

# Boom Boom phuttttt

The self-propelled boom lift has been with us since the early 1960's when John Baerg, a farmer in Dinuba, California developed the Tree Farmer for pruning, picking and thinning fruit trees. He also patented a control system for the machine, consisting of rods and levers. Selma Trailer, based in Selma California took the concept and put the Tree Farmer into production in 1962 and began looking for industrial and construction customers.

The breakthrough, if one can call it that, came when Bob Irving, who owned a rental company in the Los Angeles area, agreed to put four units of what was now called the Tree Master, into his rental fleet. The association with trees was considered to be too agricultural so the word Manlift was adopted. In order to help sell the concept he allowed his salesman - John Parker - to use one of the units as a loan machine to place with difficult customers free of charge. Irving would later found Mark Industries, named after his son Mark.



The Selma tree farmer

The next big step in the development of the modern boom lift was the addition of a telescopic boom. John Grove is widely credited with being the first to do this commercially in 1971 with his first aerial lift product the Condorlift 27-32 with its two-section telescopic boom and 27ft platform height. The 27-32 was soon given a three section boom, eventually becoming the JLG40F - a product that really established the boom lift concept.

The first JLG - the Condorlift 27-32



Genie 30

The next major development was the arrival of the articulated boom. Trying to pin down the true originator of this product is much more difficult and relates as much to the single and dual riser mechanisms as the overall product itself. Anthes Hi-Reach and Gala engineering, which later became part of Simon, have often been credited with the concept. Although Anthes was the first with a complex machine, it was Genie that made all the early running when it introduced its Z30/20, articulated boom lift in 1985 taking the concept into the mainstream market.



The Snorkel boom lift - Reach Up...Get out Over

The first unit was battery powered with LPG and Diesel following on later. The other company that had considerable early success was Snorkel with its UNO range launched in 1987. It had originally been dubbed the LBC (Light Bulb Changer) but management thought better of it and Up N' Over became the UNO.



Articulated booms were initially designed for industrial and institutional applications, replacing heavy, narrow-aisle zero-tailswing telescopic models that were never very popular. Their benefit is of course lighter weight and/or more compact dimensions - due to their reduced outreach - as well as the ability to reach up and over obstacles. There was a flurry of activity in the market as the articulated boom concept gathered pace with



This lift could be 12 years old, in fact it is almost eight - but very similar to a new one

boom in this year's Vertical Check (See page 33) few people noticed that it was not new.

As the crane fraternity discovered to their cost in the 1990's when new product development slows the market becomes less dynamic, particularly in difficult economic periods. Looking at the last 12 years it is hard to single out any really ground breaking new product in the sub 80 ft boom market. This means that a well refurbished, eight to 10 year old boom lift can rent out for exactly the same rate as a brand new one! The incentive to upgrade to newer models and pass the older machines on to developing markets is just not there. Saying this



Snorkel, Genie and Simon-Gala introducing 30 and then 40/45ft machines. In the frenetic development JLG and Grove, which had acquired Manlift in the late 1970's, were left behind as they looked on the new lighter products as fads that would not last. JLG eventually jumped into the market with the 33HA. Grove decided that rather than go head to head with the others it would jump directly to a 60ft model, which better fitted its heavy-duty crane manufacturing skills, and introduced the AMZ66 a rugged rough terrain articulated boom.

Since those heady days between 1985 and 1996, dramatic developments have been slow. In fact it was interesting to note that when JLG entered a seven year old model 600AJ articulated

there has been a flurry of development in the 80ft boom sector in the past year or two, with Genie introducing its latest product at the recent APEX show.

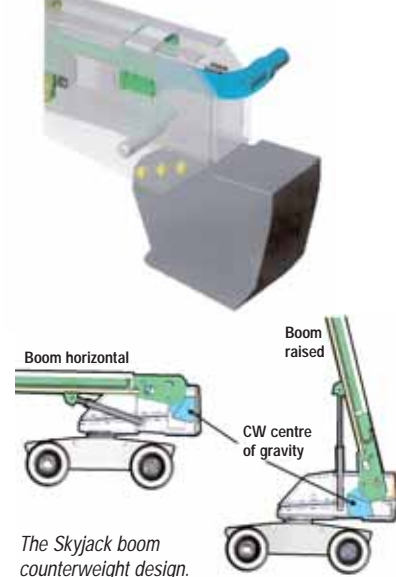
## 80ft's slim down

The first volume 80ft boom - built by JLG - had outriggers, which kind of negated the point of a self propelled lift. This was quickly replaced with extending axles, or in the case of Grove, a three metre wide chassis. For many years extending axles have been the standard configuration, allowing 80ft telescopic booms to be relatively light and compact while offering decent outreach. However after the first 80ft articulated booms arrived with their narrower chassis and fixed axles, 'the writing was on the wall' for the telescopic axles on any machine of this size.





The JLG 860SJ was the first 80/86ft telescopic boom to dispense with extending axles



JLG was first out of the box this time around eight years ago managing to keep the weight down by fitting a very short articulating riser that raised the boom pivot point and moved it towards the centre of the machine. Some three years ago Snorkel simply made its fixed axle model heavier - over 3,000kg heavier - but thanks to its aluminium boom it had the weight to play with as the original extending axle model was very light at just over 13 tonnes.

860SJ. The effect of this is to reduce outreach when the boom is horizontal, (although it compares favourably with the previous models) while providing extra height at steep boom angles, but most important of all it moves the boom pivot point towards the centre of the machine at maximum elevation, thus reducing the biggest stability problem with telescopic booms, that of rearward stability. Other improvements on the upgraded

almost 15 metres when the main boom is fully extended and elevated. It also has a height of more than 22 metres under the horizontal jib and a tailswing of just 720mm - less than half that of all of its competitors. And all this, seemingly without sacrifice. It is still too early to know if this new twist on the telescopic boom lift will take off or not, much will depend on price and distribution.

machine's centre of gravity towards the centre of the machine in the same way as Genie's 'Virtual pivot point'. The Skyjack system attached a 'hockey stick' linkage to the base of the telescope cylinder which a) allows the cylinder to be shorter - saving cost and weight and b) mechanically reduces outreach when the boom is horizontal, while providing a little extra height when the boom is fully elevated.

How do the new 80ft's stack up?

	Genie S80/S85	JLG 800S/860SJ	Snorkel TB85JFA	Haulotte H 28TJ+
Platform Ht	80/85ft	80/86ft	85ft	86ft
Platform Ht	24.4/25.9m	24.4/26.2m	25.9m	26.2m
Outreach	21.8/23.3m	21.6/22.9m	23.4m	22.6m
O/A Width	2.49m	2.49m	2.6m	2.49m
O/A Length	11.2/12.2m	11.35/12.2m	12.86m	12.25m
Lift capacity	227kg	230kg	227kg	350kg
Weight kg	16,100/17,236	14,820/16,490	17,100	17,300
Jib	1.52m -135°	1.6m -130°	1.52m -135°	5m -140°
Tailswing	1.42m	1.42m	1.50m	0.72m



Genie S85

Most recently Genie became the last big company to dump extending axles on its 80ft boom lifts, with the introduction of its new S80 and S85. The new models are a great deal more compact than the ones they replace. In work mode they have an overall width of 2.49 metres, compared to three metres and they are also slightly shorter when stowed, particularly the S85 which, with jib tucked, is almost a metre shorter than its predecessor. The penalty for the fixed width is around 1,000kg more Gross Vehicle Weight and a slightly wider transport width - the old units were just 2.43 metres wide when retracted - the new 2.49 metres. The sacrifices would have been a lot greater (as we have seen with Snorkel) had it not been for the company's 'Virtual pivot point', first introduced on the S60/S65.

models include updated wiring and electronics with improved lower and upper controls, including large clear pictogrammes (like JLG), improved hydraulic hose routing and a far greater use of steel tubing. This aims to limit rubber hoses to areas where there is movement, making for easier replacement, better cooling and more systematic assembly. Speed has also been improved with a 68 second time to full height compared to the more typical 80 seconds plus.

Something different from France

The other new entrant into the 80 to 90ft market is Haulotte with its H28TJ+. This new boom introduces a telescopic articulating jib to the self propelled market and as such offers a new concept in up and over reach. Launched in March, the unit is just now shipping to end users. On paper the new machine offers several advantages including a higher lift capacity at 350kg, an outreach of

A new 60ft player

Skyjack also launched a new straight boom earlier this year - the 61 and 66ft platform height SJ61T and SJ66T the latter being the former plus jib. The new models are largely traditional, following the no-frills solid engineering approach laid down by its 40/46ft booms unveiled almost two years ago. The 60ft model includes the same axles as the 40ft and the same drive motor, but using two rather than one in order to cope with the extra weight. With 50 percent gradeability, oscillating axle, and direction sensing controls they are strong performers.

In order to keep the machine lightweight and compact without sacrificing performance, the new model incorporates two devices to shift the

In addition Skyjack has attached a pendulum type counterweight to the back of the boom, which provides extra counterweight effect when the boom is at lower angles, while improving rearward stability and less counterweighting when the boom is at maximum elevation.



Skyjack SJ66T

How does the Skyjack stack up?

	Skyjack SJ66T	JLG 660SJ	Genie S65	Haulotte H23 TPX	UpRight SB66J
Platform Ht	66ft	66ft	65ft	67.6ft	66ft
Platform Ht	20.1m	20.1m	19.8m	20.6m	20.1m
Outreach	17.4m	17.3m	17.1m	19.5m	17.1m
O/A width	2.4m	2.44m	2.49m	2.47m	2.5m
O/A length	10.3m	10.84m	9.5m	10.6m	10m
GWW	13,383kg	13,115kg	10,102kg	13,110kg	11,920kg



# Tracked invasion?

The first impression of APEX show was the numerous tracked platforms on display, well it was in Holland after all. UpRight was showing a its new 10.5 metre working height crawler mounted scissor, the X28T built by Omega; Giraf Track (see page 30) unveiled its big capacity tracked boom platform/materials handler/crane, and Japanese manufacturer Nagano showed three different tracked articulated boom machines with platform heights of 9.28 metres, 12.14 metres and 18.09 metres all new to Europe.

Nagano Industries manufactures several products including mini excavators up to 7.5 tonnes, tracked access platforms and mini crawler cranes (with 2.6 and 2.9 tonnes capacity). Three of its five model range of tracked access platforms are now being distributed in Belgium and Holland by agent Nagano Hoogwerkers. However, in the rest of Europe - including the UK - the machines will be known by the company's other brand, Hanix, best known for its mini excavators.

Two platforms - the nine metre na90za and the 18 metre

na180ja - are due in the UK this month and will initially be available through the existing Hanix dealer network.

The smallest in the tracked platform range is the 9.28 metre platform height na90za, an articulated telescopic boom lift with large 3.15 metre long by 2.05 metre wide rotating platform. Weighing 7.3 tonnes the unit offers 360 degrees slew and 600kg lift capacity.

Largest in the range is the 18.09 metre platform height na180ja articulated boom lift, which features a dual parallelogram riser, three section telescopic boom and articulated jib. The basket is a more normal 1.16 metres by 760mm with 227kg lift capacity and total weight is almost 10 tonnes.

Slotting in between with a platform height of 12.14 metres is the 4.47 tonne, na120a which has a similar layout to its larger brother. We understand that Nagano Hoogwerkers, the distributor for the Benelux market has bought in nine stock machines to get started. Tracked machines are popular in Holland and northern Europe because of the extremely soft ground conditions. It will be

C&a

booms



Nagano launched three tracked machines at APEX

interesting to see how the existing Hanix mini excavator dealers in the UK take to selling a totally alien item of equipment. This is not the first time that Hanix UK, has tried to market a platform here, the company promoted a crawler mounted boom lift with big platform in the late 1980's /early 1990's but had no success.

It is always a challenge for a highly focused earthmoving company to focus on the aerial lift market, especially when the product is such a niche machine. JLG, Genie, Haulotte, Skyjack and Haulotte are hardly likely to be quaking in their boots even though these are some very interesting products.



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# Innovate or play it safe?

At the recent APEX show in Maastricht Canadian manufacturer Skyjack unveiled its first articulated boom lift, the prototype of its brand new 45/51ft rough terrain range. This is the largest volume sector in the self propelled boom market and is still dominated by the Genie 45/25 although many companies have taken a run at this market and found the going very hard. We look at Skyjack's new machine and its approach to this market.

Skyjack is no novice to the boom market. The company built up a range of unusual models in the 1990's, including the TK series and popular SJB-33N. However the company quit the market in 2000 and pulled back to its core scissor lift product range. Since then the company's fortunes have been transformed and it is now an important part of the Linamar automotive group. So in 2005, Skyjack decided that it was time to get back into booms. It began with a 46ft straight telescopic and earlier this year launched the 61/66ft models. Both products stick to the same fundamentals as its popular RT scissor lift range, avoiding unnecessary complexity - straightforward products competing in a conservative market.

The 45ft articulated market is a far greater challenge - do you introduce new ideas and innovate

*Even though a first prototype, everything under the covers was neat and well laid out.*

or play safe? In the end Skyjack decided to take no risks and opted to closely benchmark the Genie 45. Having looked at all manner of boom configurations it found that the Genie layout was the most cost-effective and posed less risk. First impression is that it is a direct copy, however the Skyjack uses matched riser arms to provide a perfectly vertical parallel lift, handy when working on a façade.

Other features which make it stand-out are the company's direction sensing drive and steer controls, 360 degree continuous slew, which the company believes will not only provide greater productivity, but that its simple rotary coupler will have lower maintenance costs and greater reliability compared to twisting and flexing hoses with non-continuous slew. On the chassis the company maintains its axle drive train, but has a manual button-operated differential lock, in order to provide a better turning circle with less tyre scrubbing on hard ground. Most importantly the new lift looks right, with some excellent styling and first class service access.

## So how does it stack up?

Well Skyjack is holding back from disclosing detailed specifications. we did all we could to obtain a few key dimensions, but apart from a class leading up and over reach we obtained nothing solid. Skyjack naturally do not want competitors to upgrade in the six months it will take to bring the product to market.



Skjack 46AJ

## Manitou moves up

Apex also saw the public unveiling of the latest new boom lift from Manitou. The company has made significant progress in recent years, particularly with its 47ft 160ATJ and 52ft 180ATJ rough terrain articulated booms, which have won a place within a number of rental fleets due to their strong performance and excellent quality of finish.

The company is now pushing to win a slice of the 60ft market with its new 59ft (yes I know- 60ft class!) 200ATJ. At a quick glance it looks like a slightly stretched and upgraded 180, thanks to the strong family design philosophy. However on closer inspection you realise that this is a totally new machine but does though maintain the features and layout of its smaller brothers. Unlike the smaller models the top boom is over-centre, in-line with the dual riser arms, rather than offset, for improved stability and platform rigidity.

The Manitou 200ATJ



Aside from this the new model is just slightly more of everything - slightly longer, slightly wider, slightly higher with a slightly longer jib. It also has a slightly wider platform at 2.1 metres (available as an option on the 180 rather than 1.8 metres) a slightly larger turning circle and slightly larger tyres. Most performance characteristics, from speeds to gradeability are the same, although the 200 weighs a full 2,000kg more and uses the same Perkins engine.



The Manitou control panel.

The new model also incorporates a large number of smaller more detailed refinements including improved controls, many of which are likely to trickle down into the two smaller members of the family over time.

Manitou also unveiled the 150 and 170AETJL Bi-Energy articulated booms with 43 and 50ft platform heights. The new models retain the full battery packs and features of the original electric models - first seen at Intermat 2006 - however they also incorporate a quiet Lombardini diesel engine, coupled to a 100 Amp DC Generator. The generator can not only run the machine without depleting the

batteries, but can also provide a rapid recharge

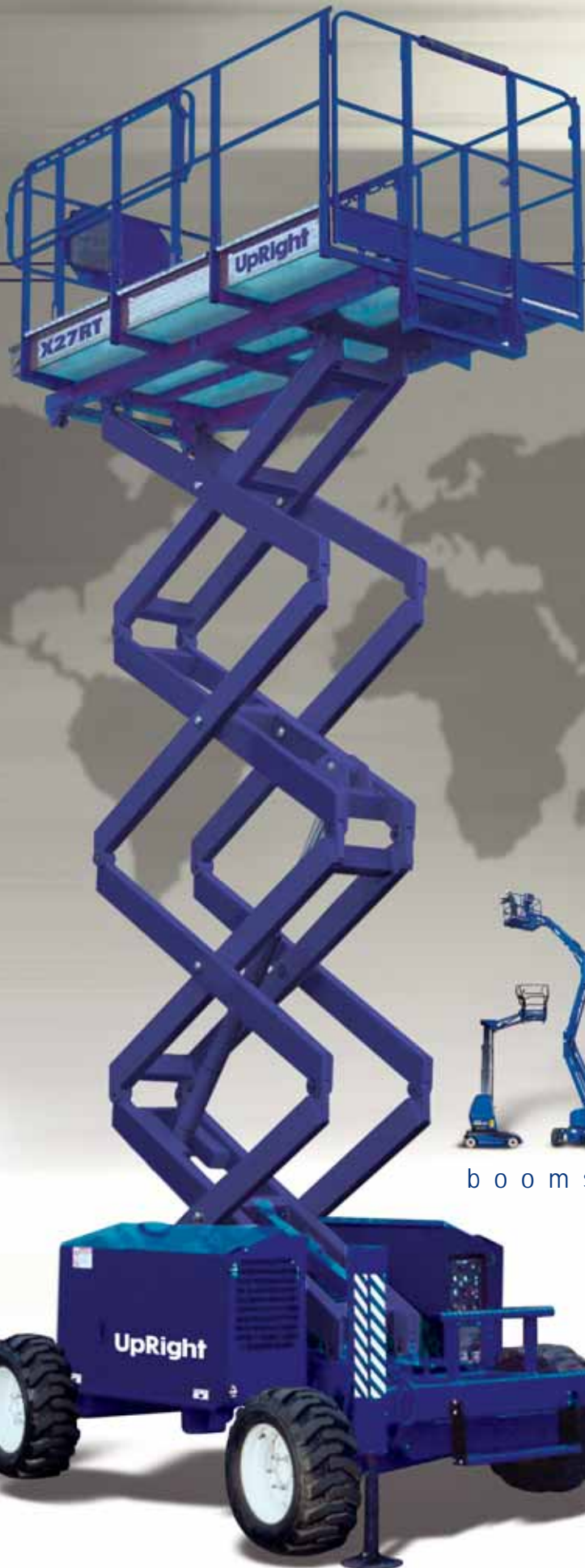
when the batteries are low. Larger lugged tyres and a better ground clearance transform the 'gawky' look of the electric models into Bi-Energy models that look right.

The Manitou 170AETJL Bi-Energy.





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# A bit of an animal

If ever there was a distinctive boom lift or is it a telehandler? - it is the new Giraf Track from Testcentrum De Lille. The company has two divisions - one is engineering which is responsible for producing this machine, and the second is the Merlo importer for the Benelux region which is why the machine is finished in fluorescent 'Merlo' green.



This is the first ever work platform produced by the company and currently just one model is available - the GT580B. An unusual and versatile item of equipment, the unit is built on a standard undercarriage from a 15 tonne Caterpillar excavator to which additional weight has been added (a slab of steel under the undercarriage frame) in order to lower the centre of gravity and improve stability.

The superstructure frame, along with all fabrication work is outsourced to specialist suppliers, while the boom is a standard three section Merlo telehandler boom which provides a maximum platform height of 15.8 metres with the standard platform. A two metre articulating jib and smaller platform extends this to 17.8 metres. Total machine weight is 16.5 tonnes.

The Giraf accepts all Merlo attachments (winches, forks and buckets) as well as a crane jib and large working platform. With forks fitted, the unit can lift a maximum of 3.8 tonnes to a height of 15.2 metres and 750kg at its 15.5 metre maximum horizontal reach this performance is available, even when working over the side and on a slope of up to 7.5 degrees.

While this lift has a wide variety of potential uses, it was originally designed to offer an easier method of installing horizontal and vertical cladding and glazing panels on industrial and agricultural buildings which have frames designed on five or six metre grids.

In order to perform that task, the Giraf's main basket is over seven metres long, to accommodate both five and six metre long cladding panels with a man at either end. The lift capacity is a substantial - 750kg in order to handle up to 500kg of cladding panels, plus two men and their power tools which can be powered from an onboard electrical socket.



The unit can lift 750kg at 15.5 metres on a slope of 7.5 degrees



The GT580 fitted with small platform and jib attachment

In order to handle the one metre wide vertical panels, the GT580 is fitted with a smaller platform and jib attachment which lifts the panels into position allowing one or two men to fix it in place from the basket. At the moment, two platforms, two men and a crane are normally required to complete this task.

The machine's tracks allow it to cope with wet, boggy sites or just to provide peace of mind from the exceptional stability such a base offers. When working on concrete, rubber faced track pads can be used to minimise surface damage. Giraf export manager Frans Van Dooren said: "This machine has been extensively field tested over several years with two end users and each has been so impressed that they have each put in an order for a new machine. Minor items have been improved over this period of time and the aesthetics of the unit have been enhanced with the addition of a new body. However, the main aim was to produce a machine that was totally reliable as most of its life would probably be working as a rental tool."

The lift is fully CE approved/EN280 compliant, has a full electronic overload systems and has full 360 degrees continuous rotation.

The high specification comes at a price, with an average unit costing around €120,000. While the lifts are produced at the company's Belgian plant, it could be assembled locally if there was sufficient demand.

Distribution has yet to be confirmed, there is the possibility that it could be available through the Merlo distribution network although nothing has been agreed.

"Initially we see a lot of interest from Holland, Northern Germany and France although we have already had enquiries from Turkey," says Van Dooren. "We do not think there is any competitor able to offer the performance of the GT580 and with the savings in man power and equipment, we think this machine will prove very popular."



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