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Renewed interest in Rough Terrain cranes

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rough terrain cranes



Liebherr LRT1090-2.1

North America has always been the major market for Rough Terrain cranes taking an estimated 60 percent of the total units sold outside of Japan. It was therefore fitting that many of this year's new models were launched at Conexpo this spring. The show saw the unveiling of the first Liebherr RTs for more than 30 years as well as the new Grove GRT655 and GRT880, Link-Belt's 75RT, the Terex RT 100US, the Tadano GR-1200XL and Sany's largest - the 118 tonne SRC8130C. More recently Tadano added the international version of the GR-1200XL, the GR-1100EX and Link-Belt increased the nominal capacity of its three axle 135 tonne RTC-80150 to the 145 tonne RTC-80160. We take a closer look at the new introductions as well as other developments.

Our review of the Rough Terrain crane market a year ago (C&A 18.7) featured an extended preview of Liebherr's return to the RT market after a 30 year absence. Two machines were unveiled, the 90 tonne LRT 1090-2.1 and the 100 tonne LRT 1100-2.1. Considering Liebherr had taken so long over the decision to re-enter the market, conducting extensive market research along the way, many were surprised that it began with

machines of this size, expecting it to enter with 60 to 80 tonne capacity models.

While North America remains the largest market, demand for Rough Terrains has been in decline for several years, with global sales outside of Japan, slumping to around 1,200 units. However the market in Japan, which includes compact road going machines, remains buoyant taking around 1,800 units.



The market for RTs appears to have bottomed out and there are signs that it is starting to pick-up



A Grove RT550E working on the roof of the Yuen Long MTR station in Hong Kong hoisting loads weighing up to 14 tonnes

The market in North America has been struggling for some time as the low oil price depressed activity in one of the major markets for RTs - the oil & gas industry. But the good news is that the market appears to have bottomed out and there are signs that it is starting to pick-up. Historically about three out of every five international RT sales are to North America, so the region's economic prosperity is critical.

According to Steve Filipov, president of Terex Cranes, the market is "fairly flat with a few little blips but nothing to get too excited about. Today the price of a barrel of oil is hovering around \$50 per barrel and there is not a lot of fleet expansion. This will change around \$65 per barrel but at the moment, RT crane sales are slow. The good news however is that the market has stabilised and more likely to go up than down." Oil prices have increased steadily since July with a significant gain

over the past month with prices now approaching the \$60 mark. During the slump many cranes have been moved from areas of high concentration - such as the tar sands regions of Canada - to other areas. The Middle East has also seen some improvement with around 100 units delivered in the first half of this year. While Europe - never a great market for RTS - took around 50 units. However with new companies entering the market and new models and innovations coming on stream, we should see the global market continue to improve.

Liebherr believes that the returning market will coincide with the availability of its cranes next year and that the major applications and demand will be for cranes around the 90-100 tonne capacity. This is substantially up from the market's hay day, when 20 to 30 tonners represented the main volume. Entering a market late has plenty



Liebherr believes that the returning market will coincide with the availability of its cranes next year



The 15 ton GR-150XL is Tadano's smallest RT

of disadvantages, but there are certain advantages, such as being able to benchmark and improve on existing products, while responding more easily to customer requests. However taking on the well-established players is always tricky. Liebherr is however the world's largest and most successful mobile crane manufacturer and has boosted its US distribution network and coverage over the past few years and now claims to cover 84 percent of the country. This has helped its share of the All Terrain market grow and it now claims to have 43 percent of the market. But this is a market that it entered at the very beginning and helped create, while it is starting from scratch in the US RT market. The established players such as Terex, Grove, Link-Belt have all improved their product offerings in recent years, as Tadano steadily took market share from them. They all have loyal long serving dealers/customers and full product lines and looking for a new supplier will not be top of their to do lists.

Tadano market leader

Given that the Japanese market is twice the size of the rest of the world put together it is perhaps unsurprising that the overall market leader is Tadano with more than 50 percent of the total sales. The company launched two new North American models at Conexpo at opposite ends of the capacity range - the 120 ton GR-1200XL, its

largest two axle RT and the 15 ton GR-150XL its smallest.

The GR-1200XL and the international 'EX' version - the 108 tonne GR-1100EX have been developed with the North American and Middle Eastern energy markets in mind, with a focus on manoeuvrability, compact dimensions, simplicity and lifting performance.

The GR-1200XL features a 56.1 metre rounded profile high tensile steel boom with a single telescopic cylinder. A 10.1 to 17.7 metre bi-fold swingaway extension with up to 45 degrees of offset takes the maximum tip height to 73.6 metres. Maximum working radius on main boom is 44 metres or 47 metres with the extension installed. The crane also incorporates Tadano's new 'Smart Chart System' that optimises the load chart depending on the actual outrigger set-up and superstructure slew position, for example offering greater reach or capacity when the boom is directly over the top of an outrigger jack, compared to over the side.

Other features include Tadano's fuel monitoring system - Eco-Mode and Positive control - which reduces fuel when working and on standby. Hello-Net telematics allows crane activity, work history, machine position and maintenance information to be monitored remotely via a computer or mobile device.

Among its recent launches was the 110 tonne Tadano GR-1200XL and the international version the GR-110EX.



The new Link-Belt 145 tonne RTC-80160 Series II Rough Terrain

Two new Link-Belt models

Link-Belt launched its new generation RT - the 70 tonne 75RT - at Conexpo and more recently announced the 145 tonne three axle RTC-80160 Series II Rough Terrain crane.

The 75RT has a five-section 43.3 metre full power boom topped by a 10.7 to 17.7 metre bi-fold swingaway extension with an option of a three part version to provide an additional three metre heavy duty extension. Maximum tip height is 63.6 metres while matching main and auxiliary winches provide an 8,400kg maximum line pull, with line speeds up to 147.8 metres a minute.

A new tilting cab is said to offer 20 percent more visibility and is

fitted with the company's Pulse 2.0 system with 10 inch display screen and Wi-Fi hub. The crane has a wide range of monitoring cameras to cover the right side of the superstructure, the main and auxiliary winch and reversing. Another new feature is Link-Belt's 'V-CALC' - Variable Confined Area Lifting Capacities - outrigger set-up system. Once the outriggers are set, the Pulse 2.0 system takes the information and calculates the working ranges and capacities. A full telematics suite is installed as standard.

The fully equipped 75RT weighs 45.4 tonnes and can be transported to site ready to work. Removing the counterweight takes this down to 40.8 tonnes. Power comes from a Cummins Tier 4F diesel, matched to a six speed transmission and hydraulic disc brakes.



Link-Belt's 75RT is the first of an all-new generation of Link-Belt Rough Terrain cranes.



The Link-Belt RTC-80160 Series II

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RTC-80160
winch cam

Link-Belt has also updated its 90 tonne 100RT to the 100 tonne 110RT however there are no significant changes to the specification with the crane featuring the same six section 50 metre main boom.

The new 145 tonne RTC-80160 Series II Rough Terrain crane is also a simple nominal capacity upgrade of the 135 tonne RTC-80150. The unit is rated at 2.1 metres over the front on intermediate width outriggers. As with previous three axle Link-Belt RTs, the RTC 80160 Series II features six wheel hydrostatic drive with a top speed of just under 16mph. The unit features a six section 59.5 metre main boom and 95 metre maximum tip height. Maximum counterweight is 26.5 tonnes and the unit has a Gross Vehicle Weight of 76 to 80 tonnes

depending on specification.

The crane's basic design follows the company's original three axle Rough Terrain, the RTC-80100 Series II, unveiled in 2002. The range now includes three models, the 100 tonne RTC-80110 Series II, 118 tonne RTC-80130 Series II, and the RTC-80160 Series II.

While the new Link-Belt is an upgrade of a 135 tonner it stacks up well against the Tadano. Its hydrostatic drive will not appeal to everyone, but it offers greater travel speed than the Tadano. Length would normally be a problem with a three axle design however the Link-Belt's chassis is half a metre shorter than the 135 tonne two axle Grove. Longest is the XCMG RT150 although also has the longest boom at 62 metres and handles its 150 tonne capacity at three metres.

Although the Link-Belt's maximum



The XCMG RT150 has the longest boom at 62 metres and handles its 150 tonne capacity at three metres.

How the RTC-80160 stacks up

Make Model	Link-Belt RTC-80160	Tadano GR-1600XL-2	Grove RT9150E	XCMG RT150
Max Capacity	145 tonnes @ 2.1m	145 tonnes @ 2.4m	135 tonnes @ 2.2m	150 tonnes @ 3m
Capacity @ 3m	115.3 tonnes	109 tonnes	94.5 tonnes	150 tonnes
Main boom	59.5 metres	61 metres	60 metres	62 metres
Max tip height	94.8 metres	82 metres	95.3 metres	82 metres
Dimensions metres	15.4 x 3.7 x 3.8 m	16.2 x 3.5 x 3.8m	15.5 x 3.8 x 4.2m	16.4 x 3.6 x 4.1m
Max travel speed	25.4kph	15kph	24kph	33kph
Axles	3	3	2	2
Drive/steer	6 x 6 x 6	6 x 4 x 6	4 x 4	4 x 4
Max counterweight	26.7 tonnes	29.3 tonnes	28.6 tonnes	N/A
Total weight	80,000kg	89,725kg	88,040kg	90,500kg

The 50 tonne GRT655 is the latest in its range of next generation RT cranes



Grove GRT880



capacity is at 2.1 metres, it performs well against the Tadano and Grove at three metres with 115.3 tonnes - but well short of the XCMG. The RTC-80160's boom, while slightly shorter, is close to the 60 metre mark. One area where the Link-Belt scores well is its overall weight - almost 14 tonnes lighter than the heaviest crane - the XCMG.

New Grove GRTs

Grove is another manufacturer to introduce new models showing its GRT655 and the 80 tonne GRT880 at Conexpo. The 50 tonne GRT655 is the latest in its range of next generation RT cranes and features a heavy duty four section 34.9 metre main boom. Introducing the new crane product manager Paul Cutchall said: "We have loaded the GRT655 with features that are usually

seen on larger cranes. The bottom wear pads of the greaseless boom comprise a continuous, flexible sheet of oil impregnated wear pad material and are arranged in a segmented, 'Kit-Kat' style, providing greater support than previous boom designs."

A long-boom version of the crane - the GRT655L - has a 43 metre five section boom of a similar design, which Grove says gives it an 8.32 metre reach advantage over its closest competitor, with a maximum radius of 36 metres. The company claims that both the GRT655 and GRT655L boast load charts 12 percent stronger than other cranes in this class. The cranes also feature polymer outrigger pads, said to be almost 50 percent lighter than traditional steel pads, making them easier to stow. The GRT655 weighs 36 tonnes and both feature a 20 degree tilting cab with updated heating system and wider, improved door design. The company's Crane Control System (CCS) is also standard.

The 80 tonne GRT880 shares most features with the GRT655 and Grove claims it has similar performance advantages with up to 16 percent greater capacity at full radius, 13 percent more in mid chart, and 27 percent more at closer radii. A new boom extension stowage system is said to cut erection and stowage time by half compared to previous generation Grove cranes.

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Zoomlion has been one of the most active Chinese manufacturers in the Rough Terrain market.

Terex RT100US

Terex added to its large RT range - which spans capacities of 27 to 118 tonnes - with the launch of the 90 tonne RT 100US. With a 47 metre five section, full hydraulic boom topped by a 17.1 metre bi-fold extension for a tip height of 67 metres.

the new crane features the Terex IC-1 control system with integrated diagnostics, and intuitive touchscreen operation. The joystick controls are integrated with the crane's system, allowing the operator to configure joystick functions to his own preferences. A new cab design with a 18 degrees of tilt and is easy to access via the flat deck. An Eco-Pro feature manages the engine performance automatically while delivering fuel savings. In transport mode the RT 100US is just under three metres wide, while the counterweight can be easily removed and transported separately to avoid the need for special permits in many areas. A central lubrication system is standard. The crane complies with both European and US standards and is available with either a Tier 4F or Tier 3 engine.

With a 47 metre five section, full hydraulic boom topped by a 17.1 metre bi-fold extension the Terex RT100US has a tip height of 67 metres.

Socage takes Manotti

Manotti - one of the few European manufacturers of Rough Terrain cranes - has been in and out of financial trouble for many years, but the Italian company has been purchased as a going concern by aerial lift manufacturer Socage. Manotti was founded 40 years ago and has also operated under the PC Produzioni name. Products included truck mounted lifts, a 35 tonne truck crane, and since 2009 a range of four Rough Terrain cranes, with capacities of 35, 45, 60 and 85 tonnes.

Two basic versions are available, with either mechanical or hydrostatic drive with the engine mounted either in the chassis or in the case of the hydrostatic drive in the superstructure. Not much appears to have happened since the acquisition. The latest model is the hydrostatic drive ARM 450 with a 45 tonne capacity at three metres. Main boom is 32 metres, maximum travel speed 30kph, with power supplied by a Cat or Iveco diesels.

Chinese entrants

While the market for Rough Terrains in China is negligible, several Chinese crane manufacturers have had some success in the market, mostly in the developing world. They include Sany, XCMG and Zoomlion. Sany and Zoomlion have developed a modest presence in



A Minotti ARM350



The 200 tonne capacity XCMG RT200.

North America with Sany, launching its largest RT - the two axle 118 tonne SRC8130C - at Conexpo. The company said that sales were starting to pick up as infrastructure spending picks up. In an effort to stimulate sales, the company is promoting a five year warranty and four year, zero percent finance deal. The SRC8130C has a 49 metre five section boom and 67 metres with extensions. It has an all up weight of 77 tonnes, or 52.5 tonnes with the auxiliary hoist, counterweight and front/rear outrigger boxes removed for transport.

Big XCMGs

Perhaps the most interesting Chinese RTs are the two largest models offered by XCMG - the 150 tonne RT150 and if the website is to be believed a 200 tonne RT200. Both are two axle cranes and according to the company have been developed by teams in

Germany and China. Specifications and dimensions for both are very similar - a six section, 62 metre main boom, plus 20 metre extension, an overall width of 3.57 metres, and an overall height of 4.1 metres. Both weigh 90.5 tonnes with the RT150 rates at three metres and the RT200 at 2.5 metres.

Zoomlion has been one of the most active in the Rough Terrain market, having kicked off with a US master distributor. Global Crane Sales of Houston, Texas in 2010. The company recently expanded its four model range with the addition of the 60 tonne RT60XL which looks like an upgraded 55 tonne RT55 with a longer 43 metre main boom (34 metres on the RT55) and higher nominal capacity.

Late last year Tadano in Japan launched the 70 tonne four axle Crevo 700 G4 with 44 metre main boom and 17.7 metre telescopic jib with 60 degree offset giving a 65 metre tip height. With transport dimensions of 12.76 metres long, 2.78 metres wide and 3.75 metres high it can lift 500kg to 36 metres radius.

Sany launched its largest RT - the two axle 118 tonne SRC8130C - at Conexpo



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Power in Peru

Five Grove RT cranes have been working on a four year project to build the 525MW capacity Cerro del Aguila hydroelectric power plant in the province of Tayacaja, Peru. The \$800 million project is being built by a consortium formed by Graña and Montero (GyM) of Peru and Astaldi of Italy.



Work included foundations, a 5.7km long tunnel and constructing the 80 metre high dam structure



Five Grove RT cranes have been working on a four year project to build the 525MW capacity Cerro del Aguila hydroelectric power plant in Peru

The cranes - two RT530E-2s, two RT765E-2s and a RT9130E-2 - worked throughout the project including on the foundations, a 5.7km long tunnel, surge tank, powerhouse and substation and constructing the 80 metre high dam structure that retains the Mantaro

river to power three large turbines. The cranes worked both inside and outside of the dam from an underground machine room to the top of the dam wall lifting a variety of materials. They were often used near the edge of the dam in the face of high altitudes and in strong winds.



Smith Erectors used its new 70 tonne Link-Belt 75RT Rough Terrain crane to replace a steel chute weighing 9,525kg

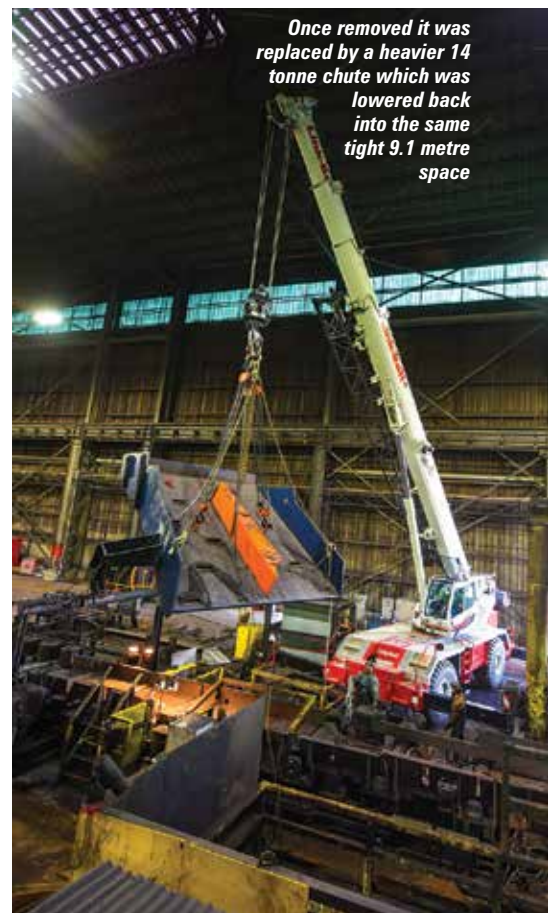
Right to the limit

Smith Erectors of Markle, Indiana spent four days working around the clock during a shutdown at Steel Dynamic's plant in nearby Columbia City which fabricates structural, rail and engineered steel. The first step of the shutdown involved removing an old hot saw chute in the cutting area.

It involved entering the building through a narrow door before setting up alongside the saw. Smith Erectors used its new 70 tonne Link-Belt 75RT Rough Terrain crane, which was compact enough and had the required capacity. The chute weighed 9,525kg and due to its irregular shape and position, needed multiple lifting points to remove it, as over time had become jammed in place with remnants of hot steel. Once removed it was replaced by a heavier 14 tonne chute which was lowered back into the same tight 9.1 metre space. The 75RT carried out the lift at a radius of 10.6 metres using 16.1 metres of boom.

"The chute was a beast but all went smoothly made easier because the crane has great visibility," said operator Jim Green.

Smith Erectors owner Garland Smith added: "We expect the machines to carry out the work that needs to be done. We carry out a lot of heavy lifts and often take everything close to the limit. We have never had any problems with Link-Belt cranes, they are good quality and dependable."



Once removed it was replaced by a heavier 14 tonne chute which was lowered back into the same tight 9.1 metre space

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