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ALL QUIET ON THE ALL TERRAIN FRONT

In terms of new developments and innovation, the All Terrain market sector has been a trifle quiet over the past year having undergone some interesting changes. Most manufacturers now plan their major new model launches to coincide with Bauma - although the next show is still 10 months away - often unveiling products that are still a year or two away from being ready to deliver. We take a look at latest developments and report from Liebherr's recent Customer Days event.

Liebherr used its Customer Days event to unveil the new six axle, 400 tonne LTM 1400-6.1. To some extent it is simply a re-engineered version of its popular 350 tonne LTM 1350-6.1, with the same 70 metre main boom configuration, but equipped with all the latest tech including the VarioBallast counterweight system that boosts the load chart, while providing a reduced tailswing when needed. It also extends the single engine concept to 400 tonnes and is said to be easier and quicker to set-up. More details on the crane can be found on page 30.

MARKET SIZE AND CAPACITY

In recent years, Liebherr has tightened its stranglehold on the AT market, and manufactured more than 2,000 units for the first time in its history last year. Its dominance has been helped by Tadano's ongoing challenges of absorbing Demag following the acquisition of its mobile crane business in 2019.

Earlier this year Tadano announced that it will close its plant in Walleisheid, one of two

former Demag facilities in the Zweibrücken area. In all around 400 jobs are expected to go between now and mid-2025, with some of the Walleisheid activity being transferred to the Tadano plant in Lauf, Bavaria, where it plans to invest in new production lines and recruit more staff. The company says that the move has been driven by the fact that the production capacity of the three plants is 750 to 800 All Terrains a year, and yet annual sales are running at around 450 units, with no sign of a dramatic change on the horizon.

Manitowoc is the other major manufacturer of All Terrains, with a factory in Wilhelmshaven, northern Germany. It has launched a number of new models with longer booms and appears to be benefiting from Tadano's struggles with its production and brand integration challenges.

UPDATED 300 TONNER

At Intermat earlier this year Liebherr announced an update to its 300 tonne LTM 1300-6.4 the main change being the incorporation of the company's new Liccon3 control system and



Liebherr's new 400 tonne LTM 1400-6.1 with 70 metre boom and improved Y-Guy Superlift system



Liebherr announced an update to its 300 tonne LTM 1300-6.4 at Intermat

installation of the new chassis cab - boom lengths, load chart and all other performance parameters remain unchanged.

The new chassis cab incorporates better quality materials, a new 'multifunction steering wheel',

ALL TERRAINS



One of the main changes to the LTM 1300-6.4 is the full width chassis cab



Tadano's AC 5.250-2 features include a new 'Surround View' camera system

side roller blind on the driver's door, central locking system with remote key, improved instrumentation and new display. The entire lighting package for the cabs and chassis - including new headlights and work lights - has also been improved.

Liebherr has also started delivery of other models with the Liccon3 crane control system including the 110 tonne LTM 1110-5.2s, the first 10 of which were delivered to German crane and heavy

transport company Riga Mainz, equipped with an additional remote access data logger.

NEW 250T TADANO

Shown as a prototype at Bauma in October 2022, Tadano's new 250 tonne 'class' AC 5.250-2 five axle All Terrain is now in production, while the previous 250 tonne model, the AC 5.250-2, continues to be offered alongside two 220 tonne five axle cranes - confusing? The new crane features a seven section 70 metre main boom

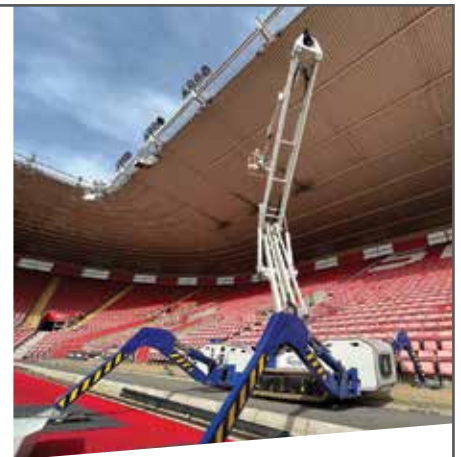


Shown as a prototype at Bauma in October 2022, Tadano's new 250 tonne 'class' AC 5.250-2 five axle All Terrain is now in production

topped by a lattice extension which can be built from 11.8 to 34.9 metres with 40 degrees of offset. A 7.1 metre insert can also be added between the boom nose and full extension to achieve the maximum tip height of 116 metres. Alternatively, a 20.9 metre three section telescopic extension can be added with a tip height of 94 metres.

The maximum capacity without 'special equipment' is 175.9 tonnes at three metres radius. More impressively the crane can handle 14.5 tonnes on the fully extended main boom at a radius of up to 24 metres. It can also manage 11 tonnes at a 42 metre radius on a 47 metre boom. When it comes to travel, it can carry a three sheave hook block or a 5.8 metre heavy duty runner on board within 12 tonne axle loadings, or up to 20 tonnes of counterweight where 16.5 tonnes per axle is permitted.

The AC 5.250-2 can install its full 80 tonnes of



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The AC 5.250-2.1 can lift 14.5 tonnes on its fully extended main boom at a radius of up to 24 metres



Early last year XCMG launched its second European All Terrain - the 120 tonne four axle XCA120E



counterweight in three lifts: 49.6 tonnes with a full 360 degrees at a radius of up to 6.2 metres followed by two lifts of 15.2 tonnes. The variable automatically monitored outrigger system allows asymmetrical set ups in predetermined extension widths of fully retracted, 25, 50 and 75 percent as well as fully extended.

The standard IC-1 Plus crane control system allows the available radius to be significantly increased at certain slew positions. The counterweight can be split into a large number of elements - none weighing more than 10 tonnes - allowing relatively small trucks to be used for transportation.

Other features include a new patented 'Surround View' camera system with six cameras to show a computer assisted diagram of the maximum possible extension lengths for each outriggers with the crane in that location, making it easier for the operator to set up on site. A 'TailGuard' active reversing assist system uses two ultrasonic sensors to monitor the area behind the crane when reversing and works regardless of

ambient light conditions. It shows the distance from stationary and moving objects on the in cab display, sounding a warning when close to an obstacle, and stopping the crane when there is a risk of collision. The backup assist automatically activates when the crane's reverse gear is engaged.

Tadano's 'Lift Adjuster' systems, which measures the boom's potential deflection and adjusts the lift cylinder to compensate to reduce the risk of load swing out on pick up, will be available on the crane next year. A hill start assist system is also standard.

All hydraulic components have been located away from the superstructure cab to reduce noise, while both cabs have been designed for easier entry and exit. Power comes from a single HVO ready Stage V diesel with Eco Mode and auto start stop.

CHINESE CRANES - ARE THEY COMING?

Chinese crane manufacturers such as XCMG,

Sany and Zoomlion have been knocking on the door of the European All Terrain market for more than a decade with little to show for it so far. However, this might be beginning to change as they invest more into European style cranes and begin to innovate. It seems they have realised that in the market cheap or 'me too' simply does not hack it.

Early last year XCMG launched its second European All Terrain - the 120 tonne four axle XCA120E - with a seven section 66 metre main boom, topped by an 11.65 to 18.5 metre bi-fold swingaway extension, which can offset by up to 40 degrees. Two 7.1 metre lattice extension sections can be added between the boom nose and the swingaway to achieve the maximum tip height of just over 96 metres, while the maximum radius is 60 metres. The 120 tonne nominal capacity is achieved at a theoretical 2.5 metres, at three metres it can handle 80 tonnes.

Power comes from an MTU diesel driving a 12 forward - two reverse speed ZF 12 TraXon transmission, with the three rear axles all driven, while all wheel steering is standard as is a retarder. The independent suspension system avoids the need for full width axles and is similar in its overall concept to that used by Grove. The new crane has an overall width of 2.75 metres, while the overall length is just over 14.3 metres.

The outriggers have up to five working widths, fully retracted, 3.83, 5.0, 5.9 or seven metres when fully extended. Maximum counterweight is 33 tonnes, made up of eight slabs allowing a variety of configurations. The crane follows the launch at Bauma last year of the 60 tonne XCA60 EV three axle hybrid All Terrain.

SANY'S 60 TONNER CAN IT BE A WINNER?

Last summer Chesterfield based Sany UK received its first 60 tonne three axle SAC600E, kicking off its plans to strengthen its presence in the European market. French rental company Foslev and the Hungarian Army took delivery of several units last year.

Andrew Snow, previously with Tadano UK was recruited to lead the Sany crane business in the

The XCA120E has a seven section 66 metre main boom, topped by an 11.65 to 18.5 metre bi-fold swingaway extension





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Recent projects

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Tadano ATF 70-4



Liebherr LTM 1100-5



Liebherr LTM 1160-5



Sany SCE 1350A-EV



Sany SCA 1350A



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The Sany SAC600E features a six section 50 metre main boom



The Kato outrigger functions can now be operated from a hand held remote controller

UK and Ireland. When it comes to All Terrains he is betting on the 60 tonne SAC600E to get the brand established. "I think the 60 tonner is probably the most popular sized AT in the UK at the moment," he says. "The SAC600E has a very good initial specification requiring few options and can be delivered very quickly."

Snow bases his expectations on his estimate that around a third of all ATs sold in the UK are 60 tonners or smaller, however, there are plans to bring in 120 and 250 tonne All Terrains as well. The SAC600E features a six section 50 metre main boom and can handle its 60 tonne nominal capacity at three metres over the rear. A 16 metre bi-fold swingaway extension with offsets of 20 and 40 degrees gives a maximum tip height of 69 metres. With its maximum 13 tonnes of counterweight installed it can handle 800kg at 39 metres radius. With full counterweight and hook block on board axle loads are less than 16 tonnes. While 4.2 tonnes of counterweight on the deck takes axle loads below 12 tonnes.



The Sany remote control

The new carrier cab has three seats which fold into a bed, a 10.1 inch touch screen including reversing camera and multimedia. The superstructure cab tilts up to 20 degrees and features a 10.4" LMI display screen. A wireless remote for outrigger and main boom operation is also standard.

Power is supplied by a Stage V MTU diesel driving an Allison transmission and Kessler axles. The front and rear axles are driven while all three are steered for a 6x4x6 configuration. The MachineLink+ remote telematics package is standard showing machine position, status, maintenance management and alarm status. The unit has an overall length of just under 12 metres,



The Sany chassis cab

is 2.55 metres wide with a maximum travel speed of 80kph.

UPDATED CITY CRANE

Japanese crane manufacturer Kato introduced an upgraded 13 tonne CR-130Rf City Crane - the CR-130Rv - at the start of the year, with the first units delivered in April. The main changes include a new Hino JO5E-VA Stage V engine with Selective Catalytic Reduction and Diesel Particulate filter, standard ABS braking, a new crane control system with ergonomically improved electronic joysticks which also allow the operator to set and record operating speeds and be more functional and comfortable to use.

Outrigger functions can now be operated from a hand held remote controller, which incorporates



Kato introduced an upgraded 13 tonne CR-130Rf City Crane - the CR-130Rv - at the start of the year

auto-levelling and engine control speed functions. Maximum spread is 4.75 metres with load charts for three intermediate positions, in addition to fully retracted.

The crane retains its six section 24 metre boom topped by a 3.6 to 5.5 metre hydraulic luffing jib, offsettable by 60 degrees, for a maximum tip height of almost 32 metres. A three tonne searcher hook is standard equipment. The crane's overall length is unchanged at 7.5 metres, with



The Kato CR-130Rv with searcher hook

an overall width of 1.99 metres and overall height of 2.87 metres. Total weight is only 13.83 tonnes, split roughly evenly between the two axles.

Three of the first cranes delivered in Germany have gone to Mini & Mobile Cranes Körner and Baumo Kranservice. Though the companies are separate, they work closely together sharing the same yard in Duisburg. In 2019, Mini & Mobile Cranes Körner developed an in-house electric pack for the Kato CR-130 model range which can also be fitted on the new models. ■



Kato CR-130Rv cab controls





Liebherr wowed customers by driving an LTC 1050 onto a tandem lifted beam



LIEBHERR WOWS

This year's Liebherr Customer Days - the seventh to date - was another mobile and crawler crane spectacular, held for the first time at its repair centre in Ehingen-Berg, a short drive from the main Ehingen production facility. Although held every three years, it has been six years since the last event - with the planned 2021 gathering a casualty of the pandemic.

Around 3,000 customers from all over the world were invited to the three day event to see its latest All Terrain and crawler crane products and innovations. They included a new 400 tonne All Terrain - the LTM 1400-6.1 - a new version of its Crane Finder app, driver assistance systems and RemoteDrive for its All Terrains. And of course, a chance to marvel at the incredible crane demonstrations ending with a spectacular lift that always wows the audience. On the Saturday following the event Liebherr held an open day for employees and their families with an estimated 25,000 people attending.

NEW 400 TONNER

The only brand new crane on show was the LTM 1400-6.1. Billed as the world's most powerful six axle crane it will replace the popular 350 tonne LTM 1350-6.1. Main features include a six section 70 metre main boom including an improved Y-Guy Superlift system with a simpler single lift set up and a hydraulic quick coupling system that automatically closes when the boom is lowered between the two Y-frames. The electrical connection is established with one final movement, making it ready to operate in just a few minutes. The LTM 1400 is now the smallest crane with the Y-Guy system in the Liebherr line-up.

Liebherr says that the new all-rounder is "extremely flexible and economical thanks to a wide range of accessories, a highly functional

modular boom kit and familiar Liebherr technologies as well as driver assistance systems increasing road safety".

Although we have not yet seen the load charts, the LTM 1400 is said to have 'significantly higher' capacities than the LTM 1350. Various extensions and jibs are available, starting with the fixed lattice jib/extension that offsets by up to 40 degrees, it extends the boom by up to 45.5 metres taking the maximum tip height to around 120 metres. An 80.5 metre luffing jib takes the maximum tip height to around 140 metres.

As with its predecessor the counterweight for the LTM 1400 is 100 tonnes with an additional



Liebherr LG and LTR with 70 tonne hook block



Liebherr LR 125000-1.0



The new LTM 1400-6.1

IC-1 Remote

Advanced telematics solution

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The ideal 360° view for optimal positioning and overview

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Quickly pinpoint and fix problems for maximum uptime

Take a closer look at Tadano.

Discover how our DNA can fuel your passion for lifting.

Tadano mobile cranes are filled with technology and innovations that are designed to make your lifts faster and easier. Innovations like IC-1 Remote that gives you access to crane operating data and Surround View that significantly makes it easier to find the optimal crane position. These features are more than talking points to us, they are part of our DNA.

Learn more about Tadano all terrain cranes at tadanoworld.com



VarioBallast hydraulically extends the ballast from a minimum radius of 5.6 metres for working in confined spaces to a maximum of 7.7 metres for maximum capacities



The LTM 1400 chassis cab

40 tonnes available. However, the new crane uses the VarioBallast system that hydraulically extends the ballast from a minimum radius of 5.6 metres for working in confined spaces to a maximum of 7.7 metres for maximum capacities.

However, unlike the LTM 1350, the LTM 1400 is powered by a single engine - an eight cylinder Liebherr diesel - with mechanical drive to the superstructure. It also features VarioBase outrigger set up with load charts automatically calculated for the outriggers when extended in any position up to 50 percent - a first for a crane over five axles - then 75 percent and fully extended.

For road travel the crane has an overall length of 17.8 metres and can meet 12 tonne axle loads with the full boom and a hook block on board. On site or where 16.5 tonne axle loads are permitted it can carry the boom, 10 tonnes of counterweight, a hook block and Y-guying system.

Other new features are the various driver assistance systems including a 'Blind Spot Information System' which warns the driver when someone is in the vehicle's blind spot, particularly useful when turning. A moving-off information system has a visual and acoustic warning if someone is in front of the crane, while it also monitors the more obscured areas around the crane while it is moving.

NEW CRANE FINDER APP

Liebherr has also updated its 'Crane Finder' database and added an app. All of which is designed to help customers find the right mobile or crawler crane for a specific job from a list of 76 machines which also includes some older models.

The new database enables users to input many more functions including information such as

Driving along the beam



ballast radius, support, main boom angle, accessory angle and central ballast for the project. The Crane Finder app then generates a list of suitable cranes. As before, all information can be displayed in large tiles or with a new compact list view.

A new 'Optimise Configuration' button, displays the minimum amount of counterweight needed for a specific lift, in order to reduce transportation costs and CO2 emissions. A new 'favourites' function, allows users to select and save their preferred crane models for a given job type.

LIFT SPECTACULAR

The highlight of every Customer Days event is a spectacular crane demonstration and finale - this year it included a drum, laser and drone show.

In 2012 the 'crane mobile' involved a 3,000 tonne capacity LR 13000 lifting an LR 11350, which in turn picked up an LR 1350/1 supporting an LTR 1100 lifting a scale model LG 1750 lifting a small All Terrain! Three years later two LTM 1750s were mounted upside down by their booms on a rotating crawler crane undercarriage. In 2018 Liebherr suspended

one of its new Rough Terrain cranes, caught in a spider's web of rigging between the lattice booms of two crawler cranes.

This year the highlight involved a three axle LTC 1050-3.1 - weighing 36 tonnes - being remotely driven off the 36 axle M-SPMT ballast wagon of a 2,500 tonne LR 12500-1.0 onto what looked like a 50 metre long lattice boom section which was then slewed and lifted to around 20 metres in a tandem lift by a nine axle, 750 tonne LTM 1750-9.1 and an 800 tonne LG 1800-1.0.

While in the air, the LTC 1050 drove along the beam and then slewed over the side to lift a large sign stating that since 2021 the EHINGEN plant has saved 19,500 tonnes of CO2 by using HVO fuel.

This was a highly complicated tandem lift, made even more difficult with the constantly changing centre of gravity of the load involving calculations in three dimensions! The LR 12500 - valued at around €30 million and sold to Sarens - featured a 7.5 metre wide high performance boom and 1,400 tonnes of counterweight. The crane can lift 1,700 tonnes at 100 metres and 315 tonnes at 200 metres.

The event ran late into the evening ending with a spectacular drum, music, drone and laser show. ■



The LTC was driven along a lattice boom section lifted in a tandem lift by an LTM 1750 and an LG 1800



The evening show included music, drums, lasers and drones

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1. Max Height	21.38m	22.95m	28.70m	44m	50.6m
2. Platform Capacity	250/360kg	300/454kg	300/454kg	300/454kg	300/454kg
3. Range extender	6kW	6kW	8kW	18.2kW	18.2kW
4. Hydraulic Tank Capacity	75L	75L	120L	245L	300L



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