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# Dynamic Loaders

The loader crane sector is one of the most dynamic we cover in terms of the pace of new product development, yet in terms of the three largest manufacturers - Palfinger, Hiab and Fassi - little has changed in recent years. The market has certainly grown following the lingering effects of the 2008-10 recession, mostly in Northern Europe but increasingly joined by the slow recovery of Southern economies. While the market leadership may not have changed or even shifted much in that time, there are an increasing number of manufacturers fighting for a slice of the global pie. Cranes & Access reports...

In addition to the many well established loader crane manufacturers, the sector has seen the arrival of new blood with companies such as Co.Me.T and Soosan dipping a toe into the market, while some long established regional producers are also looking to expand, such as Spanish company Toimil and **Dutch group Hyva.** 

As with other lifting sectors manufacturers are constantly striving to increase performance at the same time as reducing weight. Better design and higher strength steels are helping improve capacities and reach, coupled with technology such as variable outrigger monitoring and sophisticated stability safety systems, not to mention improved remote controls. The net effect is the introduction of far more technically complex products, but ones that are easier and safer to







Hiab has also updated its small telescopic T-Series cranes, launching the 0.9 tonne metre T-009 and the 1.8 tonne metre

At the end of last year we took an in-depth look at Hiab and its concerted effort to rebuild after a long-term market share slide, with a focus on re-taking its position as the number one producer. It must be galling to have what has been a generic name - Hiab - and not to be market leader! The company has completely sorted out its identity crisis, separated the business from Kalmar and is now changing its local business name from Cargotec to Hiab, while remaining an important part of the cargo handling group. Hiab certainly appears to have re-found its mojo, introducing more innovations and launching new products. For the general construction sector its latest products are the 'big five' - a range of high capacity models with improved performance and economy, with load moments from 50 to 90 tonne metres. The range includes the X-HiPro 548, X-HiPro 638, X-HiPro 658 the X-HiPro 858 and X-HiPro 1058.

The Hiab X-HiPro 558 shown at Bauma, is, says Hiab, the strongest crane that can be mounted on a three axle truck and has been specifically designed for heavy, bulky loads. The headline

specifications include a maximum capacity of 50 tonne metres, continuous slew and a total weight with eight metre stabilisers of between 5,350 and 5,458kg with only 1,283mm of installation space required. Hiab has also updated its small telescopic T-Series cranes, launching the 0.9 tonne metre T-009 and the 1.8 tonne metre T-018.

The move towards Virtual Reality

(VR) goggles for crane training purposes is also gathering pace with several manufacturers offering increasingly sophisticated solutions. Hiab has gone one step further with its unusual HiVision product which is intended to allow remote crane operation using VR goggles. Four cameras - two pointed forward and two pointing left and right are mounted on top of the crane, covering the whole working area to provide the operator with a field of vision that is not normally possible. In this way the goggle-wearing operator is liberated to operate the crane from any location without physically moving around - for example in a safe and comfortable environment inside the truck cab, or indeed remotely from a safe distance. The cameras - located in a small box where the operator's head would normally be when using a top seat/cab - give a realistic 240 degree view with the left and right cameras providing sideways vision.



#### loader cranes

Hiab says the system has been thoroughly tested and feedback is good. One tester - Henrik Strömbäck from JS Frakt, with 20 years' experience hauling timber - tried the VR goggles at Hiab's Research & Development facility in Hudiksvall, Sweden. "The system exceeded my expectations - it is very different compared to the traditional way of operation, but there is no need to re-learn the way you normally work," he said. "You don't have to climb out in the cold - everything is close by and you can start loading immediately when you arrive on site. You have a surprisingly wide field of vision."

Another reason driving remote crane operation is the ever-stringent safety regulations. The company thinks that one day systems such as HiVision may become compulsory and replace unprotected top seat control points. The load still needs to be attached and removed of course, but depending on the type of load being lifted, automatic hook on and drop technology is already well developed. With loas of course. as with muck away applications the grab already does that.

#### **Market stats**

Like most equipment sectors it is difficult to give precise numbers for the global market. In the UK total sales of loader cranes are thought to be around 2,000 units a year, with cranes of more than 30 tonne metres making up around 400 units of the total. The UK differs from continental European markets in that it has three principle areas - big cranes, muck away applications and the builders' merchants/general delivery market. In mainland Europe the cranes and contractors tend to

The uncontested global market leader remains Palfinger. In recent years the group has grown considerably, as it launched a constant stream of new and upgraded cranes. Its distribution strategy also appeared to suit the times and the market better than say Hiab, although it is publicly quoted, the group remains family controlled with a clear focus on the long term, rather than the quarterly results and conference calls. The Palfinger range of loader cranes is now exceptionally wide, and topped by the 200 tonne metre PK 200002 L SH, which Palfinger claims can lift with a 60 tonne All Terrain crane. Further down the scale, Palfinger's new heavy-duty PK 165.002 TEC 7 for 32 tonne trucks, demonstrates the current progress being made to refine loader cranes, with a

substantial weight saving over its

predecessor - the PK 150.002 - of

800ka.

different tasks with the same crane.

The company has formed several joint ventures, the first fruits of the Palfinger and Sany venture - Sany Palfinger SPV Engineering - were seen at Bauma with the unveiling of its first model, the SPS 20000 which is currently aimed at the Asian market. The two companies formed two 50/50 joint ventures back in 2012, investing €106 million in the new businesses. The 20 tonne metre straight telescopic crane uses high strength steel for its 14.3 metre boom, and has an overall weight of 3,820kg. It also features an eight tonne winch and a continuous slew. Sany Palfinger SPV will primarily produce and sell Palfinger products for the Chinese market and will initially build 10 Palfinger loader





close to Sany's Changsha facility and headquarters, as well as establishing a national loader crane dealer network. A second phase will include aerial lifts and other Palfinger products. The new plant is said to have an ultimate capacity of 10,000 cranes and aims to gain a 30 percent share of the growing market for loader cranes in China, originally forecast to reach 30,000 units by 2017, that now looks somewhat optimistic given the current economic situation.

#### The Palfinger Fall **Arrest system**

Another innovation from Palfinger is its fall protection mode (FPM), where the crane effectively serves as a fall protection anchor point. **Developed following consultations** with safety experts in Austria, Germany, Switzerland and the South Tyrol area of Italy the system is currently only offered in these countries.

It can be used with the Palfinger SH and TEC 7 loader cranes where other safety measures such as scaffolding, platforms or safety harness anchor points are not available when working at height. For example, when working on fragile roofs the new fall protection system can be attached to a loader crane as a safe but possibly expensive alternative.

The individual wears a fall arrest harness which is then attached to a line running from the FPM fall arrester mounted on the crane boom. The fall protection system is subject to a full risk assessment, some specific requirements and strict compliance with precisely defined safety requirements. These include the requirement for at least two people to be present - the person who is secured, while the other operates the crane. The system can be provided with new cranes or retrofitted to its SH and TEC 7 models.

Two other ranges from Palfinger

include the L series aimed at construction, and the Solid models seen for the first time at Bauma. The L series features 440 degrees of slew with the slewing gear mounted in an oil bath, internally routed hoses and an optimised top seat with new joystick controls.

The new Solid cranes will replace existing models PK 16.001, PK 16.001-K and PK 18.001 EH. They feature the new Single Link Plus boom system that allows above horizontal articulation without the need for a double link mechanism. Available in three different configurations the Solid models include the PK 17.001 SLD 1 - a non-CE entry level model delivered without overload protection in its basic version. The PK 17.001 SLD 3 equipped with Paltronic 50 in basic version and available in non-CE and CE-versions. Top of the range is the PK 19.001 SLD 5, equipped with Paltronic 50, E-HPLS, radio remote control and a load-sensing control

Due to the Single Link Plus the PK 5.001 SLD 3, the PK 7.001 K SLD 3 and the PK 7.501 SLD 5 feature a much better articulation geometry than previous models and with



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With the PK 7.501K SLD 5, an HPLS crane in the seven metre range is available for the first time.

the PK 7.501K SLD 5, an HPLS crane in the seven metre range is available for the first time. The reach has been extended from 6.9 to 8.8 metres by means of a third extension

#### **Big loader cranes**

Very large capacity loader cranes are a very specialised sector of the market with relatively few players. Cormach has always had a good range of specialised high capacity cranes, and has recently launched another - the 575000 AXO E. The crane boasts a basic nine section boom and 25 tonnes of counterweight, allowing it to lift 80 tonnes at just over four metres, 23 tonnes at 14 metres and 8.3 tonnes to a height of almost 34 metres. With jib it is capable of 1.6 tonnes at 58 metres. It is obviously a very large crane and mounts on a 2.55 wide 8.3 metre long chassis, with an outrigger footprint of 11.8 by 11.4 metres. The first unit has been sold to Otman Hassan & Sons, of

Turkish producer World Power Erkin however is the must see

company if large articulated cranes are your thing. The company was established in the early 1980's and claims to be the country's leading crane and construction machinery manufacturer. It also produces truck cranes up to 70 tonnes and a 30 metre truck mounted work platform on a 7.3 tonne chassis with 17 metres of outreach. Based in Aydin, it offers a range of loader cranes from nine to 450 tonne metres which are CE/TÜV certified.

The range is topped by the 450 tonne/metre ER 450.000 L-8 mounted on a four axle six wheel drive chassis with Mercedes power and a ZF Astronic transmission. It has a maximum capacity of 150 tonnes, but is too heavy for most European countries in this format, with axle loads of 14 tonnes. Maximum reach is 27 metres on the main boom or 52 metres with iib. The unit can also be mounted on a compact five axle trolleytype chassis for use in industrial applications with three section telescopic outriggers.



The World Power ER 450.000 L-8 can also be mounted on a compact five axle trolley-type chassis for use in industrial applications.





#### **New names**

Two companies looking to enter the market include Italian access manufacturer Co.M.eT and Korean company Soosan. Co.M.et unveiled a three crane line up at Bauma, but says that it is still in the early stages of marketing the products and would not supply more information.

Korean company Soosan - better known in Europe for its hydraulic breakers and demolition attachments - has launched its first prototype the 12 tonne metre class, SCF 1216 with a 14.1 metre boom and an outrigger spread of 5.6 metres. If feedback is positive, it will develop further models in the range for the European market and with a focus on the 12 to 23 tonne metre sector.

Other companies with names likely to be less than familiar include Spanish company Toimil and German-based MKG. Toimil - or Hermanos Toimil Garcia to give it its full title - has been building hydraulic lifting equipment for more than 50 years. The family business started with forestry cranes on farm tractors in the 1980s, and these together with trailer mounted forestry cranes, make up a large proportion of its current range. Its articulated loader crane range runs from two to 85 tonne metres with features such as dual side controls, hexagonal booms, Scanreco remote controls and stability control





Toimil - or Hermanos Toimil Garcia to give it its full title - has been building hydraulic lifting equipment for more than 50 years.



Toimil's articulated loader crane range runs from two to 85 tonne metres.

systems. In 2014 it produced almost 800 cranes - its best year so far. With revenues of €17 million, around 87 percent of its production is now exported, to a range of markets including Korea, Venezuela, Denmark, Turkey, USA, Poland and Russia. It has 12 distributors at the moment - spread through North and South America, Europe and Africa - but is looking to add to this. Interestingly the company also produces a 12 metre trailer mounted work platform - the Prado 12T.

German company MKG was established in 1969 in Gerrel, Northern Germany and is known for its long-boom brick handling, recovery and marine cranes, built to customer's specifications, with capacities ranging from five to 125 tonne metres.

At Bauma it unveiled the 75 tonne metre HLK 801 HP a6-a4, built for a customer in Schleswig-Holstein, Germany. Mounted on a Volvo 8x4 chassis with two front jacks, allowing it to have a reduced outrigger spread of 8.61 metres and still lift its entire chart through 360 degrees. A new continuously variable stability system ACS



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#### loader cranes

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3 Plus also includes the weight of the truck and its load in the stability calculation, while sensors monitor the 'out of level' situation to provide the optimum capacity within the stability range. Maximum capacity is 16.5 tonnes at four metres radius, while its six extension boom reaches 16 metres, which increases to 24.75 metres with the four section jib. The company has also launched a new Automatic Loaddependent speed control - ALG aimed at preventing or curbing load swing with heavy loads. The new HBC radio remote control now has a display with all relevant date giving the operator the actual weight of the load in kg and not as a percentage.

#### Hyva steps up

For many Hyva is another new

force in the loader crane market, having now fully digested Italian companies Amco Veba and Fratelli Ferrari. At Bauma it launched two new crane 'families' comprising 12 models and variations, including two new telescopic units - the 13 tonne HT130 and 16 tonne metre HT162 aimed at the car recovery market and applications where a compact, light and easy to operate crane is preferred. The other new models are articulated cranes, starting with the relatively simple HB range, comprising the HB130 and HB160 models with 13 and 16 tonne metre ratings, designed for routine basic delivery duties. The more sophisticated HC line of six models, including the HC131, HC143, HC153, HC161, HC171 and HC183



with capacities from 13 to 18 tonne metres, equipped with double linkage boom systems and targeted at more complex lifting applications. Finally the HC131K and HC161K are short boom articulated cranes with double linkages designed for heavy duty applications, such as grab and clamshell work for installation on short wheelbase trucks.

The new models feature a new control station, incorporating both crane and stabiliser controls and user-friendly interface, to help improve operator efficiency and safety. The new Dynamic Load Diagram system, confirms the available lifting capacity based on the truck's stability at the time, while the Magic Touch allows automatic stowage and unfolding

from travel to ready to work position. The new models also include several options of radio remote control and a wide range of stabiliser configurations. The 425 degree slew is said to be best-inclass for medium sized cranes.

The 12 models will also be available under the Ferrari brand known as the 7000 and 9000 ranges. Ferrari has also agreed a UK distribution agreement with custom truck bed manufacturer Shawtrack.

#### **New Fassi cranes**

As one of the leading global manufacturers Fassi is constantly adding and upgrading models. Bauma saw several new additions including the F40B, F255A and the heavy duty F1650RA.







At the end of last year the company launched two models in its light-duty range - the six and seven tonne metre F65B.1 and the F70B.1. These models are nine percent lighter than their predecessors thanks to the use of ultra-high strength steel helping add to vehicle payloads as well as compensate for heavier engines. They also use a new boom link design on the primary and secondary joints resulting in a nine percent increase in reach on the F65B.1, compared to the model it replaces.

However Bauma saw the introduction of another crane in the light-duty range - the new F40B. With extremely compact dimensions and a very high power-toweight ratio, Fassi says the new crane is ideal for use on chassis up to 3.5 tonnes. Available in four versions the F40B.0.24 has a load moment of 3.67 tonne metres, a 9.4 metre reach and weighs 675kg.

Moving up in capacity to the middle-range XE segment the new F255A follows the recent introduction of the F545RA, and is a step closer to completing the XE range. With a 22 tonne metre load moment the F255A has 17.1 metres of reach and is available with the L213 hydraulic and manual jib extensions to give a maximum reach of 25 metres. Standard features include the FX500 control system, D850 hydraulic distributor bank, the Fassi RCH/ RCS remote control and the FSC-S or H stability control system. It will be available in various versions, up to a maximum of six hydraulic sections in the base configuration and in four versions with a short secondary

The final new addition is the 121 tonne F1650RA.2.28 xhe-dynamic, its third largest heavy duty crane. The F1650 slots between the existing F1550 and F1950 and has a standard reach of just under 20 metres where it can lift up to 5,245kg. With jib the F1650 can lift 2,250kg to 26.8 metres. The unit has 360 degree slew and weighs a shade over 13 tonnes.

#### Turkish delight

Italian manufacturer Effer is set to launch the 95 TLF with its partner in Turkey, TLF Makine. The buoyant market in the country has resulted in the company creating a crane specifically for the local market,







#### loader cranes

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designed and built in Italy and featuring Effer's in-line boom system which heavy loads. The 95 TLF has a Weldox steel 1300 jib, cab and winch.

In the UK, Effer's new distributor -Martin Williams (Hull) - will be at Vertikal Days in June, with the Effer 955 with XV Stab as sold to Michael Large, a rental company and arborist from Northern Ireland. This particular outrigger system combines the CroSStab and V-Stab systems for improved stability. The product is aimed as an alternative to an All Terrain crane in terms of capacity and reach. The company will also show a rear mounted Effer 525 5s on a Volvo Tridem chassis, built for County Lifting of Northamptonshire. This crane is used general lifting, machinery moving and as a support crane for its larger All Terrain cranes, transporting and lifting counterweight and large outrigger Mats.



## PM group rejuvenated

Just over a year ago Manitex International acquired the PM Group which includes aerial work platform manufacturer Oil&Steel and PM cranes, one of the oldest producers of loader cranes in Italy. PM is Manitex's latest acquisition and part of a the rapidly expanding group which includes Valla pick & carry cranes, CVS-Ferrari reach stackers and port equipment, and Manitex boom trucks, among others.

The acquisition appears to have focussed both PM group companies, helping improve their financial worries and allowing them more freedom to design new products and grow.

The PM group is now headed by Luigi Fucili who joined the company in 2003 as sales director with the goal of developing exports. In June 2007 he was appointed chief executive and since 2012 has been

in charge of both PM and Oil&Steel.

"I took over from Marco Milesi who in 2002 had completed the acquisition of Autogru PM - a company founded in 1959," He says. We now have offices in North America, Argentina, Chile, Mexico, the UK, France, Spain, Germany, Russia and Singapore which has allowed us to capture more international sales. We are now expanding the network with

branches in Jebel Ali in Dubai and in Gardermoen, Norway", says Fucili..

"Jebel Ali aims to strengthen our presence in the Middle East where there is a great demand for lifting solutions due mainly to the strong growth of various economic sectors particularly construction. Norway is a highly strategic position, providing us with a point of reference in the northern European markets which are increasingly exacting in terms of products and technology development."

The current PM range has more than 50 models and 350 configurations, with design to final testing taking place at the two PM plants in San Cesario, Italy and Arad Rumania. San Cesario carries

out all assembly, quality control, painting, and testing, while the facility in Rumania - which was opened in 2004 and now employs 130 - produces fabrications.

PM's latest cranes include the PM 45527 and PM 55525 in the updated Heavy Range suitable for mounting on 26 to 32 tonne trucks. The new 45.5 and 55.5 tonne metre models have up to nine extensions and several versions with jib. The cranes include a variety of new features, including a new easier to use control station and the Power Tronic Advance Plus load handling system - said to improve lifting precision and safety - improved stability control monitoring, soft stop end stroke hydraulic cylinder cushioning and fully proportional speed management.



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