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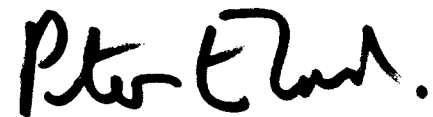
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Peter Eland
Editor and Publisher,
Velo Vision

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VELO VISION AND VELO-VISION
We weren't first with the name. Velo-Vision (note the hyphen) is a progressive HPV-friendly bike shop in Körten, near Bergisch-Gladbach, Germany, who also make their own recumbents. *Velo Vision* magazine is working in friendly harmony with Velo-Vision in Germany.

Velo Vision is printed on paper produced from sustainable forests to Nordic Swan standards.



COVER PHOTOGRAPH:

The Challenge Concept XT trike on the road.

OPPOSITE: The Koga Worldtraveller on a forest track near Bellingham. Both photos by Peter Eland.

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TESTING TIMES

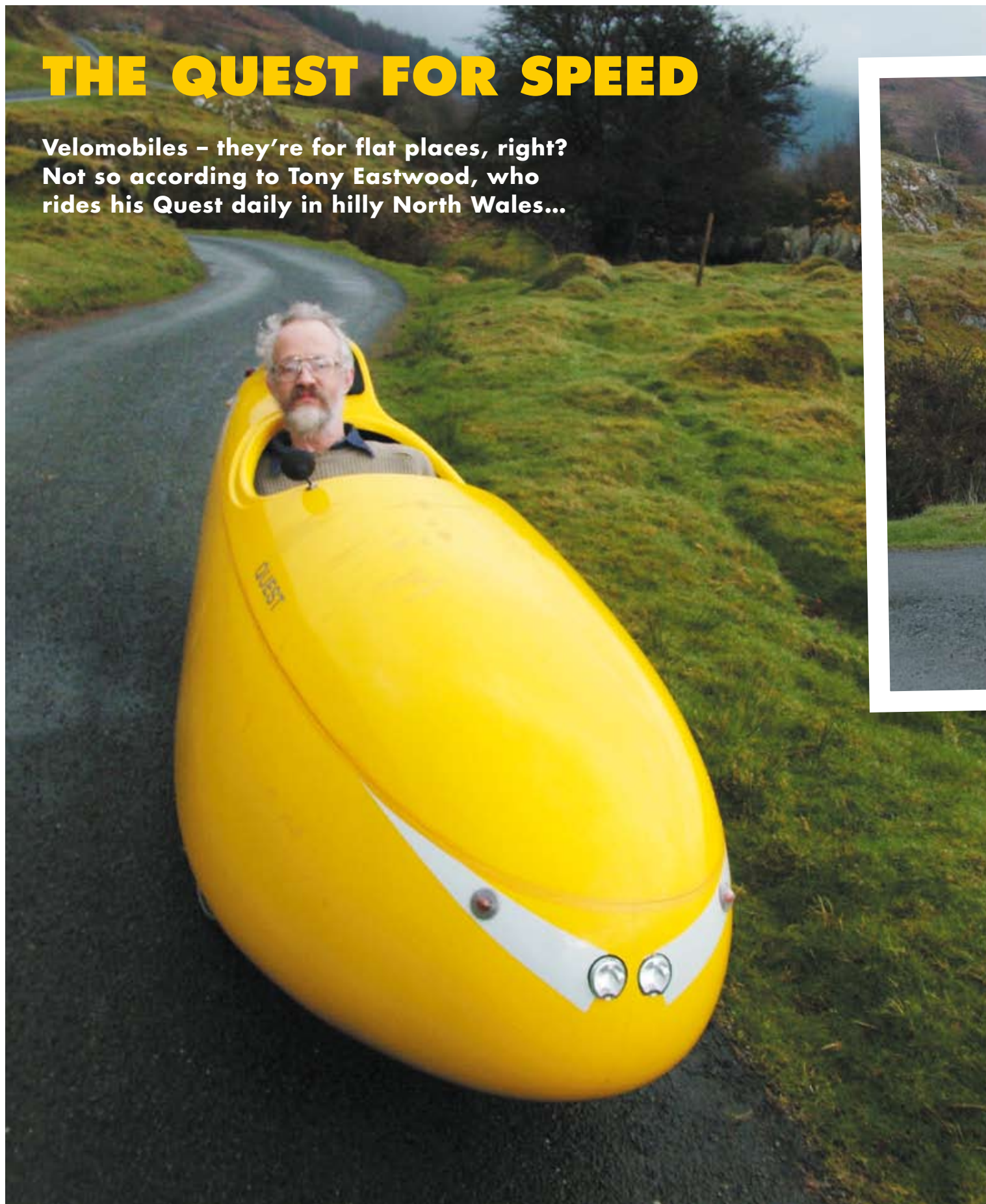
Once again we have an issue chock full with bike tests – I hope you enjoy it. Our March issue is always popular with manufacturers wishing to launch fresh products ready for the new cycling season, and our thanks in particular go to both Challenge and Hase Bikes for rush-shipping us test trikes hot off the production line. Our continued thanks also to all of my friends in York who model for the photos and whose 'second opinion' insights I often feed back into the review write-ups.

It's a sign of a flourishing industry that there's a constant flow of significant new models seeking evaluation and exposure to you, the critical reader and potential customer. Are we ever going to run short of new and exciting bikes to test? Not likely!

Peter Eland

THE QUEST FOR SPEED

Velomobiles – they're for flat places, right? Not so according to Tony Eastwood, who rides his Quest daily in hilly North Wales...



If you've read Flann O'Brien's classic *The Third Policeman*, you already know that 'much-used' bikes develop personality. The flat-handled roadster has a certain gait, a certain speed that it (not you) is comfortable with – it just won't go like a fast touring bike. Yes; you can push it a little faster but you're working against the grain, it's not going to help you.

The Quest is no exception, and driving it each day you come to appreciate its complex personality. Sitting in it, stationary, it's just amazingly homely. It's an arm chair. Creature comforts are all around you; a control panel on your left with lots of little switches, interior light, full beam, side lights, indicators. The cycle computer's even telling you the time. There's a floor on which you can stack anything you might need: laptop computer, map, passport, gloves, sandwiches, coat (for when you get out), hat in case it rains. There's never any need to pack anything, just sling it all in. Everything is within reach; it's Kenneth Graham's 'Mole End' on wheels.

The interior light helps; without it you'd have quite a job getting your feet in, nor would you be

able to read the speedometer at night. Believe you me you're going to need to; at times it's all there is to remind you of the world out there moving past at colossal relative velocity.

RIDING THE ROCKET

Yes, shy and homely it may be – but just wait till you start moving! Once under way your cosy 'Mole End' will be superimposed upon a world that simply fades away beneath you – the long yellow bonnet in front is the only reality, the remainder of your field of vision an impossible illusion. The arm chair's still there; but it's just mutated into your own personal rocket.

I've lost count of the number of times I've tried to ride the Quest gently. It can be done, but only by strict discipline. I try almost every morning; first, a gentle roll into the village. If you don't brake it will do 36 mph – not at all wise; you'll get killed that way – aim for 20. Next; an awkward stop at the main road junction and nasty little hill out too; a meek 14 mph.

And then: out onto the flat and the rocket starts to cut in. Yes, maybe this morning you're trying to just roll along but there's someone behind you; better not keep them waiting – it does 30 mph on the flat after all. Then you come to the first downhill – this one is nothing much, a drop of 35 ft feet, but if you brake only a little for the first bend you come out of the second at 40 mph. And now – yes, now the self control's gone – now it's so tempting to keep that speed; it's so easy. If self-control or laziness triumphs you can let it roll down to below 30 into the next set of bends. But usually it won't, and anyway the next (minute) drop will soon put you back to 33.

You are soon faced by the Quest pilot's delight: a long straight level section with a small hill at the end. You now have serious motivation to accelerate. Why? In the Quest there only two plans for smaller hills. Plan A: arrive at the bottom as fast as you can and get over before you've even noticed; or Plan 'B': arrive at the bottom at low speed and grind up slowly. And, here's the rub – Plan A, the fast plan, is actually easier! So any experienced Quest pilot, seeing that small hill, will be really churning, building up his store of kinetic energy. You won't see him do it of course, as no-one can

see anything happening in there. In fact I've found most 'inquisitives' are totally convinced it has an electric motor – they've never seen anything climb hills like this before.

IMPOSSIBLE ENERGY

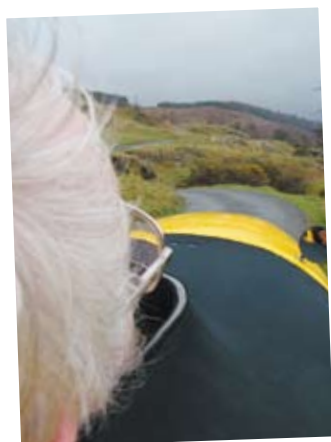
Impossible? No, not really, once you understand that the Quest has, as a first approximation, no wind resistance at 30 mph. Understand the secret of that sleek yellow fibreglass and you can see how it's so very, very unlike a bike. You have to be amazingly strong to get a bike beyond 25 mph even in still air, and every second you spend at that speed drains your energy at a terrifying rate.

And at 35 mph at Quest you have twice the kinetic energy of 25 mph: you can climb twice as

high (40ft to be exact!), without any further effort at all. 'Flying' a Quest on undulating roads and through rolling hills is unreal. You simply carry on turning biochemical energy into mechanical, and it manages the rest – potential to kinetic (40 mph) or kinetic back to potential (15 mph at the top) and it's enormous fun.

So how fast is it? Obviously much faster than a bike. I'm no athlete but I pass every cyclist on the road without even trying, even those I know to be much fitter than I. The overtaking sensation is similar to passing cyclists in a car – they are there in 'the sights' and then they are gone.

Quantifying it is difficult but I'll try. In normal conditions it's a devastating 10 miles an hour faster than a drop handlebar bike – where I used to do 22, I'm now doing 32. If a slight rise and headwind would have slowed me to 15, in the Quest I'd expect 25. In the Quest I've maintained 30 mph into a 15 mph headwind! My averages, with start stop, road junctions, the lot, come out about 24 mph. So on my morning run up the valley I will reach the start of the big hill, 6.5 miles from home, in about 15 minutes. On those rare occasions I drive a motor car it takes 13 minutes. On a bike I'm over 22 minutes.



much – except that at 50 mph you have a hundred times the kinetic energy you had while climbing the same hill. You can convert that kinetic energy into a serious stay in any hospital ward.

As you daily travel at such speeds, where it gets hard to see without goggles – it gradually dawns on you what faith you putting in Ymte and the crew back at Velomobiel.nl. You just have to assume that it's built well; that the suspension can,

However on a windy day 50 mph invites suicide. All side winds, especially gusty side winds, needed to be treated with real respect – or you can find yourself several feet off course. You soon learn to treat wind with caution.

Bikes are easier to park, but on every other point the Quest wins the comparison. It's so low maintenance. You simply ride it – once every two weeks you pump the tyres up, once every month you might oil the chain. Everything including the

real noise is the wind noise – not bad at 30 mph but it rises into a shriek at 60 mph!

At high speeds the big issue becomes other motor cars going your way. They can no longer screech past without your cooperation. Here mirror and indicators are essential. But do you risk positioning yourself out in the road or should you slow down and dive for the curb? There's pitfalls in both – keeping six inches from the curb in the wet pitch dark at 40 mph is pretty scary. I doubt most motorists could do it; but then, out in the middle at 35 mph encourages aggressive types to risk head-ons, for they'll pass you anyway. Much worse are those who won't pass you at all and sit just behind you for miles – occasionally with camera phones held out of the window. That's fine for them (maybe) but they often build up a queue of irate young men on short fuses; or worse still heavy lorries that lack the acceleration to pass you in anything like real time.

But that's the negative side. Generally other road users react brilliantly and very positively – they can't see you pedalling, so they think you are a car. You get plenty of room, sometimes far too much – but yes they always see you, even in the dark (compare this with cycling...). Thumbs up signs, cries of 'wow' or 'cool' outnumber

obscenities and road rage about 50 to 1. You get better reactions with the rain cover off – I guess in this mode it's got a real sports car feel. In contrast, the head-out-of-the-rain-cover look definitely has a slightly nerdy quality.

FLYING THE QUEST

For me it remains a great privilege to fly a Quest velomobile. I have to remember that I'm a kind of ambassador for this thing – that how sensibly I fly it, how much common sense I show now, may influence a whole generation who have yet to encounter anything like this.

It helps if you smile; and believe you me you're going to smile a lot in a Quest. It's hard not to, as it abolishes distance so effortlessly. People love it; being delayed by people who stop you to talk about it is an occupational hazard. Serious petrol heads even follow you home for a better look.

I wish I could keep mine a bit smarter – it's very hard not to scratch it; and you cannot touch up the original 'paint' without it showing. At the moment I've nearly given up keeping mine tidy; first of all a good friend of mine managed to crack the rear fairing (he was trying to feel the suspension – he's still a good friend, friendship is still more important than velomobiles!). Then one windy day while

parked it got blown over in the wind. In the summer I will have to get it polished up again and resprayed – it will go faster; the roughness and damage is probably costing me 1 mph.

So what is my overall verdict? 110 out of 10. Is it worth the money, the wait? Yes: order one now. The waiting list is only three years. You won't regret it.

I can't understand why the roads are not full of them. Yet the Quest has never, to my knowledge, even been mentioned by mainstream cycle magazines. They need to wake up; they are sitting on something so important.

The Quest is the physical projection of the velomobile vision: a human-powered vehicle that, in the context of cities limited to 30 mph, is as fast, as comfortable, as practical as a car. In an age of epidemic obesity, of cities choked with traffic fumes, of 'peak oil' just about to happen, of a society literally driving itself to destruction, the Quest could be one of the 'get out of jail free' cards we all need.

Tony Eastwood

Photography by David Edwards

The Quest is made by Velomobiel.nl: see the website of the same name for details.

SERIOUS HILLS, SERIOUS SPEED

All this, of course, assumes that you're not trying to climb serious long hills. Which is precisely what I do every morning. Yes, 15 minutes to the bottom of the hill, another 23 minutes to climb 720 feet – three miles of serious hill. The kinetic energy disappears in the first section, and then you're simply down to a straight biochemical energy to potential energy conversion – 72 kg of me, 32 kg of Quest. Bottom gear lets me wind the thing up comfortably at 4.9 mph, the next gear gets me 6 mph. My 'Welsh' Quest is especially geared down for these climbs – there are no hills like these in Holland. You just have to wind away, gradually getting rather warm, and enjoy the peace of the morning, the bird song, free from the rush of air past the ears.

Then, of course, there's the coming down. It's not quite what you'd expect. The Quest experience turns level roads into downhill – it's found me downhills I never knew existed. So down real hills it simply goes wild. Even the slightest drop will put you above 45 mph – it rolls far, far better than a car in neutral. So, if you want to keep living, serious hills need constant braking to keep the speed to even astronomical levels. I try not to go much above 50 mph – sure, 50 mph may not sound

repeatedly, take pot holes that you hit in the dark at that speed, that the steering linkages will not suddenly part company. In the Quest you're hardly aware it has wheels – you can't see them. You simply point the nose is the way it's supposed to go and fly it there.

It's always a bit of a relief to get round the final bend, stop braking and then start pedalling at more sensible speeds (35-40). My 'Welsh special' Quest is too low-geared at the top end. For me the absolute limit under power is about 42; but you're already pedalling pretty quickly at 35. Maybe one day, when I can face taking the top off again (about 18 very awkward bolts), I'll fit a quad chain ring – I could certainly use it.

These speeds are not something you want to know about before you are accustomed to your Quest. If your test riding in Dronten is anything like mine you'll find 25 mph quite scary enough. It simply takes a long time to get used to the way the Quest steers – for me, all of the 400 mile journey back from Dronten to Wales. At first it's pretty frightening – it's almost impossible not to over-correct. But when you've got used to it, it is marvellous. On a nice calm day it's rock steady well over 50. The Quest's personality seems to include elements of self-preservation.

drive is fully enclosed. Your first real service will be at 10 000 miles (new chain, maybe change suspension dampers). It's a brilliant piece of work – this is a design that's been slept on and slept in, driven, tested, developed and re-developed. Nothing is left to chance. It is a modern car – a stupendous achievement for three men in a workshop in Holland.

A CAR CYCLE

And it's with a car that the Quest should be compared. The Quest soon teaches you that, except for the long hill problem, motor cars are simply fraudulent. You don't need that great heavy engine, all that stuff, all that weight and discomfort just to travel at 30 mph. Your body can do that already; just protect it from the wind. Once accustomed to the Quest, motor cars seem so coarse, so crude in comparison – so boring, noisy, stiff; so smelly. Take your foot off the accelerator in a motor car and it slows down so quickly – free-wheel the Quest and it just keeps on going, half a mile or so before it comes to rest. The ride is so smooth once you're over 20 mph, with little of that low pitched noise and vibration which is so tiring in any kind of motor vehicle. The only

RIDING THE RUKO

Gerd Rutkowski from Cornwall, Ontario in Canada describes the development of his 'Ruko Cycle' front-steered recumbent through a series of ingenious prototypes.



The pictures show a prototype recumbent bicycle developed and fabricated by myself. The pedal axle passes through the centre of the front wheel hub, and the rear wheel is driven.

Because the pedal shaft passes through the front hub without any internal connection to it, the steering of the Ruko Cycle is not affected by this



The first front wheel drive prototype, with a modified frame from a standard lady's bike.



The aluminium-framed, rear-wheel drive bike, with crank axle passing through the front hub

It may also be of interest that the frames can be separated into two parts by removing the rear fork, which involves only the loosening of two bolts and the removal of one bolt on the rear drive model, or the removal of three bolts on the front wheel drive version.

An important feature on the front wheel drive version is a sliding, curved hinge between one of the frame arms and the lower end of the steering arm.

The hinge arrangement involves a slotted member on the outside of the steering arm, which is curved about the steering axis and an equally curved guide arm mounted on the inside of the frame arm.

Both versions of the Ruko Cycle can overran freely when power is not applied, without any movement of the chains. Patents have been applied for to cover both models. My primary goal in the design of my bikes was very low mechanical resistance, good structural integrity (but more like a dragonfly than a tank), good balance and a pleasing appearance. I believe that I have succeeded in all these. One of our local bicycle dealers said of the rear drive version "A Cadillac of a bicycle".

A key feature is that the pedal shaft passes freely through the hub, without having any contact with it. The design of the hub allows it to function for wheel rotation with one ball bearing only. How about that for low mechanical resistance?

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Gerd Rutkowski