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Tower Power

ACTTOWER CRANE50

Ranking North America's
largest tower crane-
owning companies

INTERVIEW:
P&J Arcomet's
Stephen Jehle

PROJECT DIGEST:
Specialized rigging

PRODUCT FOCUS:
Rough terrain
cranes



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A big loss

The industry lost a dear friend last month. Jimmy Lomma's passing was a blow to everyone who knew him and the industry at large. As editor of *ACT*, I considered Jimmy a friend and a valued source. He would email amazing photos of cranes working in New York City and around the world. He helped us with all sorts of articles, and if he didn't know the answer to a question, he would find someone who did. He let us know about his jobs and his competitors' jobs. To Jimmy, an interesting job was an interesting job, and it was worth sharing.

On behalf of the *ACT* and KHL Group around the world, our deepest condolences to his family, co-workers and friends. He will be deeply missed. Our obituary on page 67 recaps the highlights of the life of a man who will be long remembered for his kindness and having a true servant heart.

. . .

ACT's **TOWERCRANE50** list reveals that the tower crane sector is performing well, but that there may be a slight slowing of growth. While we did see growth in the number of units on the 2019 list versus the 2018 list, one might characterize the growth as modest. As well, some of the larger players on the list actually downsized their fleets, another interesting indicator.

Our Interview this month is with Stephen Jehle, president of P&J Arcomet, who provides a really good snapshot of the tower crane market and reveals what it takes to keep a tower crane company successful for almost 20 years.

Hannah Sundermeyer dissects the rough terrain crane market in our Product Focus, while our Project Digest focuses in on some of the most interesting jobs using highly specialized rigging equipment and machines. A new feature for *ACT* is our Project Focus on crane engines. We've never really reported on crane engines before, so I hope you will let us know what you think. The article presents a roundup of engine models that you can find in most of the major crane brands.

And finally, as the dog days of summer set in, let me know what's going on with your people, cranes, projects and equipment.

D. ANN SLAYTON SHIFFLER**Editor**

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ACT's TOWERCRANE50 reveals modest growth in the tower crane sector. See page 21.



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■ Mammoet has partnered with Core Industries, the owner and operator of Theodore Industrial Port near Mobile, AL. Under the agreement, Mammoet will have the opportunity to work with Core and utilize the 400 acres of land at the port, positioning the company closer to Mobile's chemical industry.

■ Florida Handling Systems (FHS), a Mazzella Company, and Industrial Training International (ITI), have reached an agreement to partner on a new crane, rigging and load handling training center in Bartow, FL.

■ SafwayAtlantic has acquired Sheedy Hoist. Sheedy Hoist has an inventory of standard and counter-weightless equipment, single- and dual-car hoists and leading brands such as Alimak, Champion, AVRO and RAXTAR.

Manitex to debut 60-tonner at ICUEE

Manitex International has introduced the newest model in its TC-series lineup, the TC600. The crane features a base rating of 60 tons and a maximum main boom height of 141 feet. It has a 194-foot maximum height when equipped with an optional jib. The new model expands Manitex's heavy-crane product offerings.

The TC600 incorporates a four-section boom and offsettable lattice-style jib utilizing high strength steel and components providing high strength-to-weight ratio for increased capacities at long radius. Featuring a removable counterweight system and uniquely designed trapezoid subframe, Manitex said the TC600 provides added stability and precision control. "We are excited to add the TC600 boom truck to our



The new TC600 features a base rating of 60 tons.

line of products, supporting the industry's growing need for high-capacity machines," said Steve Kiefer, president and CEO. "Manitex has consistently been an innovator in meeting end-users' needs for equipment delivering high-value, operator comfort and overall performance."

The TC600 is available through the Manitex dealer network, and it will be on display for the first time at the International Construction & Utility Equipment Exposition (ICUEE) in Louisville, KY in early October. Deliveries will start in the fourth quarter of 2019.

Raimondi launches 20-ton luffer

Raimondi has launched a new 370 ton-meter-rated luffing jib tower crane. The LR372 will lift 20 tons on two falls of rope and has maximum 60-meter jib. Capacity at maximum radius is given as 3.63 tons. It has a 110-kW hoisting winch and maximum lifting speed is 250 meters per minute. Rope capacity is 880 meters and there is an auxiliary hydraulic emergency brake as standard.

The luffing winch is 75 kW and has a secondary emergency brake as standard. Raising the jib from 15

A choice of seven jib lengths, from 30 to 60 meters, are available for the Raimondi LR372 luffer.



degrees to 85 degrees takes just over two minutes under full load, the manufacturer said.

Installation can be on one of two masts without an adapter section. For internal climbing it can be on the 2-meter GR5H. The 2.3-meter GR6 series can be used for other applications. GR6L tower sections can be installed on embedded legs or on an 8 by 8-meter cross base. Tower height is up to 84.4 meters.

"One very important features of the LR372 is that it may be installed on two different types of towers," said Domenico Ciano, chief executive officer, Raimondi Cranes. "For an internal climbing system, the new GR5H tower at a width of 2 meters or the 2.3 meter width GR6 tower series (GR6B, GR6 and GR6L inclusive), for standard, external, and internal climbing configurations."

Hyva has launched its latest truck-mounted crane line, the 12 to 21 ton meter Edge range. Designed to complement the 9-ton meter and 13 to 16-ton meter line, the new product family means that Hyva now offers solutions for every industry and application, from mining to maintenance, construction to car recovery. The new Edge line comprises 14 models with five different boom configurations.

■ Lifting Gear Hire has changed its name to LGH as part of a worldwide rebranding. The move will standardize the name across its 36 locations in six countries. The company said the new name would overcome some local variations in meaning, especially between Europe and the U.S., where the word hire usually refers to people rather than equipment.

■ The Diesel Progress Summit on Monday September 30, in Louisville, KY, will focus on the fast-changing world of engines and powertrains, looking at the technology that will be used on the cranes, aerial platforms and earthmoving equipment of the future. Power experts from Caterpillar, Cummins, JLG Industries, John Deere, Volvo CE, Danfoss, Deutz, Hatz and Kohler will describe the latest trends in diesel engines, hybrid systems and electrification.

■ Manitowoc has expanded its EnCORE network to the Pacific Northwest and southeast U.S. with two new partners. Select Fluid Power and Ring Power Crane extend the network of certified Manitowoc EnCORE repair shops.

■ The Lube-A-Boom team has launched its newest product, Loose-N-It. Loose-N-It is a 4-in-1 industrial lubricant and penetrant containing PTFE. Specifically, the lubricant penetrates old bolts and screws, lubricates, displaces moisture and resists corrosion.

■ Texas-headquartered Bishop Lifting Products has completed its acquisition of American Wire Rope & Sling (AWRS).



Modern Crane receives Canada's first AC 300-6

Milton, Ontario-based Modern Crane received Canada's first Demag AC 300-6 all-terrain crane. The company purchased the new crane from Terex distributor Cropac Equipment, and plans to use it to assemble tower cranes.

Modern Crane is a division of the Pumpcrete Corporation, which is active in heavy lifting, concrete pumping, heavy haul and transportation.

According to Aaron Hanna, Modern Crane vice president of sales, the Demag's long main boom was an important feature.

Mark Williams, Modern Crane's owner, said the new AT will give the company a significant advantage in the marketplace. "It features the latest in crane technology that



Modern Crane purchased the Demag AC 300-6 from Cropac Equipment and plans to use it to assemble tower cranes.

will help our team work more efficiently, and we consider Demag to be the pinnacle of heavy lifting cranes on the market," said Williams.

The six-axle Demag AC 300-6 has a 350-ton capacity classification, features a 262.5-

foot main boom and is the smallest crane in the Demag all-terrain range equipped with a luffing jib. The main boom is designed to perform jobs at heights up to 255 feet or a 242 feet radius without rigging a jib. ■

Jaso towers in Vancouver

Two J380PA luffing jib tower cranes from Spanish tower crane manufacturer Jaso have been erected on the roof of the former city post office in Vancouver, Canada by Jaso's Canadian distributor Allied Crane.

The cranes are being used to help with the construction of a new Amazon headquarters, which will be dedicated to e-commerce, cloud and artificial intelligence technologies. Construction is scheduled to finish in 2022.

The two tower cranes have been fitted with two DCS 60 anti-collision systems from French zoning and collision-avoidance equipment manufacturer AMCS Technologies. According to AMCS Technologies, the systems will manage prohibited overflight zones and avoid any interference between the two cranes. The DCS 60 operates in real time



and in three dimensions to calculate the distances between each crane component as well as movement speed.

The system applies a security envelope around the jib in proportion to the speed of slewing of the crane as well as around the cable in proportion to the speed of movement of the trolley. This is particularly important on the Amazon jobsite where the two tower cranes are in close proximity and facing each other. ■

The two Jaso J380PA tower cranes work from the roof of the Amazon headquarters jobsite in Vancouver, Canada.



■ For the sixth year in a row, Express Mondor brought together more than 200 people for its annual golf tournament and fundraising dinner in support of the Quebec Breast Cancer Foundation.

■ Empire Crane has been named an authorized dealer for Trimble Lifting Solutions Products. Trimble produces a number of load cells, angle sensor, a2b sensors, anemometers and the like.

Trand uses new LG 1750 on Lubbock, TX wind farm

A Liebherr LG 1750 provided the primary lifting power for Trand, Inc. during a nearly two-week-long project in May. The company provided crane services for a main shaft exchange on a wind turbine with a nearly 400-foot hub

height in the Lubbock, TX area.

Based in Pratt, KS, Trand took delivery of the first LG 1750 in the U.S. in March. The LG 1750 is an 850-ton-class eight axle, lattice boom mobile crane with the mobility of a drivable carrier and the lifting capacity of a crawler crane. It has a 633-foot maximum hoist height, six winches and variable boom systems. Among other items, the crane handled a gearbox assembly and its heaviest lift was 162,000 pounds.

“One challenge we faced during the planning of this job was that the allowable ground-bearing pressure was very low,” said Andrea Arnett, vice president of operations, Trand. “At the time of the crane purchase, we also purchased eight steel mats to help spread

Crews used the LG 1750 crane to install blade socks.



the pressure over a larger area and minimize the pressure per square foot to the ground. The steel mats were essential for this job.”

The strength of the LG 1750 on this job was its lifting capacity and luffing abilities. Trand also purchased a 344-

foot luffing jib with the crane. “The luffer was essential for this job,” Arnett said. “We originally did not plan to use it, but the blades on this rotor had a 40-foot pre-bend and would likely have hit the boom using the original configuration.” ■

Empire adds three Demag ATs

Empire Crane has ordered three 3-axle Demag AC-60-3 all-terrain cranes that feature class-leading compact design and lifting performance, Empire said.

According to the team at Empire Crane, the complete Demag all terrain crane product line has been well received by its customer base and other crane companies throughout the region. The distributor has seen significant growth in smaller crane models including the Demag AC 45 City and AC 60-3 cranes.

The Demag AC 60-3s have a 65-ton rated operating capacity, feature a 164-foot-long main boom with a total system length of 216.5 feet and an automated counterweight rigging system. The units utilize a one-engine concept and have the IC-1 Plus control system that provides maximum allowable lifting capacity, based on slewing angle.

Pettrone places first in A1A Software contest

A1A Software has announced the winners of its 2018 Lift Plan of the Year Competition. The awards program is for companies that use A1A Software's 3D Lift Plan as a sales tool, for bid proposals, crane selection and setup, lift planning and documentation. Project submissions were for

jobs that were completed last year.

“More than 1,000 crane industry professionals voted for the best lift plans,” said Tawnia Weiss, president of A1A Software. The competition focused on creative and practical use of 3D Lift Plan to solve

challenges of the jobs.

Riley Pettrone, a project manager for La Grange Crane Service, La Grange, IL, received first place for his lift plan detailing a two-crane lift of a 120,000-pound steel bridge section over the Calumet River. The project was conducted for Copenhaver Construction and the Illinois Department of Transportation. Second place went to Brent Genseke, project manager for Rockford, IL-based Area Erectors; and Jose Sosa, while employed by Ed Bell Construction, Dallas, received third place for his use of 3D Lift Plan on a Texas Department of Transportation state high improvement project. ■



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PREVIEW:

WORLD CRANE AND TRANSPORT SUMMIT 2019



The seventh World Crane and Transport Summit will be held in Amsterdam on November 13-14, 2019. The Summit has firmly established itself as a key meeting place for users and buyers of cranes and transport equipment as well as manufacturers and distributors.

The event attracts audiences in excess of 250 people, from all over the world, including many of the largest crane and transport equipment owning companies. Keynote speakers include Fabio Belli, Fagioli SpA, and Erich Sennebogen, Sennebogen Maschinenfabrik GmbH.

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Stock markets began to pick up as the summer wore on, with new record highs being threatened.

ACT's Heavy Equipment Index (HEI) tracks the performance of eight of America's most significant, publicly-traded construction equipment manufacturers – Astec Industries, Caterpillar, CNH Industrial, Deere & Company, Joy Global, Manitowoc and Terex.

Back on top

The last year or so has seen stock markets remain fairly flat overall. There have been ups and downs, with the most pronounced dip starting in the last quarter of 2018. However, there has been a rally since then and the mainstream indexes have now recovered.

Why?

All the talk nine months ago was whether we were seeing the start of a bear market – defined as a fall of 20 percent or more from the peak. Technically, some shares and indicators may have touched this briefly, and the construction equipment sector was clearly one of those. However, a series of recoveries in October, most notably January and June, have seen share prices bounce back.

At the time of writing in July, the markets were not only enjoying one of these upswings, but also breaking new ground. July 3rd saw the

Dow hit a record high and come close to closing above 27,000 points for the first time.

There has also been a good rebound for construction equipment manufacturers' shares, as measured by the ACT Heavy Equipment Index (HEI). The index started January a few percentage points ahead of where it was a year ago. Although its performance has not matched the 10 to 15 percent gains of the mainstream indicators, this was a good result for an index that has looked weak for the last three quarters.

The key factors lifting share prices have been interest rates – the outlook is for them to stay low – and trade – the promise of no new tariffs by either China or the U.S. during a new round of negotiations.

One of the key events as far as interest rates has been the nomination of former Chair of the International Monetary Fund Christine Lagarde as the new President of the

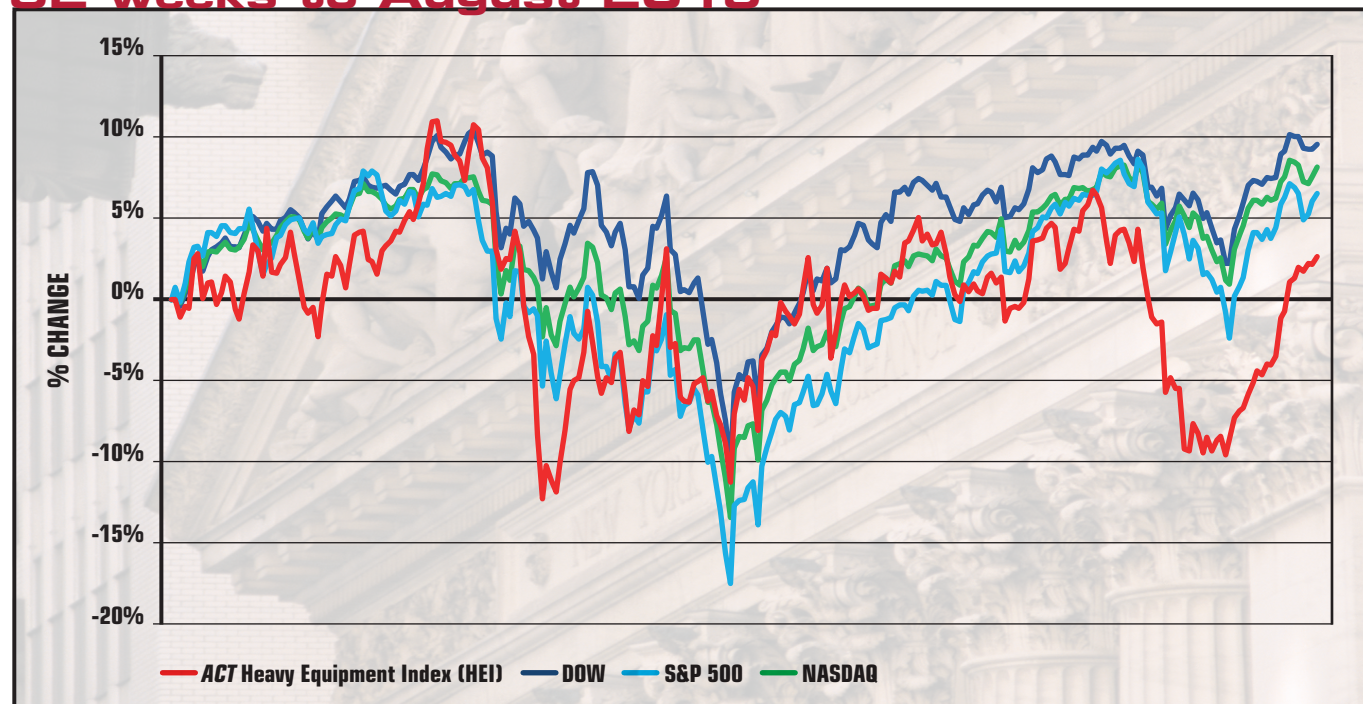
European Central Bank (ECB), to succeed Mario Draghi in November. The significance of this is that Lagarde is seen as likely continuing the current ECB policy of extreme caution towards interest rate rises.

The ECB sets the interest rate for the 19-country Eurozone bloc. This has a significant impact on the cost of finance for almost all multi-national companies, such as those that make up the Dow, and to a lesser extent NASDAQ and S&P 500. The continuing policy of cheap money is good news for businesses and share prices.

More records?

At the time of writing it looked possible that the Dow would set new records. Two years ago it was breaking through to 21,000 points, while back in July 2016 we were stunned that it had breached 18,000 points. So it is natural to ask how high can it go and when will it top-out? Time will tell. ■

52 weeks to August 2019



P&J Acromet's **Stephen Jehle** understands what it takes to succeed in the North American tower crane market. **D. Ann Shiffler** reports.

Knowing

How did Stephen Jehle, president of P&J Arcomet, go from a career as an aviation finance executive to being the president of a leading U.S. tower crane company? It's an interesting story.

As a youngster and young adult, Jehle aspired to be a fighter pilot. He studied at Embry-Riddle Aeronautical University, earning a degree in Aeronautical Science and obtaining his commercial pilot's license. Due to the need for corrective lenses, he lost eligibility for the Air Force, so he changed gears and pursued a career in the commercial aircraft financing industry.

"I landed a job at Newcourt Capital, doing structured operating leases, leveraged leases and manufacturer financing for the likes of Bombardier, Northwest Airlines and the like," he said. "This was a wonderful incubator for a young ambitious mind and I quickly took to the world of equipment finance and management."

It was Jehle's father, Peter Jehle, who had spent his career in the tower crane industry. He worked in the technical side of the business, eventually serving as vice president of American Pecco, which eventually was sold and became what today is Morrow Equipment.

The idea for P&J Arcomet was hatched after he visited his parents over the holidays.

"My father was thinking of doing something on his own," Jehle said. "I saw a lot of commonality in leasing airplanes versus tower cranes. I drew up a business plan and was able to get financing put together while my father secured our

relationship with Terex, which had just acquired Peiner (American Pecco's previous owner). With financing in place and a distributor agreement with Terex, we launched P&J Cranes and immediately focused on what to this day is our hallmark: providing our customers with a superior product from the technical support side, safety, engineering, regulatory concerns and quick response on down equipment. We wanted to set the bar in the industry of what to expect when you rent a tower crane."

His background in finance became invaluable. During the 2001 Bauma exhibition Jehle and his father met the late Dirk Theyskens, who owned Arcomet and was looking for some help with a repossession in the U.S.

"Having done this more than once in my aviation days, I knew the legal steps and was able to quickly get the cranes back," Jehle said. "I asked Dirk if he would let us re-rent the cranes and he agreed."

Before long P&J Cranes started to rent more units and although they were acquiring their own fleet, it wasn't fast enough.

"Arcomet began to ship units over as it was a perfect way to supplement our own fleet as customer demand rose faster than we could keep up," Jehle said. "By 2005



“ We wanted to set the bar in the industry of what to expect when you rent a tower crane. ”

STEPHEN JEHLER, President, P&J Arcomet

the market

much of the industry had taken notice of P&J and we had been propositioned by a few competitors who wanted to acquire us. We wanted to grow but I still wasn't willing to give up control, so Dirk Theyskens proposed a Joint Venture where P&J would become the North American division of Arcomet, but still retain its independence. It was a natural fit and in 2005 we formed the JV and became P&J Arcomet."

Since then the company has continued to expand, yet still follows its core philosophy.

"And although Arcomet ownership has changed hands, our commitment to being a member of what is now Uperio is stronger than ever as we have a shared belief in supplying a higher level of services," said Jehle.

American Cranes & Transport had a lot more questions for Jehle. His answers are interesting and forthright.

WHAT IS THE SCOPE OF OPERATIONS OF P&J ARCOMET?

P&J Arcomet wants to be the best at what we do, so we stick to tower cranes as our focus – top-slewing and self-erecting tower cranes for the North American market including not just rentals, but also sales of new and used parts, engineering, overhauls and warranty work.

WHAT DISTINGUISHES P&J ARCOMET IN THE MARKETS IT SERVES?

While we have explored acquisitions, we tend to grow more organically as we emphasize our high level of service capabilities first. We find our customer base recognizes us as the leader in technical competency, quality equipment and reliability. Our niche is not being the cheapest, but saving the customer money over time with more reliability and thus great production on their jobsite.

YOU'VE BEEN IN THE TOWER CRANE BUSINESS FOR ALMOST 20 YEARS. WHAT DOES IT TAKE TO SUCCEED IN THIS MARKET?

Understating that this is a people business first and

foremost. Whether it be in hiring and training the best and brightest, creating a culture of excellence and real passion for this higher level of service we offer, to developing relationships with customers where there is a partnership rather than just a business relationship. We are both in this project together and we are all on the same team. When this is what you are known for then when challenges do arise it becomes much easier to handle them.

HOW DO YOU CHARACTERIZE THE CURRENT MARKET FOR TOWER CRANES?

The North American market right now is still very strong. We have seen a slight downward pressure on prices lately, more so due to a lot of new units on the market by the various rental companies, many of whom use price as the only lever to gain more business as they cannot compete technically.

WHAT ARE THE BIGGEST CHALLENGES IN THE TOWER CRANE SECTOR?

Sadly, our industry has seen a few fatal accidents this year and this will put a lot of scrutiny on safety standards and insurance demands. More contractors are looking for a total turnkey proposition where we take care of all aspects regarding the tower cranes on site. They want to push down that responsibility and I think P&J Arcomet is well positioned for this, as it has always been part of our culture. The pressure will be on for those who don't do it as well though.

WHICH CRANES IN YOUR FLEET ARE IN THE MOST DEMAND?

In North America, the 400-metric ton tower crane has been the work horse since I can remember. The Terex SK-415 is for many the original standard bearer, and the Zoomlion T-8030-25 has performed beyond expectations and is now often the preferred choice due to its reliability and capacities.

HAS ZOOMLION'S ACQUISITION OF WILBERT AFFECTED HOW YOU DO BUSINESS IN THE U.S.?

Not so much yet, but we are working closely with the Zoomlion team in the development of new products

that combine the best of Wilbert and Zoomlion. We now are able to offer an 85 meter jib length and just over 300 feet free standing on the T-8030. All I can say is stay tuned.

YOUR COMPANY ALSO IS A DISTRIBUTOR FOR TEREX TOWER CRANES. DO YOU ENVISION ANY CHANGE WITH TEREX'S SALE OF DEMAG?

As we are not in the mobile crane market, we do not see any significant changes here. Terex has been a great partner over the years, and we do not see changes on the horizon. Ruedi Van Coppenolle was recently hired as our COO after spending 29 years at Terex. I think that says a lot about how highly we regard Terex and the people there.

WHAT IS IT ABOUT THIS BUSINESS THAT KEEPS YOU ENGAGED?

The tower crane industry never stops being demanding and challenging. There is no cookie cutter in this business, and I love that each day I come to work I have a new challenge in front of me that is different than the day before.

WHAT IS YOUR BUSINESS PHILOSOPHY?

Each day we start at zero and go from there. Stay focused on your long-term goals and don't get off course by chasing short term things that will not contribute to the bigger objectives and only weigh you down over time. This is a big failing of many crane companies out there. My financing background taught me to be very analytical and I do not make decisions based on gut feelings, but rather deliberate moves based on sound business principles. People come first and we often call this our P&J Family. That is something my father taught me, and I'll never forget it.

WHAT DO YOU DO WHEN YOU ARE NOT WORKING?

Work. LOL! I am blessed to have an amazing family and two wonderful kids. When I am not working you can usually find me with them at some event. Personally, I love to fish, swim, scuba, boating, you name it, so I like to spend time on the water to get away from it all and re-charge.

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Precision planning

Modulift's **Harshal Kulkarni** discusses the importance of precise rigging calculations when using spreader bars and other lifting devices.

As the demand to lift heavier and more complex objects increases, it becomes more important than ever to precision plan in advance.

I have a great passion for chess which I've played since I was a child. It keeps my mind sharp as I plan my next move and formulate a strategy. The middle game is my favorite part. As an engineer, I've specialized in integral lifting analysis – the science of calculating correctly how to design a safe lifting process. This requires a similar approach – careful planning and a robust strategy.

To provide an accurate analysis of a lift, it requires the customer to provide their design and it's then integrated with a lifting design model, which produces a combined computer analysis. For heavy lifting, which includes items weighing more than 100 tons, these calculations are even more crucial. Fortunately, we have the technology and the skills in our team to perform this analysis to a very high standard.

I've worked extensively in the oil and gas industry, typically lifting fired heaters – critical pieces of equipment that heat gases or liquids as part of the refining process. These are complex, expensive and relatively fragile items and, as you can imagine, there's a lot that can go wrong when craning these sorts of things onto oil platforms in the middle of an ocean.

Equally, heavy lifts can be tricky on



THE AUTHOR

With more than 15 years of experience as a structural engineer, **Harshal Kulkarni**, who previously worked for Nass Corporation

and Sarens, is the engineering manager for lifting equipment manufacturer Modulift.



Modulift's Harshal Kulkarni helps solve lifting problems, advises on rig planning and works with the Modulift team to design custom lifting equipment.

land too. In 2014, while working in my previous job for Nass Corporation, I was asked by the Electric and Water Authority in Bahrain to assemble an elevated service reservoir – this is basically an above ground water tower. It was designed by Pittsburgh Tank and Tower Group in Kentucky. As you can imagine in Bahrain, water is a very precious commodity, so there is a great demand for water storage.

Tricky operation

At the top of the tower to support the water tank there is a metal knuckle plate. These plates are 2.5 inches thick and once fully assembled weigh 120 tons. Previously, no one had been able to lift them in one piece, so the individual sections were usually lifted to 135 feet and then welded together onsite at the top of the tower – a very tricky and time-consuming operation.

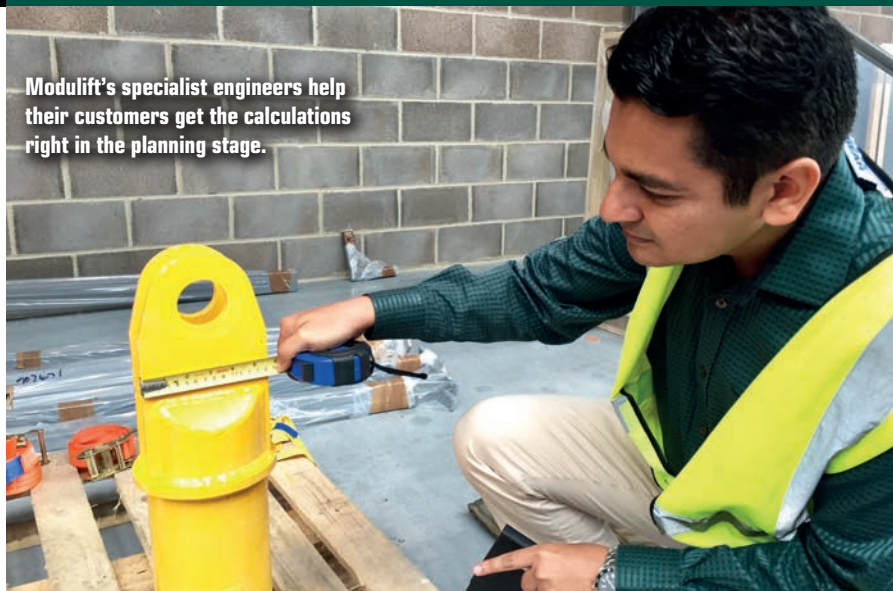
If I could find a way for the knuckle plate to be fully assembled in the factory and then safely lifted into position in one piece, we could save a lot of time and money. But it had never been done before and there's always a reason for that. So my team first studied the previous lift plan, and then we had a design review meeting to look at improving the process. We asked why the knuckle plate hadn't been lifted in

“ For heavy lifting, which includes items weighing more than 100 tons, these calculations are even more crucial. ”

one go, undertook a full risk analysis and then set about overcoming the problems.

First, we needed the right crane – we chose a mobile crane with a 500-ton capacity and then adapted the boom. We needed a telescopic boom that could cope with a 135-foot high lift. The tower was in the middle of a busy water station and the ground was soft, so we had to sit the crane on firm foundations. This was solved by using concrete thrust blocks as a base. These are usually used to stabilize pipes but worked just as well for the crane.

On the day of the lift it was a bit nerve wracking. The knuckle plate was transported to site, four slings were attached and slowly but steadily 120 tons was lifted 135 feet up and then placed carefully on the top of the tower. We all held our breath. It worked perfectly. You always learn from experience.



Modulift's specialist engineers help their customers get the calculations right in the planning stage.



Modulift beams were used in the construction of the CitizenM hotel in South Lake Union, Seattle, WA. Modulift's engineers provide lift analysis for its clients.

We had achieved the assembly of the water station in Juffair in just one week, when previously a similar operation would have taken two months. My team then went on to build four additional water towers across Bahrain. I enjoy working out how to tackle these complex heavy lifts – it can be challenging but really rewarding when everything goes to plan.

At Modulift, we have a great deal of

professional talent. Sue Spencer, who founded the company in 2002, and the rest of our engineering team help our clients with lift planning and engineering. Modulift has five U.S. distributors that cover the whole of the states and one that covers Canada.

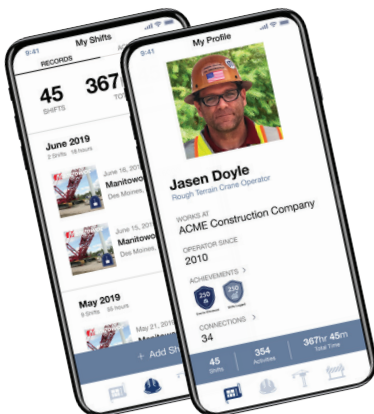
Modulift supplies spreader beams for lifting, lifting beams, spreader frames and other below-the-hook lifting equipment.

As specialist lifting engineers operating in a niche market, we concentrate on the provision of off-the-shelf and custom lifting products. We provide lifting analysis to help customers get the calculations right in the planning stage.

In chess, there is the opening, the middle game and the end game. The middle game is the bit where you work out what you want to achieve. The end game is where you consolidate your strategy, but achieving checkmate in the middle game means there is no need for the end game. That's the way I like to play. Plan well and have a good strategy and you can complete the task safely and ahead of schedule. ■



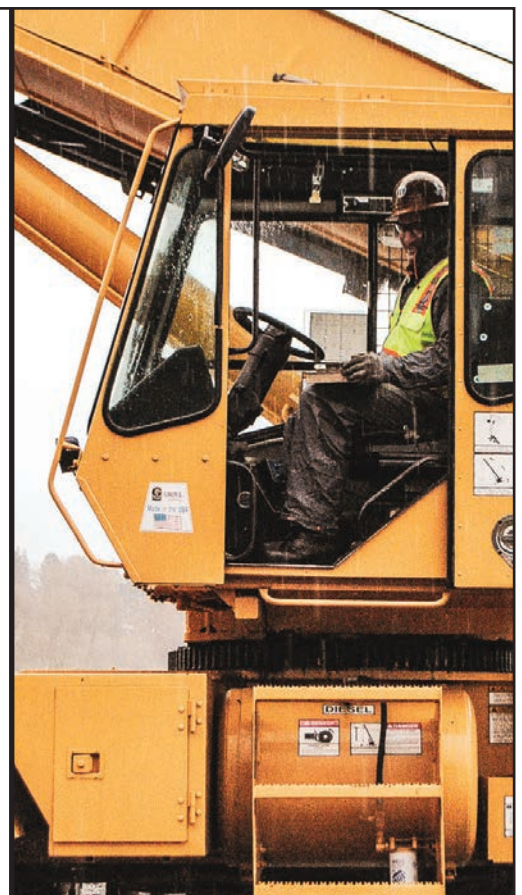
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A low-angle photograph of a tall building under construction in Manhattan. The building's steel framework is visible, and it is partially covered in orange safety netting. A red Wolff Luffing Jib Crane is positioned next to the building, with its long jib extending high into the sky. A small rectangular object is suspended from the crane's cable. The surrounding area is filled with other tall buildings, and the sky is a clear blue with some light clouds.

WOLFFKRAN

Rising high in Manhattan

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Tower power

The annual
ACTTOWERCRANE50
top list continues to mature.
Hannah Sundermeyer
reports.

BY NUMBERS

TOWER CRANES

2,026

BRANCHES

250

EMPLOYEES

8,192

PHOTO: © BOB DIMMITT PHOTOGRAPHY 2019

Largest tower cranes (by capacity)

2019 RANK	COMPANY	LARGEST TOWER CRANE	CAPACITY (MT)
1	J.F. Lomma Inc.	Favco M1280D	96
2	Morrow Equipment	Liebherr 710 HC-L	64
3	Maxim Crane Works	Wolff 1250B	60
4	Bigge Crane & Rigging	Comedil CTT 721-40B	40
5	ALL Family of Companies (ALL Erection & Crane Rental)	Potain MD 610	32
6	Leavitt Cranes Inc.	Terex CTL 630	32
7	P&J Arcomet	Terex Peiner SK 575	32
8	Stafford Crane Group	Terex Peiner SK 575	32
9	RMS Cranes	Potain MR 608	32
10	Oxford Builders Supplies	Terex Comedil CTL 630	32
11	Skycrane Limited	Sun STT-753	32
12	B&G Equipment and Supply	Terex Peiner SK 575	32
13	ML Crane Group	Terex Peiner SK 575	32
14	Wolffkran Inc.	Wolff 355 B	28
15	Crane Tech Solutions	Jaso J560	24
16	Compass Equipment	Potain MD 569	23
17	Guay	Peiner SK 415-20	20
18	Blue Hat Crane & Equipment Rental*	Linden Comansa 21LC550	20
19	Custom Service Crane	Wolff 8033.20	20
20	Connelly Crane Rental	Terex Peiner SK 415	20

Has the tower crane market peaked? 2018 was a banner year for the market and 2019 doesn't seem to be showing any stress. Economic indicators show a growing market for tower cranes but competition for customers is fierce. Several new tower crane players have entered the U.S. market over the past five years, some that are experiencing solid success.

The **ACTTOWERCRANE50** shows steady growth with one new company. The list has grown from 1,941 units in 2018 to 2,026 units in 2019, a net gain of 85 units. While tower crane unit counts are up, they are not at the pace of last year's 168 new units. This year's list has 24 companies with 250 branches and 8,192 employees.

Last year's list had 23 companies, 251 branches and 9,264 employees. So, it looks like companies are retrenching a

>22

2019 ACTTOWERCRANE50

2019 RANK	2018 RANK	COMPANY	COUNTRY	NO. OF DEPOTS	NO. OF EMPLOYEES	SCOPE OF OPERATION
1	1	Morrow Equipment	USA	20	341	Worldwide
2	2	Maxim Crane Works	USA	55	3,615	National
3	3	Bigge Crane & Rigging	USA	18	950	National
4	5	P&J Arcomet	USA	4	56	National
5	4	ALL Family of Companies (ALL Erection & Crane Rental)	USA	36	1,600	National
6	7	Stafford Crane Group	USA	8	100	Worldwide
7	NEW	Leavitt Cranes Inc.	USA	34	40	Worldwide
8	6	Creative Lifting Services	USA	1	26	National
9	8	RMS Cranes	USA	6	311	Regional
10	9	Bigfoot Crane Company	Canada	2	28	National
11	10	Oxford Builders Supplies	Canada	4	64	National
12	12	Blue Hat Crane & Equipment Rental*	USA	6	92	National
13	17	Compass Equipment	USA	4	75	Regional
14	13	Skycrane Limited	Canada	2	12	Worldwide
15	11	J.F. Lomma Inc.	USA	8	163	Worldwide
16	15	B&G Equipment and Supply	USA	6	105	National
17	14	Guay	Canada	20	500	National
18	18	ML Crane Group	USA	2	70	National
19	16	Allied Crane*	Canada	1	14	National
20	20	Wolffkran Inc.	USA	2	7	Worldwide
21	19	Custom Service Crane	USA	5	50	Regional
22	21	Connelly Crane Rental	USA	3	49	National
23	23	Crane Tech Solutions	USA	2	25	Regional
24	22	Kranes Inc. of Central New York	USA	1	4	Regional

*ACT Estimate

bit, not hiring as rapidly or expanding as much as they did in 2018.

The ACTTOWERCRANE50 list continues to be affected by mergers and acquisitions, just like our ACT100 list of top crane-owning companies.

Morrow Equipment is the Number 1 company on our list. Morrow has been at the top of the list since the beginning. This year Morrow logged 568 tower cranes, some 98 fewer units than the 666 units it listed last year. The company shows 20 depots in 2019

and 341 employees. While Morrow's numbers may be down a bit, this is likely a right sizing due to the market. Morrow remains firmly ensconced at the top of the list, rightfully owning the title as the largest tower crane-owning company in North America.

At Number 2, Maxim Crane Works has 373 tower cranes. The company has 55 depots as compared to 52 last year and 3,615 employees, up from 3,500 last year.

The Number 3 company on the list is Bigge Crane & Rigging, which continues

to invest in its tower crane fleet. The company reported 210 units last year and 250 units this year, up 40 tower cranes.

The biggest surprise this year was the jump up by P&J Arcomet from Number 5 to Number 4, taking over the 4th spot held for years by the ALL Family of Companies. P&J Arcomet listed 93 tower cranes in its fleet last year and 107 this year.

The ALL Family of Companies round out the top 5 with 98 tower cranes in its fleet, up four units from 94 in 2018.



SENIOR CONTACT	WEBSITE	LARGEST TOWER CRANE IN FLEET	LARGEST TOWER CRANE CAPACITY (MT)	NUMBER OF TOWER CRANES IN FLEET
Christian Chalupny, president	morrow.com	Liebherr 710 HC-L	64	568
Bryan Carlisle, CEO	maximcrane.com	Wolff 1250B	60	373
Weston Settlemier, president and CEO	bigge.com	Comedil CTT 721-40B	40	250
Stephen Jehle, president and CEO	pjarcomet.com	Terex Peiner SK 575	32	107
Michael L. Liptak, president	allcrane.com	Manitowoc Potain MD 608	32	98
Patrick Stafford, president	staffordcranegroup.com	Terex Peiner SK 575	32	79
Erick Zampini, general manager	leavittcranes.com	Terex CTL 630	32	78
Will Webb, president	creativelifting.com	Saez TLS-65	10	63
Dennis "Whitey" Lebsack, sales	rmscranes.com	Potain MR 608	32	50
Ryan Burton, managing partner	bigfootcrane.com	Potain MDT-219	10	44
Mike Demelo, VP of equipment operations	oxfordbuilders.ca	Terex Comedil CTL 630	32	41
Henry Volante, director, tower crane operations	bluehatcrane.com	Linden Comansa 21LC550	20	37
Kelly Hadland, CEO	compassequipment.com	Potain MD 569	23	36
Jim Howard, president	towercranes.net	Sun STT-753	32	31
James Lomma, president	jflommainc.com	Favco M1280	96	30
JR Moran, director of crane operations	bgequipmentsupply.com	Terex Peiner SK575	32	28
Jean-Marc Baronet, president	gruesguay.com	Terex Peiner SK 415	20	24
Joe Mirabile, Mid-Atlantic general manager	unitedcraneandrigging.com	Terex Peiner SK 575	32	24
Derek Kasa, manager	alliedcraneld.ca	Jaso J300N	12	23
Todd Yager, president	wolffkran.com	Wolff 355 B	28	14
Randy Huffman, vice president	customservicecrane.com	Wolff 8033.20	20	11
Michael A. Connelly, president	connellycrane.com	Terex Peiner SK 415	20	7
Robert Kohler, vice president	cranetechsolutions.com	Jaso J560	24	7
Neil Keukelaar, president	kranesinc.com	Potain MDT 302	17.5	3

Most companies on our list have increased the number of tower cranes in their fleets since this time last year.

In terms of the largest cranes on the list, J.F. Lomma Inc. still has the largest capacity tower crane, the Favco M1280D, with a capacity of 96 metric tons.

As always, the ACT team made a monumental effort to increase the number of companies on the **ACTTOWERCRANE50** top list. We created a database of close to 90 companies that we know have one or

more tower cranes in their fleets. The problem is getting these companies to realize the value in filling out our survey form and submitting their information. As ever, we will continue to try to get this list to its rightful size of at least 50 companies.

The 2019 **ACTTOWERCRANE50** shows that growth may be slowing in the tower crane sector, but the smart companies will be able to handle a decreasing market. Congratulations to those who made our list!

Disclaimer

Like all of our lists, we work very hard to ensure the accuracy of the information submitted to us. ACT and its editors are not responsible for inaccuracies or errors in our top lists. We hope to continually grow this list. If your company has one or dozens of tower cranes in your fleet, you should be on this list. To receive a 2020 survey, please e-mail: D. Ann Shiffler at d.annshiffler@khl.com or Hannah Sundermeyer at hannah.sundermeyer@khl.com.

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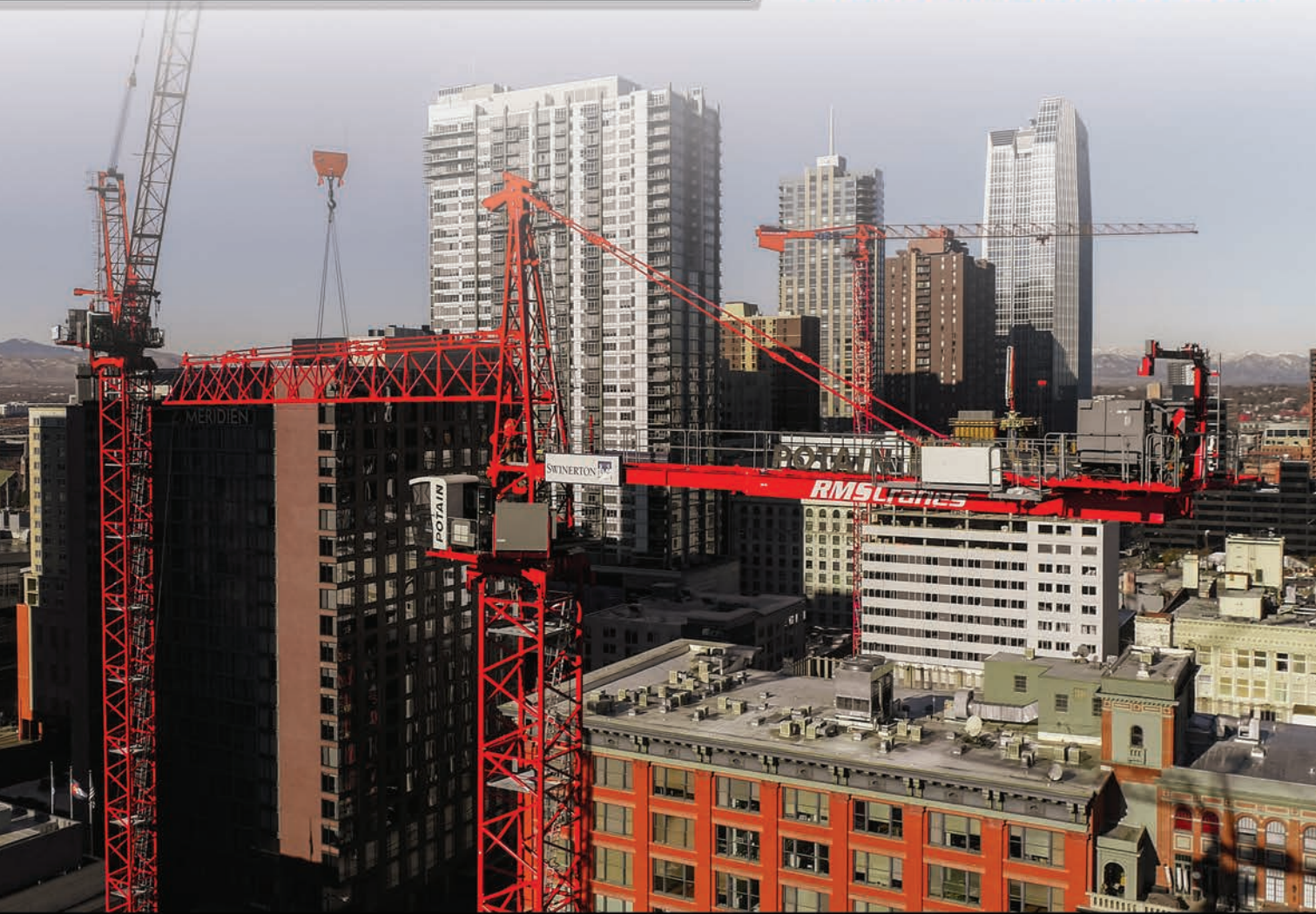




RMS Cranes provides a premium tower crane service, expanding from the Rocky Mountain Region through the Midwestern United States and down to the Gulf Coast. Our growing tower crane fleet now consists of more than 50 late-model machines. Not only do we excel as a crane provider, we also specialize in a complete package solution which includes in-house assembly, disassembly, operation, maintenance, and insurance.

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As the market starts to recover,
Hannah Sundermeyer
breaks down the market
for rough terrain cranes.



Demand appears to be increasing
for larger class rough terrain cranes.

Return of the RT

When I first started as the assistant editor of *ACT*, I actually made myself flashcards to learn all the different crane terminology. Rough terrain cranes were the first machines that I started recognizing on the streets of Chicago. It seems to be the bread and butter crane in the industry. The machines are flexible in tight spaces and are frequently used on infrastructure projects and urban jobsites. Their ability to pick and carry is a plus, giving them a work horse status.

The Liebherr LRT 1100-2.1 is a 110-ton class crane equipped with a 164-foot Telematik pinning boom, 62-foot swing away jib and a hydraulic ballasting device.



The biggest demand for RTs over the past decade was in the oil and gas industry. These cranes were ideal in many energy industry applications. The market for this class of machines fell drastically in 2014, and there hasn't been much recovery until this year. The industry is hopeful for a return to a healthy rough terrain crane market.

Energy comeback

When asked what it would take for the market to improve, Casey Lembke, media relations for Tadano America, said that energy related industries (oil and gas and petrochemicals) are the most important, but infrastructure investment and construction demand are also major players.

Randy Spike, regional sales manager, Pacific Northwest/product manager for LRT cranes at Liebherr USA, contends that a federal infrastructure spending bill would help improve the overall market.

"Right now, it seems that the larger you go in capacity the more active the market," said Kelly Fiechter, product manager rough terrain cranes, Link-Belt. "The progression of utilization towards larger RTs has held steady while small pickers' growth is behind."

A better-quality rental rate environment



The new 120-ton 120IRT was displayed at Link-Belt's booth at Bauma 2019 in Germany.

is needed, Fletcher added, one that would provide a return on investments to allow owners to upgrade their fleets.

"The 100-ton class is very competitive," said John Bair, product manager for Grove cranes at Manitowoc. "The market has shifted over the last decade or so from the 60 to 70-ton class being the most popular models in rental fleets to the 100-ton class. Versatility is key for fleet owners. RTs are used for a wide array of applications ranging from general construction, bridge and highway to the energy sector, and having flexibility in reach and capacity is pivotal to ensure high utilization."

"The rough terrain market is coming out of a challenging stage due to collapsing

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The 100-ton capacity Grove GRT8100 features a 39.2 to 154.3 five-section full power boom.

oil prices back in 2014 and taking a slower recovery path,” said Olga Dubinok, crane sales manager, Zoomlion North America. “Although the market is not where we would like it to be, and rough terrains are falling behind other classes of cranes, the fact that rough terrains are hardworking machines and still have a high demand in utilization in non-residential infrastructure, the energy sector and government projects makes us feel confident that growth of the rough terrain market will continue with a decent pace and will reach its consistent strength in the period of 2019-2025.”

Dubinok said that every class of rough terrain cranes is flat, but generally higher capacity, longer boom units are the most sought-after because they can perform at larger-scale projects.

“We have seen a concentration and demand in the market for 90-ton and higher with the low-end demand below 60 ton decreasing for several years,” said Chris Johnson, director of sales for rough terrain and tower cranes in North America for Terex. “With a maximum capacity of 100 tons and a narrow width of 9.8 feet, the Terex RT 100US offers competitive performance and ease of transport for the 100-ton class.”

Manitex serves the smaller end of the market with 15 and 30-ton units. This market, including the cab-down is competitive.

“Refineries play a big role in the

utilization of our products, and there are many older models in service that will be due for replacement in the near future,” said Beau Pocock, industrial sales manager at Manitex.

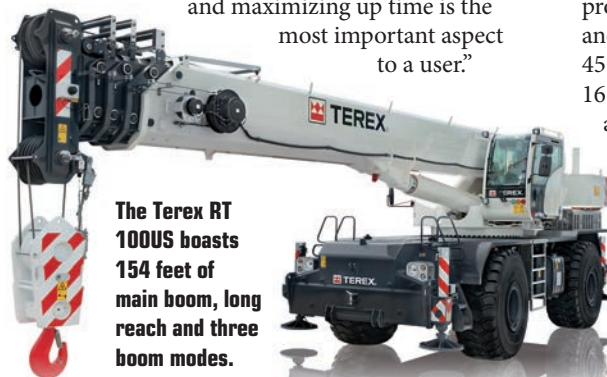
Super competitive

Tadano’s RTs are particularly popular in the over 100-ton capacity category. This class has become increasingly competitive in recent years as the major OEMs have launched cranes in this class. Tadano’s largest RT is the GR-1600XL that has a 160-ton lifting capacity and a 200.1-foot boom on a 3-axle carrier.

Spike said that while the RT market is competitive in all classes, Liebherr will likely move towards larger units in the 90-ton and above class where it is already positioned with 100- and 110-ton capacity RTs.

What exactly are customers looking for in a new RT? Terex’s Johnson said his customers are looking for the longest boom available.

“This eliminates the need for having to swing a jib and makes the whole process quicker and safer, but longer booms also mean a more complicated extend system which increases the complexity of operation which can be countered through an easy-to-understand integrated control system,” he said. “Safety and overall compliance is also critical as standards continue to become stricter in different jobsites such as refineries and mines. Aftermarket support is also a critical aspect as keeping the cranes operational, and maximizing up time is the most important aspect to a user.”



The Terex RT 100US boasts 154 feet of main boom, long reach and three boom modes.



The Manitex M150 rough terrain crane is just over 11 feet tall, which makes it ideal for refinery work.

Following are the latest models released by the major rough terrain crane OEMs.

Liebherr

The Liebherr LRT 1090-2.1 features all-terrain maneuverability, and the standard VarioBase ensures that the crane delivers a high level of safety and performance. The hydro-mechanical telescoping system with rope pull technology enables the telescope to be extended to the required length quickly and easily, Liebherr said. The machine also features a maximum load capacity of 90 tons and a 154.2-foot telescopic boom. The Liebherr LRT 1100-2.1 is a 110-ton class crane equipped with a 164-foot Telematik pinning boom, 62-foot swing away jib and a hydraulic ballasting device.

Terex

The Terex RT 100US features 154 feet of main boom and offers long reach and three boom modes for competitive performance and productivity, the company said. Three boom modes include the unique synchronized boom mode, in addition to strength and stability modes. The RT 100US has a narrow width of 9.8 feet and removable counterweight, which allows it to be trailered without weight and width restrictions in most situations.

Link-Belt

The Link-Belt 120|RT features a six-section 38.3 to 164.1-foot pin and latch formed boom. An available two-piece 35-58 feet on-board offsettable fly provides greater flexibility and range, and manually offsets at 0, 15, 30 and 45 degrees, the company said. Two 16-foot lattice insert extensions provide a maximum tip height of 261.7 feet.

The crane also has the same cab that was launched in 2017 on Link-Belt’s 75|RT, meaning it can tilt 20 degrees.

Manitowoc

The Grove GRT8100 features a 100-ton capacity with a 39.2-154.3 five section full power boom. The



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The ZRT850 features a five section, U-shaped telescopic boom.

machine is also equipped with a 33-56 foot manual offsettable bi-fold lattice swingaway extension, 22,000-pound

The 15-ton Tadano GR-150XL-3 is a full-scale rough terrain crane released for the North American market in April 2019.



standard counterweight hydraulically installed and removed, user-friendly controls with electronic joysticks and operator customizable function speeds and full cab vision with a 20-degree tilt feature.

Manitex

The Manitex M150 rough terrain crane is just over 11 feet tall, which makes it an ideal choice when space is limited, the company said. But despite the compact size, the M150 features a 4-wheel drive and 4-wheel steering in order to maneuver in very tight spots and multiple boom configurations. Other features include a 15-ton capacity, 62.5 maximum boom length, 85.5-foot maximum boom tip

height and an option 20 feet of jib. The M300 RT features a 30-ton capacity, a maximum boom length of 77 feet and maximum boom tip height of 90 feet.

Tadano

The new Tadano GR-150XL-3 is a 15-ton full-scale rough terrain crane released for the North American market in April 2019. This new model has evolved significantly from the previous GR-150XL-2. The GR-150XL-3 has a maximum 78.7-foot six-section boom and hydraulic offset and a two-stage jib at 11.8 feet and 18 feet. Maximum lifting height reaches 80.4 feet by boom and 97.4 feet by boom plus jib.

Zoomlion

The ZRT850 features a five section, U-shaped telescopic boom, a maximum lifting height of 215 feet and a 94-ton to 10-foot working radius. It's telescoping system consists of a two-stage hydraulic cylinder with a rope extension mechanism. The boom head and end structure provides stronger load bearing capacities, and the cab is designed for maximum comfort and ease of operation, the company said. ■

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Monumental rigging feats

Skates, slides, jacks, gantries, SPMTs and other specialized rigging equipment are being used to perform extremely complicated jobs throughout North America.

Sometimes conventional equipment isn't enough for rigging jobs that may have otherwise been deemed impossible. Skates, slides, jacks, gantries and other equipment are being used in highly creative ways to move, lift and install all sorts of equipment, historic objects and the like.

ACT's annual roundup of specialized rigging jobs combine interesting equipment, amazing ingenuity, practiced know-how and expertise that is second to none.

Priceless move

"When our machinery moving and crane services teams work together, good things tend to happen," said Omega Morgan Project Manager Erik Zander.

But it's not every day, though, that they

work on a project that has an entire city holding its breath.

Before the city of Olympia, WA could tear down an old administrative building, there was one problem to be solved: what to do with a priceless mural by artist Jean C. Beall. Commissioned in 1956 and depicting Washington State's industrial and natural resources, the mural measured 30 feet wide and 12.5 feet tall. The mural needed a new home, but transporting it was going to be a major challenge.

The City hired A to B Builders, who turned to Omega Morgan's Seattle office for help in this risky and delicate task. In all, the mural contains 150,000 small pieces of Byzantine glass and stone that is adhered to a curved concrete wall. Transportation to its new home had to occur in one piece, with no natural seams allowing deconstruction.

A to B Builders engineered a frame for the mural to be transported. Omega Morgan was given the design criteria and developed their means and methods

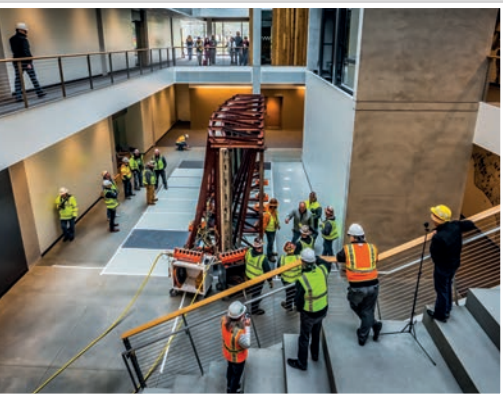
to move the mural with that design information, the weight of the mural and the path of travel.

"In preparing for the project, our team discovered two major challenges," Zander said. "First, the mural was just barely shorter than the opening through which it had to fit to exit the building. Taking it apart was not an option, nor was the typical wheels to move it forward. Another solution had to be found."

As well, the 30,000-pound mural was heavier than the floors on which it had to be transported could potentially support. Any movement within the building had to include a solution to make sure that the ground could support the move without potentially damaging the artwork.

Compared to these two major challenges, the rest of the planning was straightforward. The roads on which the transport would occur had to be shut down to avoid interference. Finally, the crane pick outside the building had to

The 14-ton historic mosaic mural was moved to the Capitol campus in Olympia, WA using 12 low profile AeroGo air skates. The skates allowed the mural to clear low ceilings and didn't add much weight.





The William Shipp Spanish-American War monument was relocated by Wolfe House Movers using a Buckingham Unified Hydraulic Jacking System along with a combination of steel beams, supporting straps and cribbing.



include support at 12 points instead of the usual three or four to avoid stretching or warping the mural.

In anticipation of potential floor-support issues, Omega Morgan worked with engineering firm Associated Consultants to calculate how much load the flooring could hold. Based on that calculation, the team shored the lower level with 100 shoring poles and about 30 I-beams.

The clearance presented more problems. After analyzing images and dimensions of the mural, Omega Morgan team decided on 12 low-profile AeroGo air skates to move the mural without adding too much height.

The air skates brought the total height of the mural within its frame to 12 feet 4.75 inches, leaving just about an inch clearance from the ceiling. As an additional benefit, the number of air skates transferred the weight evenly to avoid damage to the curved mural and its 150,000 tiles.

The team filed two permits with the city to clear the roads for the move itself. Finally, for the pick Omega Morgan leveraged a Grove GMK 5275 crane with 12 points to lift up the mural in its frame and set it safely on a flatbed trailer for transport to its new location.

Omega Morgan worked for two days to move the mural. All 150,000 individual tiles were transported safely, without a single break or shift.

"Now, the city of Olympia can continue to pride itself in this priceless piece of art," said Zander.

Monumental move

Wolfe House & Building Movers transported a piece of Spanish-American war history by moving the First Lieutenant William Shipp Monument. The city of Charlotte, NC tasked Wolfe with moving the granite monument from the back corner of the U.S. District Courthouse to its new location at the opposite front corner. The monument was moved along with its brick base and concrete footer, weighing in at 35 tons overall and standing more than 30 feet tall.

"This monument isn't your typical move done by heavy haul or structural moving companies, and the support system for the move wasn't typical either," said Andre Siegrist, marketing coordinator of Wolfe House & Building Movers.

Two of the four bases of the jack-up system were set on opposite sides of the river.

A Buckingham Unified Hydraulic Jacking System along with a combination of steel beams, supporting straps and wooden cribbing, were used to raise the monument up out of the ground. Then four Buckingham Dollies with SmartSteer and remote control were installed for the move. The hydraulic cylinders on the dollies kept the monument level while accounting for any change of grade in the move route.

Preserving historic homes and structures from demolition is a frequent project type for Wolfe House & Building Movers, but American war monuments, though less common, can be more interesting.

First Lieutenant William Shipp wasn't as well-known as some prominent American war figures, but he was famously killed in action during the Battle of San Juan Hill near Santiago, Cuba. He bravely led the charge of the 10th Calvary Regiment up the hill which would be his demise, but this act is regarded as saving the "Rough Riders" and their Lieutenant Colonel and future president of the United States, Theodore Roosevelt.

Trestle wrestle

The Elvira Railroad Bridge, built in 1906, spanned across the Cahaba River in Helena, AL. The old double-track open

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The lifting frame of each jack-up unit contained four hydraulic cylinders, one in each corner, which synchronously lift and stack steel barrels, forming lifting towers.

deck superstructure had reached the end of its useful life and was scheduled for replacement with a new single-track ballasted deck superstructure. Burkhalter – lifting, rigging and transport professionals – were selected to execute the replacement of Span 2 over the river. (Barnhart purchased the assets of Burkhalter effective June 1, 2019.)

An initial challenge of the project was the location of the bridge. The river below the bridge had a strong current in an area utilized by recreational kayakers and rafters. With focus on safety, the team created a plan to build the new bridge in a specific area that would allow for an efficient transport onto the old span.

The approach to the heavy move was to utilize an Enerpac BPU-750 Jack-up System. The old span weighed 1.1 million pounds and was 180 feet long by 35 feet wide by 43 feet tall. The new span weighed 1 million pounds and was 180 feet long by 19 feet wide by 13.5 feet tall.

The BPU-750 jack-up, a multi-point hydraulic lifting system, uses an incremental stage-lifting principle. The lifting frame of each jack-up unit contains four hydraulic cylinders, one in each corner, which synchronously lift and stack steel barrels, forming lifting towers. Two of the four bases of the jack-up system were set on opposite sides of the river.

Creatively, the team transported the new railroad span onto the old bridge using 24 lines of Goldhofer E-Steer SPMT with 90-degree traverse movement capability to align the span with the railroad track. A mat road was built across the old railroad bridge so that the weight of the transporters and the new span were evenly distributed during transportation. The

team designed, fabricated and provided specialized beams and transferred the weight of the new span down to slide shoes mounted on girders affixed to the jacking system to receive the weight of the new span since the old span could not support the weight of the new span and the transporters carrying it.

Using the SPMT hydraulics, the new bridge weight was transferred onto the old bridge. The jack-up system formed the four towers system supporting this double bridge setup from below. The team utilized its synchronized slide system powered by Enerpac strand jacks to side-shift both bridge spans in order to line up the new single-track railroad line that replaced the old two-track line. Upon alignment, the new span was then lowered into place with Enerpac's BPU-750 jacking system while simultaneously lowering the old bridge. Lastly, the old span was additionally lowered and removed.

"The project required a unique creation of engineering and craftsmanship to develop and provide a method to transport and set the new bridge in place while lowering the old bridge, all in one operation," said Christine Burkhalter, project development manager. "We have worked with Enerpac on past projects that needed a specific solution. We continue to be impressed by their willingness to develop systems to meet our specifications."

Delynn and Christine Burkhalter have started CIGHT, a heavy rigging and transport consulting business, to work with heavy civil/infrastructure contractors, government entities and engineering firms to assist in the development from conceptual to execution plans.

Exchanger change-out

Hill Crane & Rigging used a 500-ton capacity heavy-track HT500 hydraulic skidding system from Hydra-Slide to change-out a stacked heat exchanger at a Carson refinery in its home state of California.

The Hill Crane & Rigging team accepted a scope of work that covered the emergency removal of a 260,000-pound stacked heat exchanger and its replacement with a new 279,000-pound unit. The principal complications were caused by major obstructions onsite, a tight schedule and project delays inherited from other contractors. The HT500, engineered 100-ton capacity modular support stands, and Hydra-Pac synchronous hydraulic power unit, all from Hydra-Slide, were selected for the task alongside additional equipment from Hill Crane & Rigging's fleet.

Heavy track skidding systems are one

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Hill Crane & Rigging utilized a 59-8-8P Hydra-Pac synchronous hydraulic power unit to operate the HT500 system.

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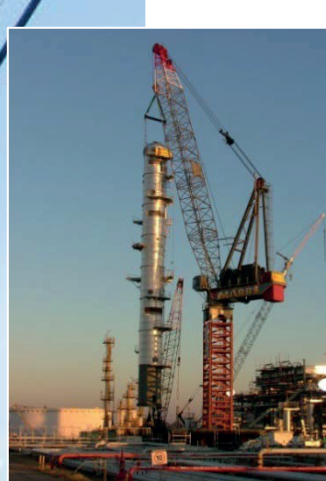
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Both heat exchangers weighed in excess of 250,000 pounds. They were loaded onto the HT500 system and engineered support stands.

of the most cost-effective and accurate methods for moving, loading or unloading heavy loads where a rigid, load carrying track is required. The HT500 has height of 8 inches, saving jacking time and suitable for confined spaces. It is engineered for pushing 500 tons and pulling 250 tons with a double track layout.

"The slide system was one of the major components of the heavily engineered concept that we pitched to the refinery," said Hill Crane's Darren Scruggs. "Without removing overhead structure beams, a jack-and-slide solution was the only viable option. We worked closely with Hydra-Slide to put together a robust proposal and upon winning the contract, we placed orders for the necessary equipment, which remains in our fleet."

The full scope of work included transportation of the old exchanger to its manufacturer, transportation of the new 27-foot, 6-inch by 7-foot, 6-inch by 15-foot exchanger to the refinery, and final installation in the same position as the original. Hill's team also employed a 500-ton capacity Enerpac gantry to load and offload the exchangers on a dual lane, eight-line trailer. The project took five days and was delivered on schedule.

"The [existing] stacked exchanger was sitting on 4-foot-tall concrete pedestals; we used crib stacks and pipe stands to support the slide track at a 4-foot elevation," said Michael Barry, Hill Crane & Rigging's general rigging superintendent. "We slid the exchangers a total of 29 feet, 10 inches. Throughout the preparation and execution of the project, Hydra-Slide remained available to take questions and provide application support, which was always delivered in a timely fashion."

Vice President Ron Hill said business is great and "our rigging group is growing quickly."

Pressure vessel install

Three large pressure vessels were recently installed at a refinery in the Texas Panhandle by ALE. This work needed to take place with minimal disruption to the plant's six-figure throughput while utilizing as little space as possible.

The three vessels, all differently sized, were received on site by ALE. The first was approximately 52 feet, 9 inches by 12 feet; the second was 116 feet by 13 feet and the final vessel was 184 feet by 14 feet.

The smallest vessel was delivered under hook and tandem lifted by 110-ton and 440-ton capacity cranes. This operation tailed up the vessel from its delivery trailer and set it on its foundations.

The mid-sized vessel was received by ALE in a laydown yard on site. From there, it was loaded onto SPMTs fitted with bolsters and transported to its dress out location, adjacent to where it would be lifted and set in place. Once dress out was complete, the vessel was weighed, establishing its center of gravity. It was then attached by its skirt ring to a SPMT with a 496-ton capacity tailing frame, then tailed to a vertical position and again set on its foundations.

Due to its size and weight, the largest vessel was transloaded onto SPMTs using ALE's 700-ton capacity gantry lifting system. It was then transported to the dress out location, where it was rotated

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ALE's custom transportation methodology ensured installation could take place without rerouting a pipe rack or a plant shutdown.

60 degrees, having been shipped out of orientation. This rotation was performed using chain hoists in combination with the gantry lifting system.

The final vessel was then tailed up in similar fashion, using a tailing frame mounted to an SPMT and a 1,488-ton capacity crawler crane that was rigged with 275 feet of main boom and 617 tons of counterweight. The radius of all tailing lifts was 125 feet.

Equipment used during these lifts

included 40 axle lines of SPMT, ALE's Lift N Lock gantry lifting system, 330-ton capacity weightors, plus various pieces of staging equipment. The project also utilized Liebherr LTM 1100 and 1400 mobile cranes and a Liebherr LR11350 mobile crane.

The project allowed refinery activity to continue during installation. ALE's custom transportation methodology for the largest of the three vessels ensured installation could take place without shutdown or



rerouting of a large pipe rack on site. The methodology used for all vessels also minimized working at height, as dressing out could take place at ground level prior to lifting. All three vessels will be used to increase petroleum desulphurisation capability at the plant.

Custom lift system

Emmert International was contracted to design and build a custom lift system to fit inside a finished building for the installation and possible future removal of three 485,017-pound compressors and three 573,201-pound motors. This made for two heavy lifts on each of the three 40-foot tall concrete foundations. Challenges included working within future building layout for lift design, a schedule

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window of 30 days, difficult routes through an active construction site and tight clearances.

The scope of work was not only the transport, set, and mating of the units, but to design a lift that would accommodate the future interior of the building that would house these units. The building was

The positioning of the cargo relative to the foundation was constantly monitored to ensure that accurate alignment was achieved for the mating of the two components.

not built at the time of the installation.

The lift design and execution of the tower system was implemented to prove the units could be removed in the future. Because each of the three tabletop foundations had slight variances, Emmert designed three different configurations of the lift system, one at each location. There were concrete pedestals at each end of the work areas, which made placement of the tower legs critical for stabilization of the lift while allowing enough space for the trailer to turn 90 degrees into place under the lift system.

Per the working parameters, weights and dimensions provided, Emmert employed the use of a tower system with a modular frame, custom-built header beams, strand jack support, a 700-ton J&R Engineering Lift N Lock gantry and four 220 metric-ton strand jacks. The system was installed three different times, one time at each foundation.

At each of the foundations, Emmert

erected the tower system and 700-ton gantry onto the high-level gantry tracks. The header beams were then installed and fastened to the top of the gantry legs. The strand jacks, strand deflectors and power packs were installed on the header assembly. The power cables were run from the generator to the power packs and the power pack hydraulic hoses connected to the strand jacks. The data cables were carefully connected to the computer control system. The strand was inserted into the strand jacks and the anchor blocks connected. The top ends of the strands were passed through the strand deflectors on top of the header beams.

Emmert then transported each component with a 10-line double-wide PST, in the proper sequence and orientation, to the transfer position. With all personnel removed from under the lift system, the gantry was moved into the equipment lifting position. Emmert utilized link plates to make the final connections. Once this was verified, the strands were then pre-tensioned using the jack tensioning system. During this set up procedure the anticipated jack load and level parameters were entered into the

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computer. All data cables were double-checked, and computer entries cross checked and signed off.

The strand jack system was energized, and the equipment was lifted one-inch clear of the trailer. The lift was halted, and the load held on the strand jacks for a designated test lift. Constant checks were made on the entire lifting system including the ground under the track support towers, structural steel deflections, strand elongation to ensure all functions were working within the written parameters. The test lift was executed a day before the actual lift and set took place.

The day of the lift and set, Emmert's team conducted a full crew safety meeting and reviewed the findings from the successful test lift. The strand jack lift procedure was performed via a computer-controlled system as well as a designated operator and spotters who constantly monitored and confirmed that all operations were within the agreed parameters of the engineered lift. The design lift speed was 7.5 meters (+/- 25 feet) per hour which indicates vertical lift duration of approximately 1.25 to 1.5 hours.

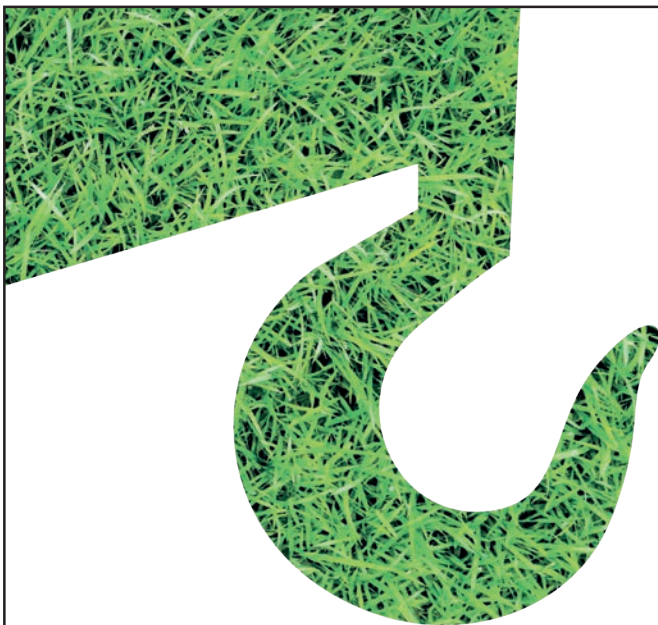


The strand jack anchor blocks were released from the cargo trunnions and the gantry system was moved away from the top of the cargo to its designated dismantling location. This process was repeated on all three foundations until all the equipment was set on its anchor bolts.

The strand jack lift was halted once the cargo had been raised clear of the gantry track and obstacles on the foundation. This proper lift height was programmed into the computer control system so that it would stop automatically.

Emmert utilized a self-propelled gantry

system to travel the cargo over the foundation to align the cargo with the anchor bolts. Once the cargo was in its final position, it was lowered very slowly via the gantry until the cargo weight was transferred from the rigging to the foundation.



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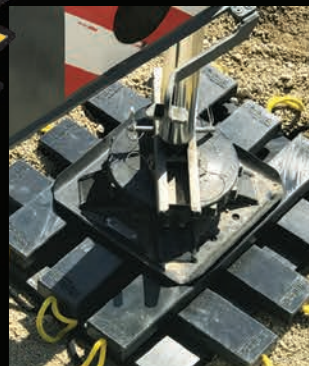
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Power play

What does a customer look for when it comes to crane engines? **ACT** rounds up products from the major makers of engines that power cranes.

It's hard to say what role an engine plays in a crane buyer's list of requirements. They buy the crane that will offer the highest return on investment. Some crane owning companies are loyal to a specific brand while others have a range of brands in their fleets.

But what about the engine in a crane? Do engines play a role in a buyer's considerations?

Everything matters, according to Jack Fendrick, COO and vice president of Kobelco Construction Machinery, USA.

"The main concerns customers have are uptime, parts availability, parts prices, service and fuel economy," Fendrick said. He said customers ask these questions: What is the engine's reputation for quality? How easy is it to get parts? How much do parts cost? Does the crane OEM/dealer support directly or do you use the engine OEM channel? Is the engine efficient?

"We at Kobelco utilize the Hino (Toyota) engine and support that engine directly through Kobelco and our dealer network," Fendrick said.

Tadano America's ATF all-terrain cranes have Mercedes-Benz engines while its GR rough terrain cranes feature Hino or Cummins engines.

Tadano Vice President of Sales Ken Butz said he believes that engines do influence

some customers' decisions.

"The comments I hear most often from customers is they prefer a reliable engine with strong parts and service," he said. "Engine parts pricing is also a consideration. Without question, Cummins is the preferred engine by customers in North America for these reasons."

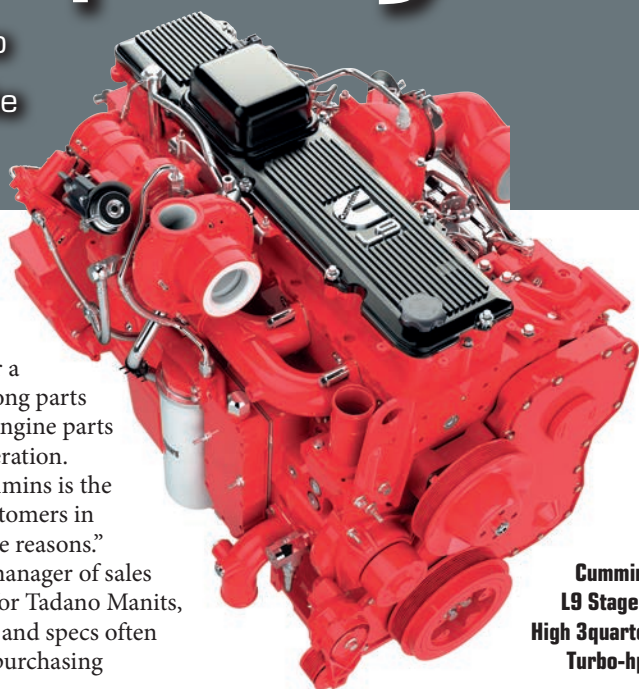
James Land, general manager of sales and customer support for Tadano Manits, said that engine brands and specs often influence a customer's purchasing decisions.

"Emissions Tier level seems to have an impact on a customer's purchasing decisions," Land said. "In the U.S., you tend to see customers pursuing the lowest tier possible thinking they will get a more reliable engine with less emissions equipment. If the requirement of a new tier is on the horizon, purchases may be made sooner fearing that the new tier level will be more complicated, costly or experience growing pains when it is released."

Link-Belt powers all its cranes with Cummins engines. Manitowoc and Grove use Mercedes and Cummins engines for its crawlers, RTs and ATs. Tadano Mantis powers its telescopic crawlers with Cummins engines. Terex and Demag power its cranes with MTU and Cummins engines, among other brands. Liebherr powers all its cranes with its proprietary Liebherr engines.

Other companies that produce engines for cranes include Caterpillar/Perkins, Deutz, Mitsubishi, Isuzu, John Deere, Kubota, Volvo Penta, MAN, Hatz and Scania, to name a few.

Frank Bardonaro, president of Maxim Crane Works, doesn't worry much about crane engines. With the largest crane fleet in North America, Maxim is constantly buying and selling cranes to assure it has the cranes its customers need.



**Cummins
L9 Stage V
High 3quarter
Turbo-hpr**

"We don't focus on the engine," Bardonaro said. "We pick the crane and they (the OEM) pick the engine."

This article marks the first time that *American Cranes and Transport* has covered crane engines. We asked the companies that supply crane engines to tell us about their products. The following information is from the engine companies that responded to our call for editorial.

Cummins

Cummins engines are proven in cranes, both mobile and fixed. Available from 75 to 4400 horsepower, Cummins engine are known for high torque capability, even at low RPM for strong lifting capacity, the company said.

Cummins engines meet the latest Tier 4 Final regulations meaning clean operation on urban jobsites. Latest technology has reduced noise as well, further improving the environmental impact and impact to those operating the equipment. Tier 4 Final engines are currently available and operating successfully in the crane market. Cummins Tier 4 Final products are a technology solution with clear advantages, the company said.

"Other manufacturers outsource their emissions after treatment systems, Cummins manufactures our own," said Cummins. "This total integration of the



Caterpillar C9.3B

engine and the exhaust system allows us to optimize fuel economy above the 5 percent achieved with Tier 4 Interim engines, while achieving near-zero emissions at the same time. Tier 4 Final engines are offered from 2.8L all the way 95L.”



Hamofa replaces engines, parts

Six months ago, an engine powering a crane atop an oil platform in the Gulf of Mexico stopped working. When the regional dealer did not have a replacement in stock, a complete shutdown seemed probable. Hamofa, an independent family owned industrial engine supplier, was able to ship a reconditioned engine of the same make and model from Belgium to the Gulf in three days, keeping production alive.

Hamofa's strategy is to replace engines and defective parts, a significant portion of which are devoted to cranes. The company delivers new, used and reconditioned engines around the world. Hamofa sells more than 1,000 engines a year and has some 1,200 engines in stock in its workshops in Belgium and Florida. The inventory includes engines that are no longer for sale by OEMs, even though older cranes still rely on them, according to the company.

“Over half of the ten largest crane manufacturers are European and use European engines,” said Rob Verhoeven, Hamofa sales director. “Unfortunately, it’s difficult to source European engines and component parts within the United States, especially since regional vendors aren’t able to source outside of their territory. Since we’re independent, we have the ability to serve as the fast lane for engines and engine parts between Europe and the United States.”

The company sources whole engines and parts to create reconditioned engines for all major brands including Mercedes, Liebherr, Volvo, Cummins and Caterpillar.

For crane builders considering upgrades or new models, Cummins’ next generation of engines, Performance Series, designed for EU Stage V emissions, is now available to North American customers due to their positive attributes. These engines do more than meet stringent emissions regulations.

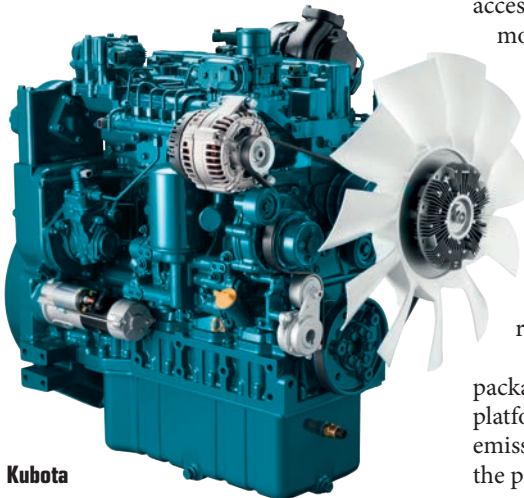
Updates in technology over the last five years enabled Cummins to change the recipe, removing ERG, improving torque and power and making engines easier to install and service, the company said.

“This offers OEMs the ability to increase machine capability and offer more value or downsize engines to reduce cost,” the company said. “EGR-free architecture reduces complexity, improves reliability and reduces the cooling system space claim. Cummins Performance Series engines offer the compact single-module after treatment system and combines DPF, SCR and urea-dosing in one unit that is 60 percent smaller and 40 percent lighter than the prior system. Performance Series products are offered with single module from 3.8L – 9L network.”

Caterpillar

Caterpillar’s C9.3B meets both EU Stage V and U.S. EPA Tier 4 Final emission standards using a new compact after treatment that is 39 percent smaller and 55 percent lighter than its predecessor. Combining the new compact after treatment with an advanced high-pressure common rail fuel system enables the 6-cylinder, 9.3-liter C9.3B to deliver more torque, more power and lower fuel consumption.

The patented compact after treatment technology combines the diesel particulate filter and diesel oxidation catalyst in a single assembly configured as a module to allow OEMs to position



Kubota



John Deere Power Systems

it at several different places around the engine. A high-efficiency selective catalytic reduction system eliminates the need for exhaust gas recirculation and its associated plumbing, parts and service requirements and potentially reduces the size of the engine cooling system. The result is an engine system weight reduction of 300 pounds.

It’s significant that the C9.3B builds on a proven core engine that has logged more than 200 million hours of real-world operation. Caterpillar has focused engine development on simplifying design, improving performance and reducing installation complexity. The C9.3B has completed a rigorous validation program accumulating over 100,000 hours in lab environments and customer applications.

The C9.3B is offered in two configurations. For customers who perform their own integration it is available as engine and after treatment only. For those who prefer a complete package, it’s offered as an engine with after treatment, cooling package, air cleaner, control module and a range of accessories. The C9.3B can be ordered in more than 2,000 configurations.

John Deere

The PowerTech 4.5L Final Tier 4 engine from John Deere Power Systems offers a wide range of configurations to best fit off-highway application needs. Depending on the technologies used, the 4.5L engine has a power range of 74 to 173 hp (55 to 129 kW).

“A variety of after-treatment packages are available with this engine platform, allowing OEMs to meet emissions regulations while delivering the performance, reliability, durability

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and low operating costs customers have come to expect from John Deere,” the company said. “The PWL, PSS and PWL models all utilize cooled EGR, which demonstrates exceptionally low diesel exhaust fluid consumption and reduces overall operating costs. In addition, the use of cooled EGR reduces nitrogen oxides out of the engine, enabling the use of a smaller selective catalytic reduction system. This also helps increase packaging flexibility.”

EGR has been a proven technology in countless John Deere internal and external OEM applications around the world.

“All of the models utilize a diesel oxidation catalyst – either with or without a diesel particulate filter – as part of the integrated emissions control system to provide a reliable solution for reducing particulate matter,” the company said. “No-DPF options allow OEMs additional flexibility to meet application and customer requirements without compromising power, as they can customize their engines and allow for streamlined installation into existing machine designs.”

Kubota

Kubota is expanding its diesel lineup to include the 210 hp class engine with the award-winning 5-liter V5009, making Kubota one source for multiple solutions.

“The world’s leading engine manufacturer of compact diesel engines below 100 hp has entered a new level of offerings for its end-users, the 200 hp class,” Kubota said. “Kubota’s larger, more powerful engine over 200 hp, shows vigilant dedication to meeting client’s needs of higher outputs and lower fuel consumption.”

With the V5009, Kubota customers

have access to a complete lineup of industrial, reliable diesel engines that provide up to 210 hp. The compact, 4-cylinder engine offers an output of 210 hp with the Diesel Oxidation Catalyst, Diesel Particulate Filter and Selective Catalytic Reduction.

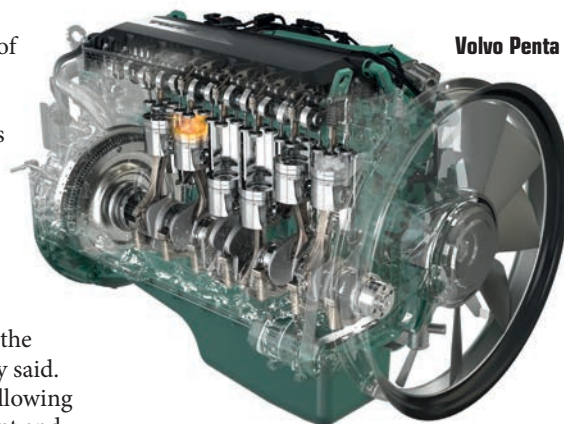
“The V5009 is expected to lead the industry in performance and reliability in the same manner as the rest of the 09 series,” the company said. “The engine enters the market following years of concentrated development and authentication, unveiling conventional technologies through a new platform and improved core technologies.”

Kubota secured the intake air flow through high-pressure turbocharging and achieving high in-cylinder pressure through combustion matching. This generates a large amount of heat inside the cylinders to achieve high output. Kubota said it has invested numerous resources in the form of countless engineering hours and state-of-the-art design, into the 09 series to produce an engine series with excellent performance and durability. The V5009 is built to be fuel efficient which is achieved through optimized combustion and has easy one-side maintenance. Designed by engineers in Japan, Kubota’s V5009 is ready, the company said. While mass production of the V5009 will not begin until 2020, all engines will be Tier 4 Final and EU Stage V compliant.

Volvo Penta

Volvo Penta offers a range of Tier 4 Final industrial diesel engines from 5 to 16 liters with horsepower ratings from 141 to 690 for cranes.

Volvo Penta’s Tier 4F solution uses Selective Catalyst Reduction together with



Volvo Penta

a light Exhaust Gas Recirculation system, which meets the Tier 4F requirements without the use of a diesel particulate filter, eliminating the need for periodic disruptions for regeneration.

The Volvo Penta engines with SCR also have lower cooling demands, enabling the use of a smaller radiator package, according to the company.

“Volvo Penta’s engines are designed and developed for long-term performance and world-leading fuel efficiency, yielding the industry’s lowest total costs of ownership,” Volvo said. “To maximize uptime, most Volvo Penta industrial engines can operate for 1,000 hours between service intervals. Productivity can be increased by using Volvo Penta’s oil analysis service.”

Volvo Penta’s optional easy-to-install start/stop technology reduces fuel consumption, noise and exhaust emissions by turning itself off when idling and restarting on demand. The result is extended engine life and reductions of up to 15 percent in fuel consumption, according to the company.

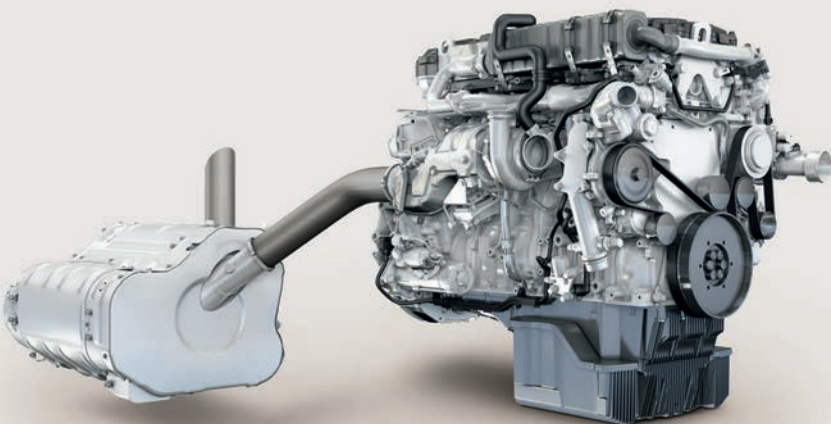
An optional 4.3-inch color display gives the operator fingertip control and shows all vital information at a glance, including fuel consumption, engine RPM, engine temperature and DEF levels. It also provides status and error code messages with suggested actions.

MTU/Rolls-Royce

At Bauma last spring, Rolls-Royce presented its EU Stage V certified MTU engines for the construction equipment and industrial sectors. Series 1000, 1100, 1300 and 1500 engines were given certificates of compliance with EU Stage V emission requirements in March 2018 and have been available as standard production engines since June 2018. The first units have already been delivered to OEMs such as Tadano, Hidromek, Kato, Manitowoc, Bomag, Bell and Hyster.

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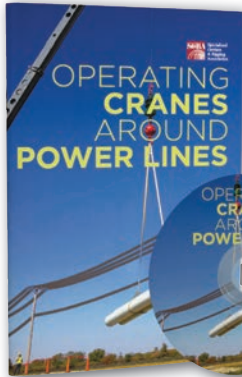
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MAN Engines



engines, these diesels cover a power range of 115 to 480 kW. The new limits are achieved by internal engine enhancements and by adding an SCR system and an additional diesel particulate filter. As well as reduced CO₂ emissions, the torque, performance and fuel consumption of the engines have all been improved, according to the company.

“The first EU Stage V engines have been tested rigorously in numerous prototypes, at times under extreme weather and altitude conditions,” said Lars Kräft, head of industrial business at Rolls-Royce Power Systems. “This way, we’ve been able to evaluate a wealth of application data and operating experience, and the engines finally went into full production seven months before the new directive came into force.”

After almost 110,000 hours of field testing, the first MTU EU Stage V engines are already shipping to customers, and they are destined for construction equipment used in a variety of off-road applications.

Rolls-Royce offers a one-box SCR-DOC-DPF solution to integrate all components into the limited installation space of the machines. This exhaust gas after treatment system is both compact and robust. The box meets the requirements of vehicle manufacturers and operators by being simple to install, operate and maintain.

As well as being certified to EU emission Stage V, MTU engines are also certified to the U.S. Environmental Protection Agency’s Tier 4 Final. This dual certification gives Rolls-Royce customers more flexibility when it comes to selling machinery, the company said. MTU Series 2000 engines (567 to 970 kW) will be available with EU Stage V certification from the end of the year 2022.

Hatz

With the new E1 technology, Hatz is now producing single-cylinder engines of the B-series and D-series for cranes and aerial work platform applications. Hatz is introducing the new E1 technology as the first electronic controls for single-cylinder industrial diesel worldwide. This product enables engine specialists to bridge the gap between previously mechanically controlled engines and the requirements of modern companies with digital operations.

“The most important components of the E1 technology are the engine control unit, sensors and fuel injector, with an electromagnetic valve specially developed by Hatz in cooperation with Bosch,” the company said. “The control unit continuously measures speed, oil pressure, oil and engine temperature, operating time or environmental data, such as air pressure or air temperature in order to ensure perfect operation.”

The E1 technology with power from 2 to 10.8 kW is fully compliant to U.S. EPA Tier 4 Final as well as EU Stage V. Machine manufacturers and operators can retrieve engine-relevant data using the new Hatz diagnostic tool HDS2 and via CAN J1939, for example, for engine analysis or for routine servicing. The E1 technology is suited for hybrid solutions.

“The E1 technology also enables functions for simplified operation. This includes automatic start protection for preventing starter

damages. Idle connection control for automatic shut-down in case of idle times that are too long is a helpful function that can prevent inefficient operation or high wear and tear,” Hatz said.

The universal interface allows for a continuous data exchange with the control unit. Bidirectional transfer of data enables engine data to be analyzed, while on the other, it allows new data to be loaded.

In addition, various operating modes can be set, for example constant speed for certain applications, eco mode for emission-sensitive environments or an adjustment of the engine to different fuel alternatives.

The interface of the E1 technology functions as the core component for the integration and networking of machines in digital applications and the Internet of Things in order to also integrate small devices in the digital applications and processes of modern companies for the first time, the company said.

MAN Engines

MAN Engines is a leading manufacturer of diesel engines for off-road applications, including mobile cranes.

“Engines for construction machinery are an important part of our long-established off-road business, which has deep roots at MAN Engines,” said Reiner Rößner, head of sales. “At the same time, we have invested many millions of euros in new and existing products in recent years.”

MAN Engines’ off-road products range from 4.6 L to 24.2 L displacement. New products include the D4276 and the recently launched D1556.

The availability of emission standards ranging from U.S. Tier 4 Final to EU

Stage V ensures that high-volume manufacturers and niche solution providers alike can sell their machines around the world.

MAN Engines’ compliance with current and future emission standards is due to its many years of experience with exhaust gas after treatment systems in the MAN Group’s own commercial vehicles and large-scale production of industrial engines, the company said. ■



Hatz E1

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The Austin answer

R&J Lifting Solutions is introducing the efficiencies of self-erectors to the Central Texas market.

Over the past decade, Austin, Texas has been one of the most desirable places to live and work in the United States. With Austin's stock rising, so has congestion, especially on construction jobsites in the region. Small commercial projects, condominiums, low-story hotels and utility applications are often too small to use traditional tower cranes, but there's not enough footprint for a mobile crane. The challenges for a contractor are many.

But R&J Lifting Solutions in Cedar Park, TX, a suburb of Austin, has an answer for these projects. R&J Lifting Solutions President Joe Galbraith and COO Randy Thorp are the first to introduce a new self-erecting tower crane – the Terex CBR 40H – to contractors in the Central Texas region.

"We see a significant opportunity to help framers of small hotels and multi-family buildings position materials more efficiently and cost-effectively by using the CBR 40H crane," Galbraith said.

Contractors are finally paying attention to the efficiencies of self-erecting tower cranes.

"The self-erecting crane design covers twice the area that a telehandler can in half the time, and at about the same rental price-point," said Thorp.

While R&J Lifting Solutions is new to the Austin market, principals Galbraith and Thorp offer lifting contractors more than a combined 50 years of crane and rigging experience.

"They both are known for providing innovative lifting solutions, and this market is an ideal fit for the CBR 40H self-erecting tower crane," said Tony Cappellaro, sales and support manager, Americas, Terex Cranes.

Galbraith and Thorp investigated potential crane designs and options to solve the lifting challenges at congested building sites in Austin. A colleague in Portland, OR, who sold self-erecting cranes along the west coast, recommended



The Terex CBR 40H self-erector offers a maximum jib length of 131.2 feet and a maximum 4.4-ton capacity.

R&J Lifting Solutions operates in the Central Texas market. Partners in the company are Joe Galbraith and Randy Thorp, standing in front of their new Terex CBR 40H.



that they look at the self-erecting crane type for the Austin market.

"Self-erecting cranes are popular in many major markets along the east and west coasts, but they are just starting to gain traction in central United States regions," Cappellaro said.

The user-friendly design and ease of operation drew R&J Lifting Solutions to the Terex CBR 40H. Galbraith was impressed with the crane's smooth handling, partly due to its remote-control operations.

"The remote control allows the operator to move with the load, making it easy to see where it's placed," Galbraith said. "It's quick to move in and out of the jobsite, requires a very small footprint and offers a great bang for the buck."

The CBR 40H offers a maximum jib length of 131.2 feet and a maximum 4.4-ton capacity. Its lift capacity is 1.1 tons at its maximum jib length.

"The big plus for the crane is it requires only a 13.8-foot footprint for its base, allowing it to be put in tight spots where a mobile crane cannot fit," Thorp said.

With transport dimensions of 44.6 feet long, 7.9 feet wide and 11.5 feet high when positioned on the trailer, the CBR 40H can be moved to the jobsite using a flatbed trailer. A second trailer transports the crane's 44,092-pounds of counterweight.

Its self-erecting design quickly unfolds the vertical tower to its 84-foot height.

"An experienced crew can have the crane set up and ready to lift loads within four hours of arriving on site," Cappellaro said.

A self-erecting tower crane can beat a mobile crane at move-in/move-out as well as on rental price, Galbraith said. The Terex CBR 40H operates quietly with 20 kVA electric power compared to diesel fuel for mobile cranes and telehandlers.

Safety was another reason R&J Lifting Solutions decided to get in the self-erector market.

"The stationary CBR 40H crane can replace one or multiple telehandlers at the project site, so there are fewer pieces of mobile equipment moving around a congested work area," Thorp said.

R&J Lifting Solutions' investment in the Terex CBR 40H self-erecting tower crane is just the beginning of many more pieces of equipment to follow, according to the principals.

"We have the vision of growing to provide crane operation training and offer full turnkey crane and rigging services in the future," said Galbraith. ■

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Old standbys

Julian Leek and **Mary Kanian** report on NASA's restoration of its crawler-transporter vehicles.

PHOTOS: © JULIAN LECK



The NASA Crawler-Transporter footprint is the size of a baseball infield and powered by locomotive and large electrical power generator engines.

Everything old is new again. This old adage proves to be true at NASA in more ways than one.

The crew capsule configuration is coming back as are splashdowns and parachutes. The call to “reduce, re-use and recycle” is fully in vogue in every space industry and human endeavor. The purpose of the Space Shuttle was to embody this very same concept. However, turnarounds for their re-use proved to be more costly than anticipated. The second of two fatal shuttle accidents sounded the death knell of that program and required a rethink of the entire space program to find a new way forward.

Specialized transporters

Through it all for more than 50 years, a pair of machines stood the test of time delivering countless numbers of space vehicles to the launch pad in numerous different rocket configurations, including the entire space shuttle program. Built by Marion Power Shovel in 1964, these are the only two such crawler-transporters in the world.

The pair became operational in 1966, in time to roll out the massive Saturn V

Built in 1964 By Marion Power Shovel, NASA's Crawler-Transporters rolled out all sorts of space craft, rockets and equipment to the launch pad, including the Saturn V rocket and Space Shuttles.



rocket weighing in excess of 6.2 million pounds fully fueled and standing 363 feet tall, still the largest and most powerful rocket ever built. Saturn V rode out to the launch pad atop the Crawler-Transporter which, at 6 million pounds, weighed nearly as much as the rocket itself.

Of the two existing crawlers, one (CT-1) will be dedicated to move commercially operated rockets and spacecraft to their launch pads while the other (CT-2) has

been refurbished and strengthened to run the Space Launch System (SLS).

The transporters are the size of a baseball infield and are powered by locomotive and large electrical power generator engines. Heights vary from 20 to 26 feet depending on the position of the jacking, equalization and leveling cylinders that work to keep the load level. Running on eight half tracks, it moves the rocket and launch umbilical tower out to the pad

>56

Of the two existing crawlers, one (CT-1) will be dedicated to move commercially operated rockets and spacecraft to their launch pads while the other (CT-2) has been refurbished and strengthened to run the Space Launch System (SLS).



Recent upgrades to CT-2 include redesigned and upgraded roller bearings, removal and replacement of the existing bearings with a new assembly that can carry a greater load and an improved lubrication system. It is estimated that the modifications will extend its life another 20 years.



The NASA Crawler-Transporter's height varies from 20 to 26 feet depending on the position of the jacking, equalization and leveling cylinders that work to keep the load level.

at a top speed of one mile per hour and returns, without load, at two miles per hour.

CT-2 has logged 2,235 miles over the past 50 years. Recent upgrades include redesigned and upgraded roller bearings, removal and replacement of the existing bearings with a new assembly that can carry a greater load and an improved lubrication system. It is estimated that the modifications will extend the crawler's life another 20 years.

Ready to roll

Up on top of the NASA's Crawler-Transporter goes the Mobile Launcher, a massive service structure referred to as the Launch Umbilical Tower. This is

the familiar two-story base that serves as the actual platform for the rocket to rest on with the tall upright service tower alongside from which dangle the various umbilicals, which are service lines that furnish the rocket and the Orion with power, communications, coolant, fuel and stabilization during the launch preparation.

During launch preparation, the NASA Crawler-Transporter will first pick up the Mobile Launcher and secure it into High Bay 3 in the VAB. Then the Orion spacecraft will be lifted and stacked atop the rocket. These two marvelous machines continue to pay dividends to the space industry and great return on investment to the taxpayer.

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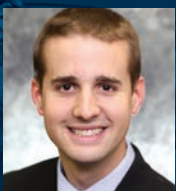
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Simon Nielsen
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Stay ahead of the risk

Tyrone Silva discusses simple ways to become a better risk.

You stay ahead of the competition, balance your expenses to a budget, but how do you manage your insurance costs? When it comes to controlling how much your insurance policy costs year over year, there are some things you can control and some things you can't. Market trends, nuclear verdicts, investment returns – they're all factors that every insurance buyer is subject to; therefore, there isn't much you can do to change their impact. However, it's not all out of your control. There are always at least three areas where you can make small changes that can have a big impact on your business – and make you a better risk.

1. Contracts

Every business in the construction industry can succeed or fail based almost solely on its contract. Negotiating contract language can be a long and difficult process, but it's ultimately one of the most important things you can do before commencing work on a job site. At NBIS, we believe a good contract or job ticket should contain the following key provisions.

■ INDEMNIFICATION OR PARTIAL

INDEMNIFICATION: Indemnity is a promise – a promise to pay for possible damage, loss or injury. Insisting that the language reads in such a way that your company only has to respond to losses that result from your own negligent operation is one way to ensure you've got a fighting chance in court.

■ **INSURANCE:** An insurance provision in your agreement is the easiest way to shield your company from paying for claims that you do not owe. This provision specifies exactly what limits of coverage your customer needs to provide, the financial rating required of its insurance company (usually an A.M. Best Company rating) and in what circumstances your

customer's insurance policy will extend coverage to you as an "additional insured."

■ OPERATION OF EQUIPMENT PROVISION:

This is very important because it provides a strong "borrowed servant" argument for the actions taken by your operator. In a successful borrowed servant situation, you increase your chance of being protected from any action brought against you by your customer's employee, should they be hurt.

■ **GROUND CONDITIONS:** One of the responsibilities assigned in this provision is that for ground conditions and ground stability. Oftentimes, your operator will not be knowledgeable about the ground conditions where the crane will be operating, especially if this is the first day on a job site.

2. Preventative risk management and training

One of the most important things to remember when it comes to risk management and training is that efforts need to be ongoing. Each member of your team should be constantly thinking about risk and how their actions play a role as either proactive or reactive. If you're a company owner, you should be looking at your team and asking:

■ **DRIVERS** – Are they all up to date on: CDL licensing, training, DQ files and hours of service logs?

■ **CRANE OPERATORS** – How recent are: certifications, training, technology and lift plans?

■ **RISK MANAGER** – Is she focusing on: safety plans, safety meetings, accident/injury prevention checklists, inspection and maintenance records and technology?

Many of the most common citations can also be avoided when drivers are properly trained and understand the current rules and regulations—which is exactly why NBIS developed the proactive Online Driver Training Program. The curriculum for this unique program was developed after understanding the most notorious transportation accident-causation factors. Each course takes around 15 minutes to complete and concludes with a test. And best of all, the program is defensible in court in any situation where a claim arises.

3. Claims response

Understanding how you're going to respond to an insurance claim scenario before that scenario occurs is a practice that is sure to pay dividends when the unexpected occurs. Being the first responder to a claims event carries with it a great deal of responsibility. It's important for management to develop a Jobsite Accident Response Plan prior to the claim event, so that critical information can be gathered in a calm and systematic way. Severity claims response is most effective when it utilizes a pre-planned approach. While safety and accident prevention are the core focus of the plan, a good response plan contemplates multiple scenarios with two key objectives in mind: preserve evidence and "set the table" for the investigative team.

4. New technology and services

Over the years, we have seen several advancements in technology, from computers in cranes (LMIs) to data recorders (black box) in vehicles. The information contained in these devices is ever evolving – and is also discoverable.

Recently, NBIS has developed several relationships with companies that offer cameras outside the cab and down the truck to record incidents and help determine liability (passive management), Telematics systems to understand driver behavior, so you can coach your drivers to avoid bad driving habits leading up to an accident (preventive management). We also partner with a product that alerts the driver if they drift the lane or follow too close to the vehicle in front (preventive management).

In conclusion, while many of the factors that go into pricing an insurance policy are indeed outside the realm of control of the policyholder, making sure your contracts, risk management and training initiatives, and claims response plans are in order are three areas where you can make immediate improvements, and help ensure you enjoy favorable pricing.

To find out how NBIS can help your company with risk management initiatives, visit us online at www.NBIS.com. ■



THE AUTHOR

Tyrone Silva is the assistant program manager for crane and rigging at NBIS. Contact him at TSilva@NBIS.com.

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KEYNOTE: Topic TBC

Fabio Belli, CEO, Fagioli SpA

KEYNOTE: DRAWING PARALLELS BETWEEN CRANES AND REACTION FERRIES

Erich Sennebogen, managing
director, Sennebogen Maschinenfabrik
GmbH

TRENDS IN THE GLOBAL ENERGY SECTOR

Diederick Nelissen, partner,
McKinsey & Company

NEW CHALLENGES FOR HEAVY LIFT AND TRANSPORT IN THE GLOBAL ENERGY MARKET

Gert Hendrickx, sales director
Projects, Sarens NV

CASE STUDY IN MAKING SAFETY A TOP PRIORITY

Peter Gibbs, Chief Operating
Officer, Ainscough Crane Hire

GLOBAL CRANE MARKETS: AN OVERVIEW

Chris Sleight, managing director,
Off Highway Research

SPECIALIZED TRANSPORT IN EUROPE: PRIORITIES FOR ACTION

Iffet Türken, chief networking
officer & board director, Kässbohrer
Group, and vice president - Transport
Section, ESTA

CHALLENGES WITH EXISTING STEEL WIRE ROPES ON LARGE CRANES AND FEASIBLE SOLUTIONS

Dr Oliver Fries, vice president
European engineering and technical
services, WireCo WorldGroup

LEARNING FROM THE AIR: APPLYING AIRLINE SAFETY PRACTICES IN LIFTING AND TRANSPORT

Blanca Claeysens, general
manager, ASA France

TOPIC: BRIDGE CONSTRUCTION: KEY ISSUES FOR LIFTING & TRANSPORT

Nick Lamb, senior business
development manager, Cleveland
Bridge International Co-presenting with
a representative from Osprey

ROUND-TABLE: NEW DEVELOPMENTS IN WIND TURBINE CONSTRUCTION

Klaus Meissner, director
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A security issue

New technologies can often mean new risks.

The construction and transport industries, while playing catch up fairly well in recent years, are still behind the curve in many ways as it applies to cybersecurity. To that end, we hear more and more about wearables – smart electronic devices that can be incorporated into clothing or worn on the body as implants or accessories.

Wearable technology has a variety of applications, which grows as the field itself expands. It appears prominently in consumer electronics, with the popularization of the smartwatch and activity tracker. Apart from commercial uses, wearable tech is being incorporated into navigation systems, advanced textiles and healthcare.

For industry, wearables monitor heart rates and fatigue, track worker/equipment location and even detect accidents. But in the age of cloud and connected platforms, securing privileged and confidential information has become a challenge for contractors – and these types of wearables have added another layer of concern as to whether the information these tools collect is as safe as it could be. Wearable devices such as activity trackers are an example of the Internet of Things (IoT) – with “things” like electronics, software, sensors and connectivity as effectors that enable objects to exchange data through the Internet with a manufacturer, operator and/or other connected devices, without requiring human intervention. However, no standards are in place to govern how data gleaned from wearables is used and protected.

As you might imagine, quite a few questions surround such a concern – especially for industries like construction and transport, who are relatively new to the technology.

Keeping an eye out

The International Safety Equipment Association (ISEA) plans to start discussing the development of privacy and use standards – if not at least some type of guidance – at its next annual meeting in November. The discussions will focus on data collected from wearables, how workers can view this information and in what ways the data can be analyzed to predict trends and patterns so as to better assist workers.

Since workers across a variety of industries are already reluctant to embrace wearables – or other types of IoT technology that is deemed invasive – this ISEA discussion couldn't be happening at a better time. Many industry insiders feel that innovative solutions will not only address well-needed cybersecurity concerns connected to wearables, but alleviate some of the many aversions workers have to participating in the technologies.

Matthew Ramage, business area director at Trimble, recently said, “The simple way to do this is to either offer visibility of the improvements from collation of this data via digital signage – or reporting on things like reduction in dangerous incidents – or offer each employee details of what, why and how data is going to be collected and used prior to implementation.”

In the meantime, some risks to definitely keep an eye out for if you, or your company, has entered the wearables/IoT era: low-power devices without sufficient processing capacity for security controls; cheap, unsupported devices with a “set-it-and-forget-it” mentality – usually produced by companies without security skills; devices without adequate manual backups/overrides available, such as emergency power off or fallback to “non-connected” controls; and, within your company, a lack of policy and process designed to address and manage the installation and operation of said devices.

Some might ask, why are we using these devices if there's so much risk associated with them? Because, from a business' standpoint, IoT and wearable sensors are a vital source of information in the knowledge economy, and they can offer significant cost savings (a camera can monitor and alert on activity 24/7 for a fixed cost, while a human guard would be exponentially more expensive). Employees and consumers find these devices valuable for many of the same reasons: for relatively little cost, we can get lower energy bills, safer and more efficient operational practices or better health outcomes. ■

CHIEF EXECUTIVE OFFICER



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How to prevent bridge

New SC&RA Bridge-Hit Training Program looks to cover all bases.

Bridge hits are becoming a growing problem in the United States – especially over the last few years. Recently, SC&RA decided to examine the issue more directly in an effort to understand whether the increase is more perception than reality.

Last year, SC&RA developed the SC&RA Transportation Training Taskforce (SCRATTT), and a member of that task force, retired Colorado Department of Transportation (DOT) official Danny Wells, conducted a study that looked into a decade's-worth of bridge hits in each state across the U.S.

Particularly important to the task force was information on how many bridge hits

involved oversize/overweight (OS/OW) loads, and especially, whether there were injuries or fatalities, what total damage costs were to the structure(s) and whether or not carriers had the correct permits. One surprising piece of information that emerged revealed that few states even track such data – despite the fact that approximately one bridge is hit every day in the U.S., according to statistics.

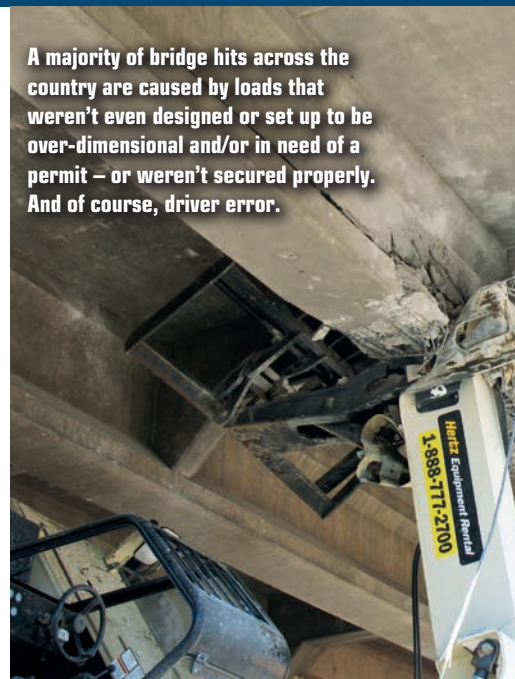
As a result of the information gathered, SC&RA decided to develop a 60-minute in-depth online training program, Bridge Safety & Accident Prevention, to launch in coming months, which will focus on educating carriers and reducing bridge hits significantly across the country.

Final touches

“Bridge hits in general reflect on our industry, fairly or unfairly, and SC&RA, as the leader in advocacy for the specialized transportation industry, has chosen to step up and take the lead on providing this comprehensive training,” said SC&RA Vice President, Transportation Steven Todd. “This will be an SC&RA product – designed to train a company from start to finish – with a sole focus on preventing bridge hits.”

One of the main reasons SC&RA has taken the initiative here, said Todd, has a lot to do with who takes the hit, so to speak. “We’re stepping forward on this because the negative consequences of bridge hits too often affect us – our members – more than the ‘bad apples’ out

A majority of bridge hits across the country are caused by loads that weren't even designed or set up to be over-dimensional and/or in need of a permit – or weren't secured properly. And of course, driver error.



“ This program is coming from a bunch of

different angles to make sure everyone's concerns are met.

”

JACKIE DARR, Permit Office Supervisor, North Dakota Highway Patrol and Chair, WASHTO SCOHT

there – the chronic offenders.”

To that end, SC&RA is putting the final touches on a learning management system (LMS), and when the product is launched, users will be able to go into the Association's LMS, sign up for the program and have their personnel take the class online.

To facilitate the launch, SC&RA has discussed the potential to partner with WASHTO (Western Association of State Highway and Transportation Officials), to pilot the program to states within its region. SC&RA hopes that success derived from such a pilot will encourage additional states and related organizations to recommend the training for chronic offenders, knowing that some states will be a challenge.

On the rise

Jacqueline Darr, permit office supervisor at the North Dakota Highway Patrol, as well as chair of WASHTO SCOHT (Subcommittee on Highway Transport), collaborated with Todd to initially get the program off the ground. “Steven put a group of people together and asked

SSRA is developing an online training program, Bridge Safety & Accident Prevention, focusing on educating carriers and reducing bridge hits.



strikes



a couple states to step up and see if the training program was comprehensive enough,” she explained. “I volunteered along with some others, including a wide variety of pilot car people – everyone looking to see if anything was missing.”

Darr indicated that, because so many people look at bridge hits from a variety of perspectives, it was important to her to develop a program that covered all bases. “Our big concern is, was there a fatality, whether we’ll have to close down that bridge, how many loads are coming that way, who’s going to be affected, what’s it going to cost us, did we find out who hit it? This program is coming from a bunch of different angles to make sure everyone’s concerns are met.”

The WASHTO SCOHT group may take the program back to their states. “Again, every state is different,” Darr said. “Some things have to be put into administrative code; some things are done by law. The one nice thing about this program is, if states want to suggest to repeat offenders to use it, then they can recommend it. It won’t cost the state anything, but, rather, the person or company taking it. That said, if I owned a trucking company, I would have all heavy haul drivers look at this. There’s likely quite a few things within it they simply haven’t thought about.”

As for bridge hits on the rise in the WASHTO region, Darr’s state alone saw six bridge hits in May and June of this year. “We certainly feel it’s on the rise,” she maintained. “However, a lot of states don’t document it very well. For context, we had seven bridge hits for all of 2018 – we nearly reached that in just two months this year.”

The goal of the training program, she said, is to ultimately get heavy haul carriers to pay attention to their permits and stay focused at all times. “First, we want to make sure they’ve purchased their permit, and then we want them to be inputting the correct dimensions into the system and remain aware of where they’re going – especially when it’s a route they’re familiar with. Construction constantly changes.

“I’m often surprised by some of the responses people give when they hit a bridge. They’ll often say that the route is confusing, but then, they didn’t call in for assistance. It really comes down to paying attention to the permit and calling in if there’s confusion.”

The ripple effect of those simple oversights can be enormous, Darr added. “Especially if it’s a non-reported hit; it costs the state so much money and can be a serious safety hazard. Then, the state bears the cost of fixing it – and new laws can even be written. We have to send law enforcement out there, DOT, resources can be pulled from other planned construction projects to fix it. The industry always suffers as a result.”

Operating standard

While some states, like Texas, are steadily experimenting with bridge-hit prevention measures, the true measure starts with proper education, said Darr. “While not every state and/or company is going to buy into this type of program, it’s still a great step towards getting more people educated and aware – and creating a standard that everyone in heavy haul can operate from. Everyone has a bad day, and

“ Bridge hits in general reflect on our industry, fairly or unfairly, and SC&RA, as the leader in advocacy for the specialized transportation industry, has chosen to step up and take the lead on providing this comprehensive training. ”

STEVEN TODD,
SC&RA Vice President,
Transportation



not everything is fail-safe, but the chronic offenders are the ones this is meant to focus on because a bridge hit ultimately hurts everyone. Again, I truly believe this program is good for anyone driving oversized loads.”

Todd added, “Why did SC&RA get involved in this? Because we started hearing, in various states, governments reacting to increases or perceived increases in bridge hits by considering, and in some cases adopting, new laws and policies that – as we’ve seen too often over the years – end up ultimately punishing a majority of carriers out there, which certainly includes SC&RA members, who are doing things the right way.

“Based on the evidence we do have – while not perfect – we understand that a majority of bridge hits across the country are caused by loads that weren’t even designed or set up to be over-dimensional and/or in need of a permit – or weren’t secured properly. And of course, driver error. We want these chronic offenders off the roadways – for safety reasons and because they put our members at a competitive disadvantage. We also don’t want government overreacting and implementing policies and procedures that could negatively impact the majority of the legitimate carriers out there. We hope this training program allows for a productive solution towards educating carriers and keeping them focused on operating both safely and successfully.”

Course launch

Watch SC&RA communications and *American Cranes & Transport* in the coming months for course launch and link.

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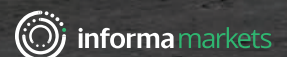


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ANSI grants NCCCO continued accreditation

After a thorough onsite audit of its certification procedures and psychometric protocols, the American National Standards Institute (ANSI) has granted NCCCO continued accreditation for its more than 20 crane and crane-related personnel certifications.

ANSI's audit of NCCCO occurs annually as a requirement of its accreditation to the ISO/IEC 17024 international standard for organizations that certify personnel, with an on-site inspection by ANSI auditors

every other year. Although NCCCO's current accreditation runs through 2022, ANSI requires a comprehensive report documenting program performance and internal procedures on an annual basis, and grants continued accreditation only if all requirements are met.

ANSI requirements are rigorous and designed to give assurance to those who depend on certification programs that the tests are fair, sound and valid assessments of the knowledge and skills they are intended to measure. As a result, ANSI accreditation demonstrates that NCCCO's nationally recognized and administered programs have been developed – and are maintained – to the highest standards of test integrity.

"Candidates and employers alike can continue to be assured that, with ANSI's independent verification of NCCCO's policies and procedures, CCO certification meets the highest professional standards of examination development and administration," said NCCCO President Kerry Hulse. "Each NCCCO certification card is backed by the ANSI guarantee of program excellence unequalled in this industry."



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- Rigger Level I (2010)
- Rigger Level II (2011)
- Articulating Crane Operator (2011)
- Crane Inspector (2012)
- Digger Derrick Operator (2013)
- Service Truck Crane Operator (2015)
- Lift Director (2015)

ANSI COMMENDATIONS

Over the past 12 years, ANSI has awarded NCCCO numerous commendations for its efforts to provide and maintain fair, valid, and effective personnel certifications:

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| <p>2 CANDIDATE COMMUNICATIONS:
video presentation of practical exam tasks</p> | <p>6 PRACTICAL EXAM MONITORING:
inter-rater reliability calibration process</p> |
| <p>3 RECERTIFICANT OUTREACH:
notification of certification expiration</p> | <p>7 STAKEHOLDER INPUT: certificant and employer recognition programs</p> |
| <p>4 INTELLECTUAL PROPERTY PROTECTION: monitoring of CCO logo use violations</p> | <p>8 DATA SYSTEMS SECURITY: protection against unauthorized access of candidate and employer data</p> |

WHO'S ACCREDITED?

OSHA now requires all certification organizations providing certification to crane operators to be accredited. There are several certification bodies but only four (4) that are currently accredited.

ACCREDITED BY ANSI:

- **NCCCO** – National Commission for the Certification of Crane Operators
- **NCCER** – (formerly the National Center for Construction Education and Research)
- **EICA** – Electrical Industry Certifications Association

ACCREDITED BY NCCA:

- **OEC** – Operating Engineers Certification Program

Note that not all certification bodies are accredited for all the programs they offer. Employers can verify for themselves which programs are included in the accreditation scope, and which bodies are accredited, by checking directly with the appropriate accrediting agency as follows:

ANSI: <https://ansi.link/17024-accredited>
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IN MEMORIAM

An industry icon

James Lomma, 1945-2019

James Lomma was a humble and committed industry leader who was known for his professionalism, humanitarianism and lasting friendships.

A crane and specialized transportation industry icon, James “Jimmy” Lomma passed away on Sunday, July 14, 2019 at his home in Staten Island. Born November 24, 1945, Lomma is the son of the late Lillian and Anthony Lomma. A lifelong resident of Staten Island, he graduated from Tottenville High School.

A self-made entrepreneur, Lomma owned several successful enterprises including J.F. Lomma Inc., TES Inc. and New York Crane. His companies provided cranes, trailers and equipment that were involved with landmark buildings throughout the United States, and especially in the New York City region.

A dedicated family man, Lomma looked forward to the tradition of family dinners every Sunday. He is survived by his three children, daughters Jennifer Gabel and Lauren Lomma and son James B. Lomma, as well as his son-in-law Steven Gabel, two grandchildren, brother Patrick Lomma and his wife Gail Lomma, and his niece and nephew Jessie and Patrick Lomma.

Lomma was a consummate professional and a well-known leader in the crane and rigging industry. He is a previous president and chairman of the Specialized Carriers and Rigging Association, and he served on the SC&RA board at the time of his passing. He is a recipient of the SC&RA’s prestigious Golden Achievement Award.

“The entire Lomma family and Jimmy’s broad but tight network of friends and colleagues have lost a great man, brother, father, grandfather, mentor, leader and very loyal friend,” said Joel Dandrea, SC&RA CEO. “If a true measure of a person is how we deal with adversity, Jimmy is atop the ladder. In all his successes and defeats, he always remained

humble and optimistic. We’ve truly lost a legend. May he rest in peace.”

Lomma was an advocate for the industry and was a staunch supporter of crane safety and crane operator certification, according to Graham Brent, CEO, NCCCO Foundation.

“Never seeking the limelight, he worked tirelessly to improve attitudes toward lifting practices, and was an early and consistent supporter of NCCCO certification,” Brent said. “His passing is an enormous loss to the industry, but the contributions he made to make the worksite a safer place are indelible, and he will forever be remembered for them.”

A proud American

In an interview with *American Cranes & Transport* in 2011, Lomma recalled his work at Ground Zero after the attacks of 9-11. Mayor Rudolph Giuliani called Lomma and asked him to dispatch the first cranes to Ground Zero. For six days after the attacks, Lomma didn’t leave Ground Zero, working around the clock with firemen, policemen, ironworkers and others to rescue survivors. Lomma was in charge of all crane operations for several months. It was a grueling assignment, but he wanted to help.

While it wasn’t something he talked about very often, Lomma remembered what he felt and what all Americans felt during that dark time in American history.

“We worked hard,” he said of those hours and days after the tragedy. “America does that. It’s an American thing. We always fight back. They didn’t win.”

Cranes from Lomma’s companies would work at Ground Zero for many years. Lomma was very proud the day that the Freedom Tower topped out in 2014. Two of his company’s tower cranes carefully



James Lomma loved his profession and his colleagues. He was honored with the prestigious SC&RA Golden Achievement Award in 2014.

placed the spire at the symbolic height of 1,776 feet.

Lomma was widely known and respected for his humanitarian efforts. While he never wanted attention for his acts of kindness and charity, he often went to extraordinary lengths to help family, friends and associates.

According to the *Staten Island Advance*, he loved the ocean and was an avid sport fisherman and boater. He was an accomplished pilot and plane owner. Motorcycles and muscle cars were also hobbies.

A mass of Christian Burial was held on July 17, 2019 at Our Lady Star of the Sea Church, with interment at Resurrection Cemetery. Online condolences may be made to the family at www.scaliahome.com. Donations in James F. Lomma’s memory can be made to Saint Benedict Abbey, 252 Still River Road, PO Box 67, Still River, MA 01467. ■



Wolffkran Chief Technology Officer Dr. Peter Barton with owner/CEO Dr. Peter Schiefer.

Rheault appointed Samson president and CEO

Samson has appointed **Christian Rheault** as CEO.



Prior to this appointment he was CEO of Greene, Tweed, a U.S.-based global supplier of

custom sealing engineered solutions for aerospace, oilfield, semiconductor, petrochemical and power industries. He also served as CEO of C&D Technologies, a company that manufactures systems for energy storage in standby backup power systems. Along with his business leadership experience, Rheault has held roles in engineering, manufacturing and marketing management, at equipment manufacturer Kulicke & Soffa and at IBM Canada. Originally from Quebec, Canada, Rheault has degrees in electrical engineering and business administration.

Wolffkran CTO introduced at Bauma 2019

Dr. Peter Schiefer introduced new Wolffkran Chief Technology Officer (CTO) Dr. Peter Barton at Bauma 2019 in Munich in April. Since recruitment, the new CTO has been responsible for technology, research and development since his appointment in February 2019.

"I am delighted to have Dr. Barton at my side, a highly innovative and dynamic CTO who knows the industry and who is extremely experienced in future-oriented technology, digitization, industry 4.0 and internationalization," said Schiefer. "Together with the Wolff team we want to continue our successful development."

Barton previously served

as the head of development at SEW – Eurodrive and had the leading role in the start-up management and development of the Industrial Gear Units division. He also spent time at Liebherr Components as general manager of engineering drive technology.

"I was warmly welcomed by the Wolffs and I am delighted about my new task," said Barton. "Team spirit is at the top of Wolffkran's values. Only together, we can successfully tackle the challenges and competition of the global market and further expand our leading position. A trusting and appreciative cooperation with all managers and employees is very close to my heart." ■

Lester and Baldree join Sims Crane

Sims Crane has named Jared Lester business development manager. Lester returns to Sims after working for the company from 2011-2013 as a crane application specialist and helping increase sales \$1.5 million annually, the company said. In his new position, Lester will mentor the Sims sales force, identify new business leads and help land new clients in new markets. Lester, who served eight years in the United States Air Force, brings more than 15 years of sales and project management experience to his position at Sims.

"My military experience



Jared Lester

provided me with solid foundation that translates to business by teaching me discipline, the ability to identify and understand the mission, leadership skills and comradery – these are skills and that I bring to my position at Sims," said Lester. "My past experience working for Sims was so positive that I knew I wanted to return at the first opportunity. When Dean called, I knew it was time to return home to Sims."

Thomas Baldree



Thomas Baldree has also been named vice president of operations/utility division for Sims. Baldree began his career with Sims in 1998 as an apprentice and over the next two decades rose through the ranks to attain several management positions including Orlando branch manager, regional area director and general manager. ■



■ **Justin Wolfe** has joined Manitex as the new regional business

manager for Manitex Articulating Cranes in the South-Central Region.

■ Hy-Brid Lifts has appointed **Nik Fleischfresser** as national account manager.



Fleischfresser will cover Illinois, Indiana, Michigan, Minnesota and Wisconsin.

■ The American Association of State Highway and Transportation Officials named **Brandye Hendrickson** as its new deputy director.

■ Walter Payton Power



Equipment has appointed **Vince Voetberg** as Michigan sales manager.

■ Contractors & Industrial Supply has appointed **Scott Tant** to its management team. As director of business development, Tant will work with sales managers to identify new business in all of the company's divisions.

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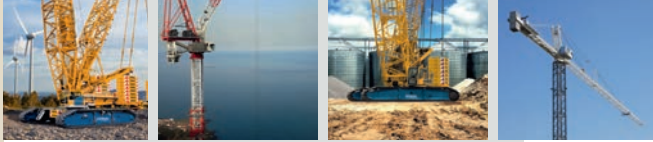
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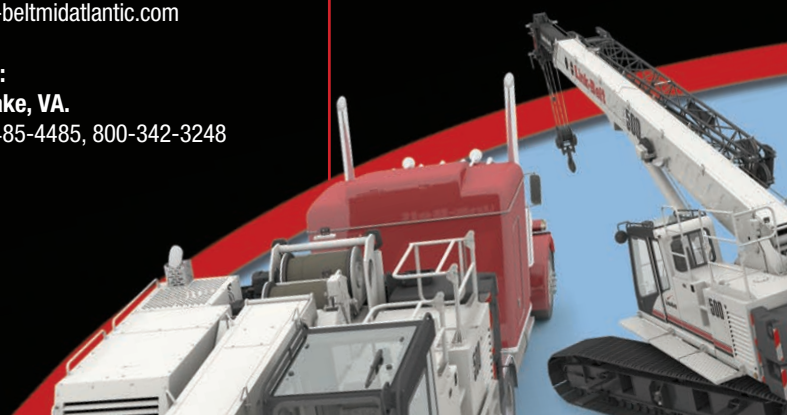
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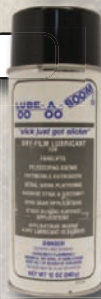


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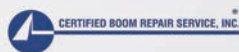
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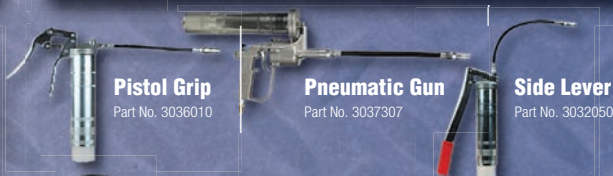
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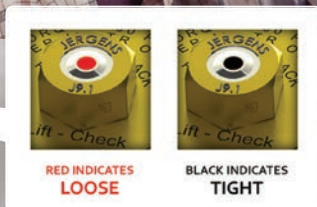
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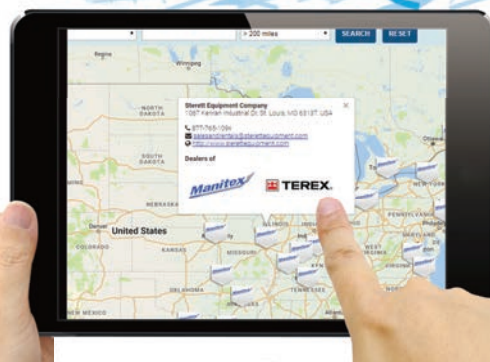
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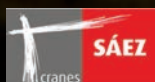
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1x	80 t	Terex RT780	2016
1x	80 t	Grove RT 880E	2008
2x	100 t	Tadano GR 1000XL-3	2015/2017
1x	120 t	Tadano GR 1200XL-3	2018
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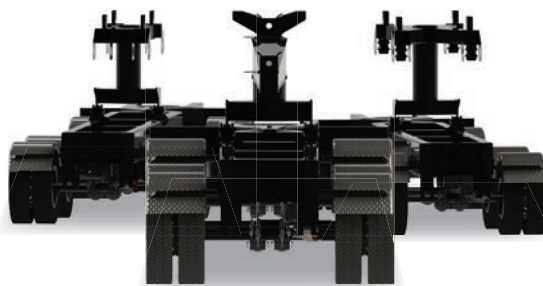
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Not one size

Bill Smith discusses how GPS navigation can prevent bridge hits.

Across the U.S., bridge strikes are a big deal. Beyond the investments the state of New York has made to its infrastructure, Governor Cuomo announced his state's 2020 executive budget will include a proposed \$25 million for bridge strike prevention on state parkways. Department of Transportation Acting Commissioner Paul A. Karas said, "I am also greatly encouraged by Governor Cuomo's executive budget proposal, which will inject millions of dollars in new capital to prevent future bridge strikes from happening across New York State."

It's not just New York that sees bridge strikes as a serious issue, though. The Federal Motor Carrier Safety Administration (FMCSA) also views bridge strikes as a serious safety hazard because they often result in injury and loss of life, damage to infrastructure, interruption of commerce, and delays in travel times. FMCSA and most industry insiders believe that bridge strikes are avoidable by maintaining better awareness of route restrictions along travel paths; typically gained by paying closer attention to road signs, and by the use of only those electronic navigation systems (meaning GPS systems) intended for trucks and buses.

Not all GPS navigation systems are the same

Some companies have learned this the hard way, but not all GPS navigation systems are the same. Many GPS systems are designed for smaller and lighter passenger vehicles, and don't take into consideration the height and weight of the vehicle. Professional truck and bus drivers should only use navigation systems intended for commercial vehicles because they provide truck and bus drivers with important route restrictions, such as low bridge overpasses.

For commercial vehicle GPS systems, FMCSA offers the following five tips:

- 1 Select an electronic navigation system intended for use by truck and bus drivers.

THE AUTHOR



Bill Smith executive vice president, NBIS, is an expert on risk management and safe crane operations. He was a member of C-DAC, which assisted writing the OSHA Crane & Derricks Standard.

“ Besides liability and property damages, failure to comply with a posted route restriction carries a maximum penalty of \$11,000 for a company and \$2,750 for a driver. ”

- 2 Before drivers begin their trip, they should type in all relevant information about their vehicles, so the system can provide the appropriate route.
- 3 Follow the route recommended by the navigation system, but ALWAYS obey traffic signs and advisories (such as low bridge overpasses, axle weight limits, detour signs, variable message signs, etc.).
- 4 Do not engage in distracted driving. Avoid typing or entering addresses or information into the navigation system while driving.
- 5 If your navigation system does not provide automatic updates of the maps, be sure to obtain updates to ensure you are following the most current route planning information.

The reality is that bridge strikes don't just pose safety risks to drivers and the public; they're incredibly expensive, too. Besides liability and property damages, the failure to comply with a posted route restriction carries a maximum penalty of \$11,000 for a company and \$2,750 for a driver. Penalties can vary based on the type of bridge, such as highway overpass, railroad, viaduct, etc.

Also, be sure to check your local, state and federal regulations, as they may require notification of a bridge strike to local authorities – i.e., state police, local police – and be aware: in the case of bridges with railroad crossings, additional reporting steps are necessary, including notifying the railroad authorities.

All this, of course, is avoidable. While there are certainly a lot of unknowns in trucking, your vehicle's height, width, and weight, as well as accounting for your precise load and trailer specifications, don't fall into that category. Bridge strikes are one area where it's absolutely possible to reduce your risk completely. ■

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