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AMERICAN Cranes & Transport

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Official domestic magazine of the SC&RA (Specialized Carriers & Rigging Association)





Grove's new GMK4115

The Grove GMK4115 offers an innovative new carrier cab with sound-dampening technology and ergonomically designed controls. The MEGATRAK™ suspension is the most effective traction control system in the industry providing superior on and off-road performance. The GMK4115 comes with a six-section, 171-foot MEGAFORM™ boom featuring TWIN-LOCK™ technology and a 115 USt capacity.

GROVE

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Crane Group



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Positive prospects

For naysayers who think that the US economy will take a tumble in 2007, there are those who say think again. News that All Erection placed an order among three manufacturers for 150 new cranes in late December, that Lewis Equipment ordered an additional 65 new tower cranes, and that planners expect Bauma to be larger than ever may mean that 2007 economic prospects are still very promising. True, the housing market may have slowed, but several new markets are staged to open up, including new highway projects and energy-related projects.

In our Interview column this month, industry stalwart Delynn Burkhalter offers a solid assessment of business prospects for the crane and transport industry. "Overall, we expect fewer construction projects to start in 2007, however there is renewed interest in nuclear power generation in the US and Europe," he says. "There is also recent construction of nuclear reactors in Asia to meet rapidly rising energy demands. Within this vertical market segment alone, construction revenues are expected to grow at near double-digit rates over the next decade. The need for energy and a rise in energy prices will continue to be the catalyst for projects that will require the need for our services in the power industries, refineries and petrochemical business." Don't miss this important interview in which Burkhalter serves up good advice, sound philosophy and encouraging business news.

Starting a new year gives everyone the chance to wipe the slate clean and tackle the work at hand from a new perspective. This year, crane operating and transport companies large and small will start the New Year with brand new machines, trucks and trailers in their fleets, courtesy of manufacturers that pushed hard at year-end to fill orders placed in 2006. With all these new machines and vehicles comes the challenge of putting them to work, which is what appears to be happening. Late last month, I chatted with an executive at a large crane operating company based in the South who told me he has taken delivery of several new cranes, and that he doubts any of them will stay in the company yard very long before being dispatched out to various jobs. As you make your New Year's resolutions, we hope one of them will be to tell us about the projects on which your new equipment is working.

Among the new cranes being brought into the marketplace are a number of large capacity all terrain cranes, still a relatively new product for many North American crane companies. The market for ATs in North America continues to mature, with more companies putting these machines in their fleets for the first time. Manufacturers are refining these machines for the North American market, introducing as many as eight new models over the past 12 months. In the US, the larger capacity ATs are getting most of the attention. See our overview of new all terrain cranes being marketed in North America on page 20.

Modular lift towers bring a new method of lifting and placing heavy, awkward objects, and Barnhart Crane & Rigging continues to find new and amazing ways to use these machines. Don't miss the site report on page 30 that details the transport, lift and installation of a steam turbine generator.

Concrete is heavy and that means cranes are needed. Two site reports reveal how cranes are critical players in concrete construction – see how two parking garages are erected in distinctively different ways in our Industry Focus on page 28.

D.ANN SLAYTON SHIFFLER

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Payload necessary? The 26101C weighs up to 5,000 lbs. less than competitive models and the 30102C provides up to 10,000lbs. payload on a 54,000 GVWR chassis.

Wireline Work? The 102WL provides 30 ton crane capacity and the 124WL offers 134' tip height without a jib.

Truss work is made efficient with the 2281T, the highest capacity tractor mount on three axles.

Five new SC-Series models support Sign Erection and Service with working heights from 62' to 97'. Our newest, the SC-85 provides 85' working height and 12 ton crane capacity.

New Market Solutions?.....Ask Manitex!





Link-Belt's new ATC-3250 is among some eight new ATs introduced to the North American market in the past 12 months

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Official domestic magazine of the SC&RA (Specialized Carriers & Rigging Association)

news

All Erection orders 150 new cranes; Washington state reviewing tower crane safety and operator certification; Lewis Equipment orders 65 new Sun tower cranes from Yongmao Construction Machinery; Rogers introduces new equipment trailer; Veri-Tek acquires Liftking

international news

Liebherr has 150 cranes working in Madrid; Jergens opens office in Shanghai; Groves working in Poland

business news

Share prices in the heavy equipment sector recovered towards the end of the year and the fall of the dollar should make life easier for American exporters. Chris Sleight reports

safety

No matter how simple or complex the lifting task, a comprehensive plan is the first step to safe rigging. Terry Young reports

certification news

Operator certification is now mandatory in Nevada, Minnesota and Utah. What states are next?

product news

New derrick crane from Liebherr, high pressure pump from Enerpac and Lube-A-Gear introduction



interview

Meet the ironman from Mississippi, Delynn Burkhalter

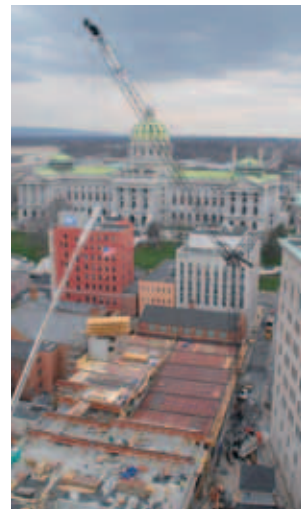
all terrains

ATs, especially those in the larger classes, are a hot ticket item in crane fleets across the US



industry focus: concrete

A Link-Belt 218HSL is the centerpiece at a cast-in place parking garage in Harrisburg, PA; a Kobelco CK2500-II crawler is erecting four concrete parking garages in Austin, TX



site report

Using its modular lift tower system in a stator frame configuration,



Barnhart Crane & Rigging installed components of a steam turbine generator. ACT reports



comment

By Joel Dandrea

SC&RA news

For 20 years, the SC&RA's Specialized Transportation Symposium has provided the forum for discussing and resolving difficult transportation issues. Terry White reports

risk management

Crane accident investigations can be complicated even on simple claims. Tim Hillemonds reports

people & events

What's happening in the lifting and transport industries

marketplace

The most comprehensive listing of crane and transport services and equipment in North America

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highlight

➔ **Bauma 2007**, April 23-29 in Munich, Germany, will be larger than ever with 530,000 square meters of exhibition space, approximately 30,000 more than in 2004.

Show organizers report they have received requests for five times as much space compared to 2004 from companies based in China and Japan, four times as much from companies in India and double from exhibitors in Austria, Luxembourg, Turkey, Korea and Greece.

Bauma 2007 will also see exhibitors from Bulgaria and Singapore for the first time. Products on display will be grouped into new categories by interest area, making it easier for visitors to find their way around the show.

Product groupings include: all around the construction site; mining, extraction and processing of raw materials; production of building materials; and component and service suppliers.

Cranes and specialized transport equipment will be in the all around the construction site section.



Bay Cranes takes large Liebherrs

Six of 10 new Liebherr cranes have been delivered over the last few months, ordered by New York-based Bay Cranes, according to its president, Kenneth Bernardo. The order included two LR 1400, four LR 1300 and four LR 1200 lattice boom crawler cranes. The company is set to receive the final four LR 1300s, a new model, in the first and second quarter of 2007.

"This represents a substantial investment and highlights the strong relationship between Liebherr and Bay Crane," said Bernardo. "Working in New York has additional pressures and demands, and the Liebherr team has historically supported us 24 hours a day, seven days a week."

A Bay Crane Liebherr LR 1400 being used to lift cargo



Veri-Tek acquires assets of Liftking Industries

At a purchase price of \$8 million (CAD), Veri-Tek International Corp. has acquired Woodridge, Ontario-based Liftking Industries Inc. Liftking manufactures rough terrain forklifts, special mission-

oriented vehicles, specialized carriers, heavy material handling transporters and steel mill equipment.

Earlier in 2006, Veri-Tek purchased Georgetown, TX-based

Manitex, which manufactures boom trucks and sign cranes.

Liftking's assets were purchased by a wholly owned Canadian subsidiary of Veri-Tek known as Manitex Liftking. The purchase price is subject to working capital adjustments, and was paid in a combination of stock and cash. The book value of Liftking's assets at closing was approximately \$10.9 million (CAD). For the 12 months ending July 30, 2006, Liftking reported revenue of approximately \$20.5 million (CAD). The company has more than 6,000 units operating worldwide and more than 170 dealer locations that sell and service units globally.

Former Liftking executive Mark Aldrovandi will continue as president of Manitex Liftking.

As to the affect the acquisition will have on the Manitex operation, at the time of going to press, officials could not be reached for comment.

AED snapshot

A host of crane and transport companies – both distributors and manufacturers – will converge on Las Vegas this month for the Associated Equipment Distributors' Annual Meeting & CONDEX trade show, January 16-18. The three-day convention includes business workshops and educational programs that will bring attendees up-to-date on trends, markets and economic forecasts. Topics include changes in distributor business, EPA non-road equipment emission regulations for 2011, a two-part series on operating a profitable rental company and the AED Foundation update from President Don Shilling. For a complete listing of all sessions, visit the foundation's site at www.aednet.org. Keynote speakers are:

➔ Ben Stein who will deliver the address at the AED/GE Capital Solutions Inaugural Dinner. As a well-known lawyer, teacher, comic, actor and economist, Stein served as a speech writer for Presidents Nixon and Ford. He has written for several newspapers, was host for the Emmy-winning TV show "Win Ben Stein's Money" and

appears regularly on Fox News.

➔ Novelist, playwright, motivational speaker and humorist John Powers will differentiate between the work-a-holic and the love-a-holic in his session "Do What You Love, Love What You Do." The author will speak on how by applying one's creativity, enthusiasm and spirit, a person can generate a richer and fuller professional career.

➔ The man who helped revamp the Harley-Davidson franchise, Ken Schmidt will speak on creating a brand identity that enables a company to build extra value into products and service. As former executive and communications manager for the motorcycle manufacturer, Schmidt will speak about the essence of a great brand that requires a company philosophy that is designed to meet customers' needs and exceed their expectations.

Next year's show will take place in Chicago, IL at the Hyatt Regency January 10-12, 2008. For more information about the convention and AED, call (630) 574-0650.



Ritchie Bros. breaking records

At an auction in Los Angeles in early December, Ritchie Bros. Auctioneers sold a record \$48 million worth of trucks and construction equipment. More than 3,200 vehicles and machines were sold, and close to 2,700 bidders registered for the auction. Registered bidders represented 27 countries, eight Canadian provinces and 43 US states. Internet participation also broke records for the Los Angeles auction location, the company said.

"It was a very large auction with a tremendous selection of truck and equipment items for buyers, who came from around the world to participate," said Ritchie Bros.' Richard Aldersley. "The results of this auction show that the market remains strong – there was a big demand for late-model equipment."

Also in December, Ritchie Bros. held an auction in Fort Worth, TX, where more than 2,500 trucks and equipment items were



At an auction in Los Angeles in December Ritchie Bros. sold more than 3,200 vehicles and machines

sold, for more than \$27 million. More than 2,200 people registered for this auction, with bidders from 26 countries, as well as from 48 US states and nine Canadian provinces, the company said. At the Fort Worth auction, a 100 ton capacity Demag AC 205 all terrain crane sold for \$360,000.



highlight

➔ The Occupational Safety and Health Administration (OSHA) is set to release a revised standard on cranes and derricks by October 2007. At the National Safety Council Congress and Exposition late last year, OSHA's Stewart Burkhammer characterized the standard as the "most contentious" the construction directorate has ever tackled. SC&RA participated in the negotiated rulemaking process for cranes and derricks, which was completed in July 2004.

All buys 150 new cranes

All Erection & Crane Rental Corp. has purchased 150 new hydraulic cranes ranging in capacities from 35 to 550 tons from Link-Belt, Grove and Terex. Deliveries will start in late 2006 and run through 2007, according to the company.

"Our hydraulic crane purchases represent just a portion of our equipment commitment for 2007, and we are already aggressively pursuing acquisitions of new equipment for 2008," said Michael Liptak, vice president of operations for the Cleveland-based company. "We expect growth in all equipment categories to be strong."

Founded in 1964, All Erection is one of the largest crane and equipment rental companies in North America.

The company provides rental, sales and service for cranes, aerial work platforms, boom trucks, material handlers, and other lift equipment from more than 25 locations in the US and Canada.

Manitoba pilot program allows extra trailers

A pilot program in Manitoba, Canada, will allow trucks to attach a smaller 6.5 meter trailer behind the normal 31.5 meter rig on the 750 km trip along Highway 6 between Winnipeg and Thompson. The smaller trailers are already used by trucks and buses on other routes but they have not been allowed on the northern route until now.

Although the rigs will not be able to increase the maximum weight allowed, they will be able to haul larger volumes of lighter cargo. In some cases, the change will enable trucks to haul the same volume of cargo in two trips that previously took three. Special permits are required.

NACB up and running in Houston

The North American Crane Bureau (NACB) has opened a training facility on the campus of Lee College in Baytown, TX. The NACB will offer several new training programs at the new facility.

Responding to a shortage of trained mobile crane operators in the Gulf Coast region, the Mobile Crane Operator Fast Track course is an intensive 160 hour training program designed to prepare entry-level hydraulic mobile crane operators for industry. The course focuses on the industrial carry-

deck crane and the small capacity (under 30 ton) rough terrain and all terrain cranes, and includes classroom instruction, simulation training and field training. At the end of the program, students can test out (written testing and practical field evaluations) leading to a certified crane operator credential designation under the NCCER/NACB Mobile Crane Operator Certification Program.

NACB's new Advanced Rigging Practices and Principles course offers advanced training on rigging applications, performance

standards, sling configurations, inspection criteria and the use of various rigging gear. The Overhead Hoist Maintenance course offers hands-on workbench training for overhead hoist system maintenance. With an assortment of hoist manufacturers represented, NACB will instruct students on how to adjust brake systems, troubleshoot electrical problems, inspection criteria, and how to conduct pneumatic system repairs.

➔ For more information, visit www.cranesafe.com



Potain erects 'Mo Mo' in Chicago

Crestwood, IL-based Central Contractors Service, Inc. has provided a Potain MD485 hammerhead tower crane to erect the Modern Momentum building in Chicago. Known as the "Mo Mo" project, the building is on State Street, on the site of the historic Masonic temple. Slated for completion in late 2007, the 31 floor building will have a final height of 409 feet and will be

home to Chicago's Joffrey Ballet Company.

The developer and construction manager for the project is Smithfield Development and the concrete contractor is Adjustable Forms, which rented the tower crane. The architect is Booth Hansen Associates. Central Contractors Service is a subsidiary of All Erection and Crane Rental.

Washington state reviewing inspection process, certification

Tower crane safety and operator certification is a hot issue in Washington after an accident in Bellevue, WA in November and subsequent inspections revealed structural problems on additional machines. In late December, state legislators and government officials attended a meeting on crane safety hosted by the Washington Department of Labor and Industries (WDLI), which has been investigating the tower crane accident in Bellevue.

In late November, after a 210 foot tower crane collapsed and crashed into a nearby apartment building, killing a man and damaging three

buildings, the WDLI issued an advisory that asked contractors to inspect tower cranes working in the state. As a result of voluntary inspections, a tower crane in Bellevue was dismantled from a high-rise jobsite after inspections revealed cracks in a portion of the tower.

A few weeks later, workers repaired a 225 foot tower crane on another jobsite in Bellevue after an inspection revealed a

crack near the top of the tower, according to published news reports. The Seattle media reported that two additional tower cranes in Bellevue had been shut down due to structural concerns after inspections.

Like most states, Washington does not inspect construction cranes for safety, assigning that task to contractors, and certification of crane operators is not required.

➔ Exhibit space is going fast for the 20th annual 2007 Specialized Transportation Symposium, March 7-9, at Disney's Coronado Springs Resort, Orlando, FL. Sign up soon to ensure a prime booth location. Exhibit fees are \$900 for members and \$1,150 for non-members and includes one registration for the symposium. The room reservation form, exhibitor floor plan, the hotel reservation link, and information about advance purchase savings for Disney theme park tickets are also available at the SC&RA web site www.scranet.org or, for additional information, call (703) 698-0291.

➔ Will your company make the list? *American Cranes & Transport* magazine will publish its annual *ACT Crane50* and *ACT Transport50* in the June and December 2007 issues, respectively. Surveys for the *ACT Crane50* will go out March 1, and the *Transport50* surveys will go out September 1. The *ACT Crane50* is a listing of North America's largest crane operating companies, while the *ACT Transport 50* is a listing of the largest specialized transport firms. To ensure your company is on our mailing list, e-mail D. Ann Shiffler at d.annshiffler@verizon.net

Lewis orders towers, elevators

Dallas-based Lewis Equipment was in a purchasing mode at the Bauma China exhibition in November. The company announced it had ordered 65 new Sun Tower Cranes from Yongmao Construction Machinery for delivery in 2007. The company also ordered 100 new Hercules elevators from GJJ.

Lewis Equipment has consolidated its tower crane inventory to two brands, Terex Comedil and Sun Cranes. This new order will put Lewis among the top three tower crane operating companies in North America.

New trailer from Rogers

Rogers Trailers has introduced a new specialized application trailer. Designed and built specifically for a major southwestern utility company to transport emergency transformers, the trailer is also equipped to haul rough terrain cranes, excavators and other heavy equipment with

little or no breakdown.

Stretching out 90 feet, the 60 ton capacity trailer has three air-ride axles with 54 1/2 inch axle spacing combined with a 14 foot 1 inch booster assembly and two detachable axles. The booster can be removed and the rear assembly can be run as

a three axle, close-coupled four axle, or a five axle when hauling lighter loads or when a spread-axle configuration is not required. The trailer also has Rogers' detachable rear frame for quick and easy axle load redistribution. The 26 foot platform deck fits under most super loads.



Rogers' new 60 ton capacity trailer is equipped to haul rough terrain cranes, excavators and other heavy equipment

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*Todd Jewell, Crane Operator
Dolan's Lumber Trusses*



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UK: Emerson Crane Hire has ordered five new Liebherr mobile cranes for delivery over the next 18 months. The first unit to arrive was a 66 ton capacity LTM 1055-3.1. Sales of this crane have exceeded 1,000 worldwide, Liebherr said, and that it is the dominant crane in its capacity class.

That will be followed by an LTM 1090-4.1, an LTM 1100-4.1, an LTM 1130-5.1 and an LTM 1250-6.1 in staggered deliveries over the next 18 months.

Emerson Crane Hire is a family owned business operating in the Greater London area of the UK.

Kobelco to launch 600 ton crawler

JAPAN: On the test pad at Kobelco in Japan is a new lattice crawler crane with a maximum load moment rating of 6,000 tonne-metres. The 550 tonne (606 ton) capacity SL6000 is designed for world markets and will be especially targeted at applications that include construction of power stations and petrochemical plants, ports, shipbuilding and wind turbine erection.

It is the second new model (first was the CKE4000) in Kobelco's program of redesigning, upgrading and improving its 275 to 880 ton capacity range of models. As part of this program, the SL6000 is of modular design for easy transport, assembly and dismantling. According to a Kobelco source the machine

will "look very European" and compete in the 600 ton class. The "SL" in the name stands for "Super Lifter" and the SL6000 will have Heavy Lift (derrick boom) and Super Heavy Lift (separate counterweight tray) configurations, with or without luffing jib.



SPAIN: In Madrid, the Madrid Calle 30 project includes the redevelopment of the M30 motorway by creating direct connections to the main routes through a great number of tunnels. Besides, the infrastructure around the M30 is being significantly improved and modernized and new green zones for recreation and leisure are being created.

The building project, consisting of 15 different stages, was started in September 2004 and is planned for completion early in 2007. The jobsites cover a length of 99 km, 56 km of which are tunnels. Working on the project are up to 100 Liebherr cranes, the majority in the HR series. The machines are used for installing reinforcement cages into the slurry excavations, for concreting, placing joints into the trenches, loading and unloading vehicles, machine assembly and the like.

An additional 50 Liebherr cranes are working in Madrid on various jobsites, representing the highest concentration of Liebherr crawler cranes in the world, according to the manufacturer.

(19.8 US tons) to 200 tonnes (220 tons).

Grabcranex has two offices, one in Poznan and another in the Polish capital of Warsaw. It also has three service bases across Poland, in Plock, Gdansk, and Katowice.

Grove RTs sold to Polish firm



POLAND: Grabcranex, Grove's Poland dealer, has sold and delivered two 45 tonne (50 ton) RT650E rough-terrain mobile cranes to Gastel, one of the country's largest crane rental companies. Warsaw-based Grabcranex delivered both RTs to Gastel's facility in the Baltic port of Gdynia in northern Poland. Gastel is using the cranes in the port's shipyards for a range of duties on docked vessels.

Pawel Kedzierski, managing director of Grabcranex, said

demand for modern lifting equipment was the reason behind Grove's recent success in Eastern Europe. "The need for new and efficient machines continues to grow in this part of the world, and the RT600E range offers some of the best capacities in its class," he said.

Gastel has four facilities in Warsaw, Gdynia, Wroclaw, and Katowice, Poland. The company also specializes in civil engineering and has a fleet of 30 cranes between 18 tonnes

➔ Former Mammoet CEO Frans van Seumeren is back in the industry. With Wout van der Zwan and Gerrit van Wingerden, van Seumeren has started RollDock, a new heavy lift shipping company based in Rotterdam, the Netherlands. Van Seumeren will be chairman of the supervisory board. Diederik Legger is managing director.

➔ Heavy transport and lifting specialist Abnormal Load Engineering Limited (ALE) has taken delivery of its 100th axle line of 2006 from the third generation of self propelled modular transporter (SPMT) from Scheuerle Fahrzeugfabrik in Germany. The series III SPMT has been developed to allow transport of loads up to 15,000 tonnes. The latest axle lines have the same dimensions as the previous generation and are fully interchangeable with ALE's existing fleet. This latest equipment has the advantage of an additional 10% payload capacity over previous axles and the benefit of the latest STEPS 3 steering technology.

➔ Financial results posted by Hiab's parent company, Finland-based Cargotec, for the first nine months of 2006, show an impressive 166% increase over the same period in 2005. Net sales in the January to September period in 2005 were €603 million while €1,594 million was recorded in 2006. Cargotec president and CEO Mikael Mäkinen said, "The third quarter developed according to our expectations as the market situation continued positive."

➔ Jergens Inc., a leading manufacturer of high-precision standard tooling components, announces the opening of Jergens Shanghai Commercial Co., Ltd. to represent and distribute its products in China. Jergens Shanghai, located in Pudong, Shanghai, provides up-to-date product information and facilitates ordering for Chinese customers. Jergens Shanghai is also arranging import and export trading, allowing faster and more economical service to distributors throughout China. Jergens is headquartered in Cleveland, OH.



CHRIS SLEIGHT is one of the world's most internationally renowned construction business writers, with specialist expertise in financial markets and stock market analysis. He is editor of KHL's market-leading *International Construction and Construction*

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Share prices in the heavy equipment sector recovered towards the end of the year and the fall in the Dollar should make life easier for American exporters. **Chris Sleight** reports

Shares rise as the Dollar dives

ACT's Heavy Equipment Index (HEI) picked up as 2006 drew to a close. Inevitably, October's heavy sell-off proved to be an over-reaction to the woes of the housing market that were reflected in Cat and Ingersoll Rand's results.

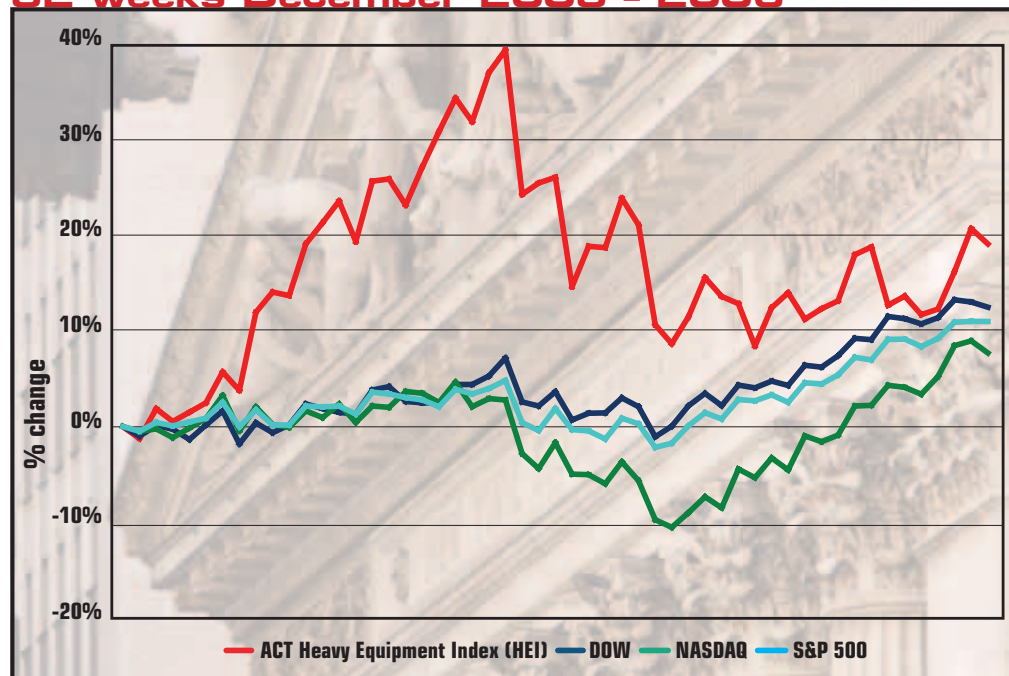
Indeed, the heavy selling made a few stocks look quite cheap, and something of a rally resulted for Astec, Manitowoc and Terex. In Terex's case, early December saw its stock break through the \$60 mark for the first time (equivalent to \$120 prior to the company's July 2006 two for one stock split).

But while this has helped the *ACT* HEI, the indicator still remains well below the high water mark set in the early summer. As of early December it was about -15% lower than its May peak of 160.1 points, holding fairly steady between 130 and 137. This equates to a market capitalization just above \$ 100 billion.

This sideways period reflects the different factors that are weighing on the industry. On the negative side, the housing market is definitely in trouble, and this alone is sparking fears about the wider economy.

But aside from this, the picture is pretty bright, both domestically and internationally. American civil engineering is strong and there seems to be little let-up in

52 weeks December 2005 - 2006



the long waiting times for heavy equipment. As I have written before on this page, the length of lead times alone, particularly in the crane sector, indicates clearly that the industry will be working to full capacity well into 2007.

Dollar dive

Another factor that is playing into US heavy equipment manufacturers' hands is the buoyancy of the international scene and the new weakness

of the Dollar. November saw the Greenback slip to its lowest against the Euro for 20 months and, at almost US\$2 = UK£1, it is at its weakest against Sterling since 1992.

This depreciation, of course, makes US-built products more viable as exports. American manufacturers can discount their products in local currency, but still earn the same amount of Dollars. Alternatively, prices can be held steady locally, resulting in a bigger Dollar profit.

This also helps American manufacturers on the domestic market, due to the fact that imported products effectively become more expensive.

Despite Ben Bernanke doing his bit to talk-up the Dollar – he says he is still worried about US

inflation and that interest rate rises are a possibility – economic data would seem to contradict this. The Organization for Economic Cooperation & Development (OECD) for example has cut its forecast for US GDP growth next year to +2.4%, compared to the +3.1% predicted six months ago.

This and other indicators would suggest a cut, rather than rise, is likely to be the next interest rate move, which means the Dollar is likely to at least stay low, if not weaken further. So it's good news if you're a US-based manufacturer looking to export, but bad news if you're planning a holiday in Europe!

act

DISCLOSURE: Chris Sleight does not own shares in any of the companies named in this column.



about the index

ACT's Heavy Equipment Index (HEI) tracks the performance of 10 of America's most significant, publicly-traded construction equipment manufacturers – Astec Industries, Bucyrus, Caterpillar, CNH, Deere & Company, Gehl, Ingersoll-Rand, JLG, Joy Global, Manitowoc and Terex. In every issue we will report the performance of the HEI against America's headline stock market indicators, with commentary about the sector's ups and downs.



No matter how simple or complex the lifting task, a comprehensive plan is the first step to safe rigging. **Terry Young** reports



TERRY YOUNG is president of Construction Safety Experts Inc. and a member of the board of directors of the SC&RA. He can be contacted at 919-632-3068 or e-mail: terry@safety-experts.com

Steps to rigging safety



Photograph courtesy of Slingmax Rigging Solutions

Using slings with synthetic armor pads, two cranes gently lift and place a 672 ton yacht into the water

Planning is the most important element of a safe rigging task. Some rigging projects are very complex, requiring technical engineering and specialty equipment to plan and execute the job. Others are basic lifting or moving operations that are not as complicated. The planning principles for most rigging jobs are the same.

1. Identify the rigging task and define the job

What is the scope and purpose of the job? What are you moving? Where is it going?

Review the following: drawings; the weight of the load; how the load will be moved and transported; the travel route; time considerations; floor requirements; head room, aisles, access and egress and loading docks; equipment requirements; environmental hazards such as heat, rain, ice, snow; and soil and ground conditions. Check for chemical and material hazards, including asbestos, lead, oil and other chemicals, that may be inside or part of the equipment.

In addition, consider the lighting in the work area, overhead obstructions, possible electrical hazards, adjacent machinery and the type of tools that must be used for the project. The work area may limit static electricity, hot work or require special personal protective equipment. Identify requirements for barricading the work area and emergency procedures.

Conduct a job hazard analysis. Select the personal protective equipment and safety equipment needed for the job. Consideration may also require evacuating a building or closing a public

or private road. Permits and notification to local authorities need to be included in the schedule and plan.

2. Determine requirements

Review the drawings and information provided by the client. Obtain a copy of the manufacturer's relevant information on the equipment that will be moved. Determine the weight of the load and center of gravity. Select and size the hardware and moving equipment based on the current position of the load, the method of attachment, where it will be relocated and that the supporting structure will support the load. Be sure to review overhead height limitations and the route of travel. Then evaluate the size and weight of the moving equipment. In multi-story buildings, account for the live loading of each floor.

Prepare a diagram of how the rigging hardware will be assembled and identify the size of each component. Complex issues may require a hardware manufacturer's assistance and the services of a rigging engineer.

If the route of travel is difficult, multiple pieces of equipment, properly sized cribbing, dollies, jacks, hoists and cranes may be necessary. The rigging plan must be in compliance with all local, state and federal requirements. Check the project site rigging operation procedures and have the rigging plan approved in writing. Be sure you can complete the job within the time requirements. Make sure the load is decontaminated, de-energized and disconnected.

Develop an emergency plan and a contingency plan. Keep a file that includes all correspondence,

diagrams, sizing calculations, a job hazard analysis, contact phone numbers, list of employees, employee training, pre-job inspection, equipment inspection, minutes to any meetings, milestones, schedule, change orders and weather. Keep a daily diary of events to help you remember the times and dates of significant activities.

3. Making the lift or move

Planning and communication will provide your employees with a safe working environment. A meeting shall be held with all employees to schedule, assign and clearly define each employee's responsibilities. Train all employees of their role and the safety requirements in the rigging task. Review and double check the load and sizing calculations, hoisting equipment and supports. Also review the possibility of impact loading, pinch points and a plan to keep employees from passing under the load.

The rigging supervisor must inspect the equipment and hardware before the work begins. That same supervisor must also ensure the area is safe and secure. Then lead and direct the rigging crew. Weather conditions and the possibility of a plant emergency are additional considerations that could change the rigging plan. Again, a good contingency plan is mandatory. Recheck the rigging load and equipment after you begin the lift, and during the course of the move.

The proper rigging plan or guide will provide the information for safe rigging work. It is best to develop a "Rigging Planning Guide" for management to use when estimating and planning a rigging project. **act**

“Prepare a diagram of how the rigging hardware will be assembled and identify the size of each component. Complex issues may require a hardware manufacturer's assistance and the services of a rigging engineer.”



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Operator Certification: This year's hot topic

Are you ready to take a New Year's Quiz? What do Nevada, Minnesota and Utah all have in common? Answer: They will all make crane operator certification mandatory this year.

The certification program offered by the National Commission for the Certification of Crane Operators (NCCCO) meets the different requirements for all three states.

Nevada's new requirement, which was effective January 1, affects all tower crane and mobile cranes with a boom length of at least 25 feet or a rated load capacity of 15,000 pounds or more. Crane operator trainees holding a provisional certificate

may operate a crane only under the direct supervision of a certified crane operator. Utility companies and companies doing utility work are exempt from the regulations.

On July 1, Minnesota's new law will take effect, requiring certification from a nationally recognized and accredited program, such as the National Commission for Certifying Agencies (NCCA). All mobile crane operators on a construction site operating a crane with a capacity of 5 tons or more will be required to have certification. Once certified, the operator must recertify every five years. There is also a provision in the regulation allowing trainees

to operate a crane under the direct supervision of a certified operator. Some exemptions apply, such as railroads, public utilities, mines, agriculture, military personnel and those operating a crane on their own property for personal use.

Also as of July 1, all mobile crane operators in Utah must be certified for excavation, demolition work, or construction of commercial construction projects and residential projects of greater than two stories above ground. Certification must be from the National Commission for the Certification of Crane Operators (NCCCO) or an equivalent organization accredited by NCCA. Crane



NCCCO has created a *Certification 2007* information center on its web site to provide further details of new states' requirements.



operations for single-family detached housing and multi-family housing, up to and including a four-plex, do not require a certified crane operator.

Any person found violating this requirement in Utah will be guilty of a Class A misdemeanor. The law does not apply to digger derrick trucks, knuckle-boom cranes or crane operations in the petroleum refining industry.

The NCCCO has a *Certification 2007* information center on its web site to provide further details of these states' requirements, and to act as a clearing house for information on implementation of the new rules as it becomes available. See www.nccco.org or e-mail NCCCO at twhittington@nccco.org.

act

CCO certification is the "right thing to do" for Zachry

"There's no reason everyone shouldn't aim to be 100% safe." That's the opinion of David Zachry, president and chief operating officer of Zachry Construction Corp.

David Zachry was speaking as the honored guest at the meeting last fall of the National Commission for the Certification of Crane Operators (NCCCO). It was the second time in five years his firm had hosted the four-day event. "We have been delighted to support the CCO program, and will continue to do so," he said.

Along with his brother and CEO John, David Zachry is a third-generation owner of the firm his grandfather, H.B. "Pat" Zachry, founded in Laredo, TX in 1924. It has since grown to be a major player in highway and infrastructure projects, powerplant construction, and industrial process plant development, and is active in more than 25 states. Zachry's international division was established in 1968.

Zachry, one of the world's largest contractor employers of crane operators, with upwards of 600 crane operators in its employ, adopted the CCO certification program for its mobile crane operators several years ago as a risk management initiative.

Joe Collins, Zachry crane department supervisor, noted that his firm had also adopted CCO's overhead crane operator certification program as part of its participation in OSHA's Voluntary Protection Program (VPP). "In 2005, we were recognized as a Super Star site for excellence in safety," Collins said. "We are reviewed annually by OSHA and must show continuous improvement in safe practices." Participation in the CCO program is one important way that improvement can be measured, he added.

Collins, who was recruited by OSHA in 2004 to serve on the CDAC committee that revised the federal standard for cranes and derricks, has been a commissioner for NCCCO for two years.

David Zachry, President and COO Zachry Construction Corp., with NCCCO Exam Management Committee chairmen, J. Chris Ryan (far left) and J.R. Williams (far right), and NCCCO executive director Graham Brent, at the fall 2006 NCCCO meetings hosted by Zachry



Liebherr launches derrick crane

New from Liebherr in Germany is the 200 DR 5-10 derrick crane for dismantling tall tower cranes. Maximum load moment is 200 tonne-meters and maximum radius is 25 meters. As standard it can hoist components for tower cranes in the 300 tonne-meter class and larger, down from a height of 320 meters. The dimensions and weights of all the parts of the new crane are designed to enable them to be dismantled with the aid of a small hoist and removed via lift shafts in buildings.

Depending on the application, the new crane can be configured with load moments of 100 or 200

tonne-meters. For optimum force distribution, supports for the 200 DR 5-10 are articulated and can be adapted to suit the substructure of the building. Using a jib for a maximum radius of 20 m, loads of 10 tonnes can be hoisted in double-reeved operation out to full radius. The jib used for a 25 m radius can hoist 7.5 tonnes at the tip.

Frequency-controlled stepless drives are used on all motions and are 37 kW for the luffing gear and 45 kW for the hoist gear. All movements are monitored by the SPS control system used in all Liebherr luffing jib cranes. Sensors monitor and safeguard the hoisting height, load moment, jib inclination and slewing gear. Operation is by a radio remote control.

Simple hoisting equipment is used to dismantle the derrick crane so no additional crane is required. Liebherr supplies a package consisting of a high-lift truck, fork-lift truck with weighing equipment and a collapsible workshop crane. Maximum dimensions of individual parts are 2.20 x 1.10 x 1.10 m and

maximum component weight is 1,000 kg.

First applications for the 200 DR 5-10 were dismantling cranes on the 264 m Al Kazim Tower in Dubai and on what will soon be Europe's tallest building, the 354 m-tall Federation Tower in Moscow.



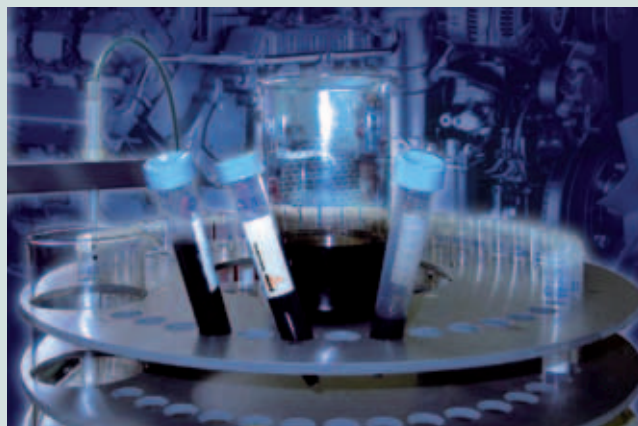
New Lube-A-Gear launched

Lube-A-Boom, which offers a line of wire rope lubricants, has launched Lube-A-Gear, for open gear applications. The company is web based and sells products through a distribution network. For more information visit www.lubeaboom.com



Engine oil diagnostic system

Deutz has introduced a new engine oil diagnostic system which is said to allow engine users to extend their standard oil change intervals by up to 100%, up to a maximum of 1,000 hours. Designed for use in preventative maintenance, warranty evidence and accident claims applications, the system analyses the used oil to diagnose the condition of both the lube oil and the engine.



High pressure pump from Enerpac

New from Enerpac is the ZA4, a high-pressure hydraulic air-driven pump designed for in-plant, industrial applications, and medium to large construction projects. The new ZA4 features the Z-Class high efficiency pump, a design known for its higher oil

flow and bypass pressure. Whether powering a cylinder or operating a tool, the ZA's industry-leading hydraulic flow at 10,000 psi is claimed to improve productivity in any application.

Reservoirs come in 1 to 10 gallon capacities. A sight gauge on

the 1 and 2 gallon models and a level gauge on the 2.5, 5 and 10 gallon reservoirs allow quick and easy oil level monitoring. Standard models are available to fit most applications and custom configurations are available.



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Mississippi ironman

Delynn Burkhalter is an industry icon, a respected business man who tends to enjoy everything he does, whether it is engineering a complicated lift or specialized hauling job or training for and competing in a triathlon. **ACT** reports

Based in Columbus, MS, Burkhalter Lifting, Rigging and Transport has a three-generation heritage in providing engineered rigging, heavy lifting and specialized transport services. Since it was founded in 1973, the company's vision has been to become the "premier" and "first choice" provider of technical rigging, lifting, and multimodal transport solutions for super-heavy and oversize cargoes, says Delynn Burkhalter, president of the company.

By combining time-proven methods with the latest in computer modeling and expert craftsmen, the company can exceed the expectations of its customers, Burkhalter says.

Safety is a top concern for Burkhalter and, therefore, at the company he runs. The company's safety culture has helped it earn a global reputation for excellence. "We have won the highest national honor for safety by the Associated Builders and Contractors for the past six years (2001-2006)," he says. "Safety and accountability is what we have become known for by customers from around the globe."

Having a global reputation and responding to calls from around the world, Burkhalter the company and Burkhalter the man are always on the go. A tough task for American Cranes & Transport was to actually catch up with Burkhalter, the man, for our Interview column. At last we were able to do so, and we are pleased to share his insight on a range of industry subjects.

What are the company's key markets?

We have the equipment and experience to take super-sized and heavy projects from the fabrication point to their anchor bolts. Burkhalter specializes in boundless moves in any direction with engineered heavy lifting, rigging, and specialized transport as a single-sourced solution to heavy fabricators, chemical

plants, nuclear and conventional power generation plants, windmill power generation, refineries, and manufacturers.

Do you envision expansion beyond your current scope of operation?

I envision Burkhalter remaining adaptable in its determination to remain competitive and profitable. Where our experience and innovation will take us is anyone's guess. However, we are confident that Burkhalter's reputation for performing work "One-Time Right" and maintaining our pristine safety record will continue to attract super-sized and heavy lifting, rigging, and transport business.

What is it about the business of lifting and transport that keeps you engaged?

One thing that comes to mind, perhaps, is the adventurous boy in me or the something-new-everyday aspect of our business. The most complex projects often begin as a riddle of how to best achieve the objective with the craftsmen, equipment, and technology interlaced with the possible need for innovation and our being solely responsible for valuable and occasionally irreplaceable cargoes.

The other thought I have when asked this question is I really enjoy seeing the excitement of our people while working together to solve problems.

At the start of the new year, how do you characterize the US economy as it relates to the construction sector in general and the lifting, rigging and heavy haul sector specifically?

Overall, we expect fewer construction projects to start in 2007, however, there is renewed interest in nuclear power generation in the US and Europe. There is also recent construction of nuclear reactors in Asia to meet rapidly



Delynn Burkhalter pursues excellence in all that he does

rising energy demands. Within this vertical market segment alone, construction revenues are expected to grow at near double-digit rates over the next decade. We understand this to be true after participating in a Nuclear Energy 2006 report published by Touch Briefings of the United Kingdom. Burkhalter produced a white paper for the report on the advantages of single-sourcing on super-sized and heavy multimodal transport projects.

The need for energy and a rise in energy prices will continue to be the catalyst for projects that will require the need for our services in the power industries, refineries and petrochemical business. Accordingly, the windmill business will continue to proliferate in areas that will support these projects.

What changes do you envision for the heavy and specialized transport business over the next decade?

It is difficult – if not impossible – to predict the future. However, as in all our lives, computers and space-age materials will continue to drive innovation in super-sized and heavy lifting, rigging, and transport. We expect products, services and technology that deliver better fuel economy, alternative fuels, and stronger and lighter materials used in the construction of cranes, hardware, trailers, and trucks. These will become bottom-line enhancing advantages to Burkhalter as the relationship between cost and savings becomes more defined.

How does Burkhalter distinguish itself from its competitors?

Burkhalter is well known for its experience, innovation, and safety record when responsible ➔

for lifting, rigging, and transporting super-sized and heavy cargoes. Every project is different, but customers repeatedly put more weight on safety when considering vendors.

Aside from the cost of delays caused by accidents, there is also future insurability, environmental, and brand damage issues that drive interest in a vendor's ability to perform without incident. Burkhalter prides itself on keeping its craftsmen and cargoes safe because it is also a valuable determining factor in gaining new business.

When the risks are high and the consequences for failure severe and costly, hire an experienced team that has a pristine safety record. Safety is a time-honored philosophy that must extend from the top down to be successful. This is due to its substantial up front costs and the hiring of safety professionals that are responsible for its adherence. Crews must be fully outfitted with the latest safety equipment and knowledgeable in its operation. Safety is fundamental to the success of any super-sized or heavy project and needs to be integrated into all planning, lifting, rigging, and transport.

I contend that the best way to ensure success and limit liabilities is to adopt a "One-Time Right" philosophy to create balance, synchronization, and flow over every lifting, logistical, rigging, and transport detail. Doing something right the first time must be the company's attitude toward quality and excellence.

To assure a high quality and safe solution, every maneuver must be procedurally designed, planned, and executed by a team of highly trained engineers, superintendents, and project managers in accordance with a company's quality system. This must include all aspects of heavy lifting, rigging, and multimodal transport.

What is the biggest challenge for Burkhalter doing business in today's business environment?

Maintaining its brand and reputation for excellence and safety is a never-ending focus of Burkhalter's business acumen. What makes its business environment most challenging is the complexity and scope of its projects that's further compounded by a shortage of quality craftsmen. We do our best to attract and employ the best craftsmen. They are the foundation of our business with or without technology and specialized equipment.

One of our customers recently wrote about their value in a note titled "Pride of the American Spirit." It described seven of our craftsmen who were given the task of installing three 280,000 pound GSU transformers onto bolts. They finished their objective without the use of a heavy lift crane that would have made the job easier. They were forced to use the time-tested means of hard physical labor and good, old fashioned ingenuity to get the job done. The heat and humidity were at times unbearable,

but that did not seem to matter. The customer wrote that he had the pleasure and honor to watch these men go about the task of moving these huge pieces of equipment into place. Not once did he hear a complaint, an argument, a swear word, a "this will never work." He just watched as each man completed his particular task automatically and the entire team seemed to work fluidly together. It reminded him of the "Pride of the American Spirit" to get the job done well and on time. He finished with a personal "thank you" for reminding him of what it is like to be an American.

Located in Mississippi, you saw firsthand the devastation caused by Hurricane Katrina and other hurricanes that hit the Gulf Coast in 2005. Has Burkhalter been involved in projects related to hurricane rebuilding?

Burkhalter offers very technical and specialized services that are not normally used for salvage. The best way to describe its core projects are those that involve critical and valuable, super-sized and heavy components that need lifting, rigging, and transport without incident.

In 2006, Burkhalter transported huge

pontoons slated for the world's largest ocean drilling platform of its kind. It was transported by tug boats to a dry-dock in Southern Mississippi for repairs after Katrina. The oil drilling platform was being retrofitted to make it more buoyant, seaworthy, and to increase the carrying weight of its superstructure.

Another storm-related project in 2006 involved a barge roll-on of a super-sized and heavy refinery module. The module was for a storm damaged oil refinery on the Gulf Coast.

However, the bulk of commercial and residential rebuilding is yet to come.

Based in the South in Columbus, MS, Burkhalter has developed a global reputation. Are there particular challenges to being based in a small town in Mississippi?

Our overhead is lower in Columbus and that affords us to grow a little faster and react to changing industry conditions. Actually, our corporate office in Columbus is centrally located to much of our work. More importantly, our customers fully understand that we go where the business is and remain competitive when we do. Besides Columbus, Burkhalter has sales

The need for energy and a rise in energy prices will continue to be the catalyst for projects that will require the need for our services in the power industries, refineries and petrochemical business.



At Burkhalter, projects are procedurally designed, planned, and executed by a team of engineers, superintendents, and project managers in accordance with the ISO 9001:2000 Quality System

offices in Birmingham, AL, Houston, TX, Mobile, AL and Nashville, TN. And we plan to establish yards in strategic areas in the near future. Having this flexibility to reach out and have local representation in high-growth areas has proved an excellent revenue generator and reputation builder.

What emerging industries do you envision for the crane, rigging and heavy haul sector?

As oil rose to more than \$70 per barrel, we learned of new projects in the nuclear, wind farm, and refinery industries that traditionally require super-sized and heavy lifting, rigging, and transport. In 2006, these projects came online and the need for our services became substantial and continues to grow. Burkhalter also is in the enviable position to be located in an economic development area that shows signs of continued growth and investment for some time to come. Burkhalter is actively engaged in transporting super-sized and heavy cargoes and using its large crane fleet to erect a modern steel mill less than 10 miles of its corporate headquarters.

Having a Burkhalter in your backyard has proven to offer its own economic impact when



Delynn Burkhalter uses exercise and keeping fit as his release. For the past few years, he has competed in triathlons, including Ironman Florida and Ironman Wisconsin. He is ranked in the top 10 of his age group in the USTA Southeastern Region

businesses consider relocation and building something so massive. Besides becoming the super-sized and heavy lifting, rigging, and transport vendor of choice, we have also solved several local logistical issues that save time and produce economical results for heavy industry. These breakthroughs are so important that it is likely that other companies will relocate and rely heavily upon Burkhalter capabilities and experience.

Let's talk about machines (cranes) and vehicles (trucks and trailers) owned by Burkhalter? Which, of the machines in your fleet, are most impressive to you?

We rely heavily on our Goldhofer fleet. This past weekend we used Goldhofer self-propelled hydraulic platform trailers to transport a super-sized and heavy cold box that measured approximately 170 feet long and weighing more than 550,000 pounds. Our Goldhofers were used from a deck barge roll-off to deliver to the customer site. Our engineers and crews have done some incredible work with this equipment and it continues to fascinate me every time I watch a multiple axle or double-wide move.

The other critical component of our super-sized and heavy lifting, rigging, and transport capabilities is Burkhalter's large fleet of modern crawler and hydraulic cranes. We have Liebherr,

Link-Belt, and Manitowoc. We have Grove and Liebherr in our fleet of all terrain cranes. The LR 1400 Liebherr crawlers we have still impress me with lifting capabilities, coupled with how quickly this model crane can be moved and assembled. Our crews have rigged up LR 1400s complete with superlift attachment in one long day. Of course, everything has to be loaded and delivered right, but they proved we can make it happen.

What do you do in your spare time, when you are not running things at Burkhalter?

I use exercise and keeping fit as my release in a highly competitive and occasionally stressful industry. For the past few years I have trained and competed in triathlons. On November 4, 2006, I completed my second Ironman competition at Ironman Florida. I started the race with about 2,200 others from all over the world in a 2.4 mile swim, 112 miles on the bike, a 26.2 mile run, and finished in 11 hours and 59 minutes. It was a great milestone for me because Ironman Wisconsin in 2005 took me 16 hours to finish.

I truly enjoy the personal challenges in training and competition, and have fortunately become competitive in regional events ending 2006 being ranked in the top 10 of my age group in the USTA Southeastern Region. **act**

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ATs: All that

Outside the US, all terrain cranes are a hot commodity and manufacturers continue to attract buyers with new and improved models. After a slow start in the US, the market has heated up for these versatile and powerful machines. **ACT reports**

In 2006, at least eight new all terrain cranes were introduced to the US market, with the 200 to 275 ton class crane apparently the most popular. While production departments continue to struggle to fill orders, engineering teams are working on new designs. For example, two 1,100 ton capacity machines are in development.

Historically a crane designed for the European market, ATs are now a mainstay in the fleets of most American crane rental companies. The critical questions of transport, reach, lift capabilities and ease of set-up have been answered for US crane owners, who are using these machines on projects that require precision, mobility and power. While ATs have not replaced any given type of crane in the market, they have earned their place among the typically more American-styled or American-produced cranes. Interestingly, every AT sold in the US is built in Europe, Japan or China.

Most everyone associated with marketing ATs in North America are optimistic about the market for these machines, and even if there is a slowdown in construction activity in the next year, the interest in these machines continues to grow.

"[Demand] has increased considerably," says

John Turner with Terex-Demag. "The flexibility of these type of machines, 'all-terrains,' to drive to and then to get to the job sites allows them to work in conditions worse than allowed for the typical truck crane style of machine. The increase of modular housing utilizes these cranes well. With the overall increase in construction as well as fleet upgrades and demand [is strong for] these units over truck cranes and crawlers. This market is strong for the remainder of this year as well as next year. Machine sales are good for 2007."

New machines abound

The biggest news in this product class is the number of new machines on the market and the outlook is good for more new models. The most recent ATs introduced into the North American market have been from Tadano



New York-based Bay Crane has developed a strong customer base for its Liebherr ATs

Grove

MODEL NAME	RATED CAPACITY (US TONS)	AXLES	COMMENT
GMK2035E	35 tons	2	Introduced at Intermat, April 2006
GMK3055	60 tons	3	
GMK4100B	100 tons	4	Introduced at Intermat, April 2006
GMK4115	115 tons	4	New cab design introduced at Intermat, April 2006
GMK5120B	120 tons	5	
GMK5165B	165 tons	5	
GMK5275	275 tons	5	Introduced at Intermat, April 2006
GMK6250L	250 tons	6	
GMK6350	350 tons	6	
GMK7550	550 tons	7	

The Terex-Demag AC 140 is among the manufacturer's strongest selling ATs in the US. The company describes it as 'the workhorse'



Faun, which produces ATs for Tadano America and Link-Belt Construction Equipment.

In October 2006, Link-Belt unveiled its new 250 ton (220 metric ton) ATC-3250. This new model has all the attributes of the Link-Belt ATC-3200 but with more power and strength. The ATC-3250 brings the Link-Belt AT offering to three models, ranging in capacity from 130 to 250 tons. Link-Belt has chosen to work in the higher capacity realm of the AT market, making sure not to encroach on its burgeoning RT and truck crane market.

The ATC-3250 has a 43.3–223.1 foot (13.2–68.0 meter), full power, seven-section, latching boom. The sections extend independently

and more



joysticks, pedals, and main console, tilts independently of the cab. The controls and instrumentation are ergonomically designed with outrigger controls in the operator's cab. Two electric-over-hydraulic, dual-axis levers with fine metering capability control the winches, boom hoist, and swing. Heating and air conditioning, a cabin pre-heater with a pre-settable timer, AM/FM stereo with CD player, power front window, floodlights, and an integrated cab walk are standard.

Axial piston, constant displacement motors drive the main (front) and auxiliary (rear) winches, which have final layer and third wrap indicators. The main and auxiliary grooved hoist drums contain 1,148 feet (350 m) of 0.83 inch (21 mm) wire rope.

Link-Belt's new ATC-3250 was introduced at the company's CraneFest event in October 2006. The company says interest in the machine has exceeded expectation

by means of one double acting, single-stage hydraulic cylinder. Four pinned positions of 0%, 46%, 92%, and 100% on each section provide 38 extend combinations for good capacity when varying the extensions of the telescoping sections.

A 17.7 – 43.3-foot (5.4 – 13.2 m) two-piece, lattice fly and four lattice fly extensions are available as options for additional reach. Each of the extensions is 19.7 feet (6.0 m) and extends the fly length to 63 feet (19.2 m), 82.7 feet (25.2 m), 102.4 feet (31.2 m), and 122.1 feet (37.2 m). All of these attachment combinations have offset positions of 0, 20, and 40 degrees. The 43.3 foot (13.2 m) attachment with all four lattice extensions used in combination with the main boom reaches a maximum tip height of 358 feet (109.1 m).

The ATC-3250 features the LoadCom load radius compensating system, which compensates for boom deflection under load. The LoadCom feature assists the operator in eliminating the guess work, so that as a load lifts, the LoadCom system automatically compensates for any increase in radius, as a result of boom deflection, by activating the boom hoist.

With acoustical insulation, the galvaneal cab has a tilting capsule for high boom angle lifting. This capsule, consisting of the seat,

Maximum line pull for each winch is 24,504 pounds (11,115 kg) and the maximum line speed is 508 ft/min (154.7 m/min).

The ATC-3250 has a 530 horsepower (390 kW) Mercedes-Benz engine and a ZF AS-Tronic automated 16-speed manual transmission that delivers a top speed of 52.8 mph (85.0 km/h). With five axles, the

ATC-3250 has a 10x8x8 drive/steer configuration. The machine can handle grades of 61% and a third-axle lift system provides more inter-bridge spacing to comply with certain transportation requirements found throughout North America.

The primary steering varies with the speed of the crane: below 15.5 mph (25 km/h), axles 1, 2, 4, and 5 steer in combination. As the speed increases, axle 4 and then axle 5 sequentially return to center until axles 1 and 2 become the only two axles steered. There are also five additional steering modes, including independent front, combination, crab, independent rear, and a temporary crab steering mode. The temporary crab mode allows the crane to drive away from an obstruction like a curb or a wall.

Best sellers

Terex-Demag has made a good impression on the North American market, selling one of the best known AT product lines. The five-axle, 170 ton capacity AC 140 is among the best selling ATs in the US, according to sources with Terex in the US.

Early in 2006 Terex-Demag upgraded its AC 55 to the AC 55-1. Improvements include a new boom telescoping system that reduces the axle loads



Liebherr

MODEL NAME	RATED CAPACITY (US TONS)	AXLES	COMMENT
LTM 1030-2.1	40 tons	2	Over 1,000 cranes built since development
LTM 1040-2.1	45 tons	2	Introduced in 2005
LTM 1045-3.1	55 tons	3	
LTM 1055-3.1	65 tons	3	
LTM 1070-4.1	80 tons	4	
LTM 1090-4.1	110 tons	4	
LTM 1095-5.1	115 tons	5	New standard for boom length in this class
LTM 1100-4.1	120 tons	4	
LTM 1100-5.2	120 tons	5	
LTM 1130-5.1	155 tons	5	Introduced June 2006
LTM 1160-5.1	180 tons	5	
LTM 1200-5.1	220 tons	5	
LTM 1220-5.2	265 tons	5	Best selling large 5 axle Liebherr in USA
LTM 1250-6.1	300 tons	6	
LTM 1300-6.1	365 tons	6	
LTM 1400-7.1	500 tons	7	California legal
LTM 1500-8.1	600 tons	8	



and enhances lifting capacity. With the boom telescoped to 131 feet (40 m) and set at a 33 foot (10 m) radius, the increase in lifting capacity over the outgoing model is more than 20%.

Telescoping and setup times of the AC 55-1's fully hydraulic boom are half of that of a pinned boom, and the boom can be telescoped under load, the manufacturer says. A further benefit is a lower weight that reduces the front axle load – the crane will run at 13.2 tons (12 metric tons) per axle, with 5.7 tons (5.15 tonnes) of counterweight, 49.2 feet (15 m) main boom extension and hook blocks, according to the company.

Lifting capacity is increased the most (by between 10 and 20%) on longer combination lengths at medium operating radii. A new option is a 26.2 or 49.2 feet (8 or 15 m) hydraulically offsettable boom extension that can be controlled from the operator cab under full load. This option is also available on the AC 35, AC 35L and AC 55L.

At a customer event at its Zweibrücken factory in Germany in July 2006, Terex-Demag announced it is developing a 1,000 metric tonne (1,100 US ton) capacity wheeled mobile telescopic crane. With a maximum load moment of around 3,000 tonne-metres, the nine-axle AC 1000/9 will be the world's



Bigge Crane & Rigging uses its Terex-Demag AC 500 to lift containers at a plant in California

Grove's new cab design is available on its three newest AT models



Grove's new AT cab has garnered much attention since it was introduced at the Intermat exhibition in Paris, April 2006. The new cab appeared first on the GMK4115, a new crane which also was launched at Intermat.

"This new carrier cab has been designed around three defining principles of quality

– functional performance, ergonomic excellence, and safety," says Gerhard Kaupert, director of engineering for Grove's AT line. "We have listened diligently to what our customers want and the result is an industry-leading cab with an innovative design, both inside and out. The high-quality specifications for this cab are unrivalled in the market and its design reflects the fact that Grove remains at the forefront of the mobile crane industry."

Features on the cab include a panoramic windshield to give all-round visibility, and wide rear-view heated mirrors with curved shaping to substantially increase visibility to the side and rear. The new cab also makes use of Grove's ECOS electronic control system. Previous cabs featured a standard central control panel to adjust carrier settings, but the new cab allows the suspension, differentials, steering, and level to be adjusted using the state-of-the-art ECOS panel. In addition, the ECOS panel allows the operator to monitor conditions such as oil and water temperature, engine speed, and fuel and battery levels, enabling them to immediately react to any change in circumstances.

A Tempomat control unit lets the operator change between brake and acceleration functions on the same pedal simply by switching a lever next to the steering wheel. Ergonomically designed air-suspension pivoting seats have been fitted for optimum comfort while a radio/CD player and a programmable adjustable heating and air conditioning system are also offered. Improved cab soundproofing comes courtesy of new plastic cladding, while cab access has been optimized for greater convenience.

Link-Belt

MODEL NAME	RATED CAPACITY (US TONS)	AXLES	COMMENT
ATC-3130 II	130 tons	5	
ATC-3200	200 tons	5	
ATC-3250	250 tons	5	Introduced October 2006

strongest boom-on wheeled telescopic crane, according to the manufacturer. The machine will travel with its 164 foot (50 m) boom and front outrigger at 13.2 tons (12 tonnes) per axle. Minimum and maximum outrigger base spreads will be 32.8 by 32.8 feet (10 by 10 m) and 44.3 by 44.3 feet (13.5 x 13.5 m). The maximum luffing fly jib will be 413.4 feet (126 m). The AC 1000/9 is scheduled for launch in 2008 and a boom-off version is under consideration.

Also under development at Terex-Demag is

the AC 100/4, a four-axle all terrain mobile, which will likely be first seen in iron at April's Bauma exhibition in Germany. The new crane has a five section 164 foot (50 m) pinned boom for a strong lifting chart. At a 32.8 foot (10 m) radius with the boom fully extended, the preliminary chart shows it will lift 13.2 tons (12 tonnes). Maximum boom and jib combination will be 226.4 feet (69 m). The carrier is 8.4 feet (2.55 m) wide and 33.8 feet (10.3 m) long. Overall length, including the boom overhang is 43 feet (13.1 m).

Also expected in iron at Bauma in Munich is the 1,100 ton capacity Liebherr LTM 11000-9.1, under development at the Liebherr-Werk Ehingen factory in Germany. It will have two telescopic boom options – along one (as the engineering design develops it is getting longer than the initially projected 60 m) and a short one for use with luffing jib.

While it produces among the largest ranges of ATs in the world, Liebherr tends to focus

Tadano

MODEL NAME	RATED CAPACITY (US TONS)	AXLES	COMMENT
ATF45-3	50 tons	3	
ATF65G-4	75 tons	4	Introduced in 2006
ATF80-4	100 tons	4	
ATF110G-5	130 tons	5	
ATF160G-5	200 tons	5	
ATF220G-5	250 tons	5	Introduced December 2006



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Rated at a capacity of 550 tons, the Grove GMK7550 is the largest AT in the company's product range. The crane is the newest AT in the fleet of Marco Crane, in Phoenix, AZ

on the higher capacity machines – 180 through 600 ton classes – in North America. The cranes that have developed a customer base in the US include the LTM 1160-5.1, LTM 1200-5.1, LTM 1220-5.2, LTM 1250-6.1, LTM 1300-6.1, LTM 1400-7.1 and LTM 1500-8.1. According to sources at Liebherr, the 265 ton LTM 1220-5.2 is the company's best selling five-axle model while the 500 ton capacity LTM 1400-7.1 is the most sought after Liebherr AT.

Grove is aggressive

Grove was the most aggressive in AT product introductions in 2006 bringing four new models to the market. Intermat in Paris was the stage for four new ATs, the 35 ton capacity GMK2035E, the 100 ton capacity GMK4100B, the 115 ton GMK4115 and the 275 ton GMK5275.

Largest of these new models is the GMK5275, which is known as the GMK5220 outside the US. This five-axle crane has a capacity rating of 275 tons (220 tonnes) and a 223 foot (68 m) main boom. The crane has one of the strongest lifting charts of five-axle cranes on the market with a 15.4 ton (14 tonne) capacity on its fully extended boom.

The higher capacity for this crane is the result of the newly enhanced MegaForm boom profile. The crane also has a stronger but lighter carrier and a new hydraulic electronic steering system. The "steer by wire" system is said to reduce tire wear and improve drivability. The crane carrier has a 420 kW Mercedes engine and Allison transmission.

The GMK5275 has a 39 to 69 foot (12 to 21 m) bi-fold luffing swingaway, which can accommodate up to two 26.2 foot (8 m) inserts to provide a maximum tip height of 354.3 feet (108 m). The jib can be hydraulically offset between 5 and 40 degrees using controls in the crane cab.

Also new from Grove this year is the GMK4100B, which is known as the

GMK4080-1 outside the US. With a 100 ton (80 tonne) rating, the GMK4100B has a six-section 167 foot (51 m) main boom. It lifts 7.3 tons (6.6 tonnes) at its maximum boom point of 167 feet (51 m) and out to a radius of 65.6 feet (20 m).

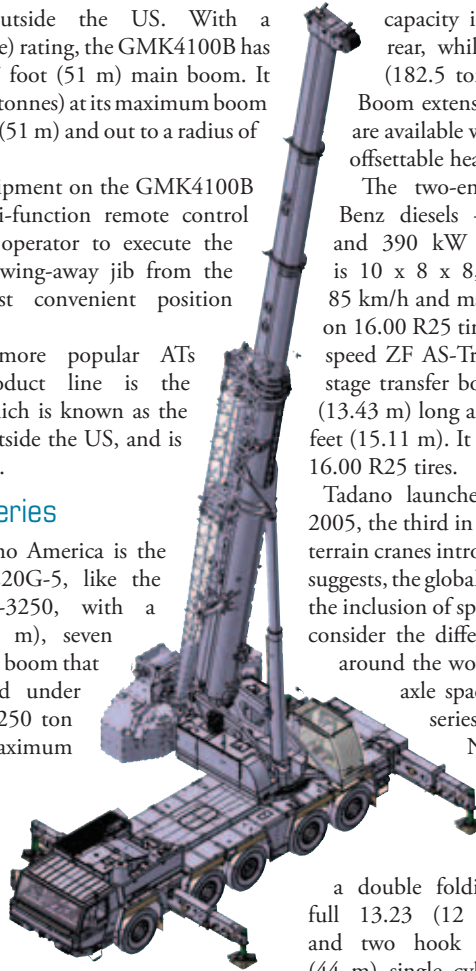
Additional equipment on the GMK4100B includes a multi-function remote control that allows the operator to execute the outriggers and swing-away jib from the safest and most convenient position outside the cab.

Among the more popular ATs in Grove's product line is the GMK6250L, which is known as the GMK6220-L outside the US, and is rated at 250 tons.

Tadano 'G' series

New from Tadano America is the five-axle ATF 220G-5, like the Link-Belt ATC-3250, with a 223.1 foot (68 m), seven section telescopic boom that can be extended under partial load. Its 250 ton (220 tonne) maximum

Tadano has begun marketing its 250 ton capacity ATF220G-5 in the US



capacity is at 2.5 m radius over the rear, while at 3.0 m it is 201 tons (182.5 tonnes) through 360 degrees.

Boom extensions to 122.5 feet (37.2 m) are available with an integral 17.7 (5.4 m) offsettable heavy duty jib.

The two-engine crane has Mercedes Benz diesels – 150 kW in the upper and 390 kW in the carrier. Drive/steer is 10 x 8 x 8, maximum travel speed is 85 km/h and maximum gradeability is 61% on 16.00 R25 tires. The transmission is a 16-speed ZF AS-Tronic with interarder and two stage transfer box. The carrier is 44.06 feet (13.43 m) long and the overall length is 49.7 feet (15.11 m). It is 9.84 feet (3.0 m) wide on 16.00 R25 tires.

Tadano launched its ATF 65G-4 in late 2005, the third in its "G" or global series of all terrain cranes introduced in 2004. As the name suggests, the global element of the design means the inclusion of specifications and features that consider the different regulations of markets around the world, including carrier width, axle spacing and overhangs. The G series has been well received in North America.

The four axle ATF 65-G-4 comes within the 13.23 (12 tonne) per axle limit with a double folding jib, 8 x 6 drive, the full 13.23 (12 tonne) of counterweight and two hook blocks. The 144.36 foot (44 m) single cylinder boom is lighter and has a new profile for safer lifts and a stronger chart. Standard drive/steer is 8 x 6 while 8 x 8 is an option. Also fitted is the automatic electro-hydraulic steering system used on the other G-series models, the ATF 45-3 and ATF 60-3 for optimal turning radii and maneuverability. All axles are steered, offering crab on site, and the rear axles three and four can be manually steered independently of the two front axles. On the road the first and second axles are steered, assisted by the fourth axle, which is electronically steered at up to 15 mph (25 km/h) in line with road regulations.

act

Terex Demag

MODEL NAME	RATED CAPACITY (US TONS)	AXLES	COMMENT
AC 40 City	45 tons	3	
AC 50-1	55 tons	3	
AC 55 City	65 tons	3	Introduced at Interat, April 2006
AC 70 City	80 tons	4	
AC 80-2	100 tons	4	
AC 140	170 tons	5	
AC 160-2	200 tons	5	
AC 200-1	240 tons	5	
AC 250-1	300 tons	6	
AC 350	400 tons	6	
AC 500-2	600 tons	8	
AC 700	800 tons	9	

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A Link-Belt 218HSL is the centrepiece of cast-in-place parking garage project in downtown Harrisburg, PA.

Photojournalists **Dan** and **Gini McKain** report

Pouring it on

In the age of prefabrication and pre-cast concrete lift-panel buildings, a new 12-story, 755-vehicle parking garage under construction in downtown Harrisburg, PA is a bit of an anomaly. Known as the South and Spring Street Parking Garage, the project is primarily a cast-in-place structure with the foundation and lower floor construction relying on pumped concrete placement. The columns and horizontal box beams on the upper floors are all being placed using the tried-and-proven crane and bucket technology.

The project is difficult for many reasons, not the least of those being a severe limitation of space, with no room for on-site storage – not even a lay-down area to shake out materials. From the beginning, the space limitations on the site have been the primary challenge, preventing the use, delivery and storage of pre-cast concrete panels. The requirement for the type of crane needed was brought about by the uniqueness of the type of structure being built and the space problems.

Builder and construction manager of record is The Quandel Group, and the general contractor is Pyramid Construction. Performance Crane Services, a division of the Quandel Group, has handled the crane rental.

Ned Gilger, project superintendent for Performance Crane Services, says, “Traffic flow, including twice-a-day rush hours precludes our bringing in a series of trailers with pre-cast concrete panels. There simply is no space to park them, even on a temporary basis. And just bringing in ready-mix concrete trucks, one at a time to the concrete pump, is a logistical nightmare.”

The consensus has been that if a contractor had to design a crane specifically for the job, then Link-Belt has done so, says Gilger. The 218HSL, in the luffer configuration, is a compact, maneuverable machine with a small footprint, stability, reach and lift. To cope with space limitations and crane capacity, the 218HSL has 84,940 pounds of counterweight, including 11,100 pounds of sidetrack counterweight on each track.

Some 10,000 cubic yards of cast-in-place concrete will be required for the overall project. The majority of this is a 5,000 psi mix with a seven-day cure time. The exception is that the post tensioning for all the floors must be completed within the first 96 hours of the pour. Concrete is being furnished by Pennsylvania Supply of Harrisburg, and is being trucked to the site on a carefully scheduled timeframe to prevent a traffic jam in the downtown area.



Outfitted with a 130 foot main boom and a 140 foot luffing jib, the Link-Belt 218HSL uses a 1 cubic yard GarBro bucket for the bucket pours. The crane is sitting on mats to level the surface where it travels.

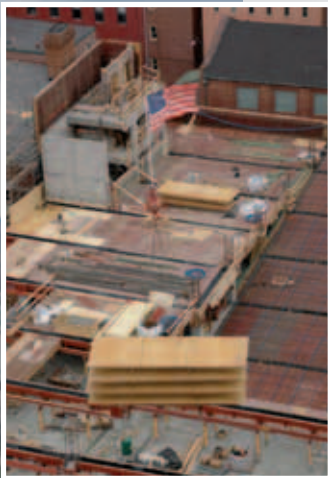
“It was imperative that the crane have a level surface for the limited area of travel available to it,” says Gary Snyder, construction manager on the site. “For this we opted to bring in special three inch thick, lightweight Dura Base composite mats manufactured by The Loma Co., of Carencro, LA, rather than use the heavier, more massive, conventional timber mats. We also added a layer of stone dust under the mats and the results have worked well.”

“The crane is outfitted in the luffer configuration because of the garage’s unique placement,” says Jim Kellum, project superintendent for Pyramid Construction. “It is essentially an ‘infill’ structure being built on a vacant space surrounded by other high-rise structures. Space limitations ruled out the use of a larger conventional crane or a fixed-mount tower crane.”

Fifteen foot wide alleys are adjacent to the new building, which is in the shadow of the



In the shadow of the capitol building, the Link-Belt 218HSL works on a parking garage in downtown Harrisburg, PA. On rent from I.B. Dickinson & Sons, the crane is working in a very tight space in an alley way between buildings



On the project, the 218HSL is also used to “fly” the plywood forms between floors before and after the concrete is cured and the forms are stripped by the carpenters. The largest are 56 by four feet square box beam forms weighing 7,600 pounds each. The heaviest single pick (lift), at more than 10,000 pounds, will be the pre-cast concrete stair sections

boom. We have already encountered this situation, and that is when you know for sure that you have a skilled operator. When he can safely lower the mast and boom without damage when a high wind suddenly whips up, as our operator Joe Mihalik did, it’s a very comforting feeling.”

Mihalik says that such technology on cranes requires a new type of operator. “While it is true that we still have the older printed capacity load charts, the computers have significantly reduced our absolute dependence on them,” he says. “The new versions simply will not let you override them, assuming that you were foolish enough even to try. These are second- and third-generation computers, much advanced and far more dependable than the first computers that appeared in cranes. Don’t misunderstand me; we still refer to the load charts, especially in the planning stages. But we are in a totally different world today and Link-Belt has been at the forefront of this.”

On the project the 218HSL is also used to “fly” the plywood forms between floors before and after the concrete is cured and the forms are stripped by the carpenters. The largest are 56 by four feet square box beam forms weighing 7,600 pounds each. The heaviest single pick (lift), at more than 10,000 pounds,

state capitol building. The parking structure is also situated over Spring Street, which is a garage entrance and exit.

Beyond the site limitations, weather has played a role in this project. The job began in April of last year and completion is scheduled for mid summer 2007. The schedule only allows for a few snow days, says Snyder. “Since we are doing the bulk of our construction during the winter months, ambient temperature is always a consideration and with cast-in-place concrete pours, winter cures will be a problem,” he says. “We’ll have to tent the pour and heat it during the process. Once the pour is finished, we will employ a chemical cure to complete the job.”

Due to the crane’s configuration, cold windshield is another significant consideration. Strong gusty winter winds whip through the alleys like a wind tunnel, Snyder says. “We can only have the boom in the air when the winds are less than 25 miles an hour,” he explains. “To cope with this limitation, we have installed a Hirschman PRS-80EZ wireless anemometer wind speed sensor with an in-cab readout. The transmitter unit is mounted on the knuckle between the vertical mast and the luffer boom

High winds are an element to consider on this job. To cope with this limitation the crane has installed a Hirschman PRS-80EZ wireless anemometer wind speed sensor with an in-cab readout. The transmitter unit is mounted on the knuckle between the vertical mast and the luffer boom



Cold weather can be a problem on jobs where concrete is being poured due to curing times required. On this job, the contractor anticipates having to tent the pour and heat it during the process. Once the pour is finished, they will employ a chemical cure to complete the job

will be the pre-cast concrete stair sections.

During one major lift of four 20 by eight foot plywood panel forms with 12 inch wood braces, the 218HSL was lifting about 5,000 pounds at that time. The tower boom was set at 80 degrees with the luffer at 45 degrees. It set the forms at a 130 foot radius at the opposite end of the garage from the crane.

The crane is on rent from I. B. Dickinson & Sons based in Reading, PA. Dickinson is also accountable for performing the factory specified routine hourly service on the crane.

Serving Central and Eastern Pennsylvania, Dickinson was founded by Irvin Dickinson 58 years ago. Today, the company is run by his son, Don Dickinson, who’s son Jeremy Dickinson is also involved in the business, making it a three-generation family-run company.

“The smallest rental machine that we have in our inventory is a six ton boom truck and our largest is a 300 ton capacity hydraulic crane,” says Don Dickinson.

The way this 218 HSL crane is set up gives the contractor both the vertical height and horizontal reach that is needed, Don Dickinson says. “It acts like a flat top tower crane without the logistical problems of putting down a base foundation which would encounter a whole mess of underground utility lines,” he explains. “Verizon Communications has a tall tower in an adjacent building which also might interfere with a tower crane.”

“When the determination was made to go with this crane, the availability of the luffing jib was a major consideration in the choice,” says Snyder. “It would be very difficult to do this job as easily any other way. The 218HSL Link-Belt in this luffer configuration is proving to be just what we needed.”

act

Pre-cast puzzle

Using its new Kobelco CK2500-II crawler crane, Van Delden Company is erecting four concrete parking garages attached to a multi-use development in Austin, TX. **ACT** reports

Some 760 pieces of pre-cast concrete – including columns, beams, walls, spandrels, stairs, pilasters and double tees – are being used in the construction of the first of four parking garages being erected by San Antonio-based Van Delden Co. With six cranes in its fleet, Van Delden is a family-owned business that specializes in pre-cast concrete erection.

“On the scale of jobs, this is a large-scale job,” says Eric Van Delden, vice president of the company his grandfather, Frank Van Delden, started in the ‘30s after immigrating to the US from Germany. “The best part of this job is our new crane.”

Van Delden is referring to his company’s new Kobelco CK2500-II delivered last summer and which is the centerpiece of the project. The crane is ideally suited for lifting and strategically placing the various pieces of pre-cast components, Van Delden says. The machine is rigged with 250 feet of main boom and with an auxiliary boom point for the whip line.

“Weights on the pre-cast components on this first garage vary from 20,000 to 62,000 pounds,” says Van Delden. “What is unusual about this job is that the tees are pre-topped and the finished floor is already cast. We follow a sequence; it’s like a giant Legos job. Once a floor is set in place, crews come in to grout and



San Antonio-based Van Delden Co. is using a new Kobelco CK2500-II crawler to erect four pre-cast concrete parking garages in Austin, TX



Van Delden took delivery of its new Kobelco CK2500-II crawler in July 2006



The CK2500-II has an all-welded, high-tensile strength steel one-piece carbody. With a maximum lifting capacity of 250 tons, the machine has a maximum boom length of 300 feet and an optional 100 foot jib



caulk the joints and that floor is finished.”

The pre-cast components are trucked to the site and arranged in the order that they will be lifted and placed.

The job has progressed efficiently, says Van Delden, who is enamored with the big yellow crawler. “This is our first Kobelco and it’s wonderful. It is night and day different from any other crane out there – ultimate precision and control. It’s like a computer compared to a typewriter.”

Van Delden is a subcontractor on the Austin project for Addison, TX-based contractor Opus West Construction Corp. With a price tag of \$200 million, the entire project consists of a one-million-square-foot shopping mall complex that includes retail stores, restaurants, residential apartments and four parking garages.

Attached to a shopping mall, the first parking garage requires the lifting and placement of some 760 pieces of pre-cast components, including columns, beams, walls, tees and stairs

Completion for the shopping development is set for November 2007.

Started in 1935 in San Antonio by former bricklayer Frank Van Delden, the company is still at its original site, says Ted Van Delden, president of the company and Eric Van Delden’s father. “My father did all kinds of contracting work and then my brothers and I took over and changed to steel erection,” he says. “In 1975, we started doing pre-cast erection and that’s now our specialty. Now, with Eric and my other son Ted in the business, we are continuing as a third-generation company.” **act**

Tilt-Up

Among the most popular building construction methods in the US for shopping centers, large-scale “big box” retail stores and even multi-story office buildings is tilt-up concrete. For 30 years, tilt-up has been a leading construction method of choice for reasons that include strength and speed of installation.

Tilt-up panels offer the strength of reinforced concrete with rapid erection, allowing much shorter building times.

On a new auto dealership in Sheffield, OH, Cleveland-based All Erection Crane & Rigging provided a 240 ton capacity Grove GMK5240 to set tilt-up panels that weighed between 50,000 and 80,000 plus pounds. The building’s shell was erected in just three days, with the crane having to change locations on the jobsite just four times.

Concrete wall panels are cast horizontally on the floor slab, and after proper curing, are tilted up into place using the crane. Tilt-up concrete is conducive to multi-story construction and is also economically viable for larger buildings.



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After transport from the railcar on a 15-line Goldhofer transport system, the 528,000 pound stator was removed from the trailer using Barnhart's 450 ton capacity self-propelled gantry system. A 500 ton capacity hoist was erected above the gantry system to lift the component and set it on the gantry runway



Lift, haul and install

Using its Modular Lift Tower System in a stator frame configuration, Barnhart Crane & Rigging installed components of a steam turbine generator.

ACT reports



Once on the gantry runway, the stator was moved down the length of the runway to the platform on which it would be installed. Barnhart's modular lift tower system was chosen for this awkward installation

Lifting, hauling and installing oversized and extremely heavy objects can make for some challenging times, especially when a tight schedule is in place. This was the case recently for Barnhart Crane & Rigging in its efforts to set various heavy and awkward components of a steam turbine generator (STG) at a power generation plant near Auburn, AL.

Due to an accelerated schedule, Barnhart was given two days notice to mobilize to the site. The first unit was the stator, weighing 528,000 pounds. Barnhart picked up the unit at a rail siding station about five miles from the plant.

The challenge was the

ambitious schedule. The rail line that operated the spur allotted 60 hours from the time of railcar delivery to the complete demobilization from the site. If Barnhart was unable to complete its work on the rail site in 60 hours, the customer, which held a temporary lease on the spur, would have faced substantial daily penalties from the rail line.

To make matters more complicated, Barnhart was given the constraint of working only one 10-hour shift per day. The railcar arrived on a Monday at 5 p.m., meaning that work needed to be finished by 5 a.m. Thursday, requiring Barnhart's crews to complete the assembly of the equipment, remove the stator from the railcar, reload and remove the tooling in just two days.

The stator was lifted from the railcar using a 450 ton J&R gantry system and was transported to the jobsite on a 15-line Goldhofer transport system.

At the plant the STG components were to be set atop a 40 foot concrete platform. Using its Modular Lift Tower (MLT) in



a stator frame configuration on one end of the platform, Barnhart crews installed a gantry runway over the 100 foot platform, as well as two 60 foot long gantry track beams from the pedestal to the MLT legs.

A 450 ton self-propelled gantry system was installed on the gantry track, and then Barnhart's 500 ton capacity hoist was erected above the gantry system.

"The design of the 500 ton hoist, combined with the gantry, gave the ability not only to lift and travel down the length of the pier, but for side-to-side movement as well," explains John Bullwinkle, project manager. "This configuration sped up the layout and alignment process when the equipment was set."

ACT



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Heading into the New Year the SC&RA embraces
a strategy that keys on five performance areas

Solid plan

As we enter 2007, SC&RA remains confident of the association's ability to anticipate developments in the industry it serves and to remain ready to take advantage of new opportunities as they arise. Largely responsible for our success in staying ahead of the curve has been the Strategic Planning Committee.

This panel of industry leaders consists of the association's chair; president; vice president; treasurer; assistant treasurer; past chair; the chair and vice chair of the Crane & Rigging, Transportation, Allied Industries and Ladies Groups; and the SC&R Foundation president. Together, they are responsible for the association's multiyear plans.

In September 2005 this group met to review progress against the 2003-2005 Strategic Plan and to develop a new plan for 2006-2008. The process identified changes in the membership, environment, capabilities, exposures and opportunities, as well as regulations, cyclical forces and assumptions about the future world in which the Strategic Plan will be executed.

Among the five key performance areas covered by the strategic plan was Continuing Product and Service Improvement. One of the goals in that performance area was to enhance the existing property and casualty insurance program.

Since then, our insurance program has indeed improved. For example, we worked with NBIS, the exclusive administrator of SC&RA's insurance program, to introduce a captive program for workers' comp, auto liability and auto physical damage coverage. These new lines of coverage for qualifying members will not adversely affect the collective loss experience and/or rates in the existing SC&RA member program.

SC&RA continued to enjoy success with its Crane-Rigging Specialized Insurance program, which included coverages for general liability, property/inland marine, commercial auto, contractors' pollution liability and umbrella liability. This year, we will collaborate with NBIS on other new programs that should appeal to many member companies.

Another key performance area in the strategic plan involved Establishing a More Effective International Network. SC&RA members increasingly need to move items across international borders, and many member firms are already headquartered outside the United States. "The strategic emphasis here

is helping members both inside and outside the US to develop a more effective network of partner firms in other parts of the world," according to the Strategic Plan.

As part of this effort, I traveled in November with SC&RA president Doug Williams and KHL publisher James King to Shanghai to participate in Bauma China, the leading exhibition for construction machinery in Asia. We shared booth space with KHL, which publishes this magazine and SC&RA's other official magazine, *International Cranes and Specialized Transport*. We believe our presence at this important event will help us expand our membership in Asia.

Immediately afterward, we traveled to meet representatives of the Crane Rental Association/Council of Australia in Sydney and the Heavy Haulage Association of New Zealand in Wellington. Both groups were extremely accommodating and arranged multiple meetings with prospective member companies, as well as with our existing members.

We plan to expand our international outreach by participating in Bauma Germany in Munich, April 23-28. We also will continue to explore mutually beneficial opportunities with the European Association of Heavy Haulage, Transport and Mobile Cranes.

Also under consideration is the re-establishment of our international forum in 2008. This would enable our American members to visit member companies overseas to expand our business network, exchange ideas and foster SC&RA international growth.

In addition, we are moving forward on other key performance areas in the 2006-2008 Strategic Plan: Building on the Financial Strengths of the Association, Recruiting People to the Industry, and Preparing for Recovery from Local or National Emergencies.

It's a strong plan, developed by our members for our members to keep the Association moving forward.

Joel Dandrea, executive vice president

For 20 years, the SC&RA's Specialized Transportation Symposium has provided the forum for discussing and resolving difficult transportation issues. **Terry White** reports

TERRY WHITE is president of T&S White Company, a writing, editing and graphic design firm in Burke, Virginia. He has written for organizations that include: Brick Institute of America; Finishing Contractors Association; Ironworker-Management Progressive Action Cooperative Trust; National Erectors Association; and US Chamber of Commerce. His relationship with SC&RA dates back to 1991.



Transport forum



At the symposium regional permit officials examine the impact on permit processing and the infrastructure as a result of the increased volume of superloads, the progress toward uniformity, the affect of automation on operations, and the evolution of other critical issues in each region

SC&RA will celebrate the 20th Anniversary of the annual Specialized Transportation Symposium, March 7 through 9, at The Disney Coronado Springs Resort, in Orlando, FL. The event will continue a dialogue that began in Dallas in March 1987. Although the name eventually changed from the original Oversize/Overweight Transportation Symposium, the underlying philosophy of the

event has remained constant for two decades.

"The symposium provides a unique opportunity for state and federal transportation officials to meet with representatives of specialized carriers, pilot-car companies and other industry members to discuss and resolve difficult transportation issues," said Doug Ball, SC&RA vice president, transportation. "As a result of these symposiums, there has been a tremendous amount of success in overcoming numerous obstacles."

Ball pointed out that the progress towards uniformity in permitting processes has resulted in increased efficiency that has saved money for both industry and government. "We're also always looking at how uniform procedures can enhance safety," he says.

The interaction between industry and transportation officials perhaps will be most obvious on the panels featured during two breakout sessions on Friday March 9:

- ➔ **Move Toward Uniformity** – Goal or Myth? will cover such areas as size and weight allowances, equipment configurations, permit procedures, pilot car requirements, certification and reciprocity, and the impact of specific commodity tolerance allowance from the perspective of SC&RA member companies and state officials.
- ➔ **State and Industry Problem Solving** will provide a forum for industry and state officials to examine prospects of

“Originally known as the Oversize/Overweight Transportation Symposium, the underlying philosophy of the SC&RA Specialized Transportation Symposium has remained constant for two decades”

standardizing permit issuing software systems, instituting uniform information requirements, and developing mutually beneficial solutions during a time of rising over-dimensional freight volumes and state fiscal woes.

Attendees also will gain the government's perspective during a session in which regional permit officials examine the impact on permit processing and the infrastructure as a result of the increased volume of superloads, the progress toward uniformity, the affect of automation on operations, and the evolution of other critical issues in each region. Appearing will be a representative from each of the American Association of State Highway and Transportation Officials (AASHTO) regions: West (WASHTO), Mississippi Valley (MSVSHTO), Northeast (NASHTO), and South (SASHTO).

For a national overview, John Hill, administrator of the Federal Motor Carriers Safety Administration (FMCSA), is expected to discuss strategic plans to improve safety through regulations while balancing motor carrier efficiency. In addition, he will examine FMCSA partnerships with state and local enforcement agencies, the motor carrier industry and safety groups. Also speaking on federal regulatory issues will be Larry Minor, FMCSA director of the Office of Bus and Truck Standards and Operations.

Timothy Lynch, American Trucking Associations senior vice president of Federation Relations and Strategic Planning, will explore the 2009 Highway Reauthorization and its impact on state departments of transportation and industry, the realities of transportation needs necessary to meet the nation's growing demands, and the reality of a decaying infrastructure with

the projected increase in cargo.

Offering a unifying theme will be featured speaker Michael Broome, who will elaborate on the qualities that make America great – hard work, leadership, accountability, teamwork and service. As the founder and president of Broyhill Leadership Conferences, he has addressed more than 3,000 audiences since 1980.

Other noteworthy sessions will focus on such topics as the impact of a successful safety culture, the Hauling Job of the Year winners, and a 20-year retrospective on how the the symposium has nurtured partnerships between industry and state transportation officials.

Still another highlight will be the Exhibit Center, featuring leading companies that supply products and services to specialized carriers. For the first time, the Exhibit Center will be open on two days.

An optional three-hour behind-the-scenes Innovation in Action Tour will include tales of how Disney has always pushed the limits of technology, demonstrated by an up-close look at innovation at a range of locations, including the Walt Disney World Nursery and Tree Farm, and the Utilidor System.

Many attendees will be arriving on March 6 for meetings of the Pilot Car Task Force and of regional associations of state highway transportation and permitting.

Until January 19, early-bird registration fees are available at \$350 for members and \$250 for each additional member, \$410 for non-members, \$90 for government employees and \$110 for spouses.

Visit www.scranet.org and click on the Events/Registration link at the top of the page to review the official program, which includes registration forms for the event, hotel rooms and exhibits. Information also is available by calling SC&RA at (703) 698-0291. **act**

Michael Broome, founder and president of Broyhill Leadership Conferences, will speak about the qualities that make America great – hard work, leadership, accountability, teamwork and service



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TIMOTHY J. HILLEGONDS is the senior claims investigator for NBIS Construction & Transport Underwriters, Inc. He is the lead coordinator of the "Shockloss Claim Investigation Process" developed by Kevin Cunningham and the SC&RA Insurance & Risk Management Committee.



There are four basic elements of crane accident investigation. **Tim Hillegonds** reports

Accident investigation: a step by step guide

In a country where daytime television is littered with commercial after commercial off fly-by-night attorneys promising financial reimbursement for injuries ranging from whiplash to coffee burns, it is no surprise that when a crane goes down, plaintiff attorneys see dollar signs.

Take for instance the Miller Park incident, which resulted in a Milwaukee county jury assigned in the "Big Blue" crane case to return a verdict awarding \$5.25 million in compensatory damages and \$94 million in punitive damages. The award was immediately challenged and then reversed by the court of appeals in 2003 only to be overturned by the state Supreme Court in 2005 and sent back to Milwaukee County to resolve myriad legal issues.

Seven years after that fateful day in July 1999, the logistics of the case are still being argued, and the final monetary cost of operating a crane in conditions that were way too windy still cannot be calculated. Miller Park is a prime example of not only the importance of a proper and diligent accident investigation (seven years later and the case still relies on the findings of the initial investigation), but also the millions and, in this case, hundreds of millions of dollars at stake.

As a crane company owner, and certainly as a crane operator, there are definite risks, monetary and emotional, associated with doing business. The potential for accidents is ever present regardless of how diligently we try

Investigation tip: initial photos

- Take distant "birds-eye" type photos showing as much of the project as possible.
- Take duplicate sets using a wide-angle lens.
- General photos can be used later to put critical job sequence photos into context.
- Diagrams or drawings can greatly assist the investigators or witnesses. If you can't copy them, photograph them.
- Use a photo scale device especially involving structures that will soon become inaccessible due to the progress of the job.

company claims team should be notified immediately that an accident has occurred and rapid response on the same day, preferably within minutes, should occur. Notices of construction defect or loss of business should be treated with the same sensitivities as occurrence type claims. After all, it is sometimes these claims that can be the most expensive if they are not given the proper attention.

First element: accident response

Crane accident investigations can be complicated even on simple claims. Liability investigations for construction accidents, and crane accidents in particular, represent the most difficult type of accident to properly investigate. Contractor restrictions due to security issues or OSHA authority may contribute to limited access to the site.

The placement of the crane and other equipment on the jobsite, including the boom position, accessories, or other component parts, can quickly change. The configuration of the load can change, witnesses can disappear, harmful or negative statements can be given, and the case can be lost before it even goes to trial. Rapid response is crucial.

Second element: tactical response

Within 24 hours and preferably, the same day, a qualified investigation team should be deployed. A specific plan and agenda for a.m.



Things not to do:

- neglect to report the claim on the basis that you are not at fault.
- conduct a detailed investigation on your own before reporting the accident to your insurance.
- wait to report the accident to your insurance company.

and integrate safety into our culture, and on days when loads fall and cranes get "light," we have to be ready with measures to mitigate the damage that can be caused by the vultures of daytime television.

We live in litigious communities where the term "lawsuit" has become the answer to almost all of life's troubles. An overturned crane on the side of one of America's main thoroughfares means new cars and steak dinners to passing motorists with mysterious neck injuries and emotional discomfort. But if the crane company owner that finds himself staring at the underside of a 75-ton Grove without being underneath it understands the key to a successful accident investigation, financial loss and legal migraines can be greatly reduced.

Initial considerations

It is imperative in each incident, regardless of fault, that the assumption be made that the incident will result in a claim. The insurance



Avoid these pitfalls

- Do not terminate your employee before involvement of your insurance company and an attorney.
- Do not request statements from employees or witnesses without prior attorney approval. (Potential damaging statement equating to "stake in the heart.")

**"Good Samaritan factor"****Expected cooperation level**

- Same day – excellent
- Next day – good
- Two days – possible
- One week – too much hassle/"lawyerred up"
- One month – cannot locate or "lawyerred up"

losses and p.m. losses, should be implemented and followed, and "no stone should remain unturned." All contracts pertaining to the job should be secured and signed, even post-accident, keeping in mind that it is absolutely critical to define the responsibilities of a construction site contractually. This includes daily job tickets and/or work tickets.

The tactical response, its name taken from the SWAT team approach that is needed in crane accident investigation, is the element responsible for "setting the stage" for the forensic team. And just as the accident response preserves the scene for the qualified claim investigators, the tactical response is designed to identify and preserve key site conditions and equipment for the proper qualified forensic experts.

In many circumstances, geotechnical or metallurgical experts are needed to address

key issues in assessing accident cause and liability. By having a member of the accident investigation scene take photos using the "8-point method" common amongst law enforcement, the proper site documentation can be achieved.

Just as important as photographs in the tactical response stage is the task of sizing up the scene. Key measurements and hard data need to be documented and recorded, and all critical distances should also be noted. Pertinent load information needs to be collected, and the use of GPS equipment should be considered for elevation issues. GPS can make site pictures and crane position rock solid. By mapping out the latitude and longitude of the item in a specific picture the margin for error is removed. The picture is then absolute.

When sizing up the scene, moving the equipment, altering the equipment set up, allowing the load to be bundled or unbundled, or allowing any undocumented change in site conditions should be avoided. In short, during the tactical response portion of the investigation, the crane company should put the "yellow tape" around the "crime scene" and wait for the "detectives" (in the form of qualified forensic experts) to assist the legal and claims team.

When accidents occur people see them and

when people see them it brings an entirely different aspect to the accident investigation: Witness information.

Witness information can be an "ace in the hole" or a "stake in the heart," depending on how the information is gathered and handled. Human factors such as forgetfulness and "selective" memory end up playing a huge role in witness information and steps should be taken to eliminate as many of these as possible. All potential witnesses employed by the crane company should be identified and all their contact information should be gathered. All potential independent witnesses should be identified and the "informal statement" approach to gathering information should be considered.

Witness information is important but how it is gathered and applied is even more important. Waiting for guidance from an attorney is a good practice to become acquainted with and using a key witness at a strategic time later on in the case can be the crane company's saving grace. **act**

EDITOR'S NOTE: This is the first in a two part series about crane accident investigation. See the February 2007 issue of *ACT* for the second article.

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Snapp, Arvin to focus on lattices



Frank Snapp has been promoted to senior product specialist for lattice cranes at Link-Belt Construction Equipment. Snapp joined Link-Belt in 1989 as a crane test site coordinator. Over the last 17 years he has moved through various manufacturing and support departments, most

recently focused on technical support for lattice boom cranes traveling to jobsites around the world.

George Arvin has been named product support specialist for Link-Belt. Arvin joined Link-Belt in 1988, working in numerous departments before focusing on the lattice boom crane assembly line. Arvin joined the product support group in 2000, and after a period of jobsite cross-training assignments, is now focused on lattice boom cranes.



act

H&E hosts open house

At its Orlando, FL branch, H&E Equipment Services hosted 350 customers, manufacturers, employees and neighboring businesses at an open house in November.

"We are excited to be in the Orlando markets," said Andrea Ussery, branch manager. "H&E has done business in this area for a number of years and we thought it was a great time to thank our existing customers, as well as invite prospective customers, to see all we have to offer."

Mauricio Ribeiro Julio hired at Cattron Group

At Cattron Group International, manufacturer of portable industrial radio remote control systems, **Mauricio Ribeiro Julio** has been appointed as an electronics technician at the company's Campinas, Brazil operations.

Julio formerly worked in electronic equipments maintenance for German automotive supply company Robert Bosch and Italian company, Magneti Marelli. In his new position, Julio's responsibilities will include South American field service, repairs, training, and help desk functions. He will report to Wesley Santos, Cattron-Theimeg America's senior electronics technician.

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- 9 ☐ Other (please state) _____

What type of equipment/products/ services do you purchase, specify, use or sell?

(Please check applicable boxes)

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- ☐ Crawler cranes
- ☐ Tower cranes
- ☐ Boom trucks/Loader cranes
- ☐ Rigger trucks
- ☐ Hydraulic gantries
- ☐ Dockside/Offshore cranes
- ☐ Specialized transport
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What is the annual sales of your company?

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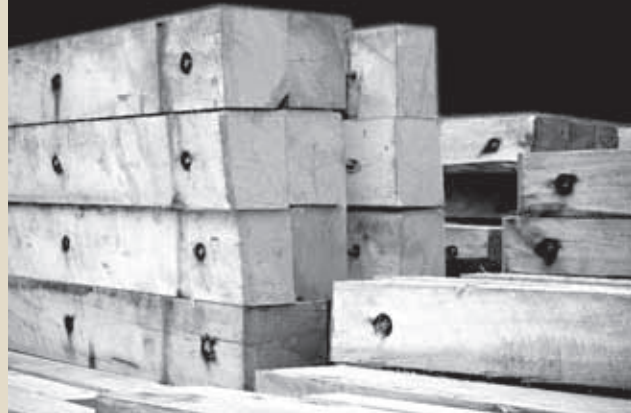
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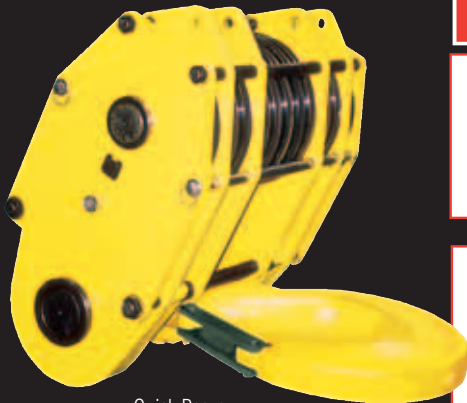
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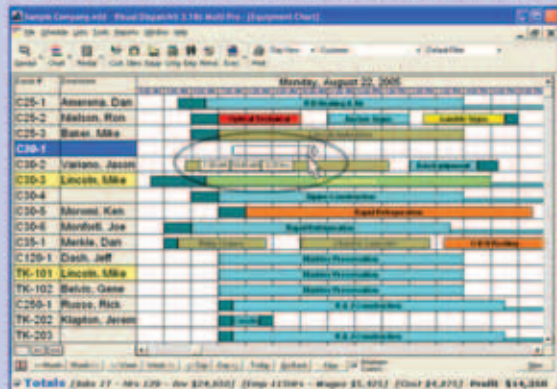


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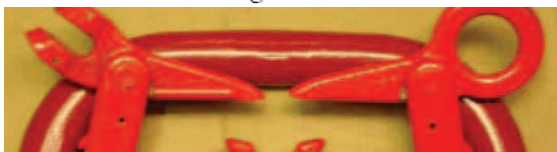
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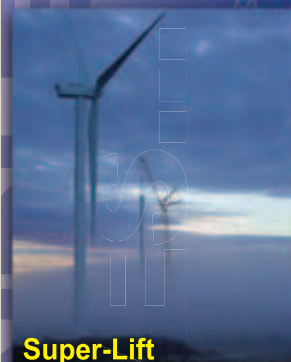
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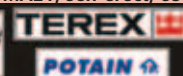
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Harrisburg, PA	CCO Written Exam Prep	2/19 - 2/23/07	
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CCO Practical Exam Schedule

Location	Dates	Fees
Pittsburgh, PA	11/8/2006	
Pittsburgh, PA	11/9/2006	The fee for the practical exams are \$325.00 for each exam taken.
Pittsburgh, PA	11/10/2006	Cranes utilized for the practical exams are: Large Telescopic - 22 ton - 30 ton RT. Small Telescopic - small stand up boom truck, small carry-deck crane or cab down RT. Lattice - (25 or 40 ton P&H Conventional). Candidates must call to schedule their practical exams at least one week prior to taking the exams. No walk-ins.
Harrisburg, PA	11/18/2006	
Harrisburg, PA	11/19/2006	
Harrisburg, PA	12/2/2006	
Harrisburg, PA	12/3/2006	
Harrisburg, PA	3/31/2007	
Harrisburg, PA	4/1/2007	
Harrisburg, PA	4/14/2007	
Harrisburg, PA	4/15/2007	
Harrisburg, PA	4/21/2007	
Harrisburg, PA	4/22/2007	

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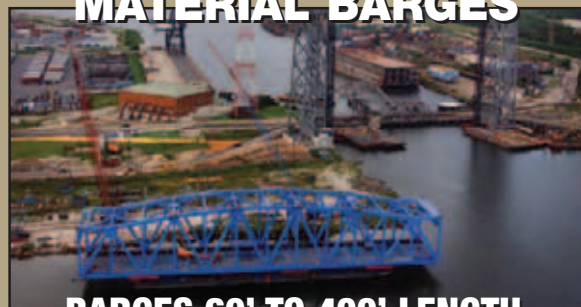
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TR800XXL-4

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