Empowering access

Alternative solutions to powering access lifts and doors are evident across the bus and coach industry.

Steve Banner reports

HAVING announced plans to install a Vantage Power series hybrid system in one double-decker and a Magtec plug-in electric drivetrain with a 750cc Kawasaki engine running on compressed natural gas in another, Reading Buses chief engineer John Bickerton, is clearly not afraid of a technical challenge or two. But when it comes to ramps and doors his philosophy is to keep it simple; because in this context, as in many others, simple is better, he contends.

"We favour manual rather than powered wheelchair access ramps apart from on our coach fleet because they only have one moving part and you can't get much simpler than that," he observes.

Deployed by the driver, manual ramps do of course have the further advantages that they cost less than their powered counterparts, do not weigh as much and are cheaper and easier to repair and maintain.

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Nor do you have to install a powered ramp to meet access requirements. Provide a manual one and you are compliant although Transport for London does of course insist on one that is power-operated.

Compak, which supplies both powered and manual ramps, points to a key limitation of the latter however; the fact that the driver has to leave the cab in order to extend it.

On many routes this will not be an issue. Getting up from the driving seat and abandoning the protection of the anti-bandit screen could be foolhardy on late-night services running through some of the rougher areas of Britain's big cities however, Compak points out, and may be contrary to the bus company's own rules.

These are not problems faced by Reading Buses however Bickerton insists.

"Our drivers are perfectly happy to deploy ramps and by doing so they are interacting with the customer," he says. "Wheelchair users are probably quite pleased to be dealing with a human being who might actually smile at them."

The manual ramps Reading Buses specifies are not all that heavy, he points out, and drivers are provided with gloves in case they have to get their hands dirty. Nor is deploying a manual ramp necessarily all that much slower than deploying a powered one, he adds, and the manual option should always be dependable because so little can go wrong with it.

"If you're putting complexity in then you've got to justify it," he remarks.

Manual or powered, ramps may not have to be extended anyway in some parts of the country if the right sort of infrastructure is in place.

"We're lucky because our key local authority has been particularly good when it comes to installing raised pavements," says EYMS chairman Peter Shipp. As a consequence wheelchair users can drive straight onto the bus from the pavement if the driver pulls up close enough without the need for a ramp to act as a bridge, although a ramp may of course be needed if the pavement is the wrong height or is not present.

All single-deck buses in service in the UK now have to meet minimum accessibility standards thanks to legislation that came into force on 1 January.

Double-deck buses have until next January to comply with the rules and coach travellers will have to wait longer than that. Coaches will not have to meet the regulations until 2020.

Once a wheelchair user is on board, he or she understandably wants to feel secure when the vehicle moves off. Restraining straps are not really practical on a bus so Q'Straint has developed Quantum.

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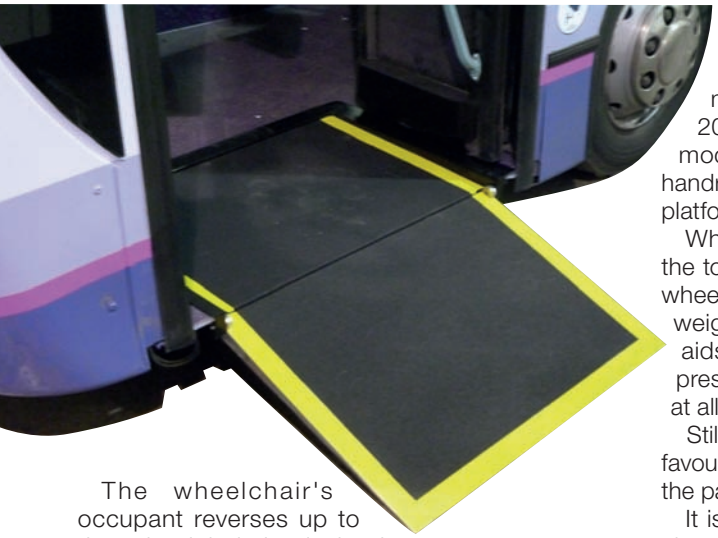

The wheelchair's occupant reverses up to the wheelchair bay's backrest as usual and two arms automatically clamp the wheelchair into position.

Said to be the first system of its type, it was trialled by EYMS in Hull in 2015 and is now in service with Lothian Buses in Edinburgh.

All this of course presupposes that the wheelchair user can gain access to the wheelchair bay in the first place. It may be blocked by a parent with a buggy who is either unable or unwilling to move out of the way.

The question of who gets priority is now being fought out in the courts under legislation designed to protect people with disabilities against discrimination. The bus driver will be placed in a difficult position whatever the outcome, says Shipp.

"What happens if he or she is given the power to order rather than request somebody with a buggy to move and they refuse to do so?" he wonders. "Presumably the police will have to be called and I doubt they will turn up all that quickly given everything else they have to attend to."

In the meantime the bus will remain stationary with increasingly angry passengers on board.

Perhaps the solution might be to take out more seats so there is more space for buggies and wheelchairs to exist in harmony. It's a thought, says Shipp, but he doubts that it would work.

"Remember that we carry a lot of passengers who are elderly and infirm but are not in wheelchairs and want to sit down," he remarks. "You always have to strike a balance."

Such conflicts seem rather less likely to arise on coaches.

Passenger Lift Services has just equipped a Plaxton Leopard going into service with Kidderminster, Worcestershire-based Woodstones with what it claims is the world's strongest wheelchair lift. With a capacity of 500kg it is mounted in the bottom locker.

Developed from the 400kg-capacity Mega-H mid-mounted cassette coach lift, it offers a 20kg weight-saving compared with previous models, PLS says. Features include quick-lock handrails that should be easy to operate and higher platform side guards.

While 500kg might be viewed as a little over the top in some quarters, there is no denying that wheelchairs are getting heavier. Add together the weight of the wheelchair, its occupant, medical aids if required and any attendant who may be present and suddenly half-a-tonne does not seem at all excessive.

Still in the spirit of keeping things simple, Bickerton favours pneumatic rather than electric actuation for the passenger doors on the Reading fleet.

It is not that he has anything against going the electric route, he stresses. "There's nothing wrong with it," he remarks.

It is simply that air is available on buses, it therefore makes sense to use it he says and there is little that can go wrong with such an approach.

Pneumatic doors made by Ventura Systems of the Netherlands are installed in Reading's buses.

Most British operators – even those introducing all-electric buses – tend to favour the pneumatic option, says Paul Rossington, managing director of Transport Door Solutions. An OE supplier to Optare, it is part-owned by Ventura and is its UK service agent.

"Electric bus doors are not big-volume sellers in Britain," he observes. "Even if the vehicle's drive system has changed, the doors tend to stay the same."

Electric doors remain more expensive than pneumatic ones, he points out. Even electric buses have to be fitted with a pneumatic system in order to power the air brakes he adds, and if air is available then there is no reason why it should not be employed to open and close doors.

Bus operators point out that if the bus breaks down then there will be enough air left in the system to open pneumatic doors instantly. Opening an electric door may take a little longer if there is a power failure.

Trials carried out by operators

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show how reliable electric doors can be however – not to mention quiet, a plus-point on late-night services – and attitudes may be changing, albeit very slowly. The 30 articulated Van Hool ExquiCity buses destined for delivery to Belfast Rapid Transit in 2018 will each be fitted with three Ventura double doors and they will all be electric.

TDS and Ventura dominate the UK bus door market, with the latter listing Wrightbus and ADL among its OE customers. Masats, Tamware and Wabtec-owned Vapor Ricon are all trying to make inroads with the last-named firm making more energetic efforts to boost its presence in the UK market in recent times.

Masats supplies wheelchair lifts and ramps as well as doors. Last year it launched the KV5 external coach lift with a 350kg capacity.

KV5 functions automatically and can be operated manually if there is an emergency and the coach has lost all power. Atherstone, Warwickshire-based Air Door Services supports Masats products in the UK.

Vapor Ricon boasts a similar product portfolio to Masats and recruited Steve Bradley last year as European applications engineer.

Formerly with ADL, Bradley points to the extent to which bus manufacturers have driven down the unladen weight of their vehicles in a bid to cut fuel consumption. "Doors systems are a key consideration in this process and a quality door that can deliver optimal functionality while addressing issues such as efficiency and comfort is of paramount importance during the construction of vehicles," he observes.

In other words, door makers need to lighten their products; but not to the extent that they become flimsy, flap about and create draughts, start to be unreliable and have to be replaced prematurely.

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