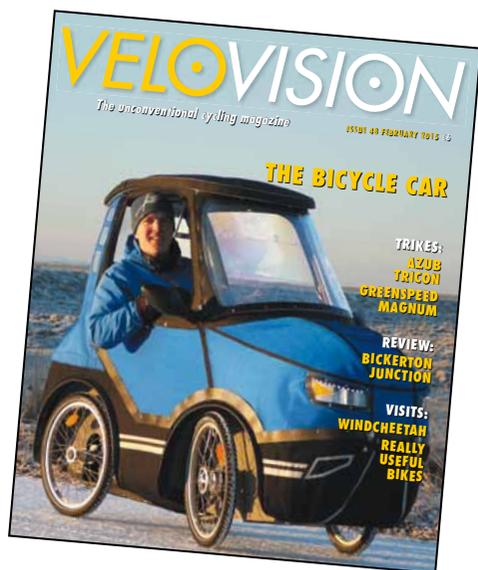


Velo Vision Sample Article



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If you have any comments, problems or suggestions about the magazine in general, or this PDF in particular, please email me at

peter@velovision.com

I hope you enjoy the read!

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 ASSISTANTS:
Howard Yeomans and Debz Butterworth
ART DIRECTOR: Brian Holt
WEB PROGRAMMER: Simon Ward
PRINTER: Stephens & George
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COVER: Mikael Kjellman in his self made 'bicycle car'. Read all about it on page 12. Photo: Mikael Kjellman

OPPOSITE: Howard Yeomans rides the AZUB Tricon near Castle Howard (no connection!) in North Yorkshire. Photo: Peter Eland

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Times of transition

I hope you enjoy Issue 48! As you will see, a number of the reviews and reports in this issue have been written by Howard Yeomans, a long-term *Velo Vision* reader with an aerospace engineering background, whose mobile bike repair service 'Bikes Made Good' we featured on the cover of Issue 41.

Over the next few issues Howard will be taking on the editorship and publishing of *Velo Vision*, and I'll be taking more of a back seat as advisor and contributor. As subscribers are aware, I have decided to 'retire' from magazines after some

20 years of publishing – it's been a privilege, but it's time for a change, to recharge my cycling batteries, and maybe to take on a new challenge.

We'll try to make the transition as seamless as possible: for now, please keep using the same contact details, and we'll introduce Howard properly in Issue 49. Nor is this the time for goodbyes – I'll be with the magazine for a while yet. At this point let me just thank you all for your support and contributions – please do keep them coming!

Peter Eland

THE CLEVERER CARGO CARRIER

Remember Sweden's spectacular cargo cyclists who featured in *Velo Vision 46*? When we wrote that article they'd developed their own four-wheeled recumbent cargo quads through two prototypes. These proved the concept as both a self-contained cargo bike and as a 'tractor' to pull semi-trailers. Now, with the help of engineers from Flevobike in the Netherlands, they have revealed a remarkable third prototype, as Johan Erlandsson explains.

First, I should clarify that although the last article was mainly about the MoveByBike cycle courier company, these cargo bikes are made by a separate company, Velove, also based in Gothenburg, Sweden. Also, MoveByBike in Gothenburg is now called Pling Transport.

The concept for the Velove cargo bike is a high-capacity four wheel cargo bike (or cargo quad if you prefer) designed for effective use on bike lanes without becoming a physical or visual obstruction for other cyclists. This is achieved via a narrow width, sufficient speed and height low enough to allow fellow cyclists to see over the bike.

The narrow width means that the bike will not obstruct oncoming cyclists on two-way bike paths, and it is easy for faster cyclists to overtake it. Including the cargo box (which has a capacity of one cubic metre), Prototype 3 is just 88 cm wide, which is actually narrower than a typical three-wheeled family cargo trike. High-capacity cargo





ABOVE: Arjan Vrielink of Flevobike Technology pilots the Prototype 3 chassis, towed behind an electric-assisted Orca velomobile. This could have been to test the suspension response without drivetrain influences – but actually it was because we couldn't wait to test it even before the drivetrain was installed!

RIGHT: The suspension can be set according to the load expected.



The speed comes from the suspension, electric crank assist, low rolling resistance, wide gear ratios and good stability when cornering.

Of the many things that have changed between Prototype 2 to Prototype 3, the double-wishbone suspension is the most obvious to the rider. It allows us at Pling Transport to safely and comfortably travel over uneven surfaces at up to 25 km/h, without destroying even the most sensitive of cargo. On earlier bikes we had to go really slow with cargos like cakes and freshly portion-packed yoghurts and smoothies. We can hardly call the suspension anything short of fantastic: the guys at Flevobike really did a great job there.

The electric assist on Prototype 3 is a Bosch crank drive unit, which thus far has worked very well.

Low rolling resistance comes from the careful design of the front suspension, getting all the angles right. On really bad surfaces, such as gravel or snow, you also have the advantage of two tracks instead of three for trikes.

For a bike like this, wide range gear ratios are essential. We need really low gears to get up hills with heavy cargo without busting any knees, and we need gears high enough to travel at 25 km/h. For Prototype 3 we are using the Rohloff internal hub gear, which gives sufficient ratio range.

Even with the cargo placed above the wheels, there is still enough stability to corner more or less as hard as you wish. And if you do go too fast, the bike will understeer, so this gives it very safe handling characteristics.

We are still taking any chance we get to let people test ride the quad, and the response is similar every time. They are

trikes for professional use are typically wider, from 99 to 120 cm.

So how can the Velove cargo bike be so much narrower? Well, the recumbent riding position gives a low centre of gravity, and four wheels offer more stability. This increased stability allows us to position the cargo box above the wheels instead of between them. That's the secret behind being able to have a one cubic metre box with internal dimensions that can accommodate an EU pallet, while keeping the total external width of the bike to just 88 cm. As a bonus, having the floor of the box at this height is easier on the back when loading heavy items. The seat height is comparable to the seat height of a car, so traffic overview and visibility is still good.



surprised how comfortable it is, and how easy it is to pedal away and gain speed. The suspension and the Bosch assist gives a really smooth riding experience, and the Flevobike seat is both comfortable and gives good support when pedalling hard.

This spring we will build a pre-production batch, and we hope to be able to start taking orders for production machines in Autumn 2015 or Spring 2016. Test rides will also be offered at the Cargo Bike Festival in Nijmegen, Holland, 18-19 April 2015. Maybe we will meet some *Velo Vision* readers there!

Johan Erlandsson

Velove: see www.velove.se