to use. "Operators should be able to operate them independently of which machine they are usually operating," a spokesperson from Terex explains, "This means that they should be easy to use and robust."

Good transportability and manoeuvrability are other characteristics that rough terrains need to have. A spokesperson from Tadano explains more, "Having a compact carrier in width and height improves manoeuvrability and the ability to navigate smaller spaces for transportation. Having rough terrains that meet these criteria in the energy sector in North America is a major factor, as they need to move through tight spaces."

To meet this demand Tadano introduced the GR-1600XL (for the US market) and the GR-1450EX (for outside the USA), a 3-axle compact carrier. The GR-1450EX /GR-1600XL has a 145 tonne capacity and the boom is 61 metres.

"The model also has a self-removable counterweight and outriggers which are cost-effective and provides ease of transport without requiring an assist crane," a company spokesperson adds. The rough

terrains include the HELLO-NET system, a machine data logging and monitoring system, as a standard function. It provides information on operational status, position and maintenance from owner's desk, a company spokesperson adds.

Driving change

Another area affecting the design of rough terrains is emission regulations, as Smith explains, "Emissions are one of the main components for modifications on our rough terrain Series II technology. These emission devices add weight and present a space challenge, but we have successfully incorporated these devices without sacrificing the transport weights, serviceability, and accessibility. For rough terrain cranes we have made the engine hood wider to house these devices while still providing six points of access to the operator's cab."

Despite the challenges presented by the regulations, crane manufacturers are finding ways to incorporate the new engines in the designs. Manitowoc, for example, has released new models and redesigned current products with Tier 4 interim engines (Euromot 3B). Crane manufacturer Sany has also overcome the design challenges and now offers models with Tier IV engines in North America and >

ROUGH TERRAINS

Europe, and Tier III in countries that can still sell them.

Return on investment

For rough terrains to provide customers with a decent return on investment, certain design and capability factors have to be taken into consideration. A result of this has meant that new models released this year have focused on reach, transportability and serviceability.

The latest rough terrain models from Terex, for example, include the Quadstar 1100 and the Quadstar 1075L. The Quadstar 1075L, which was launched at Bauma 2013, is produced in Crespellano, Italy. It has a rated capacity of 75 tonnes and a 42 m boom. The Quadstar 1100,

The 3-axle Tadano GR-1450EX model is aimed for markets outside the USA



which was launched at the beginning of the year, is produced in Waverly, Iowa, USA. The model has a rated capacity of 100 tonnes and a boom length of 47 m. Including jib extension, the maximum tip height is 70 m. Both models have cabs designed by Porsche Engineering. Both cranes come with a rated capacity indicator, which uses a graphical interface to display information about crane functions.

Other areas of focus on the design of these models include safety and ease of use. A spokesperson from Terex explains more, "The models have 60 % more decking area with anti-slip surface and improved ladder and access points. The hydraulic system has also been redesigned for improved performance, reliability, fuel consumption and longer maintenance intervals."

From Link-Belt is the 80 tonne capacity RTC-8080 Series II. "The RTC-8080 Series II comes with all the updates we have given the Series II line," Casey Smith, Link-Belt, says. It has a 3-piece bi-fold off settable

fly, a 3 m integrated fly, which was first introduced on the RTC-80130 Series II and the HTC-3140. "This is a great feature because you don't have to worry about hauling a specialised fly to the jobsite then work out the logistics of installation," Smith adds, "It's great for one-load two-line lifting procedures like placing tilt wall panels or manoeuvring large pieces from horizontal to vertical position for placement."

The model also has a flat carrier deck and six points of access for the cab and carrier. "It also has a remote controlled 360 degree high intensity boom flood light that attaches to the end of the telescopic boom base section," Smith adds. The RTC-8080 Series II is available with two engine options, Tier 4 interim packages (EuroStage IIIB) for USA and Europe and Tier 3 (EuroStage IIIA) for countries that do not require a particulate filter. Both options are fitted with a Cummins 6.7 litre engine with 270 hp (201 kW).

From Italy

Since its acquisition two years ago by Media Finanziaria Group, crane manufacturer Locatelli has also introduced some new rough terrain models, including the 65 tonne capacity GRIL 8700T, which has a 32.3 m four section formed boom. Keeping manoeuvrability in mind, the GRIL 8700T has an overall length of 11.97 m, and is 3.7 m high and 2.9 m wide.

"Besides the GRIL 8700T, another launch from Locatelli was the GRIL 8800T, which we presented at Bauma Munich 2013," a company spokesperson adds. "This model is the biggest and most powerful in our range. It has a lifting capacity of 82 tonnes and a 5 section boom with a maximum reach of 40.5 m. In addition, it measures 12.68 m long, 3 m wide and 3.71 m high."

From Sany America is the 40 US ton (36 tonne) SRC840, the 65 ton (63 tonne)

One of the first Grove RT9150E cranes in China, working at an industrial site close to Beijing



The Sany SRC885 has a lifting capacity of 85 US tons (77 tonnes)

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TCC-1100
100 mt

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70 mt

GETTING ACCESS

A Link-Belt RTC-8080 Series II was used at a ski lodge in the Green Mountains near Killington, Vermont for a steel erection job. The rough terrain accessed the jobsite after climbing steep inclines and traversing water bars during the lodge's offseason summer months. It could travel up an existing ski trail and the 80 US ton (72 tonne) capacity rough terrain was used for a 45 piece per day steel erection schedule for a new lodge at an elevation of 1,280 m.



SRC865/SRC865XL models and the 85 ton (77 tonne) SRC885 rough terrain. The SRC840 has a 31 m four section main boom and a 7.9 m to 13.7 m extension. It has a capacity of 40 US tons (36 tonnes) at a radius of 3 m. It weighs 32 tonnes and measures 12 m long, 3.4 m high and 2.6 m wide.

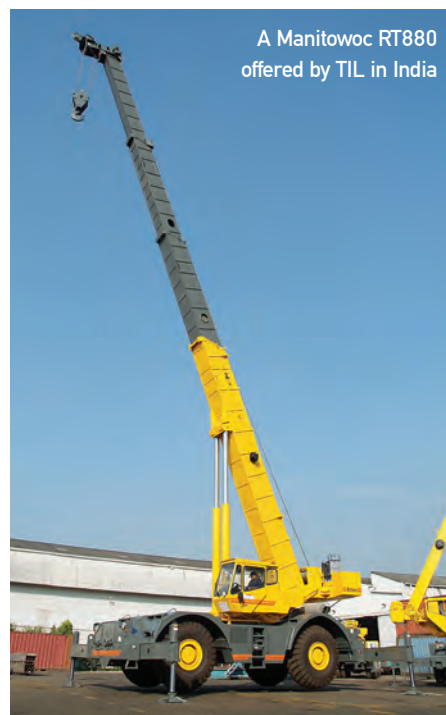
The SRC865 has a 34.4 m four section main boom and a 9 m to 16.3 m extension. Capacity is 65 US ton (58.9 tonne) at a radius of 3 m. Maximum height with extension is 53 m. With manoeuvrability one of the focuses of the design, the crane weighs 40.7 tonnes and measures 13.7 m long, 3.3 m wide and 3.7 m high.

Keeping reach in mind, the SRC865XL has a 42.3 m five section main boom and a 9.2 m to 16 m extension. The model is fitted with a large cab and has a maximum capacity of 65 US ton (58 tonnes) at 3 m radius. The SRC865XL weighs 44.6 tonnes and has a length of 13.9 m, a height of 3.7 m and a width of 3.3 m.

Kyle Nape, senior vice president Sany Lifting Group, North America, Sany

America, says, "We are in development of a larger rough terrain model for the North American market. With all Sany global cranes, we use US-built Cummins engines, Dana transmissions, Braden winches and Axletec axles as standard equipment."

From Manitowoc is the 65 US ton (58.9 tonne) capacity Grove RT770E rough terrain crane and the 50 ton (48.5 tonne) Grove RT550E. Speaking on the design ideas behind the models, Michael Herbert, director, product planning and marketing Manitowoc Cranes, North America, says, "The RT770E offers a full-power, Megaform boom with dual operating modes for structural and stability load charts. The RT550E offers a Twin-Lock Megaform boom, which is our first introduction of this boom technology to this size of rough terrain crane."



A Manitowoc RT880 offered by TIL in India



The new Terex cab designed by Porsche Engineering

The operator cab on a Quadstar 1100



Moving up

Due to the environments that rough terrains are working in, especially for the energy-related sectors in North America and the Middle East and more recently mining sites in South America and Australia, customers are starting to require models with larger lifting capacities.

"This trend is primarily stemming from the facilities at jobsites becomes larger due to continuous growth of scale for both the energy sector and mining sites," a spokesperson from Tadano explains. "This is the reason why our former largest class rough terrain GR-800EX/1000XL is the most popular capacity in Tadano. Among the five types of our rough terrains, the GR-800EX/1000XL has the top share by 35 % of sales."

A spokesperson from Manitowoc points out another reason for the increase, "Larger-capacity models offer better tip heights and multiple boom extension configurations for improved versatility and reach. Our new models, such as the Grove RT9150E and Grove RT770E, have best-in-class tip heights that have made the cranes more useful, even where a small tower crane or an all-terrain crane would have been used in the past."

These demands are being experienced in India, with customers requiring higher capacity rough terrain cranes with longer boom length. To meet these needs, TIL, a provider of equipment for the Indian construction industry, provides five different rough terrains with 20, 30, 40, 55 and 75 tonnes capacity. The models meet India's BSIII (CEV) emission standard, which is in line with US Tier III and Euro Stage 3.

"The latest ranges of rough terrain cranes have a much longer boom length compared to the earlier models," Somnath Bhattacharjee, president material handling >

ROUGH TERRAINS

solutions and equipment and project solutions business, TIL says, "These machines are easy to operate and maintain and are compact. They are also supplied with trapezoidal booms, which are patented by Grove, USA. In addition, the 75 tonne capacity machine has a turning circle radius of 8 m with four wheel steer."

Link-Belt has also seen a noticeable increase for larger capacity rough terrains, especially the 65 ton (58 tonne) RTC-8065 Series II. Casey Smith explains, "Our range of rough terrains is from 30 to 130 ton [27 to 117 tonnes]. We added the 80 ton [72 tonne] to give operators and dealers

HARSH ENVIRONMENTS

Rough terrains are used in harsh working environments. Manitowoc has opened a new Product Verification Center to test components in a simulated version of different working environments.

"The PVC has allowed us to accelerate life-cycle testing by quickly fluctuating temperature, humidity and other stresses at the component level," a Manitowoc spokesperson explains. "This additional testing, coupled with our customer demonstration testing and pre-production partnership programme, has allowed us to drive product improvements and to bring our new products to market more quickly, all while having high confidence in their reliability."

an option in the 65 ton to 90 ton [58 to 81 tonne] class with the 80 ton [72 tonne] RTC-8080 Series II falling in between."

The trend is also seen at Sany, as Kyle Nape explains, "The Sany SRC885 model at 85 tons [77 tonnes] has proven a great replacement for the 70 ton [63 tonne] class. Customers are moving up in capacities. For example, the 65 to 70 ton [58 to 63 tonne] machine has replaced the traditional 50 ton [45 tonne] class and contractors generally seem to be looking for greater capacity."

Bhattacharjee at TIL in India adds, "In India the demand for 40 tonne range of rough terrain crane is very high and as such it is most popular among all the rough terrains cranes in terms of demand size. However, we are experiencing an increased demand for 75 tonne capacity rough terrain cranes, which shows that the market is gradually moving towards a higher capacity range of crane requirement."



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Turbine parts on 12 axle lines of Scheuerle SPMT owned by Mammoet

Changing tides



The popularity of SPMT is continually growing. As a result manufacturers are producing products that are compatible and capable of operating on a range of different work sites.

LAURA HATTON reports

In his second practical how-to article (August 2013 issue page 33) Marco van Daal differentiated between the various different types of specialized transport equipment and the terminology used in its reference. In his article van Daal defined a self propelled modular transporter (SPMT) as a transporter that is propelled by a unit or a power pack. In this instance, power comes from a diesel engine and one or more hydraulic pumps, which drive the hydraulic drive motors on the axles of the transporter.

Depending on the type of applications required, the number of axles on an SPMT

can vary extensively. This has added to its success throughout the industry and SPMTs are now used all over the world at oil and gas construction projects and other sites for transporting oversize and overweight objects.

"The great success of SPMTs is based on the possibility to couple amongst the different vehicle generations," explains Christopher Rimmele, public relations manager TII sales. "Worldwide more than 13,000 axle lines of Scheuerle and Kamag SPMTs are in use and, over the past twelve months, 1,500 axle line orders were from ALE, Mammoet, Roll-Lift and Sarens. The availability of axle lines all over the world gives a high flexibility to TII customers as they can rent in or rent out axle lines in order to cover their demand of axle lines for their various transport projects and operations."

A result of this international availability generally means that new models of SPMT work with previous designs and in some cases, even with competitor products. The latest generation of SPMT from, for example, TII, is the Generation 4 of Scheuerle and Kamag SPMT. The transporter has a compact design, which allows high point loads due to short axle distance to minimise the effective bending moment on the spine beam, the manufacturer explains.

"In addition, Generation 4 works

SPMT AT WORK

Self propelled modular transporter (SPMT) is used worldwide for a broad range of jobs, from on-site logistics to shipyard use and in construction. An example of SPMT in action was seen earlier this year in Oak Creek, Milwaukee, Wisconsin, USA when the Wisconsin Department of Transportation replaced the Rawson Avenue Bridge.

For the project, Scheuerle SPMT was used using an accelerated bridge construction (ABC) technique. The SPMT was used to lift and transport the new bridge spans into place.



The Faymonville APMC trailer can be used in self-propelled mode or with normal pendular axles

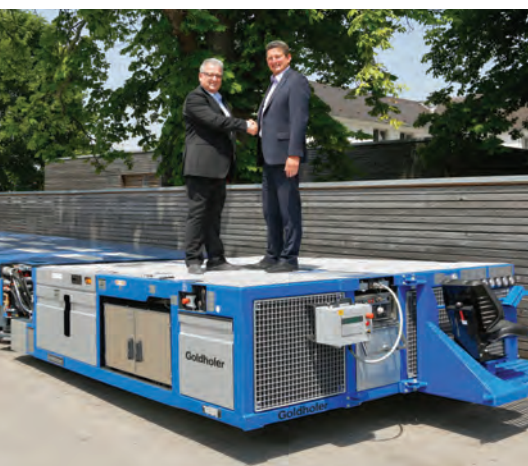


together with all previous generations of Scheuerle SPMT and has a container flat optimised design with regards to dimensions and self weight," Rimmele adds.

Compatibility

Models of SPMT from manufacturer Goldhofer also work with new and old models, as a spokesperson from Goldhofer explains, "Individual power packs and the self propelled modules can be combined with Goldhofer's conventional heavy duty modules; the steering angle on the modular transporters is synchronised, with the help of sensors and slave computer called Hydronic, with the steering on the conventional THP vehicle."

New from Goldhofer are the PST/SL, PST-SL/E and PST-ES/E with hydrostatic drive. The PST self propelled modular transporter has a maximum axle load of 60 tonnes. The PST-SL-E 6 self propelled module with multi-way steering is the most popular model, as Stefan Fuchs, CEO Goldhofer says, "We have so far shipped our self propelled transporters to over sixty different countries, and there are no signs of a let-up in demand." The 1,000th Goldhofer self propelled modular transporter (SPMT) PST-SL-E 6 self propelled module with multi-way steering was delivered to customer Resham Singh



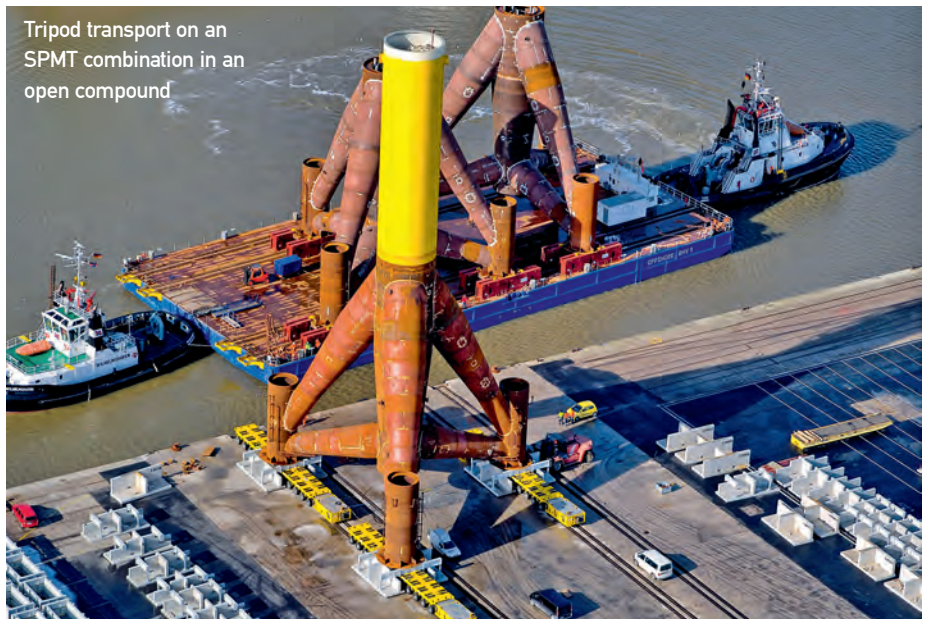
Stefan Fuchs, Goldhofer CEO, right, congratulates Horst Häfele, sales director heavy duty modules, on the sale of the company's 1,000th SPMT

in India earlier in 2013. The order brings the total of Goldhofer SPMT axle lines around the world to more than 4,000.

Goldhofer's SPMT has been used all over the world for transport projects that include moving gas turbines, a whole chemical plant and, more recently, the US Navy's new *USS Coronado* ship. Horst Häfele, sales director heavy duty systems, says, "The drives and control systems have been developed in-house incorporating the latest electronic components to cope

>

Tripod transport on an SPMT combination in an open compound



POWER BOOSTERS

With self propelled modular transporter (SPMT) in high demand, Kamag has introduced the Kamag K-25 Power Booster, which allows customers to turn their fleets of more conventional trailers into SPMT.

DAnn Shiffler, editor of sister magazine *American Cranes & Transport*, was at the launch of the K-25 Power Booster unit in Florida, USA, in September 2013. For demonstration purposes it was coupled to a Goldhofer transporter and a new K-25 transporter, showing its compatibility and adaptability. The K-25 Power Booster was demonstrated in several configurations, including as a push truck, on public roads as a trailer combination, and as a self-propelled transporter. In addition, the drive unit with the PPU can be controlled as a self-propelled transport combination using a mobile control unit.

The first customer was USA-based Taylor Crane & Rigging (TCR), which recently took delivery of 32 lines of Scheuerle/Kamag K-25 trailers purchased in April at the Bauma show in Germany. The new K-25 unit was handed over to Taylor at a demonstration event, before being transported to Kansas.

"You might need to pick up a transformer at a facility and use the K-25 Power Booster to move it through the plant," said Jim Taylor, president of Taylor Crane and Rigging. "Then you connect with a prime mover to haul the transformer on public roads and use it as a push truck on steep hills, so you don't need to go to the expense of another prime mover. Then once you get to the power plant, you disconnect from the transport system and move through narrow roads to the installation site without mobilisation of cranes or other equipment."

Stephen Crawford, Precision Enterprises sales manager, said, "We call it a mini SPMT but it can be driven or dragged home. When you get to the jobsite with the K-25, you don't have to worry about how to get the prime mover out of the way. With the power booster, you unhook the prime mover and park it in the parking lot. That's a major selling point, is that you can eliminate the need for the prime mover once you get to the jobsite. Plus, with the SPMT, there's a lot more hook up than just pushing a button, which is what you do with the power booster. It's not a big transition to unhook the power booster, just one guy to push a button and unhook a couple of hoses. It's a time-saving device."

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Transportation of a tower on Scheuerle SPMT at Keen-Mark, Russia

with the growing number of transport operations that cannot be handled with conventional tow tractors.”

The power packs on the PST modules can be operated via remote control using a joystick. Loads weighing thousands of tonnes can be moved in this manner and rotated through 360 degrees if required, the manufacturer adds. Due to the wide range of environments that SPMTs are required to work in, the PST modules are designed to work at temperatures ranging from below minus 25 degrees to more than 60 degrees Celsius.

The PST power packs are available in different sizes with rated outputs from 155 to 360 kW. “In addition, the Goldhofer PST/SL-E modules are fitted with electronic multiway steering with a steering angle of +/- 135 degrees, with each axle individually controlled by a sensor and a stepless hydraulic worm gear drive,” the manufacturer adds. Choices of steering modes are available with the modules, including normal, transversal (90 degrees), diagonal and carousel.

Popularity of SPMTs is such that manufacturers have been designing

trailer modules that can be switched from normal pendular axles to self propelled axles. In the last year Faymonville, for example, introduced the third generation of APMC trailers, where it is possible for users to switch the hydraulic drive on and off, so customers can use the axles in self propelled mode or as normal pendular axles (up to 80 km/h).

The Powermax G-SL-6 APMC 12x6 is one of the more popular Faymonville models, a company spokesperson explains, “The Russian transport company Beluga, for example, was one of the very first customers to purchase the module range. During one of their projects, a container was being transported in a low loader combination with integrated APMC. At the unloading point, due to reasons of space,

the low loader could only be moved to the assembly in self propelled mode. To do so, the tractor units were simply uncoupled and the Powermax was used to move the load.”

“Another advantage is certainly the fact that in the G-modules we offer two more models, specifically: MT (lighter) and UT (lighter and lower),” adds sales manager Arnold Luxen, “In contrast to this, only a single line had been available in the S-series until now.”

Future designs

Due to the need to operate on a range of different work sites changes for SPMT includes changes to the allowed bending moment. Rimmel at Scheuerle explains, “In the future the allowed bending



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A 13,300 tonne offshore platform on Scheuerle SPMT

axles, as Rainer Noe, product manager for the modular vehicles division, points out, "The 3 in the name stands for the third generation and for three driven axles. Decisive for this step was the market's demand for greater traction than was possible earlier with the two-axle model. Now traction of 22.5 tonnes is available, which not only puts us at the head of the class, but surpasses the products available from other suppliers by 20 per cent."

moment will increase in order to allow more compact point loads and larger combinations. Technical capacity has increased during the last generations from 36 tonnes (Generation 1 and 2) to 40 tonnes (Generation 3) to 48 tonnes (Generation 4 with foam filled tyres) per axle but most of the operations allow not more than 40 tonnes per axle line load due to limitation on ground pressure."

Traction is another area that is seeing development. The AMPC 3 series from Faymonville reflects this need for more

ALE transporting a concrete element on 84 axle lines of Scheuerle SPMT



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NOOTEBOOM SEMI-LOW LOADER FOR ACCESS

Manufacturer of specialized transport equipment Nootboom in the Netherlands, has launched a new semi-low loader trailer for moving access platforms and similar machines.

The new 3-axle trailer is hydraulically steered and has a hydraulic height-adjustable load floor for loading onto the gooseneck, a company spokesperson said. The trailer has a steering angle of 45 degrees and has a Superwinch electric winch, with a radio remote control unit.

In addition, it has a serrated and hot-dip galvanised steel grid on the ramps, the load surface and floor.

The trailer was launched in September at the Matexpo 2013 show in Belgium.



The new 3-axle semi-low loader from Nootboom

Faymonville releases 65 metre Telexmax

Manufacturer of specialised trailers Faymonville, has released the Telexmax trailer with pendel axles.

Now with pendel axles, the Telexmax has a 600 mm stroke and a steering angle of up to 60 degrees. This helps increase ground clearance compared to the conventional model, a company spokesperson said.

Arnold Luxen, Faymonville sales director said, "In order to minimise (for vehicles with a desired transport length up to 65 metres) any problems with the authorisation procedure, we now have a quadruple extending bed trailer available in our range."

The Telexmax is available



The new Telexmax trailer with pendel-axes

with rigid or hydraulically liftable and lowerable front parts and rear slide out-extendable platforms.

"With the slide out rear extension, we create on the last extendable part of the Telexmax a significantly greater flexibility for the placement of the rotor blade and counter technical traffic and geographic constraints," Luxen added.

RARE CATERPILLARS ON THE MOVE

Transport company Van der Vlist in Belgium, helped transport two rare Caterpillar machines from Belgium to the Netherlands.

The rare R2900 Caterpillar loaders had been shipped from Melbourne, Australia to Antwerp, Belgium. From there Van der Vlist was set the task of transporting the mining machines to Terneuzen, in the Netherlands.

For the transport move the machines were loaded onto 5-axle semi low trailers on 3-axle Van der Vlist trucks. The machines measured 11.75 metres long, 3.32 m wide and 3 m high and weighed 57 tonnes each.

On arrival in Terneuzen the rare cargo was taken to the port and shipped to Pitea in Sweden, where the machines will be used for underground mining and tunnelling.

Van der Vlist transport the rare R2900 Caterpillars



Nurminen Logistics in €2 million project move to Svetlogorsk

Heavy transport company Nurminen Logistics in Finland has been contracted to deliver pieces of machinery to Svetlogorsk, Belarus for a pulp mill.

In total, more than 450 loads will be transported to the Svetlogorsk project. The transport logistics behind the move is expected to cost more than €2 million (US\$ 2.7 million). It will be carried out for mechanical engineering group Andritz.

Hannu Vuorinen, senior vice president, special transports and projects at Nurminen Logistics, said, "The selection of Nurminen Logistics as the logistics partner for the Svetlogorsk projects is another testimony of our ability



Nurminen Logistics begins transporting the pieces of machinery to Belarus

to deliver demanding project entities to our internationally operating customers.

"Belarus is a familiar operating area for us: we have delivered large-scale special transports there before via the ports in the Baltic countries, for instance. Efficient management of the entire process from load planning to reporting generates both efficiency in deliveries themselves and cost savings for our customers as load

sizes and consignments can be optimised in the best possible manner. The Svetlogorsk project requires exactly the type of special expertise in which Nurminen Logistics is at its best."

Transports for the project have already started and will continue until the middle of 2014. Nurminen Logistics is a member of the Cargo Equipment Experts CEE network in Finland.

A tall challenge

Kübler Spedition overcame a number of challenges to move a section of an Airbus A 380 aircraft from Dresden to Hamburg

Transport company Kübler Spedition in Germany moved a section of an Airbus A 380 for aircraft manufacturer Airbus across Germany from Dresden to Hamburg.

The section measured 8.5 metres wide and stands 9.3 m tall. For the project the section was loaded onto specialized trailers. In total the dimensions of the transport measured 38 m long, 8.5 m wide and 10.3 m high. The total weight of the transport was 215 tonnes.

The project was originally due to begin in the summer of 2013, however, due to flooding of the River Elbe the

The oversized cargo makes its way to Dresden Port



transportation was brought to a stop and delayed for nearly two months, a company spokesperson said. Operations were resumed in September.

For the first part of the project the cargo was transported by road to the Dresden port. During this section of the journey challenges included width and height restrictions on public roads, bridges and

tramways. Obstacles such as traffic lights and street lamps were also removed or rotated away from the road to avoid collisions. The journey to Dresden port took eight hours.

On arrival at the port the cargo was loaded from the trailers onto a vessel using two mobile cranes.

The cockpit was also lifted as an additional load into the cargo hold, a company spokesperson added.

Once secured on the barge the segment of the Airbus A 380 travelled along the River Elbe to Hamburg.

After a week long journey the barge arrived at the dock of the Airbus premises in Hamburg. Within two hours the cargo was unloaded on site and handed over to the client.



Once at the port the section of the Airbus A 380 was lifted onto a vessel by two mobile cranes





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WORLD CRANE AND TRANSPORT SUMMIT 2013

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Going ahead

Around 270 industry professionals attended the third World Crane and Transport Summit in Amsterdam, Netherlands, during October. IC reports

The World Crane and Transport Summit two-day conference and gala dinner was held at the Hotel Krasnapolsky in central Amsterdam on 29 and 30 October 2013. The event offered a range of presentations to help generate debate on key issues facing the lifting and project transport industry worldwide.

Presentations at this year's event included talks on critical issues facing the global cranes and heavy transport industry and the importance of implementing workable global standards.

Sessions from day one sparked discussion on the need to recruit more women in the heavy lifting sector and ways for the industry to attract a new generation of young people into the crane and heavy transport sector.

Day two of the event included presentations on preventing transport accidents and a discussion on EN 13000. Chinese manufactures also presented on developments and trends in the country.

The two day programme also included coverage on three challenging projects completed by lifting and specialized transport companies ALE, Mammoet and Precision.

SEE FOR YOURSELF

Copies of the presentations and other information on the event are available from KHL online, as is a selection of videos.

■ See www.khl.com for details, photographs and news of forthcoming events.



Question time with Joel Dandrea, SC&RA executive vice president; Dominic Swords, economist; Ron Montgomery, SC&RA president; and Tim Ford, Terex Cranes president



Andreas Koehler, owner, Koehler Kran Service; John Gillespie, president, Crane Industry Council of Australia and managing director, Gillespies Cranes Services, and Erik Kroes, project sponsor, Mammoet



Robert Weiss, vice president, Cranes Inc



Alexander Hoffmann, product manager, RUD Group



Nadine Dereza, conference chairperson



Delegates enjoying the gala dinner



Andrew Youssef, Sany representative; David Collett, ESTA president; Leon Schopping, Shell International Exploration & Production, and Yannick Sel, ALE Projects sales manager, answer questions from the audience

The first round table discussion with, left to right, Joel Dandrea, SC&RA; Ton Klijn, ESTA secretary; Emma O'Dwyer, Matcom Group vice president; and John Gillespie, CICA, focused on ways to attract a new generation into the crane and heavy transport industry



Ed Bernard, Precision Group vice president, and operations manager



Klaus Meissner, crane group president, European Federation of Materials Handling (FEM), director, product integrity, at Terex Cranes and Søren Jansen, ESTA director discuss the root causes of mobile crane accidents and how to reduce them



Brent Wise and Diane Waghorne from Tech Safety Lines networking during a coffee break



The drinks reception in the Winter Garden



Jan van Seumeren Jnr, Re-Move CEO, Delynn Burkhalter, Burkhalter president and CEO, and Stefan Fuchs, Goldhofer CEO



Question time with, left to right, Xiong Yanming, vice president, Zoomlion Group; Marco van Daal, owner, The Works International; Chris Sleight, International Construction editor; and Zhu Changjian, XCMG senior engineer



Keeping in line with the global theme, Samir Bansal, general manager, Off-Highway Research, discussed the current markets and prospects for the equipment sector in India



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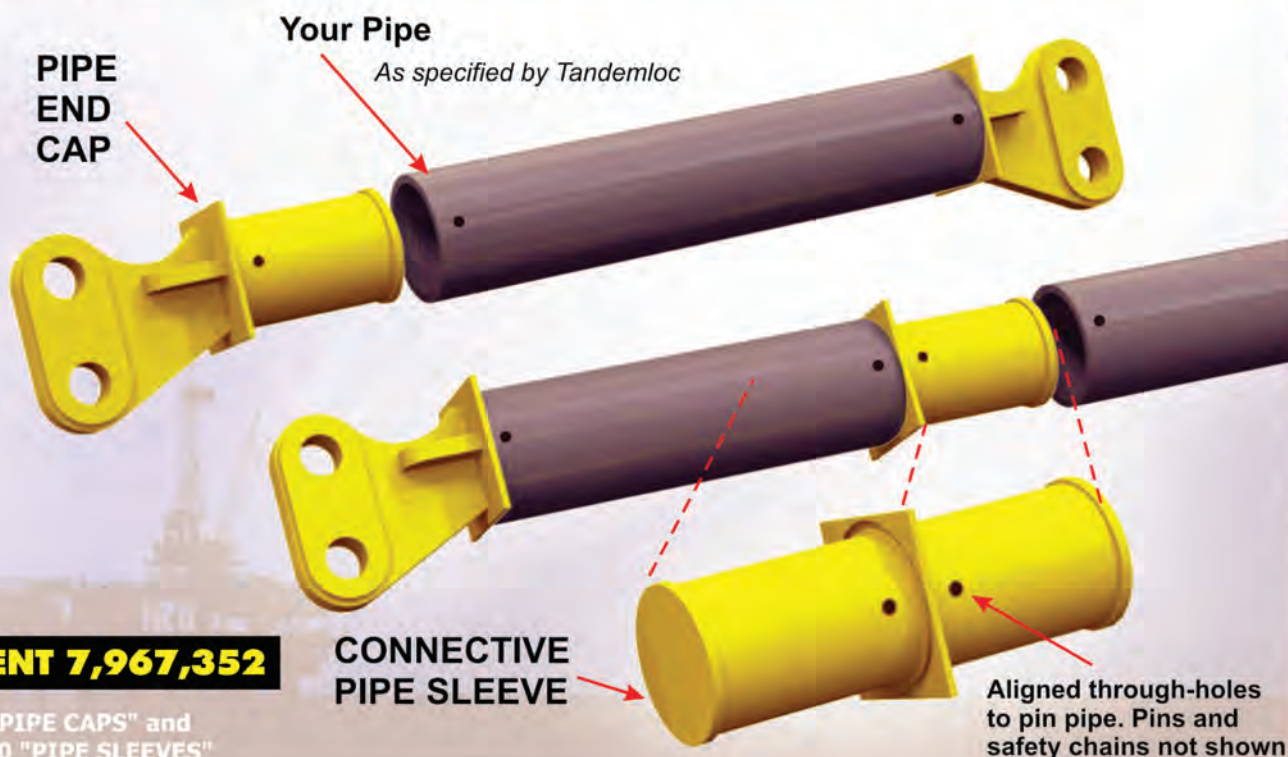


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Inverting a hydraulic jack allows it to be used as a climbing jack when lifts of more than one stroke length are required

Last month's article covered a number of alternative moving techniques, including rolling, skidding, airbags and air pallets. This month attention turns to some alternative lifting methods. MARCO VAN DAAL reports



Alternative lifting

ABOUT THE AUTHOR



Marco van Daal has been in the heavy lift and transport industry since 1993. He started at Mammoet Transport from the Netherlands and later with Fagioli PSC from Italy,

both esteemed companies and leading authorities in the industry. His 20-year plus experience extends to five continents and more than 55 countries. It resulted in a book *The Art of Heavy Transport*, available at: www.khl.com/books/the-art-of-heavy-transport/

Van Daal has a real passion for sharing knowledge and experience – the primary reason for the seminars that he frequently holds around the world. He lives in Aruba, in the Dutch Caribbean, with his wife and daughters.

The simplest of lifting methods is the use of a hydraulic jack. A hydraulic jack consists of a cylindrical housing in which a ram can move up and down. The ram moves up under the influence of oil that is pumped into the cavity underneath the piston in the cylinder. As it moves upwards the ram protrudes from the top of the jack and raises the load.

Hydraulic jacks, like every other piece of equipment, follow certain laws of nature:

A jack's capacity can be determined by the $F = P \cdot A$ equation, where;

F is the Force (or capacity) expressed in Newton (N)

A is the area under the ram expressed in square centimetres (cm²)

P is the pressure applied expressed in newtons per square centimetre (N/cm²)

An example;

$$P = 5,000 \text{ N/cm}^2$$

$$A = 150 \text{ cm}^2$$

The capacity of the jack is therefore;

$$F = P \cdot A = 5,000 \cdot 150 = 750,000 \text{ N (or roughly 75 tonnes)}$$

NOTE: This example created the impression that a higher capacity can be achieved by applying additional pressure to the jack. In principle this is correct, although the internal seals of the jack are designed for a maximum pressure that determines the capacity of the jack. Exceeding this maximum pressure could result in seal damage.

If the load is to be lifted by more than one stroke of the jack, a cribbing (a pile of neatly stacked hard wood or steel beams) is to be placed next to the jack. The ram of the jack is then retracted and the load now rests on the cribbing. The elevation of the jack is raised by placing it on yet another cribbing and the load can be lifted another stroke. It goes without saying that this is a very labour intensive way of lifting a load, especially if this load is to be raised to a significant height.

New ideas

Thanks to the guys in our industry who do this work on a daily basis, an innovative yet simple solution to make this type of work a lot less labour intensive was created. A regular hydraulic jack



FIGURE 1 Using hydraulic jacks to raise a load to a significant height is a laborious process

was turned upside down (now the ram protrudes from the bottom), a load bearing platform was constructed around the bottom of the jack and the climbing jack was born.

There are seven basic steps in the cycle of a climbing jack, see Figure 1.

Step 1: jack is set up

Step 2: ram is extended

Step 3: hardwood timbers are placed parallel underneath the jack (criss-cross)

Step 4: steel strips are placed onto the hardwood

Step 5: the jack is lowered on the steel strips and the ram is retracted

Step 6: the void underneath the jack is now filled up with hardwood

Step 7: the ram is extended continue from step 2

NOTE: The steel strips that are used are there to create sufficient space between the jack and the previous layer of timbers, so that the timbers of step 6 can be easily inserted underneath the jack.

The hardwood that is used as jacking timber is mostly called ekki or azobe. They are both of the same Ochnaceae botanic family. It is found in West Africa (among others in Cameroon, Ivory Coast, Nigeria and Sierra Leone). Once the wood is dried and the moisture content has fallen below 12 % this wood is extremely durable and hard. Besides jacking timber, this wood is also used for rail road crossies and harbour work. Machining with hand tools (drill or saw) is almost impossible, the final dimensions are commonly achieved on a lathe.

According to the Center of Wood Anatomy Research, azobe has a maximum compression, or crushing, strength of 914 to 1,050 kg/cm² (13,000 to 15,000 PSI). This makes it very suitable for jacking operations. One thing to keep in mind, though, is its specific gravity of 1,120 kg/m³ (70 lbs/ft³), it is heavier than water and it will sink.

Strand jacks

While on the subject of jacks, it is a small jump to strand jacks. Strand jacks have been around for quite a while but not in a heavy lift application. They were originally

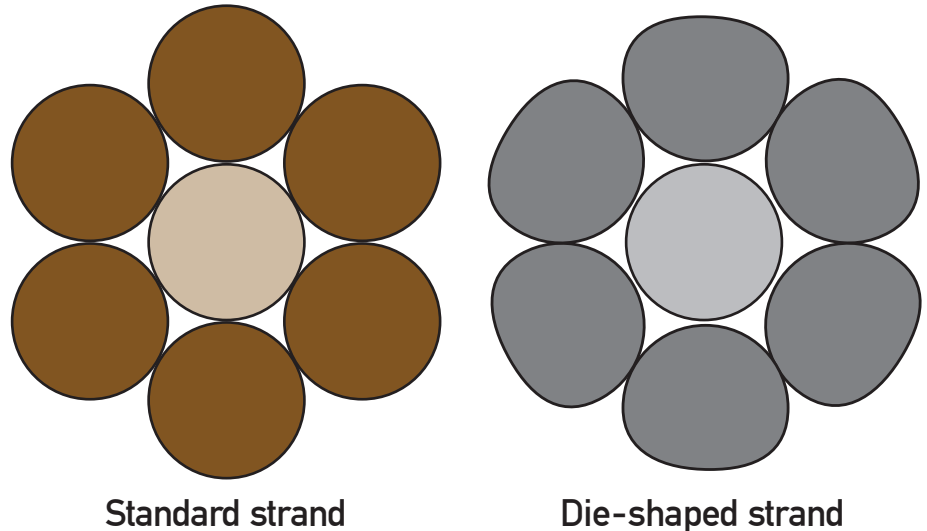


FIGURE 2 Standard strand on the left and a die-formed strand for strand jacking

used for post-tensioning of concrete beams when used for large spans such as bridges. Nowadays, strand jacks are found in horizontal applications as pulling tools, for example, for large load outs, or in vertical applications as lifting tools on cranes, lifting towers or gantries. They can even be used upside down.

A strand jack is a hollow jack that is fed with die-formed 18 mm strands of 15 tonne capacity wire rope. The strands are held in place by wedges. There is a set in the top of the jack and a set in the bottom. The strands are die-formed (see Figure 2) to allow the wedges to have a tight grip on the strand. Higher capacity strand jacks use more strands, the strand pattern is always symmetrical to avoid eccentric loads on the jack.

To lift a load, the strand jack follows a sequence of activities, see Figure 3.

Step 1: the load is suspended by the lower wedges, the upper wedges are open

Step 2: the upper wedges close and the ram extends. The load is now suspended by the upper wedges and is raised. This motion allows the lower wedges to open and stay open

Step 3: at the end of the stroke the lower wedges close again and the downward motion (ram retract) transfers the load to the lower wedges, this motion allows the upper wedges to open

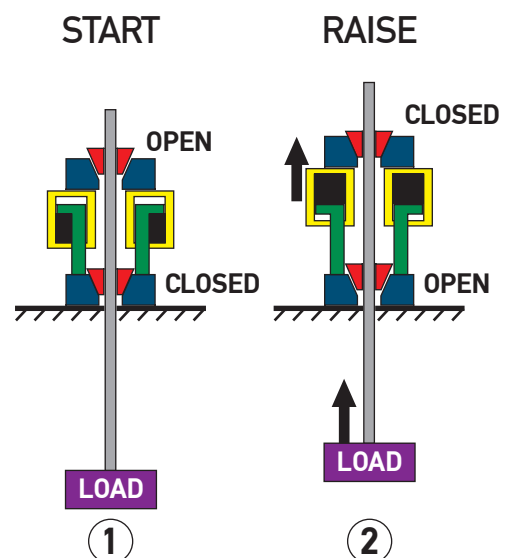
and stay open

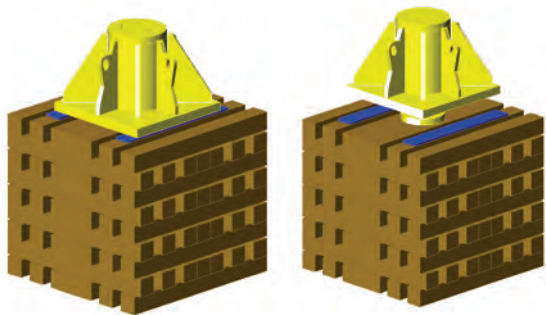
Step 4: once fully retracted, the upper wedges close and the ram extends, the load is now suspended by the upper wedges and is raised, this motion allows the lower wedges to open and stay open.

The above sequence repeats itself until the load has reached its required height.

An advantage of strand jacks is that one can achieve a high lifting capacity (750 tonnes or more per strand jack is not

FIGURE 3 Operating sequence for strand jacks





Strand jacks in operation being used for horizontal movement rather than vertical lifting



uncommon) on a small footprint. The small footprint causes less site disturbance than a crane of equal capacity. The cost of shipping strand jacks around the world is small compared to a crane.

Another advantage of strand jacks is that they are mechanically failsafe, at any point during the lift the weight of the loads can be transferred to the lower wedges and is no longer suspended by hydraulics.

To reach a capacity needed for a strand jack lift, multiple units can be

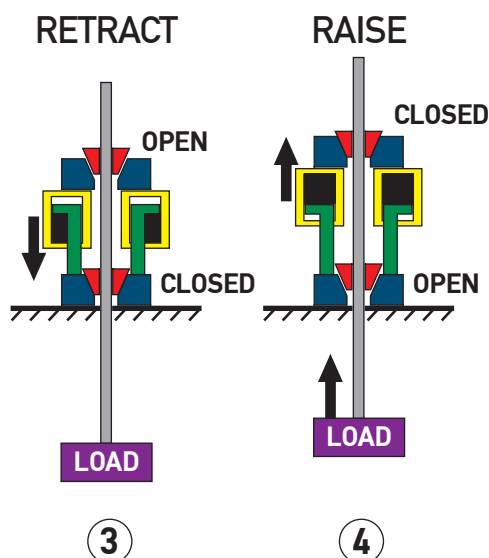
combined. There is almost no limit to how many strand jacks can be used on a lift. Computerised monitoring systems have unprecedented control over a lift and the load can be positioned very precisely.

Strand jacks, however, also have some disadvantages. The strands are generally pre-cut to suit a particular job or project. The likelihood that they can be used on another project is small. Strands exiting the top of a strand jack generally dangle hanging down from the strand guide, they don't coil up neatly on a winch drum.

There is the risk of bird nesting or bird caging in the lifting strands. Bird caging happens when one or multiple strands do not 'flow' right and buckle inside the jack between the top and bottom jaw. With the newest types of strand jack this phenomenon is less likely to happen due to telescopic tubes that do not allow the strands to divert from their path.

They are generally slower than a crane and they work at the same speed regardless of the weight that they lift. Cranes often increase their lifting or hoisting speed with lighter loads, strand jacks cannot do that.

NOTE: Every effort is made to ensure the accuracy of the contents of these articles. If you find any mistakes, a brief notification and explanation would be appreciated.



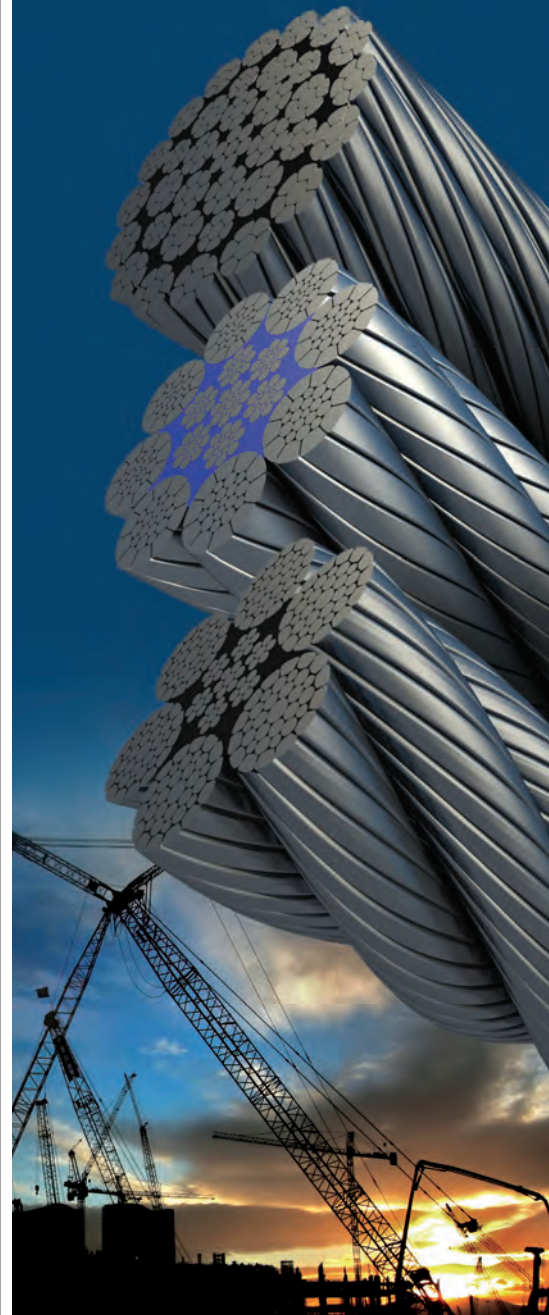
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Ups and downs

While this year's ICm20 ranking of the largest crane manufacturers is up overall on 2012, it is from a mixed bag of increases and decreases around the world. IC reports

Total revenue for the world's 20 largest crane manufacturers is US\$28.5 billion in IC's unique ICm20 ranking by sales revenue. It is a healthy enough increase of just over 5 % on the \$27.1 billion posted in 2012. Instead of the clearer picture of a near universal return to growth in last year's table, however, what characterises things this year is fluctuation by geography.

Liebherr retains its position at the top of the table as the world's largest crane manufacturer by sales revenue. Growth in its Euro reporting currency, without exchange rate fluctuation, was more than 7 % on the year before. While Liebherr is more than a billion dollars ahead of its nearest rival, the lead is 15 % smaller than it was last year.

Up in the USA

Standing out this year are manufacturers with strong links to the USA. The second place company in the table has changed from Cargotec, which held that position for several years, to Terex, which is up one place. With an increase of more than

10 % Manitowoc gains two places to 5th. Link-Belt, in particular, has also done very well with a two place move up to 14th on the back of a 30.4 % (\$119 million) rise in sales revenue. Manitex moves up two places to enter the ranking at 20th, with a huge 45 % rise largely driven by growth in the US energy sector over



RANK		COMPANY	LIFTING SALES (US\$ MILLION)	
2013	2012		2012	2011
1	1	Liebherr	4,518	4,030
2	3	Terex Cranes (including MHPS)	3,332	2,602
3	2	Cargotec	2,813	2,650
4	6	Konecranes	2,797	2,446
5	7	Manitowoc Cranes	2,441	2,200
6	5	Zoomlion	2,319	2,491
7	4	Xuzhou Heavy Machinery (XCMG)	2,161	2,509
8	8	ZPMC	1,750	1,654
9	9	Tadano	1,362	1,446
10	10	Sany	871	917
11	14	Palfinger	758	545
12	11	Kato Works	745	729
13	13	Columbus McKinnon	597	592
14	16	Link-Belt	509	390
15	12	Kobelco Cranes Co	459	608
16	15	Sennebogen	415	410
17	17	Hitachi Sumitomo	281	343
18	20	Favelle Favco (including Krøll)	219	158
19	19	Fuwa	189	203
20	22	Manitex	164	114

NOTES ON THE ICm20

It should be noted that the percentage change figures related to revenue are in the reporting currencies and not calculated after conversion into US dollars as shown in the table as the table uses different exchange rates each year – the one prevailing at the time of writing, this year as follows:

€1 = US\$1.35

US\$1 = JPY 99

US\$1 = CNY/RMB 6.1

US\$1 = Malaysian Ringgit 3.2



the previous year.

The top five companies in the table all posted increases, while the next two, XCMG and Zoomlion from China in 6th and 7th places, respectively, showed lower revenue than the year before. Next in the table, ZPMC, also from China, was up slightly, although Sany, rounding out the top ten was also down but retained its 10th place. Sany and XCMG have both now got tower cranes in their product portfolios.

Finding anomalies

Following the major slowdown in the Chinese economy in 2012, where the domestic manufacturers still make the vast majority of their sales, it is little surprise to see a fall. By number of units, sales of mobile cranes in China in 2012 were down by around 40 %. It was different for dockside crane manufacturer ZPMC, however, likely because many of its cranes are delivered to ports around the world.

For the last two years Chinese manufacturers took the largest proportion of the revenue total in the ICm20. This year their \$7.29 billion is around \$500,000 down on 2012. Instead of 29 % of the total it is now down slightly to 26 %.

What may appear at first glance

as an anomaly in the top 10 was Tadano from Japan. In 9th place for the third year running, its figure in the table is lower than 2012 due to the exchange rate going from JPY 79.00 to the US Dollar last year to JPY 99.00 at the time of writing in November 2013. Net sales, however, were actually up more than JPY 20 billion – a significant 18 % – partly due to the recovery in Japan and the cleanup operation there following the earthquake. Hitachi Sumitomo was also up, by a more modest 2.5 %, while Kobelco was down 5 %.

Similarly showing what might look like an anomaly but, this time to the company's advantage, was Palfinger in 11th place. It is up an impressive three places from 14th last year where the whole Group's sales revenue was up more than 10 % from €526 million in 2011 to €561 million in 2012. Converting that to US dollars with the exchange rate gain in the last 12 months suggests a larger increase.

Having edged into the ICm20 last year in 20th place, Favelle Favco has moved up two places to 18th with a huge 44 % increase in revenue driven by business from the oil and gas sector. Manitex displaces Furukawa Unic, which moves just out of the table into 21st place.

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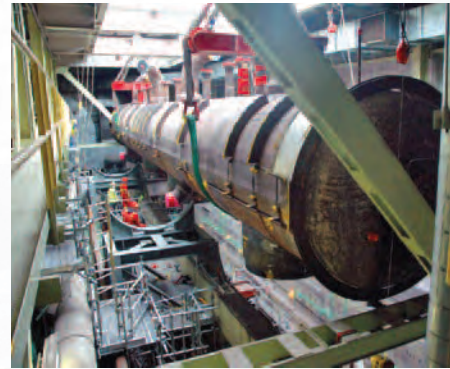
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Modulift four point spreader frame

The missing link

Step 1



Steps on
how to use
the Crosby
Easy-Loc

Step 2



Step 3



As the vital link between the crane and the load, below the hook equipment is safety critical.

LAURA HATTON reports

Safety is driving the development and design of below the hook equipment. In Canada, for example, health and safety organisations are considering enforcing legislation for automated sling releases.

As a result Canadian manufacturer of safety products Crane Equipment has designed a remote controlled sling release for cranes. The product, named Babe, is designed to reduce the risk of injury as there is no need for workers to climb into a dangerous drop off zone, the manufacturer says.

"The Babe has a solid

plate, is light weight and is small and cylindrical in shape. It meets ASME b30.20 standards. Transmission reaches a distance of 304 metres and will go through buildings and metal. It is twice as powerful and three times more immune to interference than the next best mid-range wireless equipment," a spokesperson from Crane Equipment explains.

The Babe can hold 4.5 tonne loads. Added safety features include a mechanism that prevents accidental trigger and an alarm signal to warn workers of the imminent load drop. The sling release can be used for lifting trusses and steel structures in residential and commercial construction projects.

"We also recently had interest from wind power and mining companies,"

>

Tandemloc Rapid Ready custom lift beam



BELOW THE HOOK

a spokesperson adds. For loads of approximately 2.2 tonnes there is the Baby Babe and for loads of 20 tonnes a Big Babe is being worked on.

Another product designed with safety in mind is from manufacturer of radio-controlled hooks Ludwig Hook. The Quick

Release Hook is a remote controlled hook that can be activated from 50 m away via a radio transmitter. In addition, the remote control can open each hook individually or as a complete configuration up to four hooks, a company spokesperson said. The hook has an individual safe working load

of 2 tonnes. It is also fitted with a safety mechanism which prevents the hook from opening under load.

"The idea behind the concept is to eliminate the time-consuming and accident-prone activity of releasing loads attached by all kinds of lifting gear and lifted by all kinds of cranes," Edwin van Zitteren, LudwigHook Benelux adds.

AWKWARD LOADS

To lift a load where the centre of gravity is offset, a lifter with an adjustable lift eye is necessary and economical. This example, right, also has removable swivel hooks to accommodate different size loads or pick points.

Picture, below left, is another design for lifting off-centre loads. It uses a padeye with multiple holes, allowing the user to install a shackle in the appropriate location for a level lift.

Pictured below right is an example of a lifting device with an adjustable counter weight to lift a load that is not in line with the crane hook.



Simple and easy

In the last five years Modulift has seen a change in customer demands, from requiring high quality products with full certification. Customers are now asking for products that are also simple to use, versatile and easy transport. A spokesperson from Modulift explains, "We have seen a definite shift in thinking over the last five years and we are seeing customers move away from a 'one beam for one lift' culture to modular products that will service multiple lifts."

As a result of this shift in demand, Modulift has introduced the CMOD Modular Spreader Frame, in addition to its existing modular range. "The frame is designed on Modulift's modular spreader beam components with new CMOD Corner Units to achieve a four point lift,"



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— Joshua Cotton, Equipment Manager
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— Jeff Townlin, Director-Field Support, Rowan Companies, Inc.

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— John Winn, Equipment Superintendent, Skanska USA Civil Southeast

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Crane Equipment's sling release mounted on a crane hook



Crane Equipment's Baby Babe and Babe remote controlled sling releases

the manufacturer explains. "The four CMOD corner units bolt to struts to make a square or rectangular frame as desired. Using a modular system means that the frames can be reused at different spans without the need for a new spreader frame every time."

"The system works due to a corner plate, which connects a shackle from the bow of the plate to the bow of the shackle," a company spokesperson adds, "This allows the shackle to rotate to any angle and eliminates shackle twisting." The system works in areas where there is limited headroom and, in addition,

the corner plate removes the need for a rotating lug. The range goes up to 16 m and has a 100 tonne capacity.

Stable and secure

In line with customer demand for products that are easy to use and transport, manufacturer of handling and rigging accessories, The Crosby Group, has introduced the new Crosby Easy-Loc Bolt Securement System.

"The system uses a hinged split collar assembly instead of a threaded bolt, nut and cotter pin. When compared to the nuts used with the traditional system, the

hinged collar provides up to 70 % weight reduction," a company spokesperson explains. The Crosby Easy-Loc will be standard on 125 tonne through 300 tonne Crosby G-2160 wide body shackles and G-2140 alloy shackles.

Also from Crosby is the G-2170 grommet shackle series. "The series is intended for those lifting applications that require high capacity with limited or tight headroom, such as chemical plants, refineries, interstate highway construction and offshore derrick barge cranes," a spokesperson explains. "The grommet shackle provides a bearing surface that is at least five times that of a round shackle" >



Tandemloc pipe grab

MULTI-LIFT LOADS

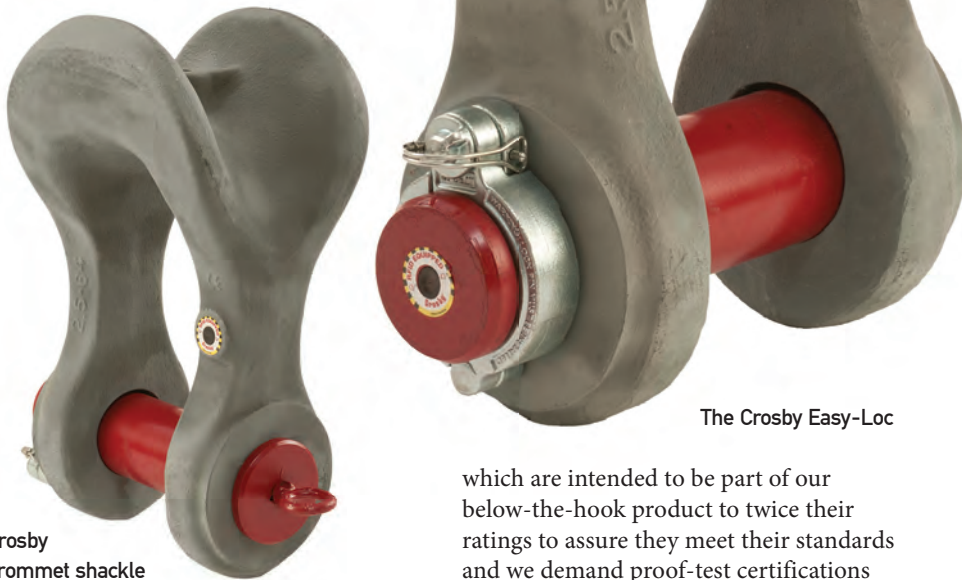
Where multi-point lifts are concerned, the tolerance on sling lengths can be an important issue, as a spokesperson from Modulift explains, "It can be difficult to manufacture slings to an exact length, which can result in uneven forces passing through the slings which, at high weights, can make a huge difference." To overcome this issue end users can use a cascading spreader system and certain rigging arrangements to counter this problem. "In a rig of cascading spreaders each spreader will be able to tilt and adjust to help spread the sling loads evenly," a Modulift spokesperson adds, "By doing this the forces are also spread throughout the load being lifted in a much more effective way."



BELOW THE HOOK

and it increases the usable sling strength minimum by 60 %. It is designed for use with single or double large diameter grommets.”

All sizes of grommet shackle have RFID (radio frequency identification) tags and the bow and pin are quenched and tempered for maximum strength. In addition, they are individually proof tested and magnetic particle inspected, the manufacturer adds.



The Crosby Easy-Loc



Crosby grommet shackle

Manufacturer Tandemloc has also introduced a new product line, Rapid Ready. It is to design custom products, from initial quotes to designs, production, proof testing and shipping. “We have structured our manufacturing plant to test equipment. We have a dedicated testing department, manned full time, and have built a large, capable, patented test stand to handle the large volumes we generate. For the past six years (2007 through to 2012) we have conducted and recorded an average of 3,521 tests annually. We have tested loads from 45 kg to 544 tonnes. We test chains purchased from suppliers

which are intended to be part of our below-the-hook product to twice their ratings to assure they meet their standards and we demand proof-test certifications on wire rope slings. Our quality assurance manager and our assistant production manager have both come up through the ranks with time in the proof testing arena.”

“The first of this Tandemloc line are custom lift beams, which are available in any spread length from 30 cm to 6 m,” a company spokesperson explains. “The custom lift beams come with up to two additional interior spreads and include two removable swivel hooks.” Capacities are available up to 11.7 tonnes.

Next in development from Tandemloc are Rapid Ready Spreader Bars. More details will follow when they become available.






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A grey area in proof testing

In addition to the need for universal safety standards, testing is another area of below the hook equipment that is generating some debate in the industry. WILLIAM FISKE, from Tandemloc, discusses the problem

The issue surrounding testing of below the hook equipment is the requirement for and the industrial response to proof testing. Technical guidance is provided for design of below the hook lifting devices in ASME B30.20, but it says very little about testing.

The standard includes requirements for those functions for lifting devices other than slings. However, in Chapter 20 of that guidance the word 'shall' is defined to 'indicate that the rule is mandatory and must be followed' whereas 'should' indicates that 'the rule is a recommendation, the advisability of which depends on the facts in each situation'.

The words used in the guidance are used inappropriately. In the sub-paragraph *Operational Tests*, the equipment user is told that 'new and reinstalled lifting devices shall be tested by a qualified person'; the tests that are therein described are essentially 'warm up the engine, check that the lifting device works, check the lights and gauges'. The user cannot 'test' the materials, the welds, the design engineering, yet they are required to test.

The next sub-paragraph, *Load Test* then instructs that 'prior to initial use, all new, altered, modified, or repaired lifting devices should be tested and inspected.' While the former sub-paragraph on *Operational Tests* is clearly written for and to, the user of this equipment, this



companion sub-paragraph *Load Test*, is pointed at the manufacturer and contains specific instructions for testing and reporting.

Responsibility

The paragraph in *Load Test* describes proof testing. The 125 % proof test verifies that no catastrophic failure can occur when the equipment is used as intended. Further, this level of testing will determine if some unexpected engineering, materials, or manufacturing situation has occurred which would reduce the capacity of the lifter to something less than the capacity design point. This puts the correct burden where it belongs; on the manufacturer. The end user is tasked to have the equipment 'tested' prior to initial use and should correctly expect, and require, that proof testing to be done by the manufacturer. We believe that it is incumbent upon the manufacturer, for ethical, professional, and safety assurance reasons to proof test every below the hook

lifting device.

End users of below the hook equipment provided by some manufacturers cannot assure that those items have been proof tested through their own required inspections or from the markings on the equipment. Sometimes the test certificates that are received are historic documents that reflect batch testing or sampling done on like items. To avoid any such confusion, we can track each product from purchase order to work order to engineering drawings to engineer test plan to photographic and electronic (DVD) records of each and every test. These DVD's are available to every customer.

We support the position that the end user should request proof testing from the manufacturer of below the hook lifting devices. Very few, if any, end users could perform the testing described by B30.20 and yet they are told that they 'shall'. We are told that we 'should' but feel strongly that we must. And we do. ■

"It is incumbent upon the manufacturer, for ethical, professional, and safety assurance reasons to proof test every below the hook lifting device."

William Fiske, Tandemloc



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COMMENT

Joel M Dandrea

A win or a warning



India's rise from the ashes, so to speak, from countless decades of poverty and disease to an emerging international economy has garnered the world's second-most-populous country (approximately 1.2 billion) some heavyweight connections – the USA being one of the more prominent. In just twelve years, from 2000 to 2012, bilateral trade between the two nations increased from US\$ 14.4 billion to \$62.6 billion. According to the US - India Business Council upwards of 100,000 jobs have been created in the USA in connection with recent cumulative Indian investments that have reached \$11 billion. So, all's well that ends well, right? Not so fast.

Outsiders might assume that such a burgeoning relationship could only continue to flourish amid near-record growth. Inquiring minds, however, would soon find that, despite the numbers, a growing collection of USA-based trade groups are less than thrilled with India's increasingly restrictive trade policies. Pressure has mounted, to the extent that US Vice President Joe Biden felt it necessary to visit the South Asian nation in late September and suggest that investment conditions could only improve if certain barriers to US products were removed.

Trade barriers

Representatives at the National Association of Manufacturers have begun to suggest that India hasn't done itself any favours in the last 18 months by contracting its economic policies in favour of its own companies and industries, rather than opening its economic arms to US and other imports. Some industry insiders go so far as to say that India's recent indifference towards economic norms is unprecedented – as the nation goes about imposing tariffs and revoking patents to apparently clear the way for local companies in industries like clean energy, technology and medical devices. Whereas India's growth has continued along a similar line of progression to another powerhouse US trade partner, China, the similarities taper off considerably beyond the

initial communications sector.

Much of India's economic improvement has found firm footing in its notorious communications service industry. But the nation has committed a key economic blunder in the last decade by allowing its transportation and infrastructure development to, essentially, die on the vine. The Indian government simply hasn't modernised its transportation and trade infrastructure and, within the merciless clutch of a real-time example of pay now or pay later, the nation is starting to realise its mis-steps, unfortunately at the expense of its own once-promising economic range.

A country bolstered by both a wealth of coastal areas and English speaking workers, India seemingly failed to plan ahead as it advanced over the course of the last ten years. Its ports exist today in a years-late state of grave underdevelopment, and its transportation infrastructure is still internationally criticised. Consequently, the nation's growth, admired by many around the globe in the first five years of the 21st Century, is decelerating. From an 11 % GDP growth rate in 2010, India hasn't had cause to celebrate. The GDP rate for 2011 was 7.7 %, followed up by 5 % in 2012 – the lowest rate the nation has seen in ten years. In addition, the country's buying power is weakening and its industrial production is slowing.

US trade associations seem to have taken the lead in pressuring the American government to address these economic obstacles with India. While many of the US and international companies already in operation in India are able to fully appreciate the nation's instincts to hunker down and protect its own industries amid tough times, most agree that there is a better way to go about re-stimulating internal stability, while preserving the integrity (and potential) of international relationships. The first step would be in assessing the many benefits in establishing and maintaining the policies and procedures inherent within a free-market economy.



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The high number of attendees at the 2013 Crane and Rigging Workshop was a good indicator of the strength of the association. MIKE CHALMERS reports

Strength in numbers

The 2013 Crane & Rigging Workshop bookended summer in memorable fashion for the many in attendance in sunny Florida, USA. SC&RA members from around the world had a chance to reunite, or meet and greet, from the Hilton hotel at Lake Buena Vista on the grounds of the Walt Disney World Resort. In addition to the distinguished setting, September's annual event saw numbers in an array of categories reach impressive heights.

This year's agenda was geared towards enhancing the understanding of vital industry issues, including safety and risk management, optimal use of equipment, employee recruitment and retention, marketing and promotion, the regulatory environment, construction contracts and more. The value of an SC&RA membership for companies in every niche and location in the world was on full display, as some of the industry's top experts provided insights on key issues that affect SC&RA members on a day-to-day basis, from the jobsite to the front office. Industry professionals, two dozen of them internationals, joined the assembly of attendees for a range of educational sessions, committee meetings and networking events.

In addition, a notable appearance by James Callahan, International Union of Operating Engineers general president, at the Labor Committee meeting, brought a crowd. It also gave the day one morning gathering a significant distinction. Callahan addressed questions and concerns from the audience covering a range of topics, including hours of service, initiatives,



Keynote speaker, Josh Williams, Safety Performance Solution senior project manager, had the audience captivated on day one with his enduring presentation Increasing Self-Responsibility for Safety

uniformity on standards, and OSHA compliance. The Labor Committee meeting was one of three to kick off the conference on the first morning – setting the tone for what emerged as one of the more uplifting and educational SC&RA events of the year.

Part of it

As the numbers go, this year's final tally was certainly worth being a part of. More than 500 attendees landed at this year's workshop. In addition to first-rate accommodation, each guest enjoyed the numerous occasions to meet and greet from a number of receptions and related

networking opportunities.

Representing nine countries, 24 international attendees made their way stateside for this year's event. They were greeted with the type of hospitality that reinforces one's pride in the industry and this association.

A record 80 booths lined the spirited exhibit centre. Exhibitors and attendees alike had a chance to interact during the largest-ever exhibit floor for this event. Products and services geared to the needs of the industry were on display within a setting intimate enough for professionals on both sides of the booth to exchange valuable questions and answers.

The First-Timers' Briefing brought day one to a close, and was supported by 66 attendees. Participants had a chance to put a name to a face, and become acquainted with SC&RA officers and staff.

The Exhibit Center Only pass created by SC&RA had nine members participating. This system allows exhibitors to invite up to three attendees or clients of their choice. SC&RA expects this feature to grow in popularity and believes it will serve to >

Industry professionals travelled in from nine countries and helped to fill a range of educational sessions, committee meetings and presentations. The top issues of the day in crane and rigging were addressed to enthusiastic audiences all week



Having so many quality exhibitors in one room allows fellow SC&RA members to easily find one another, thus enabling a more efficient platform for the growth of ideas and any resulting opportunities



increase a wide variety of member support and participation at future events.

In session

Among an inspiring assortment of presenters throughout the week, keynote speaker, Josh Williams, Safety Performance Solution (SPS) senior project manager, started things off in style on day one with his memorable presentation: *Increasing Self-Responsibility for Safety*.

Williams has worked at SPS for 15 years, and is the author of *Keeping People Safe: The Human Dynamics of Injury Prevention*. He's also the co-editor of *Keys to Behavior-Based Safety* with Dr Scott Geller, his partner at SPS. Williams has more than 20 publications in leading safety journals, and received the Cambridge Center National First Prize for his research on behavioural feedback.

One of the key questions he addressed during his presentation was, "What is an ideal safety culture and why is one necessary?" He emphasised throughout the session that achieving a company-wide safety culture requires companies to identify any barriers preventing employees and leaders from performing at their best. Williams identified three aspects of safety:



David Cowley, at TNT Crane & Rigging, presided over most of the week's presentations



The September Workshop brought together professionals from many areas of the industry, allowing for valuable "face time" and a chance to explore the benefits of quality networking

person, behaviour and environment.

"It's a numbers game, almost like Vegas," he highlighted. "You minimise risky behaviours on the front end, and you dramatically reduce the potential risks – the likelihoods – of bad things happening down the line." Williams also stressed the importance of active caring – a culture of looking out for other people. "You want to get involved to the extent that it feels good to help out other people. Most of us have a natural inclination for wanting to belong to something bigger than ourselves." Williams outlined the importance for leaders to take ownership of fostering responsibility and good behaviour practices in the workplace.

Rig it right

Al Abel, a lifting specialist at Mazzella Companies, followed up on day two with his popular presentation, *Rig it Right and You Won't Go Wrong*.

Abel has been a lifting specialist, as well as safety manager at Mazzella Companies, headquartered in Cleveland, Ohio, USA, for almost 20 years. He travels throughout the USA promoting safe lifting practices for companies of all sizes. He also holds the certification from ITI as a certified inspector; OSHA Safety and Health Compliance; Crane Training USA–Inspector Certification; and is a certified Crosby trainer.

Abel's presentation emphasised the stance that no matter how many cranes or hoists you have, or even if you don't have any, safe lifting concepts can be applied to any workplace. He discussed the applicability of ASME's B30 standard to cranes, hardware, slings and below-the-hook lifting devices. Abel also highlighted examples of what you never want to hear anyone say regarding rigging and lifting.

Following Abel on the second day of presentations, Klaus Meissner, Terex Cranes

director, product integrity, from Germany, educated the audience on *Mobile Crane Safety When Working in the Wind*.

Meissner began working in the crane industry at Demag in Zweibrücken, Germany, in 1988, now known as Terex Cranes. Since 2002 he's been leading R&D for all telescopic and crawler cranes at Zweibrücken and, as director, is responsible for product safety co-ordination and intellectual property management. Meissner is an expert for mobile crane approval, appointed by the German Health and Safety Authority, and works with different European standards committees on crane and safety standards.

His presentation stressed the reality that working with wind turbines isn't the only application where mobile cranes encounter wind. He raised the question: "What about lifting loads with large sail areas and when travelling partially erected on site?" Meissner's session underscored the effects of wind on crane parts and loads, precautions when lifting and standard assumptions for load chart calculations.

Coming up

Remember that the January board meetings are just around the corner. Canyons Resort, in Park City, Utah, USA, is the destination, from 5 to 8 January 2014. By bringing leaders together, SC&RA is adding value to its membership, and strength to the industry overall. The January board meetings set the tone for the year to come, and serve as a first step for many in getting involved with the Association. Attendees have the exclusive chance to participate in discussions concerning policies and procedures that will affect the day-to-day operations for thousands of SC&RA members around the world. ■

ABOUT THE AUTHOR

Mike Chalmers is editor-in-chief at Thrive Creative Services, a creative agency based in Chicago, USA. For more information see www.thrivecs.com

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POLAND FOR
RED ROOSTER

Red Rooster, a manufacturer of air hoists, powered winches and manual winches, has opened a new depot in Krakow, Poland.

The new centre will help increase services in Central and Eastern European countries, a company spokesperson said. It will eventually offer most products and services available within the UK and Norway, a company spokesperson added.

Red Rooster is a UK distributor of Kito products, including electric chain hoists, manual chain hoists, lever hoists, trolleys and beam clamps. It also offers 20, 30 and 40 tonne capacity hand chain hoists from a fleet of rental equipment.

■ For more information see: www.rruk.com



Industrial crane and materials handling equipment manufacturer Columbus McKinnon in the USA has launched a lightweight manually operated ratchet lever hoist called the CM Bandit. The manufacturer said it is its lightest and most compact unit and the world's first HMI-certified

ratchet lever hoist.

The Bandit has a 360 degree rotating handle, double reduction gearing and an enclosed Weston style brake. Latches are fitted to the upper and lower hooks.

It is available in 0.75 and 1.5 tonne capacities, with 3 and 6 tonne units in development. As standard it has chain lengths giving 5, 10, 15 and 20 foot (1.5 to 6 metre) lift heights. The chain is zinc plated (gold chromate plating in the USA).

Applications include work

in the mining and construction industries. An internal load limiter is available as an option on the Bandit.

CM's Bandit has been available for customers in Canada since 10 September 2013 and available to US customers since 17 October. It is HMI certified and is designed to meet the American Society of Mechanical Engineers ASME B30.21 Manually Operated Hoist Standard.

■ For more information see: www.cmworks.com

ANTI-SHOCK TECHNOLOGY FROM MAGNETEK

Magnetek, a supplier of digital power and motion control systems, has launched an anti-shock feature to its Impulse VG+ Series 4 crane controls.

The technology works by automatically stabilising loads by detecting and minimising rapid increases in motor torque, the manufacturer said. The feature helps protect the crane and building from excessive stress.

Jason Wellnitz, Magnetek controls product manager, explains, "After stabilising the load, the hoist automatically reaccelerates to the speed the operator had initially selected. At no point, however, does it take control away from the operator."

The anti-shock feature will be standard on all new Impulse VG+ Series 4 drives.

■ For more information see: www.magnetekmh.com

Konecranes offers advanced
rope diagnostics

RailQ Runway Survey product

Two new services, RailQ Runway Survey and RopeQ Wire Rope Inspection, are available from Konecranes. They offer recommendations on the overall lifetimes of industrial crane runways and ropes.

The first service, RailQ, uses an alignment survey to measure straightness, elevation, rail-to-rail elevation, and the span of the rails, a company spokesperson explained. The system uses a remote-controlled robot trolley to collect data, for example, misalignments, via Bluetooth.

RopeQ Wire Rope Inspection is a visual and non-destructive (NDT) rope inspection for evaluating the overall lifetime of a wire rope. Data provided during the inspection includes current condition of the ropes and inner and outer surface measurements. It also helps identify any internal broken wires, the company said.

■ For more information see: www.konecranes.ae



RopeQ Wire Rope Inspection product

LOAD MONITORING
FROM EILON

Eilon engineering, a specialist in industrial single point lifting and stage safety line multi point lifting, has launched a new load monitoring system.

The Ron StageMaster system has a real-time load map that allows the user to see overloads during a lift. It has four load cells and additional ones can be added, the manufacturer added.

The system has a transmission range up to 1 km and a battery life of up to 4,000 hours. It is a wireless system that is compatible with tablet and smart phones.

The system works on a range of frequencies and can work with any controller to provide automatic E-stop and overload or under-load alarm, the manufacturer added.

■ For more information see: www.eilon-engineering.com



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EVENTS DIARY

ICEF INTERNATIONAL CONSTRUCTION ECONOMIC FORUM
20 – 22 November 2013
Amsterdam, Netherlands
www.khl.com/icef

SC&RA BOARD & COMMITTEE MEETINGS
5 – 8 January 2014
Park City, Utah, USA
www.scranet.org

INTERMAT MIDDLE EAST
14 – 16 January 2014
Abu Dhabi
www.intermatme.com

CONEXPO 2014
4 – 8 March 2014
Las Vegas, Nevada, USA
www.conexpoconagg.com

SC&RA SPECIALIZED TRANSPORTATION SYMPOSIUM
19 – 21 March 2014
Houston, Texas, USA
www.scranet.org

SMOPYC 2014
1 – 5 April 2014
Zaragoza, Spain
www.smopyc.com

SC&RA ANNUAL CONFERENCE
22 – 26 April 2014
Boca Raton, Florida, USA
www.scranet.org

CRANES AND TRANSPORT TURKEY 2014
8 May 2014
Istanbul, Turkey
www.khl.com/events

SAMOTER 2014
8 – 11 May 2014
Verona, Italy
www.samoter.com

INTERNATIONAL RENTAL EXHIBITION
24 – 26 June 2014
Amsterdam, Netherlands
www.ireshow.com

CRANES AND TRANSPORT ASIA PACIFIC
30 September 2014
Singapore
www.khl.com/events

BAUMA CHINA 2014
25 – 28 November 2014
Shanghai, China
www.bauma-china.com

Picture of the month

This issue's Picture of the Month was taken by *IC* reader Søren Jansen. The photo was taken in September 2013. It shows a Coles 615 S rough terrain wheeled mobile telescopic crane in the old section of the Port of Copenhagen in Denmark. A small group of boat and engine repair businesses are still active there and Jansen reports that the crane is still in service.



PEOPLE NEWS



■ **PETER BLAKE**, CEO at construction equipment auctioneer Ritchie Bros, will step down

in May 2014 after a decade in the role. The company said Blake will remain as CEO in the interim as it searches for a replacement. Blake joined Ritchie in 1991 and has been CEO since 2004. Under his leadership the company has grown, and now has operations in more than 25 countries, including 44 auction sites. "I have decided that the time is right for a new CEO to lead Ritchie Bros into the exciting next phase that is ahead," Blake said.

■ Crane repair and refurbishment specialist Wheco in the USA, has appointed **JOHN WILLIS** as the new division manager for the Aiken, South Carolina, facility. Prior to his role Willis was operations



spokesperson said.

■ **CHUCK RICHARDSON**, York Crane Hire director, used one of his cranes, a 40 tonne Tadano all terrain, to transport groom **MARK ROBINSON** to his wedding venue at the Malton Registry Office in North Yorkshire, UK. The surprise for Mark was organised by his bride to be **LIZ PENFOLD**, who asked Richardson to help out

manager at Wheco. "We are excited to have John back on the team," a company

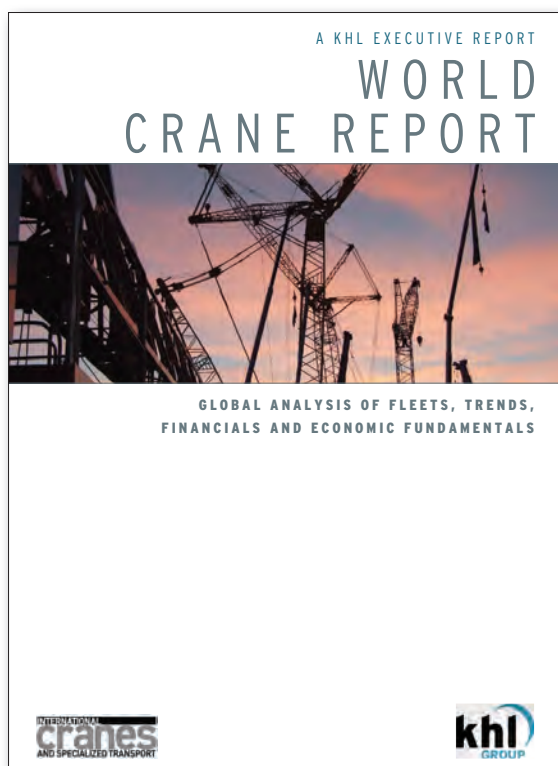
with the wedding transport as a special favour to Mark for his help as the company's banksman. Robinson said, "It was a complete surprise to me and it was absolutely fantastic and we attracted quite a bit of attention along the way from York. It's not often that you see a crane bedecked in wedding ribbons."



■ Send picture of the month entries and all other back page-related information to *International Cranes and Specialized Transport*, KHL Group, Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP, UK or by e-mail to alex.dahm@khl.com. Picture caption entries should include: the month and year taken, the place, type of crane, owner and project, plus any other relevant information.

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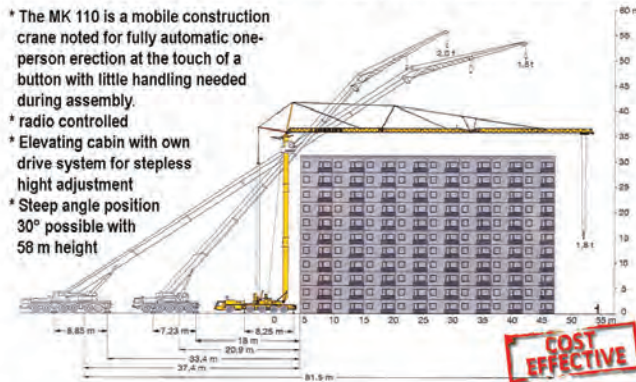


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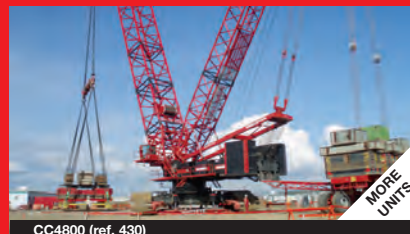
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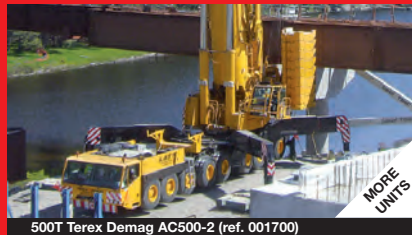
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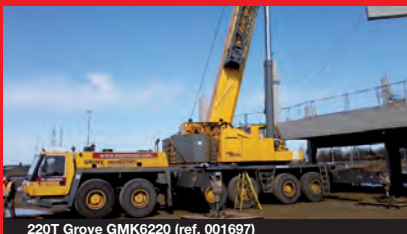
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- ▶ MOUNTED ON CARRIER FAUN FIVE AXLES - TYRES 445/95R25
- ▶ WEIGHT: 59.815 KGS

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- ▶ ORIGIN: GERMANY
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- ▶ MILEAGE CARRIER: 41.703 KMS
- ▶ DELIVERY: IMMEDIATE
- ▶ PRICE: ON REQUEST

FOR SALE: LIEBHERR LTM 1500 8.1 - 84 M - 2007 / GROVE GMK 7450 - 2003 / LIEBHERR LTM 1220 5.1 - 2007 / DEMAG AC 140 - 2005 / LIEBHERR LTM 1100 5.1 - 2005 / DEMAG AC 100 - 2008 / GROVE GMK 3055 - 2005 / LIEBHERR LTM 1055 3.1 - 2004 / LIEBHERR LTM 1030-2 - 2004 / 2001/2000/1999

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Liebherr LTM 1060-2
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Faun ATF 60-4
60 t YOM 1999



Faun ATF 70-4
70 t YOM 1999



Demag AC 205
80 t YOM 1996



Demag AC 100
100 t YOM 2001



Demag AC 200
200 t YOM 2006



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Make / Type	y. o. m.	Drive	Boom / Fly Jib
20 t Gottwald AMK 31-21	1984	4x4x4	20,50m
25 t Demag AC 75	1998	4x4x4	25,00m + 13,00m
30 t PPM ATT 335	1997	4x4x4	27,40m + 15,00m
30 t Liebherr LTM 1030/2	2003	4x4x4	30,00m + 15,00m
33 t P&H S 35	1987	4x4x4	25,90m
35 t PPM ATT 400-3	2002	4x4x4	30,40m
40 t Demag AC 40-1 City	2000	6x4x6	31,20m + 13,00m
40 t Liebherr LTM 1040-1	1999	6x4x6	30,00m + 14,50m
50 t Faun ATF 50-3	2000	6x6x6	38,60m + 16,00m
50 t Faun ATF 50G-3	2008	6x6x6	40,00m + 16,00m
55 t Liebherr LTC 1055-3.1	2005	6x6x6	36,00m + 7,80m
55 t Liebherr LTC 1055-3.1	2005	6x6x6	36,00m + 7,80m
55 t Krupp KMK 4055	1989	8x6x8	35,10m + 16,00m
55 t Grove GMK 3055	2004	6x6x6	43,00m + 15,00m
70 t Krupp KMK 4070	1995	8x6x8	38,10m + 16,00m
70 t Faun ATF 70-4	1999	8x8x8	40,50m + 16,00m
80 t Liebherr LTM 1080/1	2000	8x6x8	48,00m + 19,00m
80 t Faun ATF 80-4	2005	8x6x8	48,50m + 16,00m
100 t Grove GMK 5100	2002	10x8x10	51,00m + 18,00m
110 t Tadano Faun 110 G-5	2008	10x8x8	52,00m + 16,00m
120 t Terex-Demag AC 120-1	2006	10x6x8	60,00m + 17,60m
120 t Liebherr LTM 1120/1	2000	10x8x10	56,00m + 28,00m + 3,00m
180 t Grove GMK 5180	2000	10x8x10	60,00m + 22,00m
200 t Grove GMK 5200	2002	10x8x10	60,00m + 36,00m

LATTICE-BOOM-TRUCK-CRANE

115 t Link-Belt HC 238	1981	10x6x6	48,00m/18,00m
170 t Demag TC 650	1981	10x4x6	72,00m/60,00m

INDUSTRIEKRAN / YARD-CRANE

14 t Demag V 73	1988	4x2x2	13,10m
12 t Liebherr LI 1012	1990	4x2x2	12,00m

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Brand	Type	Year	Capacity
GROVE	AT 635E	1992	30 TON
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PPM	ATT480	1990	45 TON
Liebherr	LTM1090-4.1	2007	90 TON
DEMAG	AC250	2007	250 TON

CRAWLER CRANES:

Brand	Type	Year	Capacity
KOBELCO	CKE600	2006	60 TON
TEREX	A600 C	2004	65 TON
ZOOMLION	QUY70	2008	70 TON
LIEBHERR	HS 853 HD	1995	80 TON
HITACHI	KH230-3	1992	80 TON
KOBELCO	7100	2000	120 TON
LIEBHERR	LR1160	2006	160 TON

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200 t	Liebherr LTM 1200-5.1	NEW!
220 t	Liebherr LTM 1220-5.2	NEW!
300 t	Grove GMK 6300L	NEW!

CRAWLER CRANES

400 t	Terex-Demag CC2400-1	NEW
600 t	Terex-Demag CC2800	2001
600 t	Terex-Demag CC2800-1	2010

650 t Terex-Demag CC3800 NEW

ROUGH TERRAIN CRANES

60 t	Grove RT760E	2008
65 t	Grove RT765E	NEW!
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Demag AC 100/4L, 2010

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Liebherr LTM 1090-2, 2000

80 t



Tadano Faun ATF 80-4, 2003

80 t



Demag AC 80-2, 2006
2 Winden / Winches

70 t



2 x Demag AC 60, 2002

60 t



2 x Liebherr LTM 1060-2,
2003 & 2002

50 t



Faun HK 50, 2008

40 t



Demag AC 40-1, 1999

35 t



Liebherr LTM 1030-2.1, 2007

Further cranes / Coming soon

65 t, Tadano Faun ATF 65G-4, 2007

100 t, Demag AC 100-5, 2009

120 t, Demag AC 120-1, 2009

150 t, Liebherr LTM 1150-6.1, 2009

160 t, Demag AC 160-2, 2009

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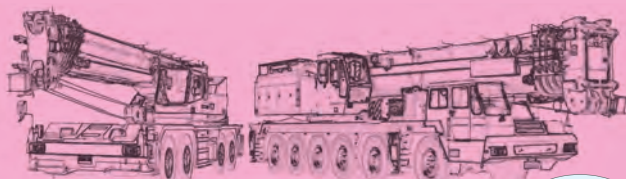


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23 t TADANO TR 230 E, year 1987

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30 t LIEBHERR LTM 1030/1, year 1996

26 + 14,5 m, 4x4x4, LIEBHERR engine

35 t LIEBHERR LTM 1030-2.1, y. 2010

30 + 15,0 m, 4x4x4, LIEBHERR engine

50 t LIEBHERR LTM 1050-3.1, year 2010

38,0 m, 6x6x6, LIEBHERR engine, 9,0 t cw

70 t TADANO FAUN ATF 70-4, year 1996

40,5 m + 16,0 m, 8x8x8, 2x MB engines

95 t LIEBHERR LTM 1095-5.1, year 2010

58 + 19 m, 10x8x8, 2x LIEBHERR engines

100 t LIEBHERR LTM 1100/1, year 1997

45 + 20 m, 10x8x8, 2x MB engines, 20 t cw

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STOCKLIST

TELESCOPIC AT-CRANES

Capacity	Manufacturer	Type	Year	Drive/Steering	Boom/jib (m)	Delivery
250 t	Demag	AC 665 SL	1996	12 x 8 x 8	58 / 22 / 65	direct
200 t	Grove	GMK 5200	2002	10 x 8 x 10	60 / 36	direct
180 t	Grove	GMK 5180	2000	10 x 8 x 10	60 / 22	direct
120 t	Liebherr	LTM 1120/1	2000	10 x 8 x 10	56 / 28+3	direct
120 t	Liebherr	LTM 1120/1	1999	10 x 6 x 10	56 / 28	direct
100 t	Grove	GMK 4100 L	2008	8 x 8 x 8	60 / 22	direct
100 t	Grove	GMK 5100	2002	10 x 8 x 10	51 / 18	direct
80 t	Faun	ATF 80-4	2005	8 x 6 x 8	48 / 16	direct
80 t	Liebherr	LTM 1080/1	2000	8 x 6 x 8	48 / 19	direct
80 t	Demag	AC 80-1	1998	8 x 6 x 6	50	direct
70 t	Faun	ATF 70-4	1999	8 x 8 x 8	40,5 / 16	direct
70 t	Krupp	KMK 4070	1995	8 x 6 x 8	38 / 16	direct
60 t	Faun	ATF 60-4	2002	8 x 6 x 8	40,2 / 16	direct
60 t	Liebherr	LTM 1060/2	2000	8 x 6 x 8	42 / 17	direct
60 t	Krupp	KMK 4060	1990	8 x 8 x 8	35 / 16	direct
60 t	Grove	AT 865	1990	6 x 6 x 6	35 / 18,5	direct
60 t	Liebherr	LTM 1060	1983	8 x 8 x 8	35 / 18	direct
55 t	Liebherr	LTC 1055-3.1 (2x)	2005	6 x 6 x 6	36 / 7,8	direct
55 t	Grove	GMK 3055	2004	6 x 6 x 6	43 / 15	direct
55 t	Liebherr	LTM 1055/1	2002	6 x 6 x 6	40 / 16	direct
55 t	Krupp	KMK 4055	1989	8 x 6 x 8	35,1 / 16	direct
50 t	Grove	GMK 3050	1998	6 x 6 x 6	38 / 9	direct
40 t	Liebherr	LTM 1040/1	1999	6 x 4 x 6	30 / 14,5	direct
40 t	Faun	RTF 40-3	1993	6 x 6 x 6	30 / 14,5	direct
40 t	Liebherr	LTM 1040-3	1991	6 x 4 x 4	30 / 8	direct
35 t	Terex-Demag	AC 35	2006	4 x 4 x 4	30,4 / 15	direct
35 t	Grove	GMK 2035	2000	4 x 4 x 4	29 / 15	direct
35 t	Grove	GMK 2035	1998	4 x 4 x 4	29 / 15	direct
35 t	Liebherr	LTM 1035-2	1988	4 x 4 x 4	26 / 8	direct
35 t	Liebherr	LTM 1030/2	2003	4 x 4 x 4	30 / 15	direct
35 t	Liebherr	LTM 1030/2	2002	4 x 4 x 4	30 / 15	direct
30 t	PPM	ATT 335	1997	4 x 4 x 4	27,4 / 15	direct
30 t	Luna	AT 30/27	1989	4 x 4 x 4	27 / 7	direct
30 t	Luna	AT 30/27	1989	4 x 4 x 4	27	direct
25 t	Demag	AC 25/75	1998	4 x 4 x 4	25 / 13+1,5	direct

LATTICE BOOM TRUCK CRANES

180 t	Demag	TC 650	1981	10 x 6 x 6	72 / 60	direct
115 t	Linkbelt	HC 238	1981	10 x 6 x 4	42 / 19	direct

ROUGH TERRAIN CRANES

60 t	Grove	RT 760 E	2005	4 x 4 x 4	33 / 17	direct
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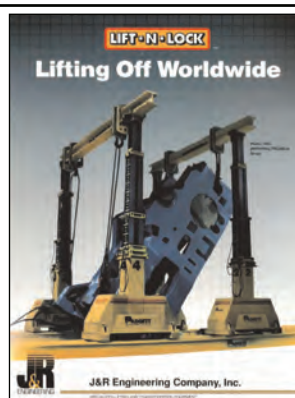
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