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The horse before the cart?

Compared to scissor lifts and booms, the mast boom is a relatively recent development to hit the shores of Europe, having started out as niche product in the US. *C&A* takes a look at how the mast boom is fairing up today.

THE MAST boom was originally conceived by US-based aerial platform producer, Lift-a-Loft, and subsequently further engineered and brought to its current volume status in France, Europe's largest mast boom market, by Delta Systemes, now known as Manlift, part of the Manitowoc Group.

The original idea was to create a product that fitted in half-way between a scissor and a boom lift, and one that would penetrate the mainstream market at a price to match. Until the mast boom came along, if you needed outreach, you bought a boom, but even the smallest

units were bulky, heavy and expensive. To cater for this market, some producers developed extra long deck extensions, or cantilever baskets for small scissor lifts, but these usually offered less than 2 metres of outreach, and because it was longitudinal to the main platform, this was impractical for use in aisle ways and tight areas.

With the advent of the mast boom, outreaches of up to 3 metres, and working heights of up to 8 and 10 metres were now achievable, and often in a more compact package than a mini electric scissor lift. With a width of under 1 metre, and a slewing capability of at least 180 degrees, these new machines were perfect for industrial maintenance, where they could work in tight areas and reach over obstacles. Some of the earliest users were car plants, where mast booms allowed maintenance access directly over assembly lines during normal working hours without disrupting production.

The big leap forward though came in France, when Delta, finding that relying on end user sales was limiting, started to rent mast booms to customers who were willing to try them, but not able or willing to buy them. Until then, most rental companies refrained from adding mast booms to their fleets. After-all, no one called and asked for them!

Once Delta started to make them available to rental companies, however, all sorts of users began to see the benefits. Some moved from booms, where they had no need for the extra outreach, and profited from more compact dimensions, not to mention lower rental rates, while others upgraded from scissors, to benefit from the ability to reach over obstacles cluttered on the ground.

GLOBAL HITCH

Today in France, you are just as likely to see electricians, HVAC engineers and other contractors using mast booms as you are industrial or commercial users. So far, however, this wider-spread usage has not caught on in the same way outside of the country.

According to Marcel-Claude Braud, chief executive officer at Manitou, numerous major rental companies have recently renewed their fleets with around 200 of its 80 VJR and 105 VJR mast booms. Pictured is the 10 metre working height 105 VJR model.



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MAST BOOMS



Manlift's Toucan mast boom line ranges from the 8 metre working height Toucan 800 up to the 13 metre 1310. Pictured is the 9.2 metre working height Toucan 1210.

"The mast boom market is primarily a French one with over 1000 units sold per year," says Laurent Guillaux, vice president of sales at Manlift, producer of the Toucan mast boom range. "Even French rental companies have been timid in their investments over the last two years, so volumes have dropped since 2000. This year should be a good vintage, however, as the rental companies have started investing again in reasonable volumes. End user sales in France have remained stable over the last two years after a peak in 2000, but fluctuations in this market are less marked.

"Most of our Toucan sales are in the European Union," continues Guillaux. "Asia is on the up and so is the Middle East, but still quite behind. The success of the mast boom concept in France has been very aggressive end user marketing from the outset, which has generated a strong demand for rental, which in turn has helped increasing end-user sales.

"The concept is coming through in other European countries as rental companies show more and more interest," Guillaux explains. "Industrial sales, on the other hand, have not been pushed so aggressively in France, so the process is slower. In price sensitive markets like Spain, the inherent cost of mast boom technology has been a deterrent. Also, the buoyant activity in Spain's construction sector has not forced rental companies to tackle the industrial market."

According to Patrick Mutel, directeur generale of French rental company, Zoom France, around 40 per cent of the annual volume [mast boom production] is sold directly to end users, mainly for factory, or outlet maintenance, while around 60 per cent goes to rental companies. "Every rental company in France has mast booms in its fleet," says Mutel. "Around 40 machines out of our 650-strong fleet are mast booms, while Kiloutou operates around 180 units."

In the UK and Ireland, mast boom usage outside of specialist applications is very rare. In fact the number of large rental fleets with significant numbers of mast booms in their fleets could probably be counted on one hand. It seems to be a case of the horse before the cart.

MAST BOOMS

SPOILED FOR CHOICE

In spite of the fact that the mast boom market is still largely an end user one, with some 50 per cent of world production delivered into France, there is a surprisingly large number of mast boom products available. C&A counted at least nine active manufacturers from five different countries. We also estimated, however, that around 80 per cent of the units sold each year are produced in France.

If you are buying in the UK or Ireland, then the choice of brand is practically limited to four producers who actively market their products in the two countries, as most find it hard to meet the challenge of building this relatively low volume product at a cost that allows it to be sold in the required price range between scissors and boom lifts. "The manufacturing of mast booms is much more complicated than for a scissor," explains Mutel. "The cost is therefore around 30 per cent more expensive."

One company that doesn't seem to have an issue here is Manlift with its Toucan mast boom range.

For many years, the industry has been told that the Toucan product is the Jewel in Grove/Manlift's crown, consistently profitable and well-respected. Today, the crown has gone, and the jewel is all that remains of the once complete Grove/Manlift product range.

The Toucan line ranges from the eight metre working height 800 up to the 13 metre 1310 and is the most complete range of mast booms available on the market today, with 11 standard models and special options for applications such as stock-picking and aircraft maintenance.

"Compactness and manoeuvrability are still the main factors that the market is demanding, while the ability to work outside without restrictions and up-and-over clearance are essential," continues Toucan's Patrick Gillaux.

Most mast booms fall into the eight or ten metre working height category, with an overall width of just under a metre, and a stowed height of just under two metres, which allows them to pass through most industrial doorways and narrow aisles. Working outreach, which is typically half a metre beyond the basket edge, is usually around three metres.

While the main dimensional specifications are very similar, not all machines are the same when it comes to other specifications. Turret rotation or slew capacity, for example, varies from 70 degrees either side of centre (too limiting for many), to a full 360 degrees (probably more than absolutely necessary). The design of the mast itself is typically



UpRight says that its relatively new powered platform breed, the MB range, which includes the 10 metre working height MB26 (pictured), sits in between a scissor and a boom lift.



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MAST BOOMS

divided into two camps. Firstly, there is the open design of the forklift-style mast, favoured by Manlift, who says that it is easy to inspect and service, and handles the deflection caused by the jib better and will not bind up as with the second box design-type.

The box-section design is now utilized by almost everyone else, and typically takes up less space, offers more rigidity, particularly in the front to back plane, and offers greater protection to the extension cylinder and any chains and cables. In reality, however, the masts on all of the top units work well, so choice is generally a personal one.

A key performance factor to look for is gradeability and the ease of loading onto transport, as some early units were notoriously difficult and even dangerous to load onto standard rental trucks. More recent product introductions have much lower centres of gravity than in the past, lighter overall weights and good gradeability.

Ground clearance is still a bugbear, however. With narrow width to height ratios, all mast booms will be fitted with some form of pothole protection, usually in the form of massive low hung blocks behind the front wheels and in front of the rear wheels.

UpRight was the first to offer active pothole protection to overcome the ground clearance issue, but while solving a declared problem, this does not appear to have attracted users to switch brand in any significant numbers, so one must assume that limited ground clearance on the "passive pothole protection" units is ultimately acceptable. It does though limit mast booms very much to "slab" type ground conditions.

UpRight says that its relatively new powered platform breed, the MB range fits nicely between a scissor and a boom lift, and includes the 10 metre working height MB26 and the 8 metre MB20N (narrow), one of only three mast booms built that allow passage through a standard 820 millimetre single doorway, the others being the 5 metre working height mast boom from France-based Comabi, launched last year, and CTE's 8.4 metre PSS-Dumbo). According to UpRight, its MB product has been particularly popular among customers who typically rent scissors or smaller booms, such as maintenance contractors who prefer the extra outreach that you don't get with scissor lifts. Other users appreciate the ease with which you can easily maintain a parallel work pattern against a vertical work surface or the high up-and-over reach that the vertical mast design provides.

"We are currently working on a new control system for the MB mast boom to give better user interface, extended battery life, smoother control of the machine, and even better gradeability," explains Steve Couling, European sales and marketing director at UpRight International. "Mast boom sales to the end-user and the resale market remains steady, but the rental market for mast booms is not as buoyant as we had expected in the UK. It shows encouraging signs though, but France remains the strongest rental market for them at present."

Arguably France's number two producer behind Manlift, is Haulotte, which offers its Star range that spans from eight metres to 12 metres

working height, and incorporates ideas from the ABM product range following an acquisition a few years ago.

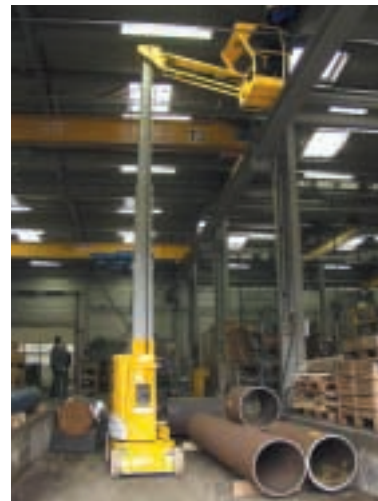
Also based in France, Manitou produces the VJR range comprising an eight and ten metre model in the 80 VJR and 105 VJR respectively. "More than 2000 units are now in service worldwide," explains Marcel-Claude Braud, chief executive officer. "The rental market shows a great interest in our machines because of the compactness and reach. In France for example, the major rental companies have renewed their fleets with around 200 80 VJRs and 105 VJRs."

Other mast boom producers include, CTE and Aero of Italy, the former of which is currently considering marketing its two PSS-Dumbo models in the UK for the first time.

So what about the future of the mast boom? Well, according to Gillaux "it is currently playing a big part in the strategic development of many rental companies in France, and while competition is still cut-throat in the construction sector, industrial/commercial rental remains a comparatively lucrative activity."

That maybe the case across the pond, but what about the UK? According to UK rental firm, HSS Lift & Shift, the introduction of the mast boom into its hire fleet has opened up new market areas for the company, where its customers have found scissor lifts either too big and heavy for specific applications, or standard AWP's inappropriate.

"These products are becoming widely accepted in the hire market because the customers are using the machines for short-term building and site maintenance or for applications such as stock picking or inventory control during peak periods, such as Christmas and seasonal sales," explains a HSS spokesperson. "HSS requires units that are easy-to-operate and maintain, economical to run, and machines that are also durable enough to withstand the abuse received whilst out on hire."



So will the mast boom take off in the same way in the UK as it has in France? It comes back to the question of the cart and the horse. If they are given the chance and become more widely available to rent, then yes, maybe. If not, then for now it seems unlikely.

Arguably France's number two mast boom producer, Haulotte, offers its Star range which includes 5 models ranging from eight metres to 12 metres working height. Pictured is the ten metre Star 10.

8 METRE CLASS

MAKE	MODEL	WORKING HEIGHT	O/A WIDTH	LIFT CAP	MIN LENGTH	GVW	OUT REACH
Manitou	80 VJR	7.90 m	990 mm	200 kg	2,670 mm	3300 kg	3.30 m
UpRight	MB20N	8.00 m	815 mm	215 kg	2,200 mm	2,172 kg	2.13 m
Manlift	Toucan 800	8.00 m	990 mm	200 kg	1,900 mm	1,950 kg	2.2 m
Manlift	Toucan 800Di	8.00 m	990 mm	200 kg	2,500 mm	2,000 kg	2.8 m
CTE	PSS-Dumbo	8.40 m	750 mm	120 kg	2,250mm	2,200kg	3.3 m
Manlift	Toucan 861	8.72 m	990 mm	220 kg	2,675 mm	2,980 kg	3.14 m
Manlift	Toucan 870	8.72 m	990 mm	220 kg	2,675 mm	2,980 kg	3.14 m
Aero	VG 900E	8.90 m	990 mm	265 kg	2,450mm	2,700kg	3.15 m
Haulotte	Star 8	8.73 m	990 mm	200 kg	2,610 mm	2,480 kg	3.10 m
Haulotte	Star 9	9.00 m	990 mm	210 kg	2,350 mm	2,350 kg	2.50 m
Manlift	Toucan 910	9.00 m	990 mm	200 kg	2,775 mm	3,400 kg	3.10 m

10 METRE CLASS

Manlift	Toucan 1010 Aero	9.90 m	1,060 mm	200 kg	2,820 mm	3,500 kg	3.47 m
UpRight	MB26	10.00 m	990 mm	215 kg	2,800 mm	2,672 kg	3.0 m
Haulotte	Star 10	10.00 m	990 mm	200 kg	2,600 mm	2,540 kg	3.1 m
Manlift	Toucan 1010	10.10 m	990 mm	200 kg	2,890 mm	3,300 kg	3.12 m
Manitou	105 VJR	10.05 m	990 mm	250 kg	2,690 mm	3,290 kg	3.35 m
Aero	VG 900E	10.45 m	1,150 mm	265 kg	2,670mm	3,100kg	3.35m
Manlift	Toucan 1100	11.00 m	990 mm	200 kg	2,680 mm	3,515 kg	3.30 m
Haulotte	Star 11	11.00 m	1,020 mm	200 kg	2,350 mm	2,580 kg	2.50 m
CTE	PSS-Dumbo	11.00 m	1,000 mm	200 kg	2,250mm	3,300kg	3.30 m

12 METRE AND OVER CLASS

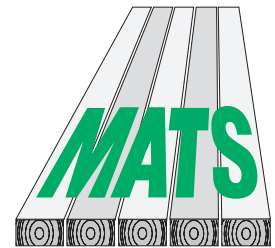
Haulotte	Star 12	12.00 m	1,290 mm	210 kg	2,350 mm	2,450 kg	2.5 m
Manlift	Toucan 1210	12.00 m	1,200 mm	200 kg	3,850 mm	5,200 kg	5.00 m
Manlift	Toucan 1310	13.00 m	1,345 mm	200 kg	4,070 mm	5,600 kg	5.22 m

Micro mast omission

C&A would like to apologise to Manlift, which kindly pointed out that they had been left out of the micro mast lift table which formed part of our electric scissor lift feature published in the last issue of the magazine. The following three platforms with mast-type lift mechanisms are currently offered by the company.

Manlift	Toucan Duo	6.00 m	780 mm	130 kg	1,650 mm	1,000 kg
Manlift	Toucan Jnr 6	6.00 m	780 mm	200 kg	1,500 mm	850 kg
Manlift	Toucan Jnr 8	8.00 m	780 mm	120 kg	1650 mm	950 kg

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