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Stop the abuse and save

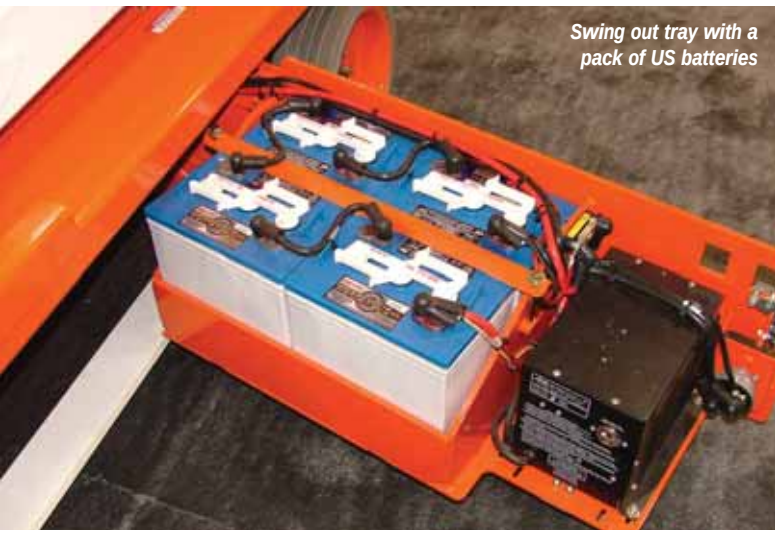
A battery with a difference - one big battery in a small Holland Lift

Aerial lift owners in the UK and Ireland have a dreadful reputation when it comes to battery care. Putting a stop to the abuse and neglect can prove to be a major cost saving.

Batteries are a critical component of well over two thirds of all aerial lifts. Thankfully they are very reliable partly due to the fact that their design and basic technology has hardly changed over the past 100 years. This reliability is probably the reason why so many users and fleet owners still tend to overlook them when it comes to a maintenance programme. With proper care and attention the working life of the battery can easily be doubled, while ensuring that it performs at near peak levels throughout that time.

Companies that have implemented routine battery inspection, testing and maintenance regimes have achieved significant results. Some managing to halve their battery replacement costs, more than paying for the extra work involved with the maintenance programme. The benefits however are even more substantial with fewer service call outs or complaints over poor battery life, a reduction in the labour replacing the batteries and the fact that most batteries are now changed when the lift is in the workshop during a routine service rather than on site in an emergency which always costs more.

Add to this the reduction in credit notes and down-time caused by such disruption, along with a happier customer and it is incredible that more rental companies do not focus more on this part of the business.


Swing out tray with a pack of US batteries

The end user

Not all aerial lift owners have large fleets of course, and an increasing number of companies own one or two electric powered lifts for their own in-house use. If you are one of these and have your lifts on a maintenance contract, make sure that your supplier has included a proper battery care element in the contract and ask what testing and topping up you should do in between the planned visits.

However be careful. According to the HSE, 25 people each year are seriously injured when using batteries. Larger units can explode so ensure than anyone working on a battery has been properly trained. (The HSE has issued a useful document 'Using electric storage batteries safely' which outlines the 'dos' and don'ts' when working on a battery).

If your lifts are subject to long periods of inaction, give someone the responsibility to keep the batteries topped up with a full charge, at least on a weekly basis. Most aerial lifts are now fitted with automatic chargers which make it simple to plug the unit in for a few hours once a week. It should not, however, be left plugged in.

Not following simple procedures will shorten the battery life. Batteries hate low voltages and even more critically the moment you need the machine urgently you can be sure that the batteries will have little charge in them and your investment in a permanent machine will have been wasted.

The best thing you can do is to use the machine regularly - batteries like to be cycled and recharged. Keep them fit through work.

Battery suppliers in the UK and Ireland

There was a time, not so long ago, when replacing the batteries found on the average aerial lift was a nightmare. The machines and their batteries were all built in America and of course were fitted with American batteries. They were not only made differently to European batteries, but were also of different dimensions. Few companies sold them on the replacement market and if they did they were prohibitively expensive.


A pull out tray from Haulotte with Trojan pack

Aerial lift owners resorted to buying local batteries but for a given size they often had more than 10 percent less output. The net result was that they barely lasted a year, compared to two or three or even more with the originals. Thank goodness that has now changed. All volume produced aerial lifts now use batteries designed for aerial lift and golf cart applications and they are available all over Europe at very keen prices.

Tilt out access from JLG with JLG brand Douglas.

The two big players

The two big manufacturers both for original equipment and in the replacement market are Trojan and US Batteries. Both build an excellent product and both are available in the UK and Ireland from a number of sources. In the UK, Energy batteries - previously known as Squadron - handles Trojan, which is distinctive in that it uses a heavy duty maroon /brown box. Energy, which was established some five years ago, claims to be the fastest growing battery company in the UK and offers every type of battery from simple AAA for your radio to large lithium, lead acid and gel batteries.

The company offers overnight delivery of most of its range with a collection service for the old batteries, an increasingly important issue.

US batteries is represented by the UK's largest battery company Man Bat which also offers an overnight delivery service and has a network of depots around the country to service its customers on a local level.

A further player in the market although not so much in the UK replacement market is Dyno which is distributed throughout Europe by Dyno Europe in Belgium.

Manufacturers elbow in

A number of manufacturers including Genie and JLG now also offer replacement batteries at very competitive prices as they look to build up their after-sales business.


Short fat swing out from Genie with Trojan pack.

Genie tends to offer Trojan, while in the past JLG has offered Douglas, which is produced for them by US batteries. However we understand that JLG will also begin offering the Trojan batteries. The company has signed a major deal with Trojan to supply all of its European production needs and intends to extend this to its replacement business. Haulotte is another manufacturer that increasingly fits Trojan in its scissor lifts, but so far has not been as aggressive when it comes to the replacement market, although this may well change.

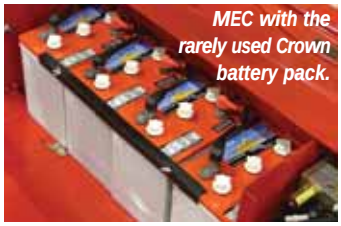
The third way

A third possibility to source your batteries is the specialist parts supply companies such as IPS in Shropshire. The company currently offers US batteries in a partnership arrangement that it has with Man Bat.

The net result of this is a highly competitive and open market, in spite of the limited number of battery producers really focusing on the aerial lift market. The benefit to lift owners is demonstrated in that in spite of a 270 percent increase in the price of lead over the past 18 months, from $650 to over $1,700 a tonne, the price of a battery for an aerial lift has remained within 20 percent of what it was two years ago.

What is the alternative to Acid?

Battery technology in certain consumer electronics, such as mobile phones has changed out of all recognition, so we asked 'when will we see such developments in the aerial lift market?' Perhaps lithium technology, now being used in large scale electric road vehicles, will benefit from increasing volumes and be practical for aerial lifts?


MEC with the rarely used Crown battery pack.

The response was a resounding No! Never! It seems that the underlying cost of material will never allow lithium to get anywhere close to that of the lead acid battery.

In spite of its archaic design, the lead acid battery is still the most cost efficient reliable battery for the application by a long way. Amazing for a 150 year old design!

Clean and easy

One alternative finding favour in spite of some limitations is the Gel battery - visually similar to a lead acid battery except that it is virtually maintenance free. Currently it is twice the price of a lead acid battery and has a lower performance and shorter overall life. However, health and safety officers are increasingly refusing to allow lead acid batteries to be used in certain applications such as food production areas, hospitals and even airports. In such cases gel batteries are the prefered option.

So given the rising volumes can we see them become more competitive with lead acid? Apparently not, at least not in the short term. They cost more to produce and a good deal of that cost is not volume contingent.

In spite of what looks like poor selling points, gel batteries have been popular with aerial lifts in some markets such as Germany where the reduced maintenance and environmental benefits have more appeal than in the UK.

If you consider that they are easier to handle, cleaner and do not require maintenance in order to keep them in tip top condition then the labour savings might well pay for the extra purchase and replacement costs... not to mention the different battery charger?

A maintenance free gel battery, clean and easy to handle.

The swing out originator Skyjack with US batteries

Newton has the drop on emissions

Lead-acid battery technology has always limited the performance of road-going vehicles to commercially unacceptable levels. However Smith Electric Vehicles (SEV) - part of the Tanfield Group which includes UpRight platforms - claims its new sodium nickel chloride battery (Zebra) technology has raised performance to a level that is attracting customers such as TNT Express, Sainsbury's Online and The Co-operative Group. The system was recently launched in the form of the Smith Newton, a 7.5 tonne delivery vehicle which uses Zebra Z5, 278 volt, 76 amps per hour batteries and 120kW AC motor.


SEV's new sodium nickel chloride battery (Zebra) technology has raised performance for road going electric vehicles

Other vehicles will include a 10-11 tonne chassis and the Edison - a 3.5 tonne van. All models in the range could be used for truck mounted platforms while the battery technology might be adaptable for existing electric-powered platforms.

SEV claims that the Zebra battery is both physically smaller and significantly lighter than a lead-acid battery and outperforms it at all discharge rates, delivering up to twice the energy. A complete truck installation is 80 percent lighter, allowing designers to provide additional range or payload. Batteries are maintenance free with no gassing and zero self-discharge.

SEV is now producing batteries more than 1000Wh per kg for the complete system - cell pack, battery housing, cooling and management system. This allows pure electric vehicles to have ranges greater than 120 miles and with the present power densities of more than 150W per kg, have a performance similar to internal combustion vehicles.

With increasing tax on emissions (and congestion charges) figures suggest that payback for the vehicle is four years in London and 5 years outside congestion charge areas.


Zebra battery technology allows pure electric vehicles to have ranges greater than 120 miles and performance on par with internal combustion engines.