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RT CRANES SECTOR GATHERING PACE

It is said, and statistics seem to bear it out, that the Rough Terrain crane market is linked to the price of oil, but it is not the sole driver. The oil & gas industry is a significant user of RTs especially in production and therefore higher oil prices can lead to more investment boosting demand for equipment including cranes. However, there are signs that other sectors are beginning to discover or rediscover the advantages of Rough Terrain cranes. We take a look at the market and latest products and developments.

MARKET TO DOUBLE BY 2032!

According to available market research, the total Rough Terrain crane market across all sectors is projected to grow and almost double in value by 2032 compared to 2022, possibly reaching around £8 billion. This is being driven by increasing demand in construction, energy and mining particularly in emerging markets. Advances in technology and the shift towards more environmentally friendly equipment with electric and hybrid drive - are also shaping market dynamics.

It is interesting comparing the global RT market by application and region. The largest application is construction followed by mining as well as oil & gas. By region, North America has always been dominant and in 2023 the market driven by new infrastructure projects. Europe comes in around a third smaller, even though it is a larger overall economy.

The Middle East is interesting in that it oscillates between being the second largest market some years, to being an 'also-ran' in others. South and Central America tend to follow the US in terms of construction methods and is a significant user when times are good, but that varies enormously. More interestingly is the massive uptake in the Asia-Pacific region and the steady emergence of Africa as a more important global economy and

RT adopter. These emerging markets are likely to play a very significant role in the previously mentioned market growth.

A LITTLE BACKGROUND

In case you wondered why North America and to a lesser extent the Middle East have been strong markets for RTs historically while Europe and Japan have not, relates to the availability and cost of transport to deliver when combined with the preponderance of a strong short term crane rental market that favoured truck mounts and later All Terrains. The same applied to self-propelled platforms, with truck mounted lifts in the early days.

NEW DEVELOPMENTS

Major developments over the past few years have included the move towards more environmentally friendly alternatives such as the all-electric Evolt eGR-1000XLL-1 from Tadano and even full crane refurbishments under initiatives such as Manitowoc/Grove's Encore programme, as well as a move towards more practical larger models such as Liebherr's 130 tonne LRT 1130-2.1. However, the majority of Rough Terrain crane sales are between 60 and 80 tonnes - a far cry from the 1970s and 1980s when the vast majority were between 15 and 25 tonnes. Another interesting development is the adoption of longer main booms.



FROM SIMPLE RUGGED TO SOPHISTICATION

Traditionally RTs had shorter more rugged booms to cope with pick & carry duties on uneven ground, and the fact that in many regions, the operator was rarely trained to levels of those

operating Truck mounts or All Terrains for rental companies. At one time the RT was treated in a similar way to a telehandler or forklift with almost anyone jumping aboard - they were and still are rented 'Bare Lease' - no operator supplied. Thus, simplicity and ruggedness were the order of the day.

New RT launches tend to be few and far between - this year's Bauma for example did not reveal any major new models. However, reiterating the fact that the majority of sales are in the 60 to 80 tonne range, Terex Rough Terrain Cranes and Grove have both launched new models in that capacity range.

TWO NEW GROVE RTS

Grove has introduced two new RTs - the new 65 tonne GRT765 which replaces the RT765E-2, and the new 80 tonne GRT780 which replaces the RT770E and GRT880.

The GRT765 features a four section 38.5 metre full power main boom - compared to 33 metres on the previous model - topped by a 10.1 to 17.1 metre bi-fold swingaway extension, which can be offset by up to 45 degrees while offering a maximum tip height of 58.5 metres. While the nominal rating is 65 tonnes, it can only handle 58 tonnes at three metres radius. Capacity on full boom is 17.7 tonnes at a radius of 7.8 metres, or 656kg at the maximum radius of 33 metres. The unit has a 6.9 tonne counterweight, with the option of a hydraulic counterweight removal system. Overall weight is 42.4 tonnes, and overall width three metres.



The new 65 tonne Grove GRT765 replaces the RT765E-2

The cab of the new crane is 76mm wider than its predecessor and has up to 20 degrees of tilt, an increased glazed area and a three camera system for improved all round visibility. Operations can be managed via a larger 12 inch touchscreen CCS display common to all new Manitowoc group cranes. Servicing tasks have also been made easier with the company's oCSI - on Crane Service Interface - for enhanced diagnostics and service, while centrally located service points on the superstructure and chassis help speed up routine maintenance.

GROVE GRT780

The Grove GRT780 features a 47.3 metre five section full power boom with the same 10.1 to 17.1 metre swingaway as the GRT765, for a maximum tip height of 67 metres. Maximum useable capacity is 62.6 tonnes at three metres with 72.6 tonnes theoretically possible at 2.4 metres. Maximum capacity on full boom with the full 9.3 tonnes of counterweight is 8.1 tonnes

at a radius of 15 metres, or 567kg at 39 metres - the maximum main boom radius. The standard counterweight is just under eight tonnes and overall weight is 45.1 tonnes or 46.5 tonnes with the larger counterweight. Dimensionally it is three metres wide, with the cab and tech the same as the GRT765.



The Grove GRT780 features a 47.3 metre five section full power boom

Both cranes are fitted with the same winch/hoist offering a single line pull of 7,800kg for fast cycle lifting and set up. Both feature the Grove MAXbase variable outrigger system, with automatic monitoring and load chart calculation. The cranes are also the first Grove RTs to offer the Grove Connect telematics and fleet management system, launched in 2022.

Grove RT crane product manager John Bair said: "Customers will immediately notice the significant improvements in reach and strength, but we've also packed a lot of other benefits into these new models. The operators will love the comfort of our new, wider cab as well as the expanded CCS display. We've also added the latest technology with variable outrigger set up and the Grove Connect telematics platform. All of this is packed into a compact and lightweight package which makes this crane very easy to transport, and manoeuvre around busy job sites."



The TRT 80L features a 47 metre main boom

LONG BOOM TEREX 80T RT

Around the same time Terex launched the TRT 80L - a new longer boomed 80 tonner. The new crane retains much of the running gear from the current TRT 80 which made its debut in early 2021, but features a new five section, 47 metre main boom - five metres longer than the current unit. It has three extension modes, as well as a self-remove and install counterweight system. The boom can be topped with a nine to 17 metre bi-fold swingaway extension taking the maximum tip height up to 66 metres.

Although many units of this size are 3.3 metres wide, the new crane has an overall width of three metres - the same as the new Grove GRT780 - making it easier to transport, especially in Europe. When fully equipped with the bi-fold swingaway extension, hook blocks and rigging, the crane weighs around 52.5 tonnes. This is reduced to 42.5 tonnes with the counterweight and extension removed.

Power is provided by a Cummins Stage V diesel, with the option of a Cummins Stage III/Tier 3 option for markets with less stringent emission requirements, with powershift permanent four wheel drive, with two mode transmission, either Manual - three speeds forward, three reverse - or Automatic - six speeds forward, three in reverse. The new crane features the company's wider 'Space' cab with standard tilt to view high lifts. The controls use the Terex Operating System (TEOS), with a 10" full colour touch screen display with intuitive interface to ease operation and maintenance. Terex T-Link telematics system is also standard, along with an anemometer and LED lighting.



The 80 tonne Terex TRT 80L

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How does the TRT 80L compare against the Grove GRT780 and others?

Comparing the new crane with Grove, Tadano and Liebherr...

Make Model	Terex TRT 80L	Grove GRT780	Tadano GR-800XLL-4	Liebherr LRT 1090-2.1
Max capacity @ radius	80t @ 3m	73.5t @ 2.4m	72.6t @ 2.4m	80.1t @ 3m
Main boom	47m	47.3m	51m	47m
Swingaway extension	9-17m	10.1-17.1m	10.1-17.7m	10.5-19m
Max tip height	66m	67m	71.6m	70m
O/A width	3.0m	3.0m	3.32m	3.3m
O/A length	14.1m	15.32m	15.2m	14.45m
O/A height	3.9m	3.82m	3.8m	3.49m
GVW fully equipped	52.5t	46.64t	56.1t	53.7t
Capacity on full boom	8.9t @ 12m	8.16t @ 9.1m	9.2t @ 9m	11.3t @ 9m
Capacity @ 10 metres	19.1t	16.9t	21.5t	22.1t
O/R spread	8.0m	7.3m	7.3m	7.3m

The Terex TRT 80L's main competition here is the 90 tonne Liebherr, matching it in most categories, but losing out on maximum tip height, outrigger spread and overall height, while leading in overall width and overall length.

The new Grove GRT780 has lower capacities than the Terex and is slightly longer but is significantly lighter - almost six tonnes - and has a smaller outrigger spread and a slightly better maximum tip height.

Terex's senior sales support manager of RT cranes, Stefania D'Apoli said: "The TRT 80L has a combination of advanced features and user centric design with longer boom and self-removable counterweight. Its improvements make it attractive for several applications including ports, construction, infrastructure, mining, energy, and yard logistics."

TWO MORE TEREX RTS

Not long after the launch of the long boomed 80 tonne TRT 80L, Terex added two more new models - the 100 tonne TRT 100 and the 60 tonne TRT 60. The TRT 100 has almost the identical specification as the 80 tonner in terms of boom length, capacity on full boom, extension/maximum tip height, length, height and outrigger footprint - but is rated at 2.5 metres radius with 86.8 tonnes at three metres. It is however 170mm wider and has a larger - 10 tonnes - counterweight which can be self-installed to reduce transport weight from its all-up weight of 53.25 tonnes - split roughly between the two axles - to 43.25 tonnes. The overall stowed width is 3.17 metres, with an overall length of 14.1 metres and an overall height of just under four metres.

As with the new 80 tonner, the key change on the new models is the incorporation of new technology. The two new cranes are the first



The new 100 tonne Terex TRT 100

Terex RTs to be equipped with the 'IdeaLift' variable asymmetric outrigger set up and monitoring with the crane automatically selecting the best load chart for the actual outrigger set up deployed. The maximum outrigger footprint is eight by 7.8 metres.

Other features include the intelligent TEOS operating system, with 10" full colour touch screen display and intuitive interface to ease operation and maintenance, the Eco Mode function and T-Link telematics platform, along with the new, more spacious, S-Pace tilting cab with larger glazed area and air conditioning.



The TEOS mode selection screen

THE NEW 60T TRT 60

The 60 tonne TRT 60 is rated at a 2.3 metre radius, and at three metres it can manage 50 tonnes. It features a 42.5 metre five section main boom and can handle eight tonnes on the fully extended boom at up to nine metres radius. An eight to 15 metre bi-fold swingaway extension can be added to take the maximum tip height to 60 metres and offsets by up to 40 degrees.

Model	TRT 100	TRT60	TRT80
Max capacity	100t @ 2.5m	60t @ 2.3m	80t @ 3m
Main boom	47m	42.5m	47m
Capacity on full boom	8.9t @ 12m	8t @ 9m	8.9t @ 12m
Bi fold extension	9-17m	8-15m	9-17m
Offset	32°	40°	32°
Max tip height	66m	60m	66m
O/A width	3.17m	2.93m	3.0m
O/A length	14.1m	12.82m	14.1m
O/A height	3.99m	3.87m	3.9m
O/R footprint	8.0 x 7.7m	7.0 x 7.3m	8.0 x 7.8m
GVW	53.25t	38.71m	53.7m
Counterweight	10t	6t	8t

Terex general manager for Rough Terrain cranes Giancarlo Montanari said: "We are diligently expanding our product offering to ensure our

portfolio possesses the capacity and flexibility to address daily lifting challenges in the modern working environment. The marketplace is highly competitive, but I have great confidence in our team members and superior Italian craftsmanship from our Crespellano manufacturing centre of excellence. Looking forward, I am excited about the prospect of further expanding our range, including reintroducing some past models that are currently in demand in some markets."

TADANO LINE-UP

Tadano has become one of the main players in the global Rough Terrain market, even though when it started out it had no domestic market and had to persuade traditional American contractors to switch to novel Japanese introductions. After a few false starts, it is now a market leader and can charge a premium for its models. In Europe it offers just three models from its range, the GR-700EX-4, GR-900EX-4 and GR-1000EX-4 with capacities of 70, 90 and 100 tonnes respectively.



The 70 tonne GR-700EX-4 has been completely redesigned to offer more reach, while being easier to transport

The 70 tonner has been completely redesigned to offer more reach, while being easier to transport. It features a 46.9 metre boom, which it claims is the longest and strongest in its class - yet weighs less than 45 tonnes for transport. Its lighter weight combined and improved reach makes it ideal for more challenging sites.



The GR-900EX-4 features Tadano's Smart Counterweight system

The 90 tonne GR-900EX-4 retains the boom and extensions of its predecessor, but now features Tadano's Smart Counterweight system - claimed to be a world first variable counterweight on an RT. The dual position counterweight increases the crane's working radius without compromising stability.

The GR-1000EX-4 - which can be seen at Vertical Days

2025 - offers a 50.9 metre boom and additional counterweight for improved load charts. Operator comfort and safety have been design

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priorities, with upgrades including a tilting cabin for improved visibility, better access steps, and modern touches such as USB charging.

INNOVATION AND FUTURE MODELS

In October 2024, Tadano launched the Evolt eGR-1000XLL-1 in North America - the first fully electric Rough Terrain crane available in the region. Delivering, it says, the same lifting performance as its diesel counterpart, it can work up to seven hours on a single charge with zero emissions and quiet operation - perfect for urban or indoor jobsites, as well as sites where noise is an irritant. Tadano is currently evaluating the potential for introducing this electric model in other markets including Europe.



In October 2024, Tadano launched the Evolt eGR-1000XLL-1 - the first fully electric Rough Terrain crane available in the region

NEW ITALIAN RT

Italian crane manufacturer Locatelli's latest Rough Terrain is the 100 tonne at 2.5 metres

Gril 110.100 taking over as the company's range topper from the 80 tonne Gril 87.80. Weighing 55 tonnes, the two axle crane features a five section 47 metre main boom that can take 1.2 tonnes to a 38 metre radius. Maximum tip height is 66 metres. Features include a new easy to use 'Locasystem' Load Moment Indicator with 10 inch touch screen, variable outrigger settings including asymmetric set up and a new generation wider and more comfortable cab with standard electric climate control system. The maximum travel speed is 30kph, overall width 2.72 metres and overall length 14.35 metres, while the outrigger spread is eight metres. The company claims that the Gril 110.100 is the "strongest heavy duty 100 tonne crane ever seen, with the best lifting charts in its class."



Locatelli's latest Rough Terrain range topper is the 100 tonne Gril 110.100

NEW LIFE AT 20

With more company and government interest in reducing carbon footprint and recycling/reusing equipment, a Qatari oil & gas company has refurbished rather than replaced one of its 20 year old Grove RT700E RT. The work was carried out through Manitowoc's EnCore programme by local Grove dealer Mannai Heavy Equipment, taking 12 weeks to complete. Work included structural and component repairs along with



Qatari oil & gas company has refurbished rather than replaced one of its 20 year old Grove RT700E RT

system upgrades, while key wear parts were all replaced. The RT700E model - discontinued in 2012 - features a 33.5 metre main boom and is powered by a six cylinder Cummins. The crane has been working in the region's oil & gas sector, often in temperatures exceeding 45 degrees.

Mannai service manager Magdy Fawzi said: "Our customers love Grove cranes and want to get the most out of them. EnCore is about maximising their value through breathing new life into their trusted machines. But it's not just about extending machine life, it's also about enabling our customers to confidently tackle ambitious projects, knowing the equipment will reliably meet the latest standards." ■



The RT700E after the refurbishment

SEATTLE'S OVERLOOK WALK

For eight months, an 80 tonne Link-Belt 85|RT Rough Terrain took centre stage in one of Seattle's most ambitious urban renewal projects, the \$70 million Overlook Walk - a pedestrian pathway linking the Pike Place Market to the city's evolving waterfront. The development is the culmination of a decades long initiative led by Hoffman Construction of Portland, Oregon, and features vendor and event areas and a pedestrian bridge to the newly expanded Seattle Aquarium.

The city's waterfront required a crane that could work in the congested high traffic environment. Crane operator Nick Jaramillo of Seattle's Garner Construction said it was the perfect crane for the job. "Everything we needed to do we could do with the 85|RT," he said. Hoffman purchased the 85|RT from Triad Machinery of Tacoma, Washington, for its easy transport and compact working footprint.

The 80 tonne 85|RT weighs in at 47.6 tonnes with full counterweight or 39 tonnes with it removed with its new removal system. It features a full power, five section 43.3 metre boom with 10.7 to 17.7 metre 'SmartFly' extension with manual offsets up to 45 degrees.

The crane also has a 2.9 metre offset fly jib capable of lifting 22.6 tonnes and ideal for applications where two load lines are necessary for loads such as precast panels. Link-Belt's V-CALC - Variable Confined Area Lifting Capacities - system features variable outrigger configurations with real time 360 degree charts.

When working on the Overlook Walk project the crane lifted a variety of materials such as 3.2 tonne boulders, precast benches, rebar bundles,

and 4.4 tonne shoring tower flange beams from street level up a vertical incline to the elevated walkways. Jaramillo said: "The V-CALC and cameras made operating the 85|RT in confined spaces or traveling down narrow roadways a breeze.

Project manager John Hamilton added: "The crane's efficient, straightforward setup and breakdown allowed us to maintain a compact and well organised site, while its four link rear suspension, all-wheel steer and LED lighting helped make navigating the congested site simple."




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