

Velo Vision Sample Article



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peter@velovision.com

I hope you enjoy the read.

Peter Eland

Peter Eland
Editor and Publisher, *Velo Vision*

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York Eco Business Centre
Amy Johnson Way
York, YO30 4AG, UK
Tel/Fax +44 1904 692800
(from UK, 01904 692800)
Email peter@velovision.com
Website www.velovision.com

EDITOR AND PUBLISHER: Peter Eland
PHOTO ASSISTANT:
Debz Butterworth
ART DIRECTOR: Brian Holt
WEB PROGRAMMER: Simon Ward
PRINTER: Stephens & George
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VELO VISION AND VELO-VISION
We weren't first with the name.
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near Bergisch-Gladbach, Germany.
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harmony with *Velo-Vision* in Germany.

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to Nordic Swan standards.



COVER: David Gardiner of Laid Back Bikes rides the Vortex. Photo: Peter Eland

OPPOSITE: Reader Dean Hipple writes: I'm just back from Bologna (Italy) where, strolling through the narrow streets of the immutable city center, I came across this scene: a quick brake adjustment and she was off. Wonderful to see the veteran mechanic, out in front of his shop, still providing service to the community of utility cyclists.

Photo: Dean Hipple

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Season's cycle

It's been a tough old winter here, so it's good to pull out of it by getting this issue out of the door.

As well as making the ride home more pleasant, the onset of long light evenings really helps with magazine production: it's easier to find willing models to ride the bikes after the working day is over, and every photographer knows that low evening sun can be magical. I was also extra-fortunate during the Vortex review in Edinburgh: it was effectively

gambling (via the pre-booked train ticket) that the weather on that particular day would be OK for a photo shoot. As you'll see, it came up trumps.

Special thanks to David from Laid Back and to Historic Scotland for the opportunity to shoot in Holyrood Park.

Thanks too, as ever, to all of our splendid contributors, both of letters and articles. Your efforts in helping us make this magazine are much appreciated!

Peter Eland

EASING THE LOAD

Pedalling a loaded workbike – especially if you're doing it all day long – can be arduous, and progress slow. Could electric assist help make (mostly) human powered transport more practical? Richard Peace tried a Bullitt cargo bike fitted with electric assist to find out...



I find it surprising how few electric assist cargo bikes there are; inevitably you'll be carrying a heavy load on such bikes so why aren't electric assist models the default offering, rather than a last-on-the-list kind of afterthought? Try pedalling a hefty load up any kind of gradient or into a headwind and you might well find yourself asking the same question.

For occasional towing of loads up to around 50 kg, a trailer attached to an electric bike looks like a perfectly acceptable solution. However, for regular hauling of more weight you might want to think about a cargo bike and, unless you live in a very flat area or are exceptionally strong and fit, an electric assist cargo bike is arguably the natural, most practical choice – budget permitting of course.

In *Velo Vision* 36, I tried out three two-wheeled cargo bikes; one was the impressive Bullitt from Denmark, summed up as 'a joy to ride', and the most stable bike tested both in terms of handling a heavy load at speed and stopping. The narrow design was great too, allowing bike path riding, including negotiating access restrictions, much as a normal bike would.

I decided to revisit the Bullitt, this time a model with a BionX power-assist kit fitted, to see what difference it would make to the practical ease of use of what was already a pretty formidable load carrier.

THE BIKE

The model used for the test was the Bullitt 'Milk Plus' – altered slightly from its usual hub gears to accommodate a BionX Hi-Torque rear hub motor with 9 speed derailleurs. With three chainrings

that gives a wide-range set-up of 27 Shimano Deore gears.

As with the original model, the hefty aluminium frame tubing and high specification, including powerful hydraulic disk brakes, are undoubtedly impressive. This BionX powered version came with a flatbed loading area, consisting of manufacturer Larry vs Harry's own honeycomb boarding with excellent grippy rubber surface.

Since the original review several 'bolt on' accessories have become available, including a waterproof aluminium box to supplement the original open top plywood one. This would be ideal for taking a wide variety of items, as the Larry vs Harry website shows – including children, dogs and all manner of other goods.

However, as my main interest was bulky and heavy load carrying the flatbed seemed ideal; a carry box could be strapped on easily if needed, but the open deck of the flatbed meant a greater variety of unusual-shaped loads could be accommodated.

The BionX kit fitted to the test model is top of the range, featuring their biggest battery and upgraded to 48V (as opposed to the 'standard' 36V). From the user point of view everything is done via the console mounted centrally on the handlebars, with four power levels (35, 75, 150 and 300%) powering a 250W rear hub motor and a nominal 423Wh battery. The battery itself locks on solidly to the bottom frame of the bike giving pleasingly short cable runs to motor and handlebar console. In short, in design terms it looked pretty well-suited to the Bullitt.





THE RIDE

The ride qualities of the Bullitt itself are well-covered in the *Velo Vision* 36 article. It could be summarised as 'set off and stop fairly quickly and you'll get the hang of it'. Whilst it feels twitchy at first, after a day in the saddle it felt normal and getting back on my usual 20"-wheeled folder in the evening felt almost unrideable.

Conclusion; just about any bike with non-standard geometry may feel strange at first but your cycling brain will soon reprogram itself so it becomes the 'norm'. To reiterate my previous conclusion, I found the Bullitt a joy to ride.

Having tested a BionX kit before on a regular bike I knew what to expect and wasn't disappointed. On Pennine foothills I found level 3 – 150% assistance – more than adequate on the steepest of the short, sharp hills typical of this area, dropping down to level 1 or zero assistance on flatter sections. Unusually for an electric kit the BionX features regenerative braking – in effect the motor can also act to slow the bike and generate electric power at the same time, feeding some of the extra power back into the motor.

ABOVE: Richard enjoys a ride with the bike unloaded. Later, in the hills with 94 kg of concrete on board, the electric assist would prove essential.

with the brake levers didn't feel very natural and took away from the rideability of the bike (though this feature can be disconnected). Nor could I get the regen 'bar' on the display, showing how much power is being put back in the motor, to get much above halfway on my initial ride. However, see 'Test Diary Ride 3' below for some later observations.

As a general point, having to move your hands off the handlebars to alter the power levels isn't very conducive to steady and enjoyable cycling either, especially with a heavy load. So BionX, if you are listening, some kind of bar end control system would improve your excellent system immensely.

Despite these operational niggles I felt the power was just what the bike needed to tackle hills with heavy loads. But would my test rides bear out these expectations?

TEST DIARY

Ride 1

I picked up two sacks of rice, total weight around 21 kg, and used canal towpaths with the odd steep climb on roads. Starting with a two-thirds full battery the bike still easily did 25 miles with a small amount of capacity left.



Ride 2

My second test involved hauling 22.5 kg of books to a local shop in the hilly outskirts of Huddersfield, with plenty of Pennine foothill climbing: constantly up and down shortish but often very testing gradients with total distance of

around 28.5 miles. This time starting with a full battery, the Bullitt managed it easily with juice to spare.

Ride 3

I loaded up around 94 kg of concrete blocks onto the Bullitt and headed



for the hills. Around 12 miles later I'm back with the battery still showing half full – suggesting I could have managed well over 20 mile with this hefty load (I was worried about running out of power with such a massive load – hence the low mileage!).

This ride convinced me electric power is really essential on cargo bikes if you want to move heavy loads any distance – the ride provided no more than a mild workout, but it would have been practically impossible without motor assistance.

I also started to change my mind about the regenerative power; with nearly 100 kg on board the bike resembled a runaway train down hills and was quite scary. Keeping the braking even was quite tricky using just the mechanical brakes. But set the BionX for maximum regenerative braking and the smooth, easy resistance acts as a real safety feature – like a sort of high-tech tandem drag brake. It also appeared to put more power back into the battery than with lighter loads, if the console display is anything to go by.

Ride 4

Again with 94 kg onboard I did a couple of timed miles round my hilly electric bike test circuit and compared the average speed to other conventional electric bikes tested on the same course. The results show that it sits in the middle of all the bikes I've tested! The huge load doesn't come at the cost of lost speed: the electric compensates for the weight on uphills, while downhills are no problem – although careful handling and anticipation is essential!

CONCLUSION

Riding with 94 kg of concrete blocks in the foothills of the Pennines is as good a demo as any I can think of for the potential of electric assist on workbikes. It makes load carrying by bike, whether it is for business or pleasure, an actual practical proposition well beyond the range of human power alone.

Most of the benefits of load-carrying by bike, such as fitness, no pollution, easy parking, silence and fun are retained. You do lose some simplicity and reliability by adding electrics of course, and you add to the cost. Indeed, at around £3600 (!) for the set-up tested, the eye-watering price is my only real concern, and this also applies to the cost of replacement or spare batteries.

The Bullitt does have some competitors when it comes to electric assist 'Long-John' style cargo bikes, all from the Netherlands. The Urban Arrow was launched with electric assist from the start (using

SPECIFICATION

Bullitt 'Milk Plus' with BionX electric assist.

- Weight:** 31.5 kg inc. battery
- Dimensions (L x W x H):** 247 x 63 x 104cm – although handlebars could be shortened quite a bit to reduce width.
- Rated to carry:** 180 kg
- Flatbed dimensions (W x L):** 45 x 72 cm (internal dimensions – large, rigid loads can hang over the sides and so be bigger than these dimensions).
- Price as tested:** around £3600 (unassisted bike alone: £2430)
- Replacement 48V, 8.8 Ah battery cost:** to be confirmed, expected to be > £1000

Bike manufacturer: Larry vs Harry, Denmark: Tel +45 3136 1719 or see www.larryvsharry.com. Contact them or see their website for details of dealers worldwide

Bullitt UK importer: Graham Pearce: 0161 4481982 / 07971 676164 or see www.thebullittbike.co.uk.

Also available in the UK at dealers including: **Wills Wheels, Stockport:** 0161 4324936 or see www.willswheelsshop.co.uk **Keswick MTBs:** 017687 75202 or see www.keswickmountainbikes.co.uk **Kids and Family Cycles:** Tel 01425 270774 or see www.kidsandfamilycycles.co.uk. They also have a demo bike in London, contact them for details.

BionX manufacturer: see www.bionxinternational.com

BionX UK importer: Zyro: See www.zyro.co.uk for a list of dealers.

the Daum crank drive system). In contrast, the Bakfiets.nl models use traditional hub motors.

Overall, adding (good) electrics to a cargo bike was quite an eye-opener. It seems to be an idea with real potential, especially in the hills!

Richard Peace