



2020-3

Supino

On your back
Some articles from the periodicals of European HPV-unions.

Ligfiets.net
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BHPC
bhpc.org.uk

Hpv Belgium
hvp.be

HPV
hvp.org

future bike.ch

propulsionehumana.it

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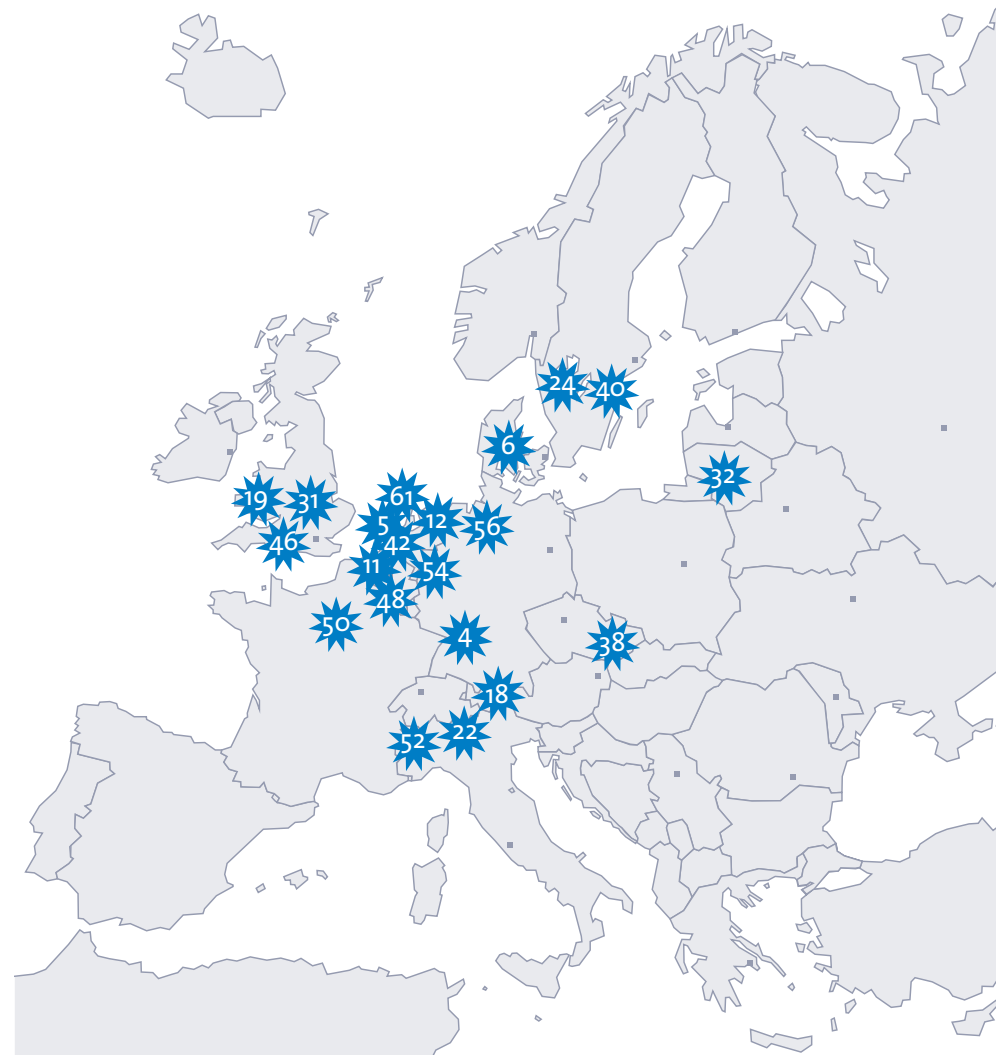
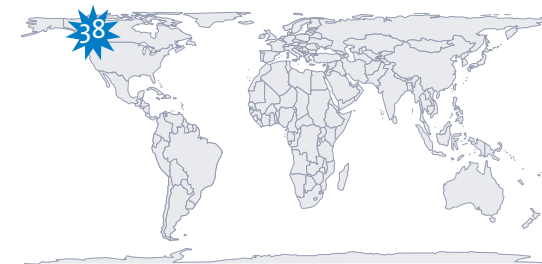
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Supino in corona times

In the third year of this magazine, the corona crisis is the talk of the town. The crisis also affected recumbent cyclists and our European cooperation.

Unfortunately, *Spezi* was finally canceled, even after postponement until August. And so there was no EuHPV meeting in Germersheim with representatives from the different countries. I was just so looking forward to the informal drink afterwards.

Fortunately, we were able to use modern techniques and a Zoom video meeting was held. Many subjects were discussed, including the name of this magazine. As shown on the cover, the name remains *EuSupino*.

Unfortunately, most races were canceled and even the 2020 World HPV Championships in Amsterdam could not take place. That was unfortunate for the participants but also because much organization had already been done. It was gratifying that the aforementioned meeting agreed to postpone the championships in Amsterdam to 2021.

One of the objectives of the collaboration is to exchange articles for the national magazines. In a year with few activities, fewer stories are created, so it was increasingly difficult for the various clubs to make an attractive magazine. It helped enormously that we could 'borrow' stories from each other. A new step forward for *EuSupino* is the formation of an editorial board. This means that the work can be done by several people and also gives more guarantee for continuity into the future. The members of the editorial team help to collect articles. The English also help to polish the English a bit.

Next year, Covid-19 will still impose restrictions on us, but I hope that some competitions, joint tours, fairs and so on can take place again. I wish you all a pleasant reading. Keep cycling, stay healthy! <



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Editorial board

Roel van Dijk, *NL*,
final editing.

Giovanni Eupani, *IT*.

Jiří Hebeda, *CZ*.

Jan Kranczoch, *D*,
ad interim.

Marc Lesourd, *F*.

Carl Georg Rasmussen,
DK.

Brian Robertson, *UK*.

Lay-out

Hans Nieuwstraten, *NL*.



by Roel van Dijk

EHPVA Video conference via Zoom

by Andreas Hertting

Participants Roel van Dijk, *NL, chairing the conference*. Rembrandt Bakker, *NL, organiser of World championship Amsterdam*. Rudi Cools, *B*. Brian Robertson, *UK, set up Zoom online*. Alan Goodman, *UK*. Simon Bailey, *UK website*. Carl-Georg Rasmussen, *DK*. Werner Klomp, *AU (present just at the beginning)*. Michael Döhrbeck, *CH*. Bram Luyckx, *B*. Edgar Teufel, *D, representing WHPVA (not visible but via written messages)*. Jan Kranzcoch, *D*. Andreas Hertting, *D, taking minutes*. Marc Lesourd, *F (from 15:35 pm)*.

40 minutes of Zoom Roel welcomes all participants for this meeting. The meeting was limited by Zoom to forty minutes of time. He added, that Zoom was not accepted by some, that they prefer Signal to hold the video-conference. He delivers three main points to discuss for the meeting, which refers the personnel aspect, the organisational matters and the agenda for the European association.

Minutes of last meeting First point refers to Heike Bunte, who is not the ECF-delegate, which was false in the former minutes from the last meeting at the SPEZI 2019.

More European communication Second point is to improve communication within the European HPV Association, the EHPVA. First Simon suggests social media, instead of mass email contacts which can be complicated for communication. Roel points out that one or two meetings in a year are not enough to get something working well within the cooperation of European HPV clubs. Is the website a solution? Simon mentions that as the website is available at any time throughout the year, a forum could be hosted on the website with each national club nominating someone as an administrator. However, since few people visit the website on a frequent basis, he proposes social media such as

Facebook or Slack. Alan supports Facebook. Alan raised the objection, that Facebook is hated by some. Brian supports also the idea of a Facebook-group, even if there are Facebook-haters. Simon wants to provide a link on the website. Roel proposes that Alan, Brian and Simon should elaborate a solution, which was confirmed by these members.

World Championships The third point is the question which HPV club will organize the World Championships in which year. In 2023 France will be the host land with land-, water- and air-vehicles. Roel announces, that the World Championship in Amsterdam will not take place this year (2020) because of a governmental decision to not allow any events of this kind until September. Rembrandt Bakker talked about some details and proposed to postpone it into 2021, because the preparing work for it would not be completely in vain. Roel reported that the German HPV club will give way to postpone his country being host land for a year to the Dutch.

Renaming the magazine The fourth point is the renaming of the magazine *EuSupino*. Roel said there were the proposals *EuRecline* (Simon Bailey) and *Aerocycle* (Lars Brunnermeier). Roel makes clear, that *EuSupino* has no sensible meaning in Italian. It was proposed and accepted that the name *EuSupino* will not be changed.

Other questions Carl-Georg Rasmussen was asked about what he thinks about the future of the European work can be, but the microphone did not work. An additional question was about the points one can earn at European competitions. Rudi Cools made this point and is in favour of creating a common points system for all countries and other

competitions such as the World Championships. Rudi Cools, Toni Cornelissen and Rembrandt Bakker will try to make a proposal. At the end Marc Lesourd joined the conference and said, that the time trial championship for September is not cancelled until now, but every event until August would be prohibited. Roel closes the meeting. <



World Human Powered Vehicle Association

Speed Championships

Amsterdam-Sloten, Spaarnwoude

16-19 July 2021 www.cyclevision.nl

Photo Bas de Meijer, Utrecht



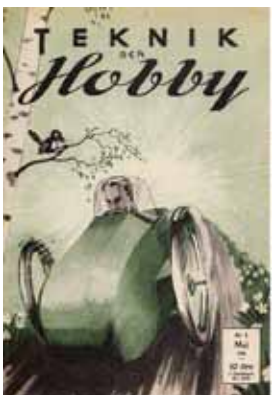
A race in the park

The father of the Leitra

Carl Georg Rasmussen



By Wilfred Brahm,
photos Jürgen Eick,
Wilfred Brahm.
From *Ligfiets&* 2020-3



Inspiration for young
Carl Georg.

On the *Leitra* website you will find a video with a very nice interview with Mr. Leitra. Carl Georg Rasmussen is an engineer and also a PhD, so he is a scientist. Carl Georg Rasmussen was at the time of that interview 'only 76 years old'. Every year he cycled another ten to twelve thousand kilometres. He is now 85 years old and still cycles more than eight thousand a year. Carl Georg is a pioneer and you don't become one just like that.



For him it started with the oil crises of 1974 and 1978. The motorways were empty on Sundays, petrol was scarce and the bicycle seemed to have the future. A threshold for cycling is for many people the weather: cold, wind and rain. He had experience flying gliders, which was his inspiration for the light yet strong construction and shape of a cabin. A name was also quickly invented. It is an acronym of *Let Individual Transport*, which means *Light Individual Transport*. The first *Leitra* was built in 1980, Rasmussen was 45 years old at the time.

Teknik för Alla

But the seed had been planted before. As a 15 year old boy he got his hands on a hobby book with drawings of a velomobile made of plywood and wood. Some metal parts were made by a blacksmith and the rest he constructed himself. Thus arose the Ulf Cronborg, an aerodynamic tricycle with two sprung front wheels. He drove around in it for about three years, even though it was quite heavy, about forty kilogrammes. He wouldn't do it like that again. Before the war there were velomobiles driving around, also with four wheels and for two persons, especially in Sweden. Between 1930 and 1950 a hobby magazine was published there, *Teknik för Alla*. It also contained blueprints and descriptions of velomobiles, which by the way were called *cykelbilen*, *velobilen* or *pedobilen*. Thousands of blueprints were sold, but only a few were built. The different models had in common that they looked a lot like a car and had

four or three wheels. They were mainly used for racing. Before production started, Carl Georg, driving a prototype, was stopped by the police. The cops thought they were holding a UFO. Explaining that it was a bike with a cabin without an engine didn't help. The prototype was confiscated. Carl Georg had to walk his way home without a jacket in the winter cold. He filed a complaint with the Ministry of Justice and a week later the bike was returned to the Technical University where he worked. The bike was later inspected in Denmark for use on public roads. Technically the prototype was found to be in order, but lawyers thought you were sitting too deep. A friend who owned an MG sports car turned out to have his eyes two centimetres deeper when sitting in his MG. Approval was obtained under the condition that the arms could be used to indicate turning and stopping, as flashing lights were prohibited. Twenty years later, this was reversed: if you cannot indicate the direction with your arms, flashing lights are mandatory.

When Carl Georg says he was the first in Europe to build practical velomobiles, he means the modern light version. A little after him Mike Burrows started with the *Windcheetah* (1981), also a tadpole tricycle with a hood mounted on it. The *Windcheetah* focused more on speed than daily use.

Not for races

The *Leitra* is designed for transport on manpower and is meant for commuting, shopping, transport of light stuff and recreation, so for practical purposes and not specifically for races. Starting points were safety in normal traffic, so see and be seen. You had to be able to ride on normal roads and cycle paths, be comfortable in bad weather, have sufficient luggage space for groceries and holidays. And of course it had to be reliable, even in winter. When the weather is nice, you can easily remove the hood by loosening a quick release with your toes, and you can also remove the luggage



Carl Georg Rasmussen (left) joins to visit the 2018 Spezi.

trays without tools. A special feature was the rearview mirror in the top of the hood.

1983

In 1983 the company was launched with the help of ten investors, friends and customers. This enabled him to produce a first series of twelve bicycles. To learn from it more, he rented out the bicycles so that fifty people, young and old, could share their experiences. The design of the *Leitra* shows how it developed. It started with the base, a tadpole recumbent trike. Then the upholstery, so the hood, was designed. This gave



him the freedom to adapt the hood to the size of the rider and to special wishes, like the need to transport more stuff. A completely different concept than that of velomobiles with a self-supporting body that gives much less flexibility. And so there are also trike owners who would like to have a hood. Sometimes it was possible, as with trikes from *Anthro Tech*, but it was not optimal. For low trikes such as the *Stein trike* or *HP Velotechnik Scorpion* it does not work. That's why *Leitra* developed the Wildcat hood in 2013, which is flatter and more sporty. There has also always been room for individual wishes, many buyers were

present at the construction of their own *Leitra*. Of course a bike is always a compromise, such as between air resistance and practical usability. For low air resistance it has to be narrow, pointed and long. A long narrow tail is not practical for luggage. It also has to be ergonomic, with the right position of handlebars and pedals and good visibility in all directions. So the *Leitra* has been designed step by step by experiencing how something works out in practice. You have to be able to reach everything in the cabin and it has to feel natural. The cabin should have a nice smooth streamline. Crumple zones also come from the aircraft

world, so that the driver remains unharmed in the event of a collision. That's why the bike is built around the rider with a frame, the frame is not between the rider's legs like with a classic bike. All this is a long development process. But how do you prove that a *Leitra* drives well? Carl Georg participated in the Sjaelland Ronde (315 km) which he completed in twelve and a half hours. In 1983 he rode along with Trondheim–Oslo (540 km and 3400 hm). The outward and return journeys together were also 540 km, so in total he cycled more than 1000 km. In 1987 he rode Paris–Brest–Paris (1200 km). Here, >



At the 2008 Spezi.

> too, he cycled to Paris and back, a total of 4500 km in three weeks. These monster rides say something about his condition and perseverance, but also about the *Leitra*. Even in the United States he participated in tours, like the Ragbrai-rally in 2004. Afterwards he sold his *Leitra* to a lady in the USA.

Besides these monster tours Carl Georg was also active with multi-day tours. In groups of five to ten he made long camping trips through Scandinavia, Germany, Switzerland and England. All this without an accompanying car for the luggage. In 2013 there was a 2000 km tour through Europe, the Velomobile-Eurotour through Germany, the Netherlands, Belgium, Luxembourg, France with start and finish in Leer. Since then, long tours have been organized on a regular basis. In the eighties there was a lot of interest for the *Leitra* abroad, especially in Switzerland and Germany. The then still young recumbent associations showed the *Leitra* at a car exhibition in Geneva. In Bern a do-it-

yourself course was organised in which five *Leitras* were built in two days. Later the *Deutsche Erfinder Verband* had invited Carl Georg to take part in exhibitions in Munich, Hanover and Cologne. He also appeared on television with a series of *New Ideas* from NDR television.

No two *Leitra*'s are exactly the same

Leitra's service went far. In the nineties Carl Georg delivered a special copy in England to an unmarried clarinet teacher. The bicycle was delivered to her home. The new owner, who didn't own a car, had made it a condition that her dog had to be transported as well. The proposal to buy a trailer was rejected and the suitcase was provided with a window. Later this was also applied for the transport of small children. A German dentist even transported three children with a *Leitra*, two in a trailer. A Danish lady wanted an extensive luggage compartment and black velvet in the interior.

Another customer missed the look of a car and had extra exterior mirrors fitted as well as a set of large headlights. This made the hood twice as heavy and an extra heavy battery was needed. The individual choices of colour and patterns on the outside resulted in a multicoloured view of several *Leitras* side by side. And even solar panels are possible. Presumably there are no two identical *Leitras*.

Who buys a *Leitra*? Sometimes they are people without a driver's license or without a car. And people who want to transport themselves environmentally friendly. But also artists, such as the performance artist Goodiepal who travelled from performance to performance in the northern countries from Iceland to Russia. Later he painted his *Leitra* and now it is in the Statens Museum for Kunst in Copenhagen. There are also German doctors who go on home visits with a *Leitra*.

Velomobile Design Seminar

In 1993 Carl Georg took the initiative to organize the first International Velomobile Design Seminar in Lyngby, Denmark. There were almost a hundred participants. This was later repeated at unequal intervals. Books were also written about velomobiles such as Andreas Pooch's standard work *Die Wissenschaft vom schnellen Radfahren* from 2008.

Leitra also contributed to the dissemination of knowledge in another way. A young Frenchman had applied for a scholarship from the Erasmus programme of the European Union. Students were encouraged to study and develop in another EU country. He wanted to go to *Leitra* in Denmark and the application was approved. Later they even won a prize with it. The young man, Sylvain Lemoine founded his own recumbent company in France, Velovergne. Later, several trainees from Italy, France, Austria and The Netherlands gained knowledge at *Leitra*.

Electrical support

At an early age Carl Georg realised that electrical support had a future with velomobiles for daily use. In 2005, he even became a representative of BionX in Denmark. For ten years, he installed many of these hub

motors in *Leitras*. It drove very nicely but also gave a lot of worries when it didn't work. Engines and control units had to be sent to Canada for repair. That's why he switched to other brands because the support had to be reliable and possibly easy to repair. Nevertheless, the *Leitra* (or the velomobile in general) did not become a huge sales success. Carl Georg thinks the Danes are too reluctant to try out new developments, more than the Germans for example. Without the German market, *Leitra* would not be viable as a company. According to Carl Georg, things are very different for the Dutch brands. They started ten years later, but with an immediately good home market. The cycling tradition in the Netherlands is much stronger than in Denmark and in that they have a big lead. In recent decades *Leitra* has been one of the models on the market. At the moment a new product appears every year and this will only expand to a whole spectrum. Velomobiles are mainly produced in the Netherlands, Germany and Austria. Carl Georg also continues to develop, but not because it brings in money. A velomobile remains his favourite means of transport



The chassis of the *Leitra*.

and his customers encourage him. They are willing to pay the substantial cost price. Cheaper production only succeeds when it becomes large-scale. Despite the wide variety of models, there are few velomobiles that are produced in series. There is no mass production of any model. However, he does see that there is more and more cooperation between manufacturers of velomobiles.

Not optimistic about the climate

As far as the climate is concerned, Carl Georg is not optimistic. People will only adapt when everything gets stuck, when there is a big shock. Prices for air travel are ridiculously low, who still believes there is an energy crisis at the moment.

To experience the *Leitra* personally I have an appointment with Carl Georg Rasmussen on Saturday 18 July. The journey by velomobile went well and the day before it looked like I could be there on Friday afternoon. He suggested to have dinner together on Friday evening, I was invited by him. That was an excellent idea, we had a very pleasant evening. Carl Georg is still very active and enthusiastic. He told beautiful stories about his adventures, like the monster trips he participated in and about the tours. And about a customer who, 25 years after making a test drive, orders a *Leitra*. Why the recumbent never broke through. He has enough customers who have a *Leitra* as their only means of transport. There is no real answer. Even his own wife doesn't drive a recumbent bike. What plays a role is that the convenience of a car is superior after all. The cost is apparently no obstacle and for many people a car is also a status symbol. Fear of harsh weather conditions can't be the reason, the *Leitra* is a good solution for that. Fear of the climate change can be a good reason to cycle. For health reasons you could also cycle, but many people seem to prefer to go to the gym by car. This is incomprehensible because cycling to work is free sport, i.e. almost without investing time.

Carl Georg has three proposals. He would like to organize another European tour. He would also like to see a new Velomobile Seminar. Finally, he would like >



Limousine, cabriolet, fun trike...



A 2016 *Leitra* with a collapsible solar panel.

> to exchange ideas with European politicians in Brussels on how to stimulate cycling. Who is going to help him? Maybe all this can be combined with the World Recumbents Championships in 2021.

The next day I visit Leitra's workshop. It is a generous space in a building where several companies are located, about twenty kilometres outside the centre of Copenhagen. There are several *Leitras* outside. Carl Georg explains how simple and ingenious the design is. The base is a trike with a tubular frame and simple leaf springs. The seat can easily be removed or replaced. Clearly visible is half a cage around the rider. How strong does it have to be? Carl Georg has made a calculation for that. The professor of the faculty where he worked at the time also asked students this as a question. A good example of double-checking. Practice has now proven its worth. Accidents in traffic can't be ruled out. Even in case of serious accidents, the *Leitra* driver is always well off. Nowadays, instead of the trike's steel frame, a carbon frame can also be chosen, just as strong but much lighter.

The hood

A completely different story is the hood. Because of its modular construction, the rider can choose to ride open when the weather is nice. If he or she wants to ride with the hood, it can easily be attached without tools. In the standard version there is plenty of space for luggage, but a child seat can also be fitted. The hood has no load-bearing function and can therefore be super-light. As a result, the hood makes a flexible impression. The headlamp is remarkably high. Because it's summer I can't judge the performance but a high position of the high position of the headlight is advantageous.

Isn't it too hot when the sun shines? No, because there are easy to open ventilation shutters. They are hatches in the sides which you fix with an elastic band. Very ingenious. This also proved itself because on a summer velomobile tour in 2013 of more than two thousand km. Half of the participants dropped out because of the heat, but the *Leitras* continued. There is a ventilation slot under the windscreen so that the



Carl Georg Rasmussen in front of the Leitra workplace.

window doesn't fog up in humid weather. Fans are not supplied but a German professor has built in a fan that works on a solar panel on the nose of the *Leitra*. So the fan only comes on when it is needed, when the sun shines sufficiently. A windscreen wiper can be supplied, again very simple, so it can be operated by hand. I am allowed to make a test drive. Taking a seat on the comfortable chair is very easy, you don't have to be agile for that. I sit more upright than in my own velomobile. It's very easy to drive with it. The handling is excellent, especially the turning circle is very small. You have a good view all around, which is very nice in the city. You have a very good view over not too high hedges and bonnets of cars. Brilliant is the rear-view mirror, you see very well what is happening behind

you. Carl Georg copied this from the World War II RAF Spitfires. This allowed the British to easily shake off the German Junkers. The one I'm driving with has a Rohloff hub gear.

Then we're heading for downtown Copenhagen. I'm driving after Carl Georg in his *Leitra*. In general this is very easy because almost all busy streets have wide cycle paths. He indicates his direction very clearly by putting his arm through an opening in the cabin. Then we come to a beautiful bike highway of five kilometres long. It is very varied and only a few times we have to cross a busy road. At a certain moment I had to drive back and forth five times to make a sharp turn, while Carl Georg takes it effortlessly. It gets busier and busier the more we approach the centre of Copenhagen and we easily keep up the pace between the other cyclists or we pass them if possible. The outside temperature is rising by now, but Carl Georg comes completely fresh out of his *Leitra*. After drinking a cup of coffee we say goodbye. I am very impressed by the *Leitra* and its ingenious simplicity. <

Sources

Interview with Carl Georg Rasmussen on www.leitra.dk. Article series in *InfoBull* 2019, written by Carl Georg Rasmussen.

Presentation by Carl Georg Rasmussen at the 8th International Velomobile Seminar in Dornbirn 2015.

Velomobil Seminar 9

Which role could the Velomobile play for sustainable mobility?



01. & 02.09.2021
in Brüssel

summary...

...The 9th velomobile seminar since 1993 looks forward to your new scientific findings, your new technical idea or your point of view of the Velomobile, in technology, in use and in the future potential. Send an abstract about one of the mentioned subjects to the scientific advisory council.

...beside this there is to celebrate...40 years LEITRA

subjects...

A	B	C	D
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velomobil or	new form or geometry or	economic or	which does not fit into categorie [A] to [C]
mobility by muscular strenght or	new extraordinary performance/function or	terms of traffic or	
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Poster for previous Velomobile Seminar.



On the road with the Alpha7

Text and photos
Willem Jan Coster,
published in the Dutch
magazine *Ligfiets&* 2020-4



The velomobile designed by Daniel Fenn is produced by Velomobile World in Romania and can be ordered at more than twenty dealers in Europe. At Velomobiel.nl a beautiful *Alpha 7* in the colors wine red metallic with white is available as a test bike.



At first glance, the *Alpha 7* looks a lot like the *Intercitybike DF*. Not surprising: Daniel Fenn is also the spiritual father of the *DF*. Indeed, what's in a name. The bike has beautiful flowing lines. From the rear the narrow hollowed tail is particularly striking. The smooth lines make the *Alpha 7* look slimmer than the *DF* despite the fact that the front is slightly wider. Inside the full carbon bike, everything looks familiar although it is just a bit more bare than in many other velomobiles. For example, the dashboard with buttons for the lighting and space for the odometer is missing, but also hardly any cables are in sight. Very neat. This test bike is equipped with a folding handlebar, but optional tank steering is also possible.

Filigree steering plates and brake lever behind the strut.



Packing up

Before I can depart I have to repack my luggage. For the trip with overnight stay besides my velomobile bag, tire repair bag, food and drinks I carry also a backpack with some clothes with me. I can just put it all in the bike without being bothered by it, but it requires pushing to stuff the backpack into the strongly constricting tail. A 17" laptop and bag of clothes for a week, as I regularly carry in my *Quest*, would be difficult in this bike. The seat is screwed into the test bike which does not help with packing, but in the standard setup the seat is removable. The space in the tail is less than I am used to in my *Quest*, but there is more usable space in the bottom underneath the seat. The standard velomobile bags can be placed against the front wheel arches, making it easy to reach and leaving room for other luggage next to the seat.

Room for the dog

After the entire estate has found a place and I have tied my Wahoo Elemnt with two cable ties on the

handlebars for the necessary directions, I lower myself into the bike.

If you are used to the wide round entry opening of the *Quest*, the *Alpha 7* will take some getting used to. The entry opening is more triangular with the narrow side to the back, so I have to lean forward when getting in. As soon as I hit the seat I can put my back against the backrest and my shoulders are just below the edge. At first feeling I am very comfortable and the *Alpha 7* fits me like a glove. The compactness of the bike feels nice, a bit as if you were wrapping a comforter around you. Despite the constriction of the tail, there is more than enough width next to the seat for the elbows. Reportedly, one of Daniel's design demands was that there should be room for his dog next to the seat.

To save weight, the seat is not adjustable but is available in four sizes which can be combined with two sizes for the seat. Perhaps with my 1.87 m long body I would need a larger size seat with a longer backrest, which would allow me to sit a bit lower in the bike. Because already in the very first kilometers my collarbones >

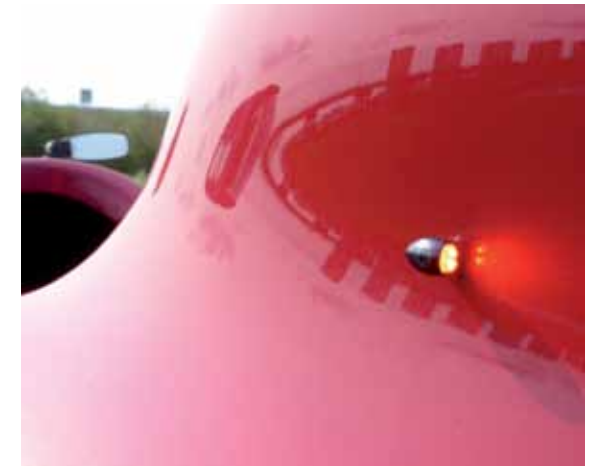


Elastomer suspension elements.



Carbon swingarm with pull rod and elastomers.





The Hellerman Atto rear light.

> painfully hit the edge of the bikes' entry opening. This will happen regularly for the rest of the trip. My shoulderblades also press against the backrest a bit, which also becomes painful over the time.

While cycling on the long straight road from Dronten to Lelystad, I let my gaze wander to the front. The nose pipe for the crankset mounting is, just like the rest of the bike, completely made of carbon fiber and consists of a stand – with a very nice space for the battery – and a horizontal tube which, just like the *DF*, is also an air intake. The tube runs quite high in the bike so the crankset is mounted upside down on the tube. This will make replacing the front derailleur cable a bit more difficult, but luckily this is rarely necessary. To be extra stiff, the upright extends wide downwards. I sometimes slide slightly along the upright with my left lower leg, but this is not really disturbing. The chance that you will get a smear of chain oil on your right lower leg is small because the chain runs steeply from the front ring to the chain wheel mounted in the steering tunnel. Whether because of the seat or my shoe size 46, but with my heels I sometimes hit the bottom. This happens especially when I apply less force, such as when shifting gears. I also sometimes hit the top of the nose with my knees, despite the 'knee bumps'; as if I should keep my knees slightly apart while cycling.

Perhaps the various bottlenecks can be resolved with a slightly different adjustment of pedals, cleats and a different seat size. On the ordering site for the bicycle, a rider height of up to two meters can be specified, but the guys from Velomobiel.nl indicate that the rider's height does not exceed 1.85 à 1.90 m. I'm right in the middle. Another rumor would have us believe that Daniel didn't want Ymte to fit in the bike.

The smaller entry opening makes the bike stiffer and perhaps just a little more streamlined, but the slightly more difficult entry makes me even more inclined to stay seated than in my *Quest*, as befits a true velomobile rider. Wheelchair-like maneuvering – 'flintstoning' is not possible due to the lack of foot holes – I try to reach hard-placed push buttons of traffic lights. Last but not least: because of the smaller entry opening, it seems difficult to take a child on your lap in the *Alpha 7*. Unfortunately, I miss the company of my six-month-old son to test it all.

Technical gadgets

To properly experience the speed of the bicycle, I have included a back and forth trip over the dike from Lelystad to Enkhuizen and back to Lelystad in my test route. With the wind at an angle from behind reach Enkhuizen with an average of 49 kilometers per hour. Back to Lelystad I get an average of 45 kilometers per hour. I would have liked to do it a bit faster, but apparently not doing bike commuting for months is starting to bother me. Or is it the tires? When I return the bike the next day, Allert Jacobs remarks that the tires could have been a bit harder. I am glad that there is still 5 bar in it. I did have my tire repair bag with me, but the pump was still at home... With rock-hard tires, Allert sends me on my way to make another round. On a straight road I hit just 60 kilometers per hour with a gentle breeze in the back and with the necessary effort. Then I let the speed drop to a 50 kilometers per hour that can be sustained a little longer. The *Alpha 7* has been designed to make the bike even stiffer and lighter than its predecessors; the official weight of the *Alpha 7* is 23 kilo. Not only has weight been saved on the hull, but also on the suspension and

wheel struts. Instead of the usual telescopic dampers with springs or air/oil, elastomers have been used: discs of rubber that are compressed when suspension bounces in. The front struts each consist of a single bar that protrudes through the wheel arches. The elastomer is compressed between a flange on the strut and the bottom of the wheel arch. When you look in the cockpit while cycling, you can see the strut heads juttering up and down. Cleverly found is the rear suspension, which acts as a pull rod and can therefore be made much thinner, because a bar cannot bend when pulled. The pull rod is made of plastic and here too elastomers provide the suspension. The possible breaking of the pull rod would be a concern for me, it's then impossible to continue cycling. At first sight, replacing it on the way seems like a difficult job. Periodic replacement may prevent unexpected breakage. But I would find it a comforting thought if there were a 'homecoming', such as a steel cable that you can hook in place of the spring element in the event of a break. The suspension is sufficient on good to fair road surfaces and I don't feel the bike dribbling anywhere. I find the suspension insufficiently comfortable on bumpy clinker roads. If I had such a road surface on my daily route, I would change bikes or consider smoother elastomers, provided the space in the wheel arch allows for it. With stiff elastomers, the suspension travel is small and a narrow space between the wheel and wheel arch is sufficient, which improves air resistance. In contrast to its even faster sister, the *After 7* (made to order by Daniel Fenn together with the customer), the *Alpha 7* has open wheel arches. Except for a few maneuvers that would be difficult with any velomobile, I have no problems with a too large turning circle and the bike rides familiar in that respect. I also have little to say about the speed steering, it feels neutral and not nervous. On a slightly misjudged roundabout, I subject the bike to a mild moose test, which is successfully passed. The track width of the *Alpha 7* is 69 cm, 3 cm more than the *DF XL*.

In the meantime, I have already left the provinces of Noord-Holland and Flevoland behind me and I continue my trip through the Weerribben national park. During

a break I decide to inspect the bottom of the bike and lay the bike on its side in the grass. Unfortunately you only see the beautiful lightweight steering plates when you put the bike on its side. The gossamer stainless steel laser-cut frames look a bit thin, although I have no doubts about their reliability during normal use. They may bend in a collision, but the wheel may remain straight. Just like a wild moose test, a crash test is not included in the test program. Another interesting detail is the position of the brake lever: instead of directly on the brake anchor plate, it is mounted at the rear of the strut and the axle for the brake lever runs through the strut, just like old *Alleweder* velomobiles. Because no gap is required for the brake lever, the brake anchor plates can be mounted flush against the suspension strut, which improves the rigidity of the wheel suspension. It is also easier for you to replace the brake cable.

Voluptuous shapes

When the bike is on its side, the voluptuous shape of the bottom immediately catches the eye – although I must admit that I only recognized the suggestive shape when attention was paid to this in the Facebook velomobile group. The fact that I didn't see it right away hopefully says something beneficial about my state of mind – and thankfully there are no voyeurs during my intimate break with the *Alpha 7*. The ground clearance is limited but sufficient. While cycling my 300 kilometers test ride, the foot bumps only hit the ground when turning. As soon as the rear wheel is lifted only slightly, the 'buttocks' already touch the ground. Not insurmountable, but especially if you are a bit taller, this happens quickly when you lift the tail at the bottom. The bicycle is optionally available with a lifting eye in the tail. Tail, buttocks... with my *Quest* I'm just talking about *butt* and *foot holes*. The beautiful shape of the bike definitely does something to me. The two maintenance hatches are both mounted with Velcro. When the chain is off, it is nice not to have to loosen a whole series of Allen screws, but with a properly adjusted derailleur the chain will hardly ever come off. The biggest drawback of mounting with >



A fit-to-measure compartment in the nose pipe upright for the battery.



The struts on the left and right protrude through the wheel arches.



View through the service hatch.

Velcro is in my opinion the unwanted removal of the hatch by 'interested parties'. The visible carbon probably arouses desire. In addition, you must replace the hatch accurately, otherwise the hatch will damage the paint on the edges around through vibration. The hatch also does not contribute to the stiffness of the bicycle. In the *Snoek*, the latest model from Velomobiel.nl, the hatch is placed at the bottom: no chance of rainwater leaking in, no theft. In addition, you could use interchangeable shutters, such as with and without foot holes. But with a hatch at the top, you can work on the bike without putting it on its side. Although visible carbon is a nice material, I think the hefty black hatch disturbs the beautiful lines of the bike. The same goes for the round hatch at the rear derailleur.

As a daily user of the foam hood, I think it is a shortcoming that the *Alpha 7* does not fit a foam hood because the necessary lowering of the edge around the entry opening is missing. Due to the triangular entry opening and a 'spoiler' just before the opening, the air should flow better over the hole without much hitting in. Instead of the foam cover, a carbon racing cover is available that can be stored behind the seat. For everyday use, I would still miss the foam cap. Not only in the rain it is a nice accessory, also to stay warm

while your head is nice in the wind; good visibility and easier to get off at traffic lights. Moreover, it keeps rain and 'loose hands' out when the bike is parked.

Light on the road

After a family visit with fries and compliments for the bicycle – you always receive from lay people, as well as the usual concerned questions – I cycle towards Kampen at nightfall. The Lupine battery is located in a designated compartment in the steering tunnel. The switch for the lighting is mounted directly above the battery. This means that there is no need for a dashboard and there are hardly any visible cables, but the accessibility of the light switch is not ideal for me. You have to reach far forward and feel for the switch. Since the headlight is not remotely adjustable in height, I have to reach for the switch a few times to switch between the two positions of the headlight. The headlight is not mounted in the air intake as with the *DF*, but a few centimeters above it. The B&M headlight mounted in the test bike has a blue glowing ring at the rear that illuminates the inside of the bike in the dark. Quite a nice detail, but the glow is not enough to read the odometer in the dark. A counter lamp, as is usual in other velomobiles, is not available. Taillight, brake light and rear turn signals are combined in the

Kellermann Atto LED lights mounted on the left and right of the Smurf hat. A pricey but beautiful solution. Due to their high and wide placement, the bright lights are clearly visible.

The opponent

After an overnight stay in the Kampen area, I cycle back to Dronten on the early Saturday morning. After I return the *Alpha 7* at Velomobiel.nl – and with extra air in the tires I made that extra fast ride – for a fair comparison I go to Intercitybike for a ride with the *DF*. To properly experience the differences and similarities, I pack the same volume and weight of luggage in the *DF*, even though I now only make a trip of an hour. Packing is a bit easier thanks to the straight tail. A small detail is that there is not enough space next to the seat to place the velomobile bag against the front wheel arch. The velomobile bag supplied as standard with the *DF* can stand next to the back of the chair; for something I have to get used to. The larger entry opening makes it easier to get in than in the *Alpha 7* and the seat fits me better. Despite more luggage space in the tail, the elbow width is 6cm less than the *Alpha 7*. Loaded a track on my GPS for a tour around Dronten which promises 'all types of road surface'. And that's quite right. The suspension of the *DF* is clearly more



Crankset fitted under the nose pipe.



Fairytale lighting in the front.

comfortable, I notice when I bounce over a clinker road through the neighboring forest. Over the dike along the Veluwemeer I notice the crosswind stronger than in the *Alpha 7*. Whether it is only because the *Alpha 7* is less sensitive to crosswind or because the wind has been increased is difficult to say, but it does confirm the opinions that the *Alpha 7* is not very sensitive to crosswind. On the same road and in the same direction where I hit 60 earlier that morning with the *Alpha 7*, I am now slightly below that. Because the wind has clearly started to blow harder in the meantime, it is difficult to say how much of that difference is due to the bike, the wind or because I already have several tens of kilometers in the legs. Or again the tires.

Conclusion

For the *Alpha 7*, the design philosophy 'form follows function' applies to a large extent, whereby maximum efficiency has been chosen as the 'function': weight savings, stiffness and aerodynamics. As a result, it is no longer so obvious that everyone fits in and finds a good sitting position and there is also less space for luggage. Because the seat is not adjustable, it is extra important to fit well and to test drive, so that you make the right choice. Especially the beautiful and undoubtedly effective shape of the tail is at the ex-

pense of the luggage space. 'Form follows function', but nevertheless I think the bike is very successful in terms of shape. The *Alpha 7* is more of a very nice competition bike than a commuter bike. As a daily velomobile commuter, I would miss luggage space and foam hood and with the stiff suspension a bad road surface is no fun.

If you mainly want to cycle for recreation and participate in competitions, then the *Alpha 7* – if you fit in – is a very attractive bike. Who wants to be beautiful has to suffer pain and that also applies to the financial side, because with a starting price of € 10 000, the *Alpha 7* is € 1700 more expensive than the *DF*. The *DF* is also standard equipped with lighting. With the *Alpha 7* this comes with an additional cost of € 350 which makes the price difference over € 2 000. <

Velomobile accident with the Alpha 7

Werner Klomp,
recumbent bike club
Vorarlberg



I ride my velomobile to work every day. The distance is about 25 km and I prefer to ride along the Rhine, firstly because there are no traffic lights and of course little traffic. Unfortunately, there are no cycle paths on the way to work. I cycle the first 5 km and the last 5 km along the main road.

On this occasion I turned from the cycle track along the Rhine to the main road, over the bridge over the Rhine, I saw a car on the other side of the road, which was traveling in the same direction as me. It stopped and I continued driving (I also had right of way at this point). Here it goes slightly uphill to the bridge, so I was not going that fast, I think about 25 km/h. Then the velomobile started to 'drift', I thought what is going on now? Then I tipped over and the car behind me apparently didn't see me at all, even though I have really bright, flashing tail lights on the *Alpha*. The driver still did not notice that there was a velomobile in front of her car which she was shunting as she drove. Fortunately after 50 to 100 m she noticed and stopped. I was pushed 15 m away from the car by the speed and stopped. The woman got out of her car and was completely horrified and frightened, just standing there with her hands in front of her face... I got out of the velomobile and checked if I was okay. I just banged my shoulder on the edge and it was a little scratched and bruised. She called the ambulance and the police arrived at the scene of the accident 10 minutes later. I was first examined in the ambulance and I did not want to go to the hospital for further examination.



We both had to go to the police station to do the accident protocol and the alcohol test, although I thought in such a case an 'eye test' may be better, of course both of us hadn't drunk any alcohol at 7 AM in the morning.

The velomobile once again protected me well, even though it got some scratches and injuries. The shock absorber was broken completely from the guide and was visible next to the *Alpha*. There were also a few small cracks in the carbon body and it was badly scratched from being pushed along the road. I put the shock absorber back in the hole and drove carefully to the police headquarters, from there to work, and after work, back home.

The day after the accident I drove 45 km in the damaged *Alpha*. Of course at a slower pace than usual, the tire was not properly on the rim, spokes were broken, but I could still drive.

Now I have to wait and see how the insurance company will compensate me. The woman confessed that she had completely overlooked me. The letter from the insurance company accordingly stated that I could bring my car to the garage but unfortunately that would not solve the problem.

Now the appraiser has been and we will have to see what happens.

I am really happy that I was in a velomobile and not on a road bike or other open wheel vehicle, then I would probably not have survived the accident without hospitalization. <

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SCHWALBE BIG BEN | BUILDING YOUR DREAM | WAW LONG TERM REPORT

BUILDING MY DREAM

BY PETE WATSON

At the start of 2020 my Dad asked for one thing he required, spare time. And as some late birthday present he received this as we were at home with no work or school or competitions to attend. The perfect time for a bike build then. Our journey begins oddly in 2011. Simon (Dad) and Jack (Older brother) Watson bought a Davis recumbent (2 wheeled streamliner) to use at some BHPC events along with the moulds for the fairing. A year later my Dad found someone who could replicate the fairing using the moulds out of fibreglass. After a brief 5.5 years we received the completed fairing making us one step closer to making our pair of fully faired bikes. This is where the timing was an issue as we had the capacity to make the bike but no spare time for us to make it.

The story now jumps forward to March 2020 as Great Britain was put into lockdown which gave us the spare time we were needing for the bike. First we needed to make a jig that fits the original Davis frame so we can copy the angles and lengths. This was important as the fairing was made for that bike so it needed to be the same size to fit as the margins aren't very big. My dad came up with a futuristic high tech solution made out of a roof rack that was about to be thrown out (not ours to start with), a bolt that can move if any adjustments needed to be made, a block of wood (very high tech I know I won't go into details because it involved a lot of mathematical thinking) and a bit of metal. After fitting the jig to the crucial components of the Davis (Bottom Bracket, Headset and wheelbase) we



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started the design of what my dad christened the DMR (Davis My Replica). We had some ~~old broken piles of scrap~~, I mean parts to use as spares so we took the headset, bottom bracket and back end off of an old snapped in two Saracen trials bike. It is always good when we find a use for old parts that my dad has been filling the garage up with as it just makes him want to keep more to restock the spares that we have just used. I don't think he quite understands what tidying the garage means.

Anyways, we wanted to make the DMR a modern version of the Davis original so that it can be easier maintained as well as taking advantage of newer technologies, therefore we used an A headset and the back end off something which had disc brakes. In the Davis we use a 64 tooth front sprocket with a 26 inch back wheel, which as you might think isn't too easy to find parts for; so we designed this around a 700c back wheel to lower the size of the massive front chain ring required. We also wanted to make the bike out of carbon so dad went to the local foam distributor (a skip he had passed on the way home from work!) to get the optimised foam (some old building insulation (Kingspan)) for the base to wrap the carbon around. After shaving the high tech, purpose built foam into shape we were ready to create the DMR. We transported the jig into our workshop (bit of grass in our back garden) ready

for carboning. During 3 hours of work we added 14 layers of carbon including 8 layers of unidirectional, 3 layers of biaxial dual layered as well as a finishing layer of carbon weave so that it would have a nice finish. Using another high tech solution of wrapping the entire frame in tape, it compressed, letting out any excess glue we left the frame in our curing hot box (a cardboard box sat around the bike with a little heater inside to keep the temperature at about 25 degrees Celsius) for about 7 hours before it was finished.

This made the basic frame so we added a pair of forks, from a 20 inch trials bike (including disc mounts), and weighed this as ~5kg but we still had to add a mount for a seat. As this was designed for the Watson family (Pete (Me), Jack and Simon) it didn't need a lot of adjustment built in as we are all roughly the same size at about 5'10". Dad decided to copy two parts of the seat we were going to use as a backstop by making a small section for the lowest point of the seat and the furthest point of the seat so the seat would sit into the moulded part but could be moved a little bit forward if needed. We made a carbon copy of the original seat using the original as a mould to provide us with a thin, lightweight seat to use. Dad then came up with a modern, futuristic mould to make a half cylinder, super strong piece of carbon to strengthen around the seat out of a piece



of drain pipe. This was glued on part of the frame just behind the seat, up to the seat stays. This would stop the seat from flexing side to side and hold up one of the back stops for the seat. We now had a bike that works to try out. We fitted some components without trouble and added some spare TT bars so we could have a go in the street.

This is when our perfect bike showed itself to be not so perfect. Up by the headset, right where your legs go, the frame was not quite straight so your left leg rubbed up against it when riding, which would be uncomfortable after a length of time. This was quickly improved as my dad sanded away the excess glue on that side and added some clear tape to smoothen it. This solved the problem easily. Onto the next problem. We had copied the original as I have said which included an issue that had shown itself. The Davis' bottom bracket isn't straight with the rest of the bike but off to one side and although my dad tried to correct for this it wasn't completely successful being a bit off. Not enough for us to notice when riding (in fact I didn't realise in the Davis even though it was more off) but not ideal. Apart from these problems the bike felt really nice. It handled just like the Davis does which is one of the features we wanted to replicate, it was smooth and it seemed to roll effortlessly. After this encouraging little try we needed to finish some minor niggles like adding brakes and gears (they aren't essential for a bike are they?). This is when we noticed that these seemingly perfect TT base bars (that gave the right position as well as being aero) we had on were some odd size meaning that

the brakes and gears off a mountain bike wouldn't fit. Them roadies making odd sizes doesn't make this an easy project!

This meant we had to embark on making our own bars to fit by getting some spare MTB bars, cutting a groove in at the correct width, bending them 90 degrees and wrapping them with some Kevlar so that they'd be strong enough. This was held in another jig (get ready for some more high tech solutions) which was a piece of plywood with some screws in while it cured. Finally we had finished the bike but more problems came about. When we added the brakes and gears I thought I'd go for a quick test. I found that my leg was hitting the gear lever every revolution which would give a significant twitch making the bike hard to control and twitchy while putting any power down. Some more tinkering was required to make the gear lever paddle about half as big so it wouldn't be hit, which worked a treat. As we thought we finished again we uncovered yet another problem. We had designed a roller just under the seat so that the chain wouldn't rub against the seat, but the chain wouldn't stay in place and kept jumping off. Getting the high tech formula one esk thinking cap on, Dad struck again by cutting a spare 250ml brake fluid bottle in half, making two holes for the chain to go through and fitting it around the roller to keep the chain in place. I think Simon could have been brilliant on Scrapheap Challenge with his simple solutions to problems using bits lying around the garage!

Anyways back to the bike, with all the problems fixed my dad decided to test it as he was sent back to work (this is mid-



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May by this time). It is maybe a bit lower than Spelky, his work recumbent/ old bike that people may have seen him riding at BHPC events, but with the roads being quieter he decided to take it for a ride. And guess what, more problems occurred. He had re-bled the back brake before going in case of any heavy braking which had uncovered a design flaw. That super strong half cylinder bit of carbon we made flexed when under heavy rear braking, making the seat twist. This may need some reinforcing at some point but it was left and the solution was just to not brake hard at the back (we are known to be very health and safety conscious as you may have noticed!). Also another part of the Davis' frame which was copied was the lack of tight turning ability which is unnoticeable at a track as the corners are never that tight and the speeds are high. However on streets and junctions it made for some tricky situations. This is because the chain runs directly past the front wheel with nearly no clearance so any turning causes the tyre and chain to rub and stop the free movement of the front wheel. But this can't really be changed and it isn't a problem if it is used on a track as intended. We had finished the bike but we still needed to try and get the fairing on. The Davis holds its fairing up with a number of brackets at the bottom as well as two on the boom (1 going up and 1 down) to keep the fairing in place and we planned to do the same for the DMR. This is where the lack of time became a bit of an issue again as my dad went back to work (an annoying necessity I know) so the progress was slow.

as this 1 fully faired bike collection was about to become 2 we needed to make a second box to store this one in. At the time of writing (early June) we still require a second box but we do not have the resources for this yet so the bike is being left as an unfaired machine until it can be safely stored. The fairing is also able to become one piece but we need to construct the brackets to keep the fairing in place so that it can be used. Judging off our previous speed of construction this could take another year or two unless we get another length of spare time in which to crack on to the finish.

PW



But we were also halted by another problem. Space. We have a wooden box in the garage to keep the fragile fairing of the Davis from being broken so we can safely store it away. But



Autumn Tour Northern Italy 2020

Text and pictures Michael
Ammann, Switzerland



future bike.ch

This year we wanted to go to the Canary Islands for three weeks. Everything was planned and booked. Unfortunately circumstances did not allow. But Sandro didn't want to miss out on the tour and so we changed our plans without further ado. We kept the route always within a day's distance from the Swiss border.

So we met, Sandro and Dagmar, Rosmarie, Heinz and me, at the end of September in Zernez. The sun was shining, it was really warm again. Without further ado we moved the route to the main road, so as not to get in the way of the mountain bike marathon. Steadily, but mostly only a little bit, the road climbs. The mountains rise up beside us, and the grazed meadows. It is still too early for the famous golden



Zernez, mountain bike marathon.

autumn, when the coniferous forests in the Engadine turn golden yellow.

Lunch is served in La Punt. Opposite, the road winds in many serpentine up to the Albulapass. This pass is still missing on my to do list. Maybe next year, or another time.

We continue on gravel roads along the Inn to Celerrina. The wind increases and pushes grey clouds towards us. It becomes cool. Past the Lake St. Moritz and on to the Lake Silvaplana where kitesurfers with hydrofoils float 50 cm above the water.

The Lake Silses follows. The road winds along the shore through the larch forest. The clouds are deep and grey, we can feel the occasional raindrop. We reach the Maloja Pass at 1815 m above sea level. An elderly racing cyclist from Italy asks us to take a photo. He started this morning in Chiavenna,



At the Maloja Pass.

crossed the Splügen- and Julierpass, and is now on his way back to Chiavenna (4000 hM, 166 km)! While we are putting on warmer clothes, our elderly cyclist disappears down the pass.

After a few metres the road drops down into the valley with several bends. Just on the steepest part Heinz has a puncture. So we have time to applaud the few passing cyclists and encourage them on the 17% steep section. In the meantime some raindrops are falling and the road is wet. Shortly before a tunnel a bicycle ban forces us off the main road. There are recumbent cyclists who are quite sure they would have rattled through. Fortunately the narrow side road leads through the small village of Promontogno, exclusively cream-coloured buildings with flat slate roofs, past the Hotel Bregaglia, built in 1875 and largely preserved in its original Belle Époque style. Segantini, Giacometti, Reiner Maria Rilke have left their traces here. Shortly afterwards we reach Chiavenna, where we meet Anna May.

In the morning we first descend the valley to the Lago di Mezzola, then we continue to Colico. It is pleasantly mild. There is a lot of humidity in the air. Will the weather hold? The road section looks familiar. In my head I go through the routes of past autumn tours, and remember that I have actually driven through here before. It was the autumn



The serpentines of the Maloja Pass.

tour on Mt Grappa 2014 with sections with 20% gradient. That is not required this year, I am still thinking... In Bellano we split up. Here I stopped the autumn tour in 2016 – after the Stelvio not much was left, but that's another story. Today Sandro and I feel like doing a few extra metres in altitude and so we attack the Passo Agueglio (1163 m). Soon the lake lies far below us, but the village stretches far up the slope. A simple panini with ham and cream cheese strengthens us before we start the last climb. Then we enjoy the ascent until we reach the crossroads at the lake again. We follow Lake Como. The road winds its way between the lake shore and the steep mountainside, passing many small villages in countless bends until we reach Lecco. Anna May is still struggling with stomach problems and chooses a direct route to her daily destination in Como. We make a detour to Bellagio, again along Lake Como, further west, where we climb up to

On the way to Bellano.



Sandro on the pass of Ghisallo.

the small church of Madonna del Ghisallo. We have passed this point several times: in 2013 and 2016. After a short descent we tackle the second pass. I believe my navigation system is making a mistake. But Sandro has a special section for me: 'Muro di Sormano'. Short and steep it is. Actually I don't feel like it. But at the last moment Sandro thinks that you can't miss this highlight. Barely 200 m later I regret it. It is steep, very steep. The road is almost two metres wide. Big numbers are painted on the road. It takes a long time for me to understand that these are the current altitude metres above sea level. After about 1 km we reach the Colma di Sormano at 1124 m, where we wait for the 'flat riders'. The descent follows. Single rain drops fall before we reach the next arm of Lake Como. There follows a section that I have very bad memories of. On the Speckwegtour back from Pavia I had disc brake failure and had to disassemble it completely in pouring rain. This section does not want to end. The road climbs again and again and then drops back down to the lake before reaching Como. But today is rewarding and I get three big scoops of gelati at the harbour.

Before we leave I have to change the gear cable. It is raining. It has become cool. We cross the border to Ciasso and continue to Mendrisio. We drive in a staggered row to avoid being in the splash water of the one in front. The roads are deep black, the >



The 'Muro di Sormano' is up to 24% steep!

> grey of the clouds is reflected in the puddles. Along the western side of the Lago di Lugano we cross the border to Italy again until we reach Brusimpiano. We turn off, leave the village behind us and drive through a green-black dark and humid channel made of quarry stone walls and dense trees that close above us. It is steep and cool. We have reached the highest point at Forcorella di Marzio. More braking than free wheeling, we descend on the other side to Lake Maggiore to Luino, where we follow the lake to Laveno. It is one of those routes I have driven several times before and each time I don't want it to end. We load our bikes onto the ferry and watch the water pass the ferry. The sun shows up again, the grey clouds retreat to the mountain tops. We reach our destination Intra.

The day cannot yet decide whether it should rain or stay sunny. But the longer we travel, the better the weather gets. We ride around the bay, look back, then turn away from the lake. In Gignese we have a coffee. The group sets off towards Monte Mottarone. Anna May is not cycling and I have caught a cold in the last few days. The two of us skip the summit and go straight to Omega. But it won't be that direct, the road is closed and there is another hard climb. Instead we enjoy the view and lie a little longer in the sun on a bench at the roadside. For lunch we have 3 bars, an apple and marzipan, which was intended as emergency rations. After a longer descent we see the Lago d'Orta and our stage destination Omegna. It is again a place I have passed several times be-



Gelati on Lake Como.

Steeply goes through Marzio.





On the ferry to Intra.

fore. Each time on the return journey of a recumbent bike tour: Speckweg Milan 2013, Autumn Tour Tenda 2017. Slowly, in my head the many tours are merging into a network with many connections.

Half starved we sit down in front of a bar. In Italy that's wonderful: there's always something to nibble on with an aperitif. This time, slices of toasted bread with ham and small pieces of pizza. And so we watch the bustle on the square, a mixture of terrace, crossroads and bar. In the midst of them we discover a not entirely unknown group of recumbent cyclists, who then gladly join us in our idleness.

Last night the cold had tormented me and so I slept very little. Anna May is not yet strong either. Since we are staying at the same place, we are not cycling. It won't be more than a walk in the pouring rain along the lake to the next supermarket.

Dagmar and Sandro, Rosmarie and Heinz are brave and take on the planned round trip to the Passo della Colma. They are lucky to get around the big downpour. In a small but nice bistro we enjoy the last evening. The weather doesn't look great for the next few days. Dagmar and Sandro will continue.

Lake Maggiore and the city of Intra.

Tomorrow we will break off and take a short cut to the north. It will be a short farewell. We don't go far until we change into rainwear. The wind blows cold and wet against us. The 30 kilometres along the valley are almost flat, but never ending. After every second bend we continue again. At some point we reach Domodossola. This is the end of the autumn tour for us.

Two days later I get a photo with two glasses and a bottle of Giulina Barbera del Monferrato. Dagmar and Sandro seemed to have enjoyed the last few days.

A big thank you to Sandro for the organisation and the last minute complete replanning of the autumn tour. Until the next tour. <



Wilfred Brahm talks to Alve Henricson 2020 Velomobile Challenge

Text Wilfred Brahm,
photos Alve Henricson

Published in the
Dutch magazine
Ligfiets& 2020-4



Alve Henricson from Sweden took the initiative for the special year 2020 to organise a challenge for individual riders to visit twenty countries with a velomobile this year, www.202020.eu. Besides Alve, there are four other velonauts. From France Denis Bodennec, from Sweden Mattias Sjösvärd and from Germany father and son Jörg and Jonathan Gebers. The last two drive *Quattrovelos* with a Solartrailer from Shanghai to Europe. After 45 days they are stranded at the border of Kazakhstan, which was closed roads due to the corona crisis.



He could not have foreseen how special the year would be at the beginning of 2020: Covid-19 was still a long way off. At the end of February he drove into the belly of a ferry to travel from Stockholm to Åland (Finland). In Lithuania, the connection between rear wheel and axle broke and fortunately the problem could be solved in a local workshop. After the Baltic States came Poland, and that is where it stopped. Restrictions were imposed

on the fight against the coronavirus near Cracow, the border with the Czech Republic was closed. At the end of March he wrote in his blog: "The border to the Czech Republic was closed to travellers because of the corona virus. I had to decide to either stay in Poland for as long as needed or travel home until the border opens again. Traveling home by land was not possible since the ferries from Poland to Sweden did not go. I decided to fly home via Amsterdam and Paris. I will continue my trip as soon as possible."

Alve left his velomobile behind in Poland at his last lodging address, which was participating in Warmshowers.org. The consequences of the pandemic were greater than we could have imagined. For this reason, the rules of the challenge had to be adjusted. It became 'Long distance cycling'. The rules include cycling with a velomobile through as many countries as possible, starting and finishing at the riders home and no time limit. Besides, long distance travelling from China to Europe was also permitted.

The adventure was resumed in Poland in mid-August. Meanwhile, Alve had organised the *Bohus Velomobile Tour 2020* in Sweden with ten velonauts taking part (<http://alve.henricson.eu/bohus-velomobile-tour-2020/>). And, here he could test his new Solar trailer. For more information on the Solar trailer see article on page 40.

Alve about the solar panel and trailer: "After testing the Solar trailer I have come to the following conclusion (not a scientific test though). If it is sunny and the roads are 'normal' German and Polish roads without a lot of climbing, then I am completely independent. If it is cloudy all day, then I have to charge through the grid every second day. If it is sunny and climbing more than a 1000 meters per day, then I have to charge through the grid every second day, not every day as before." At the end of October, Alve reached Greece after crossing the Czech Republic, Slovakia, Hungary, Austria, Croatia,

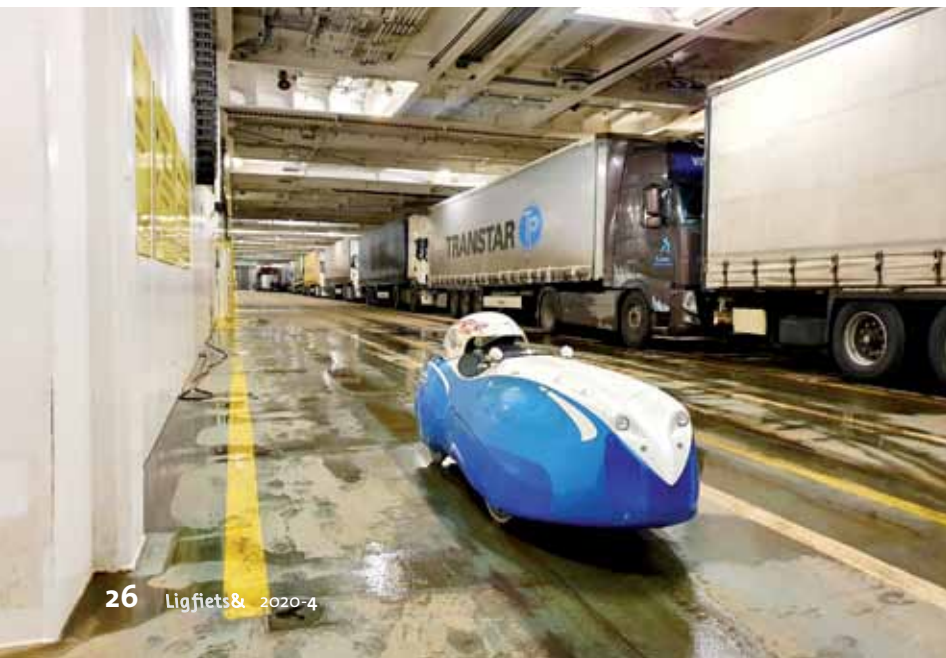


The Warmshowers host is guarding Alve's velomobile.

Slovenia, Bosnia, Montenegro and Albania. From Albania he could not cross the border to Greece but had to take the boat to Italy and then sail to Greece.

Big distances

It strikes me that Alve relatively often travels distances of more than 150 km per day and more than 1000 altimeters. That is quite an effort with a fully loaded *Quattrovelo* that is also equipped with an electric motor and a heavy battery and pulling a trailer. But 150 km per day is fine to him on normal roads. Alve: "But I have been going too fast through all the countries. I should have been stopping more often to see and experience more. In the beginning I just wanted to get to warm climate as soon as possible and then I just went on. If I was cycling 250 km in two days, I have to rest two days. If I ride 150 km per day I feel it is best to rest one day after four days. But now I have stopped counting kilometres and go by feeling and what there is to see. It's more rewarding in this way."



Did you have technical problems?

"Until now as I remember I have only had one technical problem. My velomobile has a reinforced rear axle, otherwise it would have broken during the trip because of heavy load and bad roads. The problem I had was a loose rear wheel after a 1500 meter descent. The bolt holding the wheel had broken. My theory is that the bolt was tightened very hard and when disk brakes were overheated, the axle and the centre of



Nordkapp 2019.

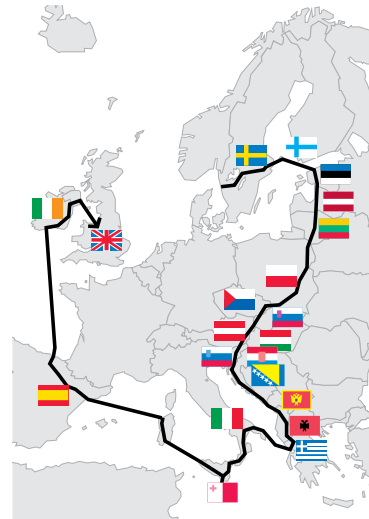


the wheel expanded so much that it broke the bolt. I have no other explanation. Fortunately I noticed that the wheel was loose when going slow and not when making 90 km/h (my fastest speed without Solar trailer is 126 km/h and with Solar trailer 104,5, which I do not recommend!)"

Alve wrote in the first days of November: "Yesterday's ride in Crete after climbing 500 meters, I had to open the front hatch to cool down the Bafang 250W assist."

Did you make the hatch in the nose of the bike for this purpose?

"No" he answers, "it was made in order to be able to reach the parts of the drive more easily and especially to reach the pockets where I place extra tires and tools." Denis Bodenec made the hatch (see for instructions: <http://alve.henricson.eu/front-hatch-for-quattrovelo-and-quest-sx/>). Does the Bafang engine always get warm when climbing? Alve: "It depends on the outside temperature. Normally there is no problem, but when the air temperature is thirty degrees Celsius it can be hot. However, I have not had any failure with Bafang so far." >



Planned voyage, through 20 countries.



> Did you accomplish your goal? How many kilometers have you covered in total?

“As mentioned, the goal has changed. I could have made many more than 20 countries, but decided to slow down and just enjoy life until the pandemic is over. I have made 17 countries if counting from when leaving Sweden with the *Quattrovelo*. I have stopped counting kilometres since I always cycle. Cycling has become a way of living where kilometres are less important. I might have made about 7000 km with my blue *Quattrovelo* after returning from my trip to the Nordkapp plus several months of cycling in Sweden



with my red *Quattrovelo* while waiting for borders to open. I did change oil in my Rohloff for some months ago though.

What did you notice about the corona crisis?

I found it bizarre that to travel from Albania to Greece you could only do this via Italy. “Yes, it is bizarre, probably it has to do with Albania not being part of the EU, I don’t know. Now in Greece I hardly notice the corona pandemic, I only have to wear a mask in some supermarkets. I’m glad to be here and have nothing against spending the winter in Greece while other countries have their lockdowns.”

There are a lot of pictures on your blog of policemen and customs officers at your Quattrovelo.

Did you often have difficulties with them or were they especially curious? Alve laughs: “I have many more

photos of police officers now. In the beginning of my velomobile career I used to be upset when I was stopped by police. Now I take it as an opportunity to explain to them what velomobiles are and promote their usage. I explain how fast and safe they are. Show them the pedals and explain how the assist is working.”

He continues: “Since language is a problem I normally say *Bicycle*, and smile. Then they point at the Solar trailer and I reply: ‘Small electric assist for mountain (and point up with my hand). Normally no motor when road flat (I keep my hand horizontal). Only motor help in mountain, very small battery. When road flat and no motor, battery charge.’ Then the cop that understood the lingo explains it to the other cops and they all are very impressed. I think that the flags shown on my velomobile from all the countries I have been in are helping. Now I always have a very good time with police and border controls.”

Would you consider to travel with a two-wheeler next time?

“No,” says Alve, “I am extremely pleased to have a velomobile for long distance cycling. It is so easy to load with packing bags and all stuff that I need. I can have many loose things stowed in it and don’t need heavy pack bags hanging on the side making the bike slower. It’s true that the velomobile is heavier than a two wheeled recumbent, but with the bags on, there is not a huge difference.

A velomobile is not as sturdy as a two wheeled recumbent and I cannot ride offroad with it. I only ride on asphalt which sometimes can make it difficult to find a good straight route. And I do envy two wheelers when trying to find a place for wild camping by the side of the road. But on the other hand, most of the time I try to find a camping where I can have a shower. I would not change my velomobile for a two wheeled recumbent, but I might get a two-wheeler if I were having a shorter holiday and I had to transport the bike from home to the area where to cycle. I would not however select a two-wheeler recumbent for riding in cold climates. I’m a velonaut!”

Did you find travelling with the race hood an advantage or a disadvantage in the warm countries?

“The *Quattrovelo* race hood is different to other hoods. It is the perfect hood combination for warm weather since the rider is sitting in a shade. I could not imagine myself sitting in the sun with a warm helmet. I’m very pleased with the *Quattrovelo* hood where it is very easy to regulate the airflow and the temperature. I just wish the visor had a different attachment where the hinges don’t obstruct the view.”

What other striking adventures did you experience?

Alve: “Hard to say. I’m usually full of joy when riding and especially when going downhill. When going uphill I tend to get into some kind of meditation and wake up when I reach the top. I say to myself that I live for the downhills. I feel extremely lucky to be able



to ride a velo, feel the freedom to see and experience different parts of the nature and culture.”

Were you welcomed everywhere with your velomobile?

“Absolutely. People are extremely friendly and welcoming. Sometimes I have to force myself to be polite

since I get the same questions everywhere. But I have learned to show a smile always, even when it is difficult. A funny observation is that once I have explained to someone in a village what I am riding, soon everyone knows what it is. Here in Greece I hear people, who I have never met, say to each other *podilato*, meaning *bicycle*.”

> Could you find campsites everywhere or did you often camp out in the wild?

“There have been several places where I have been wild camping. Mostly because I don’t want to spend a lot of money on expensive hotels. But until now, before everything is closing for the winter, I have



found campsites regularly. In a few cases I stayed in cheaper accommodations, especially in larger towns like for example Split in Croatia. On several occasions I have stayed with Warmshowers hosts. I have also been camping for over a week on an islands with goats as neighbours. Fortunately they where not used to chew tent fabric.”

What are the plans for the return trip to Sweden now that we have a second corona wave almost everywhere?

Alve: “I have stopped making plans and just take it as it comes. I try to spend as much time as possible wherever I am before getting too restless. The joy when moving along in the velomobile gets stronger the longer I stop waiting for the time to pass. I’m thinking of maybe staying on the Greek islands during the winter waiting for the pandemic to finish. When things get better I will continue my preliminary route to the west side of Europe and hopefully also include the whole Iberian peninsula, see the map at www.202020.eu. If not before, I might be cycling via Spezi in Sep-

tember back to Sweden, but hopefully before that. Once life is back to normal it doesn’t take long to cycle through Europe with a velomobile.”

Beautiful pictures

If you visit Alve’s blog you will be struck by the beautiful pictures. As a professional photographer, Alve tells more with images than with text. And within a year Alve visited with his *Quattrovelo* the northernmost point of Europe, the North Cape and the southernmost point of Europe, the Greek island of Gavdos, just south of Crete. How this adventure continues? The future will tell and you can follow it via www.202020.eu. <

The Case for Long-Distance Greenways

by Brian Robertson,
Cyclox member

“We have nothing like this in Oxford.”
A young PhD student from Oxford was admiring the excellent cycle track facilities at York University where we had just completed a day of racing. But what if instead of going around in circles cycle tracks were built that connected our towns and cities?

Imagine the benefits of a safe high-quality continuous track, especially to commuters, school children, and vulnerable road users. I live in Cambridge but often visit Oxford. I have cycled the journey a few times so I know the roads between the cities well.

In Europe, such long-distance greenways have already been built – with more on the way. Shining examples are the *Donauradweg* (Danube Cycleway) which runs for over 2000 miles to the Black Sea. Cycle tourism has exploded in popularity creating thousands of jobs and boosting the economies of towns and villages along the route. Encouragingly, there are large parties of Old Age Pensioners, many riding electric bikes.

Back in the UK an obesity time-bomb has exploded. The good news is that if we take regular exercise especially as we get older, we can vastly improve the latter years of our lives.

Safety considerations are reported to be a major barrier to the take up of cycling. The Oxford–Milton Keynes–Cambridge corridor is strewn with tragic black spots where vulnerable road users have lost their lives in crashes with motor vehicles. But if dedicated cycle and walking tracks were built they would encourage people to use active travel for shorter journeys. Large numbers of families with young children can be seen using the greenways beside the Cambridgeshire guided busways. Just as encouraging are large parties of handcycle riders who come down from towns such as Kings Lynn just to use their cycles in safety.

Greenways have great appeal for people who may not wish to share a road with motor vehicles.

What benefits could a long-distance greenway bring to the centre of cities like Oxford, Milton Keynes, or Cambridge? Firstly increased safety for all users. Secondly reliable and fast point-to-point journey time. Active travel time compares well to a queue of one-occupant cars. The average speed of car journeys in general has plummeted and between Oxford and Cambridge now stands at 30.6 mph even under the best traffic conditions. Car drivers in these cities now regularly report journeys of 4 miles taking up to 2 hours to complete. A greenway to city centres offers zero pollution, increased capacity, and almost no noise. Active travel is resilient during emergencies, which can halt other modes of transport.

We need political will and the creation of an organization such as Greenways England (similar to Highways England which builds roads for motor vehicles) to build these long-distance greenways but as yet our politicians have a poor understanding of the benefits greenways can bring. Clearly few people would cycle end-to-end in the same way that most passengers on the X5 bus are only going a few stops. Best of all, for a large proportion of the route we could use the old railway line between Oxford and Cambridge. <



The disused Varsity rail line – shovel ready?

Inspired by 1900's race cars

The Virketis

By Evaldas Virketis,
photos Evaldas Virketis and
@liberiumphotography

Since my childhood I was always making things. I remember creating small foam gravity planes when I was 8 years old. I used to sell them to my yard friends. My whole childhood was one big bike ride. I used to ride my bike all around my home city, Telšiai, in Lithuania (30 000 citizens), I didn't know any bus timetable, I just had my bike! I used to ride it to countryside, around 20 km, to my grandmother's farm, where I enjoyed nature, driving the tractor and doing farm stuff. This was the place, where I had plenty of space in the garage and I restored few motorcycles when I was a teenager. I was always interested in mechanics and vehicles.



Later I moved to study furniture design in Kaunas (second biggest city in Lithuania ±300 000 people). During these studies I learnt to draw, and to express my ideas with drawing software like AutoCAD. At the same time I experienced my adult privilege to own a car. But soon I understood that to me it was more a financial difficulty, than an advantage. So I decided to return to the cycling idea. Since I lived in the city center – I made my decision: I will not have a car until I really desperately need it. And I kept my promise! Though my city had only few bicycle lanes, I kept pedaling in the streets – along with the traffic. During next five years I rode my bicycle daily during summer heatwaves (up to about 33°C) and winter cold as low as -30°C. Rain, snow, cold – I withstood all the harshness of the extreme Lithuanian weather. Often I rode my bicycle with an umbrella in my hand, but it wasn't convenient. So I was always thinking: how to solve this weather element problem? Then I started googling and discovered these alien/egg shaped quest and similar velomobiles. It finally made sense to me! This is the answer, I thought in 2014 and started drawing sketches of my dream velomobile. Yes, straight from the start I understood that I'm not buying it, I'm building it! There were few reasons for that: I couldn't

imagine myself in our city traffic riding this aerodynamic rocket. Secondly it was way too expensive to buy one, since I was still a student. So the best I could do – was to draw my sketches and build it later. I was inspired by the ELF velomobile and "Aptera 2e" composite frame. At the time I already had my RepRap Prusa 3D printer and I was sure – one day I'll make a big printer, which will print the whole shell in few parts. However life keeps moving. I was working as interior designer, but something was wrong – it didn't feel like it should. So after 2 years working in the furniture industry, I decided – it's not for me. And started studying journalism. These were the years when I got interested into photography and started working as wedding photographer. And then I desperately needed a car. Since I was still using my bike as a daily commuter I decided to buy a vintage car for summer use only. So I bought a *Mercedes Benz W116 1973*. It was a long restoration process, but it was an experience – which led me to become interested in classics. I remember how randomly online I discovered *Velorex 350* trike. It a very interesting trike, which had the same Jawa 350 engine in it (my second motorcycle was Jawa 350). Despite the fact, that I owned my dream car – the velomobile idea still made sense to me. I couldn't agree with the fact that you need so much weight and power to move one person from point A to point B. And I wanted to stay fit! But I knew that I had to wait. I do have one more car now, an old *Mercedes S124* as a daily driver. But my wife needs a car too. So at one point I was in a crossroad. What to do? Since I moved

out to suburb area – I finally had enough space (two garages) to build stuff. So I decided – we are not buying third car (the *1973 Benz* is a summer car only). I'm building my old dream – a velomobile! So the goal was to make electric assisted trike – weather proofed daily driver (with the exception of negative temperatures). In 2018 December 24th I bought a recumbent trike. It was a steel frame 20 inch Austrian made trike. It was a good starting point to have some understanding of recumbent geometry. I measured everything precisely and transferred drawings to SketchUp program. After countless hours of scrolling Pinterest I finally decided how the design should look. I was inspired by 1900's race cars, these roadsters had their long bonnets hiding long inline 18 liter engines. And the most importantly – I loved how their front wheels were the farthest point of the vehicle. Later I discovered Cycle-Karting. It looked like smaller version of these vintage replica roadsters, which I fell in love earlier. But Cycle-Karts have four wheels and an engine behind the driver. I had to find Ideas of a proper looking three-wheeler. That's how I discovered the Morgan trike! I have to admit – I couldn't resist copying the turn signal and rear light design. But the mahogany redwood - it was something special! I remember my jaw dropping experience, when the first time I saw redwood power boat in Norway. Basically, these are the design guides which led me to this design. Let's start! OK, what do I have? Donor recumbent frame and my dusty drawing skills (it's 4 years since my last sketch). The Idea was to make it a thing by spring. I thought to finish it in 4 months. And I did! But only the drawings, in that period of time. It took much longer than I thought. The whole thing is made from two parts – steel frame and plywood structure. I had to buy a welding machine and to learn welding. The structure frame was cut with CNC machine. That's why I needed precise drawings. The frame is made out of poplar plywood, which is few times lighter than birch. I couldn't find big sheets of balsa plywood, so the poplar was >





> fine. The redwood outer shell was a challenge. I had to find someone who could make plywood out of mahogany wood veneer. It was lots of trial and error to join materials together, to find proper glue, lacquer and other things. But the most challenging part was to bend the redwood sheet behind the seat and the hood, I had to redo them twice. After designing it for 3 months I saw that not everything will be well thought out, so I left few joints to solve later.

I had to order many parts like 24 inch front rims, white sided tires, spokes, mirrors, headlights, speedometer, turn signals, bigger front sprocket, hydraulic disc brakes etcetera. I was joking to my wife: during the last 6 months our postlady brought half of my velo to our door, I only had to assemble it. But the pace was not so fast. I could spend only 10–30 hours a week during the spring. So I had to postpone the project till summer. And the summer was very busy, I had even less time to finish it. But at least I had it welded together and did some tests driving it naked to bare metal around my district. It felt fantastic! The 750w Bafang mid drive (which I had in my previous city ebike build) was powerfull enough to drift on a gravel road. So I updated my rear wheel with 3 gear internal hub and it was a good combination between speed and torque.

The best motivation is a strict deadline. It was the middle of August 2019, when I said to myself – I have to finish it this season! And I drew a strict deadline – my birthday! So I had around three weeks to finish it, there were so many loose ends, but I pulled up and did my best to finish it. I spent around 50–80 hours a week, there were nights when at 2am I was soldering the wires to make the turn signals work. I was tired, but I was proud – I saw it's birth. After 9 months of designing and hard work, a sunny morning dawned. 14 September 2019 it was ready for its first test ride. All painted, with all lights working, freshly varnished plywood, and shiny aluminum composite grille it looked amazing. I asked my good filmmaker friend to film this first ride.

I'm not sure was it the velomobile, or my smile – but that ride was a huge head turning event in my neighborhood. People stopped with their cars and started

filming me, traffic slowed down and I had so many thumb ups, random people came by asking "what is it, where did you get it?" That day I understood that only 1 out of 100 people knew this word *velomobile*. So, it made a huge impact to everyone. It's old-school appearance felt like a breeze of 1900's on the road.

When friends hear me saying – I'm going to ride this thing daily, they are concerned. Is it safe? Will car drivers respect you? Will they see you so small on the road? Currently I'm testing it in suburb area and yes, they see me. They slow down to my pace (around 25–30 km/h) and start filming me, they slowly pass me and beep their horns. I receive way much more respect, than being a usual cyclist.

The specs

It's in testing mode so far, I still avoid going to the city – because of the range. With my old ebike battery I can go up to 40 km range in one charge (58.8v 17,5AH battery). Which is not enough for me, because usually my trip to town and back is around 50km. The total weight of velomobile with battery and the motor is 65kg. Which is quite heavy to pedal it home without assistance. *Virketis* (the name of the velo, which is my surname) has the mid drive Bafang 750w motor. It was more than enough when I rode it without the shell, but with the shell it has less cooling and more weight to carry. So it does get hot. It's 107 cm wide and 110 cm high, 255 cm long. So it will fit Lithuanian bike roads easily. As long as it has less than 1000 w motor and top speed of 25 km/h in Lithuania it's classified as electric bike.

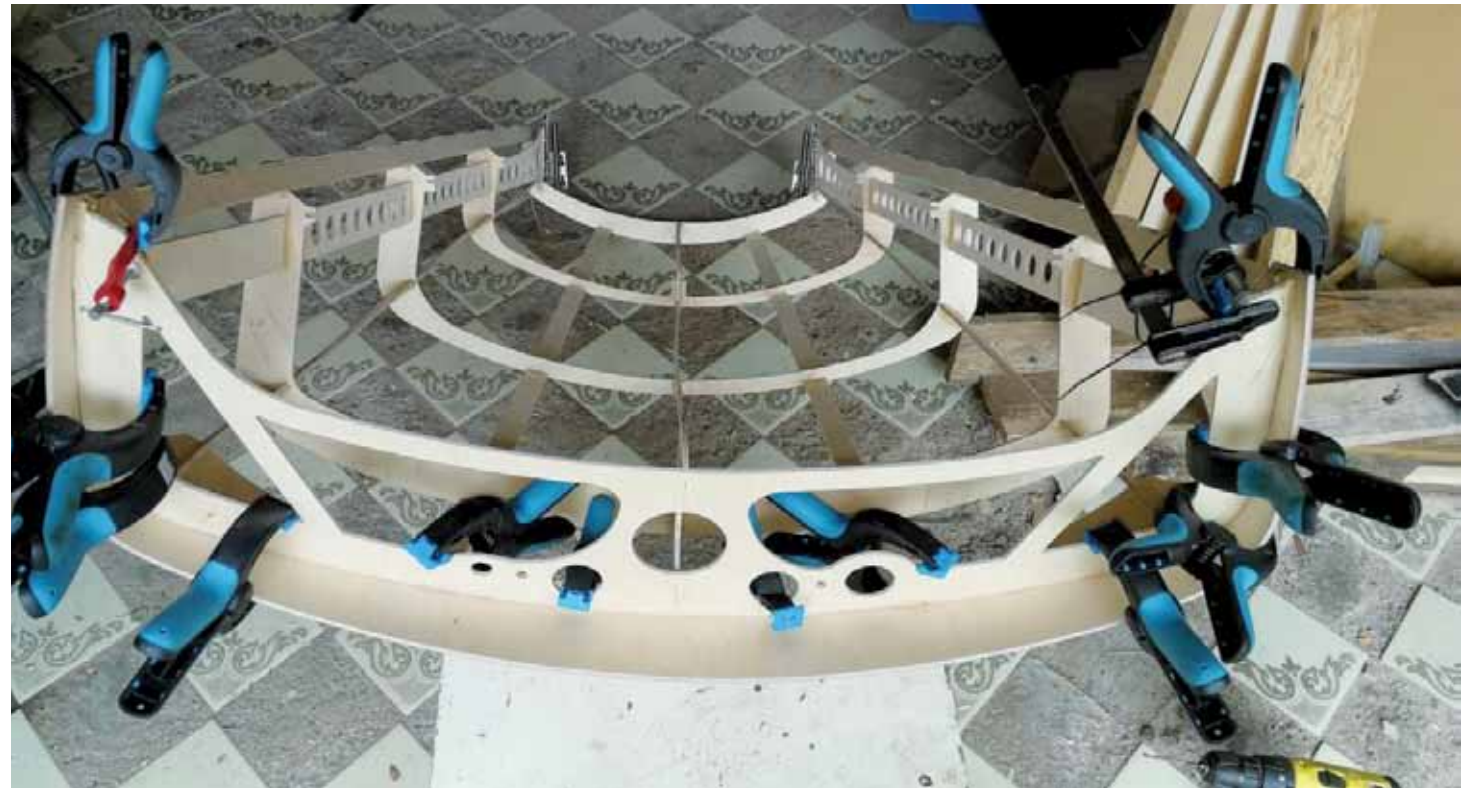
The future plan. During the winter I'll make some major modifications to my *Virketis*. Firstly I need to finish my convertible roof design, to make it weatherproof. Secondly I plan to install more powerful hub motor (1000 w) to the rear wheel, which should prevent overheating and eliminate that annoying overloaded chain noise. Of course, a bigger battery – to increase the range. I want to double it at least. One more thing, I will install some kind of alarm system, because I know how people like to look at it, but I don't want to find them sitting in it – while parked.





There are no plans for mass production, but I never say never. If there would be at least two people wanting to order my creation, I think I would make it again, but this time even better! But for now – my biggest wish is to ride it daily, and enjoy it as much as I can. To live a dream every day.

It's now about half a year after the interview with Geoff Bird. Evaldas hasn't been idle since then. The convertible roof is now finished. Making it was difficult because it is narrower in the back than in the front. He found someone who could give advice on how to make the roof. He advised to first make a trial version with plastic and then the real roof. He made a rubber surround around the glass of the windshield and an aluminum frame. The linen is elastic and is stretched between different angles. It is not 100% waterproof, not at all if the doors are not closed while driving (it only closes when parking). He prefers not to use his velomobile in bad weather. And as a freelancer, he usually goes out by car because of all the equipment he has to bring. And it is not always easy to park it safely. People want to touch it, if it's a little dusty you can see their fingerprints on the paint. That is why he bought an alarm system with a motion sensor. >





> The grill can now be closed and opened to protect against moisture and to regulate ventilation. Engine and battery are also improved. The intended change from midrive to hub motor (3 kWatt) in the rear wheel is ready. Due to the placement in the rear wheel, there is a better cooling of the engine. The range has gone from 35 to 90-100 km (at a speed of approximately 40 km/h). He made a battery himself from a number of

used golf cart batteries by connecting them in series. The battery weighs 17 kg and delivers 72 Volt! The weight of the velomobile has gone from 65 to 110 kg due to these changes. This makes it technically more like the Twike. Evaldas can now hardly drive without electrical assistance due to the weight of the velomobile and the resistance of the motor. It has a large front sprocket

with 70 teeth. And he has now built the 3-speed hub between the rear wheel and the front sprocket and so the velomobile now has two chains. That makes quite a lot of noise. He would rather drive a dynamo with the pedals. He can now also ride without pedaling, but he does not, he also wants to keep moving. This year he already drove 2500 km from March. He was often seen by the police but they do not stop him, they





Only 1 out of 100 people
knew this word 'velomobiel'

smile when they see him. They might think, where are the number plates, but they don't. Many other people think it is an electric car or think it is a really old car. He was unlucky on the last trip. On uneven roads, the velomobile shakes quite a bit and the mudguard on the right came loose because it was apparently not properly secured. The right wheel jammed and the velomobile slid to the right, damaging the tire and

requiring replacement of it. The tires were already worn out after 2500 km. He has now found very nice Michelin tires with white sides (for a children's bicycle). Hopefully they will last longer than the first pair. Evaldas has had many reactions but no orders yet for a next version. It would also be quite expensive because it is a lot of work to construct it. <



A non-recumbent, but very laid-back, thankfully short bicycle trip in Canada

The padd Wheeler

By Peter Brown,
Vancouver.

Published in the Dutch
magazine *Ligfiets&*
2020-4



Steam and smoke were pouring out of Captain Dan's ears in record quantities. It reminded me of a volcano in Iceland we had visited some years ago. His bellowing could be heard the length and breadth of West Vancouver. "This is an outrage! Hollyburn is supposed to be a sailing club! What is that bloody canoe doing sitting in our racks!" Being a man of action, Dan immediately downed another double whisky and continued his incessant muttering to no one in particular. Several months later, after considerable thought, he sent a polite e-mail to the owner requesting removal of the offending vessel.



We shall call the owner of the canoe Peter (because that is his real name and we have no interest in protecting his identity).

Peter shamelessly wrote back to Captain Dan (can you imagine the nerve!) stating that he was a fully paid up member and regularly used the canoe (what impertinence!). However, clever Dan had already gone out to inspect the canoe. He observed there was green grass growing up from the gunwales and he also counted a large number of spider webs anchoring the canoe to the rack. Caught in this 'web of deceit',

Peter sheepishly agreed to remove the offending vessel.

Thus, also being a man of action, Peter immediately (well, almost immediately,... well OK, OK, 6 weeks later) made a firm plan of action. And, after that bottle of whisky was finished, Peter decided that he really must do something. Armed only with his wits and a bicycle (well, good thing he had the bicycle at least), Peter arrived at the sailing club. A slightly modified golf cart made for a perfectly good trailering dolly for the canoe (or so he thought). Of course Peter could have moved the canoe by putting it on top of his car, like he has done hundreds of times, but where is the challenge in that? (After all, he does sometimes scratch his right ear with his left hand.)

"Now, if I can just figure a way to do this," mused Peter. He asked a few sailors who were milling about "Does anybody know the proper knot to use for attaching a canoe to a bicycle?" Relying on his extensive sailing knowledge he used a spare paddle and his own version of the reliable three-sheets-to-the-wind-bend knot. Unfortunately with this method, during the first test, every time the front of the canoe bounced up or down a little bit, it locked the bicycle's rear brakes on, causing



a rapid and unexpected stopping. A little more refinement was needed.

The answer was in slipping the blade of the paddle into a red life jacket (I am sure this is one of the Coast Guard approved uses for a life jacket) and lashing it onto the bicycle rack with the recommended minimum of 100 m of strong rope. "It can never come loose now!" thought Peter triumphantly (insert ominous foreshadowing type of music here). Then it was time to head out the gates. Foolishly, nobody tried to stop me. There were people around who had more common sense than I had, if only they had made some effort to stop me... You know who you are, Bob! (Well, I guess a lot of other people know who you are now too...)

If the police stopped me and asked "What on earth are you doing towing a canoe with a bicycle in the middle of the road?" my planned answer was "Why officer, there's no law against having a bicycle trailer is there? Isn't it lovely? I made this bicycle trailer myself by using an old canoe...."

It was lovely riding through the park. All the dog owners suddenly were distracted from dealing with Fido's droppings for a moment or two as they stared at my *paddlewheeler* (or should that be spelled as *pedal-*

wheeler?). One guy commented "If you just had a set of wings too, you would be ready for pretty much anything, eh?" But partway along the trail, I heard some unexpected bumping and grinding sounds (don't get too excited Dan, it wasn't a new bar that had opened). I looked back and saw the canoe some distance behind me. Unbelievable! My three-sheets-to-the-wind-bend knot had failed! I realized that in all the excitement I must have tied a slip knot by mistake, because the line slipped right down the handle of the paddle and let the canoe go on its merry way until it stopped by hitting the curb. "Good thing this happened on the flat pathway in the park before I started to climb the hill on Taylor Way," I thought to myself. An out-of-control canoe on a set of wheels careening backwards down the Taylor Way hill in rush hour traffic would have been quite a sight to see! For sure I would have been on the evening news!

A little baling wire and bungee cord repair work later, it was time to continue on. I cruised through the shopping mall and looked up towards the dreaded Taylor Way hill. Several cars stopped and the drivers clicked photos with their cell phones. I couldn't understand what all the excitement was. I was just complying

with Dan's request. I carried on serenely. Without police interference, without further loosening of knots (but with some considerable distraction to a construction crew who were repairing the road, and their unfinished asphalt patchwork caused my golf/boat trailer to bounce up and flip over on its side) I finally managed to get to our apartment. Now our lovely canoe will rest in peace in its very own parking stall, never to disgrace the racks of the Hollyburn Sailing Club again.

Somewhere in the middle of my next bottle of whisky, while artfully embellishing this little short story, I was suddenly struck by the idea about a possible longer trip. Maybe I could get a better trailer... Maybe we could use our tandem bike to tow the canoe... Maybe we could take the canoe on a leisurely cycle beside a river somewhere... Sort of a bike-and-barge type trip...

Hmmm, possibly an interesting idea for next summer... Let's see, eh? <



Solar velomobile from Alve

by Honza Galla from
www.recumbent.news

Alve Henricson has been slowly becoming a recumbent and mainly velomobile celebrity. And he is also a kind of hero for me. His winter velomobile expedition to the very north of Europe to Nordkapp in late 2019 immediately caught my attention for two simple reasons. I know the story of Françoise and Bernard-Régis who cycled there from Paris, France in winter 1990, but I have also tried to cycle to Nordkapp in winter 2006 (and sadly failed due to too warm weather and also because I was not mentally prepared for this task).

There is no surprise. I was amazed by the chance to meet Alve while he went through Czechia about a month ago during his 2020 Velomobile Challenge. He tries to visit as many European countries as possible in 2020. This expedition started in February 2020 but was soon interrupted by the Covid-19 crisis. Although he had to stop the journey he started it again and is in Greece now. Alve's velomobile is the *Quattrovelo* from Velomobiel.nl and has many interesting details. Not only that it is equipped with Bafang mid-drive motor

with 250 W, but it has also a connection to solar panel on a trailer which charges the battery. Since the moment Alve has started to use the solar panel he didn't need to charge the battery from the wall. It is needed to say he uses the motor only for speeds till 25 km/h (16 mph) as where the European regulation restricts the speed and is mostly riding above that speed. He actually push himself hard to stay above that speed and to save his battery. The solar panel is the best one you can get now, comes from Sunbeam system, measures 106 x 54 cm (42 x 21") and gives 125 Wp. You can see that the all vehicle is very efficient if Alve can ride it without a need to charge it from a plug. And you may rise your eyebrows. When he appeared right in front of Azub I was surprised and I was honored he was looking for help here trusting our skills. His trailer attachment was slowly bending and we have managed to repair it within less than one day. I had a chance to examine his bike in detail during that time. So here is a photo gallery and some of my notes related to his solar velomobile. Many of the details might be very interesting for future Sun Trip participants.

Honza Galla (left) and Alve Henricson (right).



Very well thought out trailer attachment which caused Alve's visit to Azub at the end. Well, all parts need some testing and some of them fail sooner or later. This one did so later, but after some little improvement, we believe will work safely till the end of the journey.



Rear of solar trailer.



There are many custom-built details, like this entrance into the nose.

It allows the rider to use some cargo space in the front as well as easily do some maintenance if needed. Built by Denis Bodennec from France.

The single-wheel trailer is very simple but very clever as well. The main tube is 4x4 cm so Alve could use standard brackets used in velomobiles to attach the bottom brackets, but he uses them to attach the rear wheel. So the 16" rear wheel can be adjusted if needed. Also, the tilting of the panels is super simple. There are two nuts to which Alve welded screws so they could be attached to the mainframe. No, those are not rod ends as I thought at the beginning, those are custom produced nuts. Through the nut goes a 5mm screw with and on the screw there is a heat shrink sleeve if I remember well. On the sleeve is a piece of hose and over the hose a clamp attached to the solar panel construction. All the tightened so that it holds the panel firmly in place tilted or not. I have found this detail the most interesting for me.



The solar panel is connected to the well known Genasun convertor

and the power is run through a cable and very nice connector to two batteries inside the velomobile. As mentioned there is a Bafang motor in the front with 250 W, custom chainwheel and even custom cranks. Alve says there is no friction coming from the motor when he pedals over 25 km/h (16mph). <

The Dijker, a novel concept

By Kees Jan Heijboer,
photos Dijker.eu
Published in *Ligfiets&*
2020-3



The Dijker. It is a completely new concept for a velomobile, nothing that we've ever seen before. It's Peter Paul van der Ven's brainchild. I visited him in his workshop at 'Arnhem's Buiten', formerly known as the 'KEMA-campus', in Arnhem, The Netherlands.

Peter Paul has not only invented the concept. He has also developed the manufacturing methods and machines, and where necessary, testing equipment.



The original idea for the *Dijker* stems from the nineties, only slightly later than the *Windcheetah*, the *Leitra*, and, again slightly later, the *Alleweder*.

The main idea behind the *Dijker* is that it should be easily accessed, lightweight, easy to control and practical. It should help people get out of their car.

Extraordinary concept

Most of the current velomobiles follow the concept of the original *Alleweder*: a monocoque body using bicycle components for the drive train. They are tadpole trikes, two front wheels and one rear. Only recently have four-wheel solutions appeared, like the *Quattrovelo*, *Sunrider* and *Intercitybike 4-wheeler*.

Peter Paul van der Ven doesn't want a trike. For one they're less stable, but, more importantly, carrying things in a trike is not very easy. That's why the *Dijker* has four wheels. These are independently sprung. Peter Paul also unfortunately was forced to stay away from bicycle mechanicals, because it takes up space in places that one would rather have available for something else and because chains and sprockets are heavy. The *Dijker* that I rode weighs about 24 kg.

But hey – how does it work?

Given: a human can produce the highest force extending the legs. One makes best use of this force in a linear movement. A linear movement takes up little room.

Execution: both pedals can move back and forth independently on their own rails.

Each pedal engages onto its own belt. This belt is wrapped around the freewheel on the rear wheel axle and unwraps during the kick.

Using two independent belts, one for the left wheel, one for the right, obviates the necessity of a differential.

The belts are plastic with a steel core. The steel core takes care of the tensile force. Plastic weighs little, is quiet and is partly self-lubricating.

The belt has a tooth-profile. By releasing the engagement of the pedal-sled with one's toes, the position of the pedal on the belt can be changed. This makes it possible to change gears.

When the belt is wrapped around the freewheel as much as possible, the distance to the axle, the arm, is bigger and this will give lower gearing. This is low gear. When the pedal is moved up the belt so that the belt is more unwrapped, the gearing will be heavier – high gear.



There is a small movie of the mechanism here: <http://dijker.eu/moreinfo.html>.

The belts are an own development. They have sustained extensive tensile and endurance tests on self-developed test benches. Although we seldom realize, in all its simplicity the modern bike is a combination of technical feats. In comparison, the construction of the *Dijker* is surprisingly simple!

One steers with a small steering wheel, and brakes, very clever and intuitive, by pushing the steering wheel away.

Pushing the steering wheel away to actuate the brakes is actually quite logical.

I was repeatedly reminded of a *Citroen 2CV*, a design that I admire for its elegantly simple design solutions: also the *Dijker* is unorthodox but at the same time clever in the simplicity of its design.

The chassis is no more than a flat carbon box. It is designed to withstand the forces that occur when the rider stretches his or her legs as it is then that pedals and seat are subjected to high forces. These forces were found to be significantly higher than those from the road or from a person standing on the chassis.

As the belts are partly routed through the chassis and end up directly next to the rear wheels, there is ample luggage space behind the rider. The linear movement of the legs also allows the nose cover to stay low.

Should the nose cover not suffice as protection from rain, there is a kind of poncho that one can attach to both rear and nose cover. This offers complete protection. Both nose cover and boot can be easily taken off and put back, by the way. Neither is load-bearing, so they can be kept really light weight.

The wheels all have independent suspension. The front axle has nice own design MacPherson struts and coil springs. The rear axle is a torsion axle.

Riding

I was able to do a brief test ride. A prototype without the body parts was used for this.

A second sample gave me the opportunity to experience getting into a *Dijker* with a body.

Getting in is a lot easier than, for instance, in a *Quest*. One can just step across the *Dijker* and lower oneself into the seat.

Riding itself is wonderfully uncomplicated. It's really simple: just push out one's legs out. It does not make a difference whether one pushes out one leg at a time or both legs at the same time. >



Peter Paul van der Ven in the Dijker.

> By pushing alternately one does not get the irregularity of drive that a rowbike has. Steering is nicely direct but not too, and the turning circle is quite small. Pushing the steering wheel away to actuate the brakes is actually quite logical. It works well, but when one has no experience on the *Dijker* it takes a fraction of a second to realize how one should brake. Luckily the four Sturmey-Archer drums with own development anchor plates offer very good deceleration. I appreciated the supple response of the suspension, without any tendency to wallow or roll. It is fun to see the front suspension respond.

Production

Peter Paul has developed the *Dijker* over the years as time and money permitted. He has now reached a very important milestone: the development is finished. The moment has come to start with a 6 piece 'zero-run'. He aims to have these ready by June 2021, about a year from the time this piece was written originally. He is looking for investors who'd like to invest € 10 000



or more into the project. They will become owner of a *Dijker* from the zero-run with the expectation that it will be well used to generate endurance test data. The 6 *Dijkers* will be followed by a series of 60 pieces. <



Torsie-as met riemtrommel.



Each pedal engages onto its own belt. This belt is wrapped around the free-wheel on the rear wheel axle.



If you'd like to join Peter Paul:
<http://dijker.eu>
info@dijker.eu
Dijker CV, Van Hasseltstraat 48
6821 AN Arnhem
The Netherlands
Telephone +31 (0)6 4455 6623.

Room for a lot of luggage.





by Mike Burrows

Soup Dragon

The Wilderness Years



Barney Townsend

Praying things go well at Rockingham

I last wrote that my next step was to start testing in earnest on the Millbrook 2-mile track. This did not happen. But as you will have read on these pages, lots of other, mostly bad, things did happen to the poor dragon.

This then is a bit of an infill, and to let you know that this particular dragon has just a little of the phoenix about it.

Millbrook never happened as they were a bit busy, and so I approached Rockingham Motor Speedway. Miles had tried out the Mango there and was quite impressed, and, as the local cycle club got to use it on Thursday evenings, easy to access.

Problem is Soup Dragon is designed to go in straight, or near straight line, and Rockingham is Indy style oval. No lack of lock but small round window means lack of vision. Riding with lid off is OK as you can look round the edge but fully enclosed is not at all nice, and I do a lot of running intos and falling offs. So, much like my usual BHPC performance, but not any good if you want to break records.

Camera is added but to little good effect. So next step is to bite the bullet and compromise the sacred laminar flow by making the window a bit bigger.

But no, college has other ideas, and it's off to Battle Mountain regardless.

Now as you will know from Mr Larrington's many and excellent write-ups of the event, untried, untested and barely rideable machines are quite common, which is fine if you are a bunch of over-optimistic students. But I daahling am a legendary bike designer, and I did not become legendary by making my mistakes in public; well mostly not.

Team dragon heads west, and I wait quietly in corner. Things, as you will have read, go badly for dragon and friends.

I await return of prodigals and the expectation that chassis and moulds will be returned to Norfolk leaving me to pick up where I left off: fit bigger window and find out just how fast it will go.

This does not happen as there seems to be a new plan that does not include me. So two years of my life, two years of

blood, sweat and tears (two thirds of that not at all metaphoric!) with no answers and no signing off. It would not have been so bad, but other things were not good either. 2018 was to be my retirement year, and it had started well enough, but ending was the same as the dragon, a resounding whimper. Actually it was arrhythmia and a heart rate of 220, but that is pretty close to a whimper.

2019 it is then, and a quiet retirement. Not that I could get mythical reptiles out of my mind; not that is until life, or more likely one of its devious fairies stepped in, and a routine-ish CT scan to check out my waterworks (it's like that at my age) showed up a shadow on my lungs. There followed a lot more trips to the hospital: Two X-rays, more CT scans, PET (not nice) and finally a needle biopsy (not bad at all). And all this time no-one used the 'C' word. All a bit Valdemort I thought, after all something is growing in my lungs, and it is either cancer or the alien, and on balance I would prefer the cancer.

Eventually a very clever man with a penknife on a stick or something gets in through a very small hole in my side and cuts it out. And to this day I only have their word for it that I have had cancer. (The bladder problems are another story!) Even the chemo was a positive experience.

Trusty sidekick Mr Pegg – who has to pick me up after operation as they will not let me ride home – must have realised that I am now likely to get the sympathy vote big time. Because not wanting to miss out gets himself a heart attack, and not just one but two, and is now a bit bionic as he has a defibrillator in his

chest. And just to keep the theme going the fairies also pick on Glen Thompson who has to go in for a hernia op.

Despite all of this I still have dragon on the mind when 2020 arrives, and with a lovely round number like that what could possibly go wrong? Actually it started quite well for me as I finally got the chassis back. A bit robbed out, but easily fixable.

Then the full lockdown arrived and Barry can't get mould out of college. Much heel kicking later moulds arrive in Norfolk for Mike and Sylvia at HQ to work their magic, and sure enough in no time at all a shiny green shape arrives in Rackheath. But it seems the fairies are not finished yet and for one of the very few times HQ have 'dropped off'. The glass cloth is a different weave, which results in a series of surface ripples. Not something that would be a problem in a racing rat, but not good enough for our pampered reptilian. More glass is obtained and a new lay-up agreed on, but by now the virus is starting to affect me; well not me as such but the dragon, as HQ are now very, very busy.

(Remember how everyone became a cyclist on account of the virus? And how they bought all the bicycles that were in the shops? And how you could not get any more this year due to everyone adopting Toyota's just in bloody time system!?)

All of which results in lots of cracked and broken carbon frames being sent to HQ for repair, so no time for shiny green things. Doh! More heel kicking and eventually a new and most beautiful shiny shell arrives. I then, most carefully, cut holes and bond in clips and brackets



Testing at Scottow Enterprise Park... And the consequences.



and eventually have the chassis nestling just where it should be. So just the new, bigger and better window to fit, and what do we need for windows? Clear plastic of course, and where has all the clear plastic gone? Gone to face shields – every bit. Well not quite; young Mr Kingsbury has a bit left over from the Guy Martin project, which he kindly donates to the project. Much experimenting and occasionally messing up later and the dragon has a much bigger and brighter eye. Not perfect but a lot better than before.

Year by now has raced by and with it most of the good weather, so it is mid October before a small group gather at Burrows Corp HQ to set off for "Scottow Enterprise Park", who have become very enterprising of late requiring me to cross their palms with silver for the privilege of using their admittedly very nice runway.

So I wriggle aboard, secure the hatches and stare through an almost good window; good push from Mr Pegg and I am off, with the greatest of expectations... that just a quarter of a mile later are dashed. I had been telling myself that all of the problems were down to poor vision, which was wrong. The just a bit *avant garde* steering was still a problem.

In fact a bigger problem now than back in '18 when I was still racing Rat X, alongside which the dragon was nothing special. Now all I ride is the mild-mannered Ratcatcher. It was not nice, and at less than 30mph I bottled it. Even then could not do a proper landing. I did a last minute wobble and fell to the right. Sh*t Sh*t Sh*t Runway is very scratchy.

Driving back I decide dragon is rubbish, I am rubbish, everything is rubbish.

Thankfully people can be very nice at times. Mike Nelthorpe, who had been there to see me trash his handiwork rang to console me and suggest I wait and see what new screen that is being made by motorcycle screen company is like.

I know by now that vision is not the problem but the suggestion does change my attitude from negative to positive and I start thinking about how to fix things. First idea was to convert it to tricycle. But this, I realize, would be the ultimate admission of 'old manners' and I am not quite ready for that. I then have, not so much an idea, but memory kicks in and I



The old and the (work in progress) new front end based on Alfie



realise that there was a plan B. The off-centre steering was not chosen for its control potential, but to allow for the most efficient transmission, and was always a bit suspect. I had already worked out a quite easy way to convert to a relatively conventional front drive, not unlike the hub-gear 'Alfie' tourer, but using a monoblade. So all sorted then; well not quite, I have started to measure up and doodle things, and I was wrong about

the 'quite easy.' First step is easy as it involves cutting the chassis in half just in front of seat and binning whole front end apart from wheel and chainring.

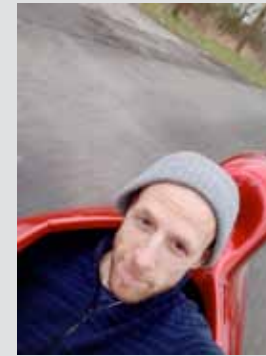
Looking on the positive side I now have lots of interesting things to do this winter. If it had all worked and done say 50mph I would now be sitting with nothing to do until next summer.

To be continued...

Mike Burrows

Things they are a-changing

By Jan Trenson



On 7 July 1933 a special bicycle broke the 20 year old hour record on a Parisian velodrome. In 1934 the UCI declared this record to be invalid and rules were implemented to keep recumbents out of all competitions.

In 1993 Graeme Obree broke Moser's hour record on 'Old Faithful', a bicycle with narrow handlebars upon which he lay head first, 'tucked in'. An hour before the track pursuit world championships in Italy the UCI announced that his riding position was banned and that Obree was disqualified.

Obree went on to develop another riding style, the 'superman' position, in which his arms were stretched out in front of him. Using this he won the world championships track pursuit in 1995. And again, also this position was banned afterwards.



The UCI is the 'Union Cycliste Internationale', or rather the international cycling union. All races worth mentioning in road racing, cyclocross, time trials, track racing, mountain biking etc. follow the UCI rules and every national cycling team is a member of the UCI. It has a monopoly on everything that has to do with competitive cycling, from the youngsters racing in your local town to the Olympic Games.

Unfortunately its monopoly is the biggest obstacle for technological innovation. The frame shape, the weight (minimum 6.8 kg), the clothing (sock length cannot exceed the midpoint between ankle and knee), the number of spokes (a minimum of 12 for a road bike)... everything has been regulated meticulously. Did you know that the most forward point of your saddle has to stay 5 cm behind the perpendicular line coming from the bottom bracket?

If we would consider cycling to be a purely physical battle between cyclists, we would like them all to ride the exact same bicycle. This would be a fair battle in human strength. But what about technological advancement? The minimum weight of 6,8 kg dates back to the year 2000, that's twenty years ago.

(and it's not the UCI)

Bicycle manufacturers spend millions in research and development, but only create bicycles for the public which follow these UCI rules. These companies will easily charge you € 8000 for a bike that's a few millimetres different. Because nobody wants to spend their money on a bicycle they cannot use in a race. And even if you don't race, you want the bikes that Van Avermaet, Froom or Bernal ride, don't you? Surely they'll have the best cycling technology? The answer is no.

Dear UCI, Dear dictator

*Your kingdom is not over yet,
but it is crumbling under your feet.*

Sincerely yours,

Jan Trenson

Bicycles can be better. If you ride a velomobile, for example, you are sheltered from cold and rain, you can take some luggage and on top of that you can be 10 km/h faster than a regular road bike. Experiments with shapes and materials can produce much better bikes than what we see today. Unfortunately we have, for the last 80 years or so, been obeying the UCI rules, and as a result also your regular commuting bicycle has stayed largely unchanged.

But... Things they are a-changing. In the world of triathlon, where the rules are less strict, we see new and exciting frame shapes popping up. For the first time ever manufacturers are taking the effort to develop bicycles for this specific market. 3D printing and easy-to-shape carbon fibre has opened a world of opportunities. On the streets the speed pedelec and the electric bicycle are rushing forward, in both the literal as the figurative sense. It seems as if, despite everything, the moment has come to release ourselves from the shackles of the UCI and just do what we feel like. From an economic perspective, we have reached a turning point in which designers and manufacturers can also profit from some Research & Development which does not conform to the almighty Cycling Union. <



100% Muscle power.



The 'Coronapistes' in France



By Marc Lesourd of
Association Française
de vélocouché

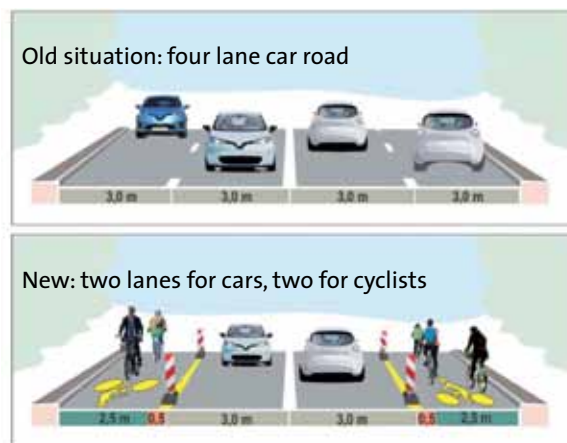
After the lockdown period, it is expected that public transport in major cities will both run at lower capacity and would be better avoided if possible to limit virus transmission.



The consequence would be a major increase in car traffic. In order to limit this effect, bicycle associations, local representatives and research institutes like the Cerema (*Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement*), have proposed modifications, improvement sometimes definitive but more often temporary. Cerema has published some guidelines for the creation of such cycle tracks (<https://www.cerema.fr/fr/actualites/amenagements-cyclables-temporaires-confinement-quelles>). Let's have a look at some French cities with very different approaches to the situation

Bordeaux

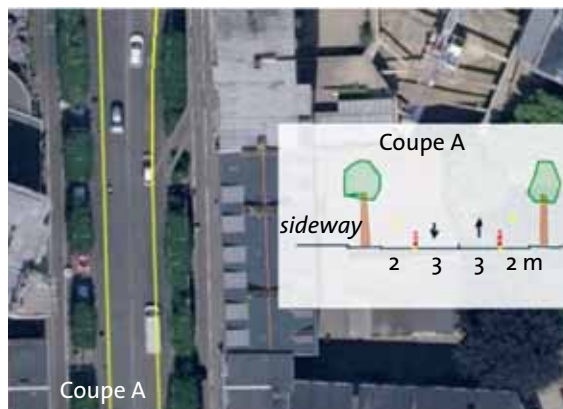
Cycling is not a priority for the end of lockdown! There are several towns with such a terrible point of view on the subject, but Bordeaux is the largest city as far as I know (but Bordeaux has a relatively good existing bike lane network).



Example of a temporary modification proposed by Cerema.



Lyon: the 77 km new bike lanes layout.



Rennes: the existing cycle track on the sideways will be move on the road, reducing the car space.



New lane in a street and a new 'velorue' in Lille.

Lyon

A total of nearly 80 km of new cycle tracks is planned before September. New bike lanes shared with buses. Installation of 3000 new bicycle parking spaces in front of shops and schools. Extension of 30 km/h zones.

Lille

15 km of new bike lanes created in emergency. Priority given to bikes in one-way streets called *velorues*.

Rennes

The aim is to give more space to cyclists, optimise the flow of cyclists and increase their safety. In particular, cycle path on sideways will be transferred to the road, reducing the car lines. More info here: <https://metropole.rennes.fr/covid19-des-amenagements-transitoires-pour-encourager-la-pratique-du-velo>.



Paris: new temporary bike lanes (yellow now, red before summer, blue existing).

Paris and Ile de France region

300 Million Euros for the development of a *RER velo*, a network of bike lanes following more or less the fast train network RER. 50 km of new temporary bike lanes are on their way. The bicycle associations would like most of them to become permanent!

Map by carte.velo-iledefrance.fr.



Temporary bike lane in downtown Paris and from Neuilly to Defense.



Grenoble: one car lane replaced by temporary 2 ways bicycle lane.

Grenoble

About 20 km of new temporary bike lanes along major public transport axis.



The Val Veny trip

By Giovanni Eupani, Italy

Every now and then you have to set yourself a few small goals, aim high, without perhaps exaggerating too much, but just enough to force body and mind to remember that you are alive.

Last year it was thirty years since 'my' 135th official course at the Aosta Alpine Military School, and thanks to the group of comrades who organize the reunions, the program was to meet the first weekend of July, in Val Veny at the small barracks Fior di Roccia, where the 'boys' also organized the base camp to return, as thirty years ago, on top of the Gran Paradiso.

Unfortunately my program did not include the ascent of the 4061 meters of the massif, I would have needed a couple of days more than I had available, so I opted for the ride from Dueville to Val Veny and back. What you would not do for a dinner with friends!

The bond that there is between us, still alive after three decades, is the result of a very hard course, where we learned to suffer but also to overcome many difficulties together, and I think this is the real secret. History of other times, when military service was mandatory... Perhaps for this reason we were much less committed to 'exporting peace', if I think about it, it immediately comes back to my memory 'Nineteen Eighty-Four' and the ministry of peace...

Leaving for a ride of over a thousand kilometers does not happen every day, especially with the hard ascent to Val Veny as a cherry on top. But I was motivated by the fact that the mountain enterprises completed thirty years ago were far more difficult. However, I must say that the idea of arrival in the barracks after a hard work and welcomed by about thirty old friends, kept me going.



The ritual picture, just after dinner

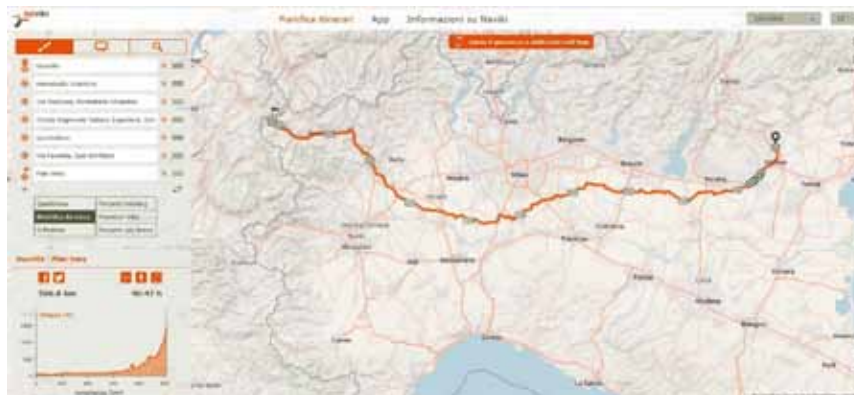


Here are the 'boys' after conquering the Gran Paradiso, 30 years later.



The DF proves to be an efficient, sturdy and fast vehicle, even if loaded with more than 130 kg...

Now I will give you some numbers and some technical notes. I left on board my velomobile DF XL, loaded with more than 20 kg between tent, sleeping bag, bathrobe, towels, clothes, shoes and slippers, jacket and sweater, inner tubes and front



Here is the route of the outward journey, as you can see from the Naviky app.

spare tire, full size pump, batteries for headlights, battery pack to recharge the phone and photovoltaic panel to extend the autonomy given the use of the navigator, flask and large bottle of water, basin with a kg of well washed white grapes, 4 bananas, bag with repair set, various tools, American tape, soap, toilet paper and parachute (to be used eventually as aerodynamic brake on the steepest descents). I'm just sorry I couldn't get my alpine hat on too.

The 'nose burner' High Noon

I left on Thursday 4th at noon, 6 hours late on the program, because of the replacement of my phone, that just the day before the start got stuck. It didn't allow me to install an app for navigation. Besides that I was without ADSL for four days, because of a storm that had fried my line and modem...

This delayed me because doing the data transfer without a fast connection and reinstalling the minimal apps on the new phone took me some time. I decided at the last minute to install a navigation app that I thought was interesting. In the end it turned out that it worked well in symbiosis with my new phone costing 99 euros (for curious people: an Honor 7A). The app is Naviky (naviki.org), a free



Burnt nose, mad eyes.



The only pict I get, then the smartphone was out of battery.

app with some possible paid functions. After a couple of days I was very happy to buy, the system (app and phone). They proved to be precise, fast and made me to take a wrong turn only a couple of times before I took measures to the diminish the delay of the GPS. It guided me on interesting routes and avoided routes with a lot of traffic). Up to Ivrea I followed the proposals of the app. Then I choose to stay on the SS26 until Courmayeur, otherwise with the settings chosen I would have slowed down a bit along secondary roads and various ascents and descents.

Anyway we start from the beginning. From Dueville down to Vicenza, via San Bonifacio down in the countryside up to Villafranca di Verona and then on to the end of the first stage in Orzinuovi, a total of 185 km. Not bad for an afternoon of riding.

I arrived at the center of the town that was blocked because of the market. I was lucky to stop right in front of a 'Turkish kebabbaro pizzaiolo' and bought a rich pizza with vegetables and beer. Nearby I found the hotel Gambero, a nice hotel with a kind receptionist, who helped me to store my velomobile in a well protected place inside the private parking.

From there at 6:30 am I continued towards Crema, Pavia and then passing through the rice fields to Borgo d'Ale and then I arrived in Ivrea. It was a route through the countryside with beautiful landscapes. Looking at myself in the mirror that evening, I realized that the only part of my body that was exposed to the sun was the tip of my nose. It was now in a pitiful condition, because in the hurry I had forgotten to spread the sunscreen...

The horses powered parade

Ivrea is 410 km from home. I entered the city following, and finally overtaking, a beautiful carriage pulled by a single beautiful animal. It was driven by a couple in vintage clothing, he with top hat and she with sumptuous dress and umbrella. I arrived

in the center and I pulled over to a couple to ask if they knew a hotel nearby. Then I turn towards him while she tells me that they are strangers and then I recognize him, a young boy... from my town! What a small world, isn't it? Then the beautiful carriage passes me and I notice that many others are entering the center. Some are already parked, one more beautiful than the other, with passengers dressed in style, and wonderful horses. They are closing the center for the parade, so I had to speed up to find a bed. Unfortunately I was following Google and found myself on a steep climb. Trying to to the smaller sprocket, the 'patatrac' happened and the derailleur came off and twisted the support arm. I was forced to get off as well. I had to push up to the Bed and Breakfast, but unfortunately it was fully occupied. The big 61 tooth sprocket did not match very well with the small 34, so shifting under high pressure it is a risky procedure. The derailleur in my case had turned a little bit, and the crank on the next turn had anchored it, torquing with it the support arm.

... so start with the repair

I quickly opened the front hatch, removed the derailleur, straighten the aluminum arm and fixed the derailleur trying to restore sufficient alignment. I got back in, and I went chasing a bed again. I met a policeman, who had just placed a barricade, but he let me pass because a little further on there was a hotel. I found the last free room, on the third floor and the stairs seemed to me Mount Everest! At least there was a good, nice and closed place for the velo also here. After a shower I went for a pizza with vegetables and big beer, to replenish the glycogen. Returning to the hotel, I was in time to see other carriages parading in front of me There were a total of 75 crews, who made two laps each, not without a couple of small accidents...

I left in the morning just before 7 am heading straight to Aosta. I traveled fast because there was little traffic. Hunger 'forced' me to stop in a beautiful and colorful pastry shop. After two excellent vegan croissants with soy cappuccino I started the climb to Saint Vincent.

I was forced to go shift the sprocket with 34 tooth a couple of times. My leg turned happy. The surrounding offered more and more beautiful views and a slightly cooler air, despite the climbing of the sun. In Aosta I ignored the center and I continued on the state road. At a gas station I drank another beer and had a very good Sammontana ice cream with almond, milk and berries. I also filled my water bottle with ice and water with a bit of sparkling. In this season I'm grateful for the bars with the ice cube machine!

By now Courmayeur is not far away but the hunger calls again. So I stop in Runaz for a rich salad washed down with the usual big beer, coffee and ice-cream (thanks again Sammontana). I left at 1:50 pm after having avoided the worst sun and made the 20 km that separated me from Courmayeur in less than two hours. There I allowed myself another ice-cream and oxydiodihydrogenic break. With this heat, half a liter of sparkling water lasts the blink of an eyelash... then I fill my water bottle with ice cubes and go after the ritual photo.

'Celtic' ascension

I go back on the state road 26 until the last junction that turns left and goes up towards Val Veny. Here things get serious, the slope goes well over 10% and my ratios are definitely too long especially considering the 20 kg of luggage that I carry with me. To complicate it, there is a Celtic fest just a few hundred meters from my destination. It is full of Celts there, but Celts with a SUV! Here the average drops dramatically, but since I drive a little more than 5 km/h I do not give up. I make a few short stops at the hardest points >



The Celts.

> to catch my breath, but I keep pushing. When I stop, the handbrake is not enough, I have to apply constantly a good force on the brakes to avoid to start reversing towards the bottom of the valley. Naviki says the goal is at less than two km, so I pick up speed passing between groups of Celts with horned headdresses that look at me a little bit strangely. And then at 900 m the phone switches off, the solar panel after Courmayeur remained for long stretches in the shade. But the goal is near and in a flash I arrive at the gate of the Fior di Roccia. I've never been so happy to arrive at the barracks!



Arriving at the barracks.

The barracks, after years of abandonment, were taken over by the ANA section of Bergamo, the Red Cross, with the collaboration of the army. The structure is therefore used for training activities of military personnel, but also used by the National Alpine Association and the Red Cross for social activities, training and education. The boys who are completing the course for mountain guide opened the gate for me. And so, as I anticipated before, I 'triumphantly' entered the square at the bottom of which were chatting more than twenty of my course mates. Many of them I had not seen for thirty years and they welcomed me warmly. I was really moved. The happiness of

having reached the goal in addition to the emotions of seeing old friends almost overwhelmed me, some tears came down, but I am proud of it. The evening was spent in the open air on the square, just under this little giant. The aperitif was washed down with white and red wine. Then we went inside for the real dinner accompanied by other excellent wines, including those produced by the son of our company commander, the now retired general Giorgio Braga. Together with our commander was also present our deputy, now colonel, always on duty, Ezio Saccaro.

The next day, after the usual flag flyer, we left for a short visit to our barracks in Aosta. I arrived about ten minutes after my comrades, especially because I drove the whole Val Veny at a walking pace as not to risk to stress too much the drum brakes. When overheated they tend to lose effectiveness and are to ruin themselves. From Courmayeur to Aosta I traveled quietly in the rhythm of the traffic, so from 50 to 80 km/h. However many cars could not resist the temptation to overtake me, hoping to understand which vehicle was in front of them. After a break of half an hour or so, and saying goodbye to my comrades. I returned to my fuselage and started again, passing through the centre, always beautiful, of Aosta. Then I threw myself back down the valley. I still made a nice stop at Borgo d'Ale, and its beautiful 82nd edition of the 'Festa delle Pesche'. Peaches at will, I did not let myself pray...

Then down in the middle of the rice paddies on narrow but deserted and fast roads, with as only travel companions many herons, that at the 'thundering' arrival of my velomobile, always got up in the air. Then further down to Vercelli and Casale Monferrato, until Sartirana Lomellina, where after some vicissitudes I found a beautiful B&B when it was dark. Very nice place, beautifully restored with closed garden, as always nice to leave the velo. I had an apartment with four rooms and an imperial bathroom, with a jacuzzi mega bathtub. In the morning after the breakfast in the beautiful



dining room, I lost some time because I had run out of cash and the B&B's POS didn't work. Since even the ones in the small castle village were out of service, the manager took me to the bank of the nearby village... a shame to waste time early in the morning when the air is still fresh. It was also a pity to spend only one night at 'Perbacco'. Leaving the beautiful village I threw myself towards Pavia, and then Lodi, passing so south of Milan and its chaotic traffic. I made my lunch/rest stop



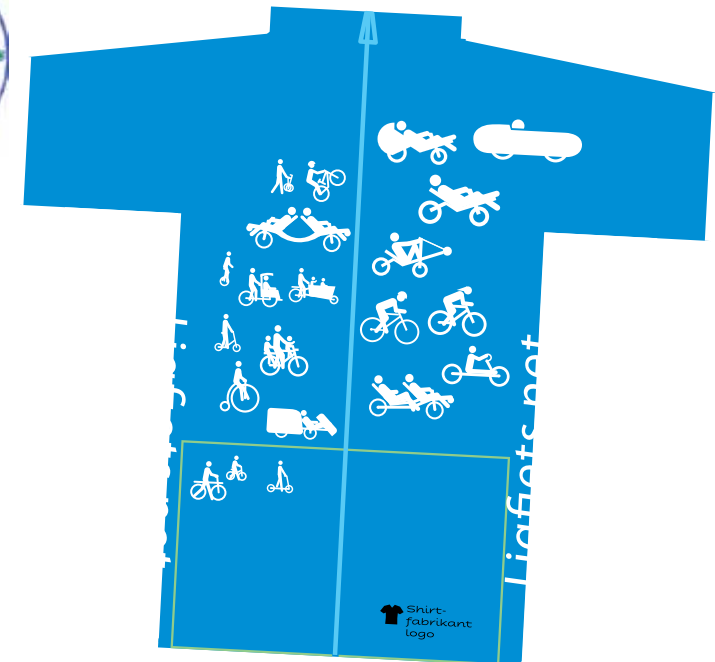
The way back.

'al Paiolo' in Crespiatica, where I ate well and relaxed skipping the hottest hours of the day. I left again to Crema, passed by Orzinuovi, where I stopped at a petrol station to take advantage of the shade and eat an ice-cream. The very kind old manager brought me a popsicle without the need to get off and, after chatting with me, curious about my vehicle, he hands me a 1.5 litre bottle of iced water. Then at the moment of leaving instead of wanting money he leaves me with a greet and a push. "Power of the velomobiles."

I set off again up Montichiari as far as Desenzano where I skirted Lake Garda, passing by Sirmione as far as Peschiera del Garda, from where I headed straight for the centre of Verona. Here I had a break for the usual vegan pizza and beer right in front of the Arena in Piazza Brà, a ritual stop! Then off on the state road to Vicenza, where I was amazed that my legs could still push up to 50 km/h, while the night was falling around me. On the horizon stood a remarkable storm front, which fortunately was moving away in the same direction as I did, but still offered me a fascinating spectacle of crazy lightning. I entered Vicenza and just at 1000 km I found myself in front of the seat of the Alpini's association, sometimes by chance... I turned North and covered the last few kilometres that separated me from home. I was tired but happy to have done the job, just a few more pedal strokes and I made it.

Just a word about the vehicle. The DF (XL in my case) behaved very well. I don't know what I would have liked better, mine is the second XL built after Ymte Sijbrandij's, and it always proves to be an efficient, sturdy and fast vehicle, even if loaded with more than 130 kg... I rode on Continental and that was not a bad choice. <

Support your HPV association!



Five models of a single-track recumbent bike

by Jan Kranczoch

It seems that the single-track recumbent bike has gone out of fashion. However, I am still fascinated by this design and the enthusiasm for it has so far been greater than the curiosity about the even more efficient locomotion with faired velomobiles. With this stubborn attitude you have to bravely face the air resistance – or try to avoid it as far as possible. In the HPV world, experiments on this are explicitly desired.

The series of custom made highracer recumbents presented here, which were created over a period of about 8 years, proves that you can become noticeably faster not only by tough training units, but also through experimental approach and a little bit of brains. The underlying blueprint of my bikes was trivial and the insight of the previous sentence is not new. But maybe that is exactly what makes the ‘cultural asset’ recumbent bike and the tinkering with it: the joy of dealing with a technical item that can be very suc-

cessful even without revolutionary achievements but with moderate resources – small triumphs of improvements, achieved by implementing mostly proven principles with one’s own means and ideas.

It all started with a *Challenge* aluminum seat shell that fitted my back like a glove. I learned to appreciate it during a cycling season (it must have been 2011) on my former Fujin. In 2012 I decided to build my own bike ‘around this seat’ for the championships in Leer (East Frisia, Germany), which of course should be as sporty as possible. At that time, I somehow must have had the impression that the high racers were always right at the front – which of course was primarily due to the riders who powered them. Anyway, I focused on bigger wheels for this project from the beginning. Although it was not my first self-built recumbent bike, all drawing board sketches, attempting to combine two equally sized 622 mm wheels with my body metrics and a fairly acceptable chain line, failed. Hence, I switched

to the apparently simpler solution with a 571 mm front wheel. Assuming this relevant feature, I defined the Z-shaped geometry for the 50 x 2.5 mm aluminum main tube. Three freehand cut pieces of the main tube and a drawing on graph paper displaying some angles and important markings were enough for the artful frame builder Stefano Agresti to weld the frame. Features of the tail end and the reinforcement gussets around the cut-out of the head tube are therefore his intellectual property. However, I had to realize that it was difficult to get a matching 571 mm fork and wheel. These triathlon dimensions were obviously a dead end of evolution and even most of the bone sites of this extinct species had already been looted. Heike Bunte (two rims) and a Kinesis parts dealer (‘antiquarian’ fork) helped me out of the mess. Luckily, there were still plenty of 571 racing tires on the market. The bike was ready in time for the world competitions in Leer, made a very good 200 m sprint (> 60 km/h – admitted, with slight tailwind) and performed



The model, suitably equipped for everyday use and powder-coated.



Model 1 prototype stage in racing use (Leer, 2013).

without any breakdowns. Intentional details, such as the low deflection of the power strand and the textile attachment of the Teflon chain tubes, had thus proven themselves. However, when critically judged, the frame in the front section showed a noticeable flexion under high load. In addition, sightings of various highracers from *Troytec*, *Zockra* and *M5* soon aroused the ambition to launch a further improved machine.

With the second highracer I wanted to be smarter and therefore I first got myself a fork as origin of all further plans. In order to avoid collisions between the chain lines and the front brake in the space around the fork head, I went for the disc brake holder type. Moreover, especially along the front part of the frame rigidity should be enhanced. So I used an oversized 8 x 5 cm oval cross-section aluminum main tube. It was purchased from Alligt (The Netherlands), a company which produced single track recumbents for a while, which were based on

exactly that tube. Somehow, I remembered about this fact and Alligt had still several meters in stock. Besides, I particularly took care of a robust and notch-free connection to the crank bracket, which now was carried by a boom with a full 60 mm diameter. Stefano once again shone with his skill in the bold and smooth welding seams. This time a fiberglass seat shell was used, which was still in my parts warehouse. Conclusion from practice was that this new machine actually ran a bit faster; on the one hand probably because of the more rigid frame, on the other hand perhaps because of the somewhat stronger elevation of the crank. It was pleasing to see that the design allowed a simple conversion from tiller steering to around-the-knees handlebars – and both versions were tested for one season each. The result was a slightly higher speed with the narrow type of steering when using the same subjective effort. But somehow I missed the *Challenge* seat with its special swing and the unique spine recess. Of course, I couldn't get rid of the >



Model 2 – the naked frame, ready welded.



Model 2 – reinforced front part of the Z-frame.



Model 2 – checking the frame layout with prospective chain line (folding rule).

> thought that you could combine the best of all previous achievements...

Without special experience and by means strongly resembling a camping vacation equipment list, a functioning recumbent can be produced.

Then in 2015 my employment changed and I had no more business trips that would take me to the frame builder Stefano, sited in southern Hesse. The idea and need of manufacturing a bike almost on my own (but lacking a welding workshop) led me to carbon as the frame material of choice. I acquired my first knowledge from a small dealer for carbon fibers, resins and adhesives (Bacuplast, Remscheid, Germany). The advice I received there on processing, the composition of the required material and the selection of suitable tools and aids was excellent. I have rarely ever learned more in one hour than during this conversation. However, I felt confident enough to carve the positive model with its very generous cross-section from PVC hard

foam boards. Pattern was the proven geometry of its aluminum predecessor. This body was later to be simply laminated, with carbon rovings along the entire frame 'sculpture' to reinforce the fabrics. The seat surface was molded from the beloved *Challenge* seat, just applying a separating layer of cling film. As it was beyond my imagination at that time to make the rear dropouts also from carbon fiber, they were sawn from aluminum plates. Drill holes and rough sanding should enhance contact between metal inserts and the composite coating. It was advantageous for the project that meanwhile carbon racing forks with disc brake mount and stronger steer tube were common and available – a brand new Kinesis Aithein fork was the perfect buy. In order to guarantee a stable and precise integration of the steering head, a junction component made of aluminum seemed inevitably. The workshop of the local mechanic Lothar Köslich (Oldenburg, Germany) was used to manufacture this part. Symmetry and dimensional accuracy were otherwise only monitored with a heavy textured coated board: this platform served as a 'gauge', in

that spacers compensated for the intended distances of different frame points from an imaginary sectional plane. Cockiness – and probably also the newly discovered structural possibilities with carbon fibers – led to the somewhat eccentric shape of the handlebars, which were gripped with crossed forearms. This posture lifted the elbows very effectively out of the airstream. It proved useful under racing conditions (competitions in Meppen and Assen, 2017), albeit steering required uninterrupted concentration. Conclusion from this project was that without special experience and by means strongly resembling a camping vacation equipment list, a functioning recumbent can be produced. The headrest, adjustable by a clamping mechanism, turned out to be very useful and hence was adopted in the future designs. Again, I became faster than with the previous models. Unfortunately, it was right towards the end of the construction that I felt a certain routine and skill in the processing of resin, fabrics and rovings – but the workpiece in front of me looked unsatisfactory rough. Of course, this flaw had to be remedied by another attempt...



Model 3, my first real "self-construction" made from carbon.



Front view of the model 3, showing special handlebar.



Model 3, PVC foam body and aluminum compounds.

In addition to craftsmanship, I wanted to improve the rigidity of the entire frame by the fourth approach. On the one hand, the crank bracket boom was planned to be much shorter, on the other hand, the power strand was guided through the rear chainstay triangle and (seen from the side) always along the frame silhouette, hereby exerting minimal bending effects. This should further reduce the deformation in both the front and rear parts of the frame. For the dropouts and the head tube now carbon was used; only for the bearing shells for the headset and the deflection pulley axis lathed metal parts (again manufactured by Lothar) were used. Again, it was the fork that determined a cascade of features: On a biking holiday in the French Alps I had seen a Giant Propel road bike equipped with special mini V-brakes, located at the back of the fork blades: A very aerodynamic solution with a cable routing that promised to harmonize with the chain lines of a highracer. After drawings confirmed this assumption, the decision was made to have exactly these rim brakes. In retrospect, turning away from disc brakes was beneficial, as

it drew my attention to light, aerodynamic wheels, which I had previously ignored: another potential for increased speed could be exploited. As an otherwise conservative buyer, I have to admit that without online trading I would have had no chance of finding and purchasing the aforementioned Giant Propel fork, matching brakes and the Citec wheels that were finally used. An even lower backrest angle compared to the predecessor designs, the compact cockpit of the tiller handlebars, another two centimeters more of crank bearings elevation and an extended wheelbase should support the sportive goals. The top layer of fiber material, draped in spread-tow fabric, succeeded very neatly and thus fulfilled aesthetic demands. With this machine I then finished a one-hour time trial on the track in Cologne at an average of well over 40 km/h, a year later (2019) at even 45 km/h – so far unattainable velocities for me. Of course, it should be mentioned that this success motivated me to train more, which is why I regularly pushed the speed on my way to work and back (about 19 km each). The bike could certainly be used in everyday

life, because even narrow curves can be mastered without the chain lines touching the pivoting front wheel and a Radical recumbent bag perfectly fits onto the seat profile.

Finally, in the fifth and final model, whose construction began in 2018 and was completed at the end of December 2019, a significantly reduced lean angle of only 12° is the core feature of the design. In total, the base of the seat dropped a few centimeters closer to the ground, so the elevation of the crank bracket is more pronounced. This new geometry is on expense of a slightly stronger deflection of the power strand, the assumed drawbacks of which are to be widely compensated for by a very large Ginkgo pulley, as introduced with the previous model. Covering the headset projection and the first few inches of the tiller stem with a flexible velcro-neoprene hood streamlined the frame's shape, just as all the cables were hidden inside the frame – excepted some short terminal sections – to reduce air drag. The voluminous frame hull is hollow in the rear part. Through a hole in the seat >



The Model 4 - virtually all carbon.



Model 5 with its eye-catching rear frame.

> surface you have access to a kind of 'trunk' where small tools and a 1.5 liter hydration bladder can be stored: a nice gadget for longer competitions. The Giant Propel fork had proven itself so well that it was trusted again for this project; now in its tapered shaft pure carbon version, bought as a second-hand part from Italy. Finding the appropriate bearings was not easy, since an incredible number of types are available. Lothar (the mechanic) made me the suggestion to lathe the axle for the deflection pulley from a titanium rod. So for the next 3000 years this noble piece will be superglued into its carbon housing. The handling of the racer is very comfortable despite the flat body

position and can even be denoted as moderately road worthy. The reason for this is the clear view over the low cockpit, the collision-free steering, the low level of the seat base which allows the feet to safely get floor contact and the short tiller handlebar behind which you can sit up before stopping. Finally, the adjustable, elastic headrest dampens the most annoying vibrations. The seat pad made of 8 mm thick natural felt was taken over from the predecessor. This material has some weight, but offers very good grip between man and machine. It also has good absorption properties. Again, this bike was clearly faster than its elder 'siblings' – perhaps also for the reason that mostly top quality

parts were mounted. Since I have no ideas for further improvements, I think model #5 will be the last one of the series.

I also have a guilty conscience to waste the precious material (leaving a huge ecological footprint) without any prospect of significant progress in terms of performance or workmanship. Thus, I prefer to enjoy the effortless cruising over the asphalt for a while. If there wasn't the disturbing musing that a copy made of hemp fibers and degradable resins could be at least as good as the carbon template... maybe one should try it soon! <



Cockpit of model 5 with integrated speedometer.



Model 5 with its small trunk under the seat.

Organising a large velomobile tour

Oliebollentocht 2019

By Maarten Sneep,
the Netherlands, NVHPV,
photos Bas de Meijer,
www.basfotografie.com



In 2019 Maarten Sneep and Theo van Soest organized the traditional *Oliebollentocht*. There is still a lot to consider when organizing an event with 150 velomobiles. The '*Oliebollentocht*' has a long history, starting out with only a few *Allededer* riders in the summer of 1997 and a second ride in the spring of 1998. From December that year the rides became a yearly event between Christmas and New Year's Eve. Initially for *Allededer* velomobiles only, but later open to all velomobiles as more models became available. The count of how many *Oliebollentochts* is hard – do the first two count as *Oliebollentocht* or not?

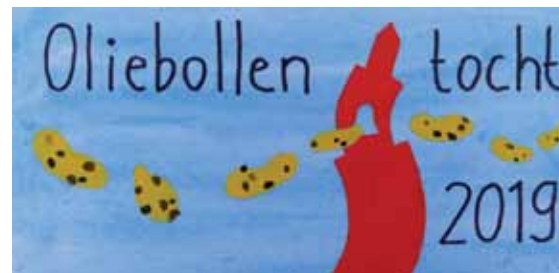


An '*oliebol*' is a Dutch treat that is closely associated with New Year's Eve, not something for summer of springtime. So the *Oliebollentocht* in 2019 was either the 24th, or the 22nd, depending on how you count them. I don't think I really care – with the best traditions the origins are always a little vague. The *Oliebollentocht* last visited Utrecht in 2009. After 10 years the organisers thought it was a good idea to revisit Utrecht. In the intervening years a lot has changed in Utrecht.

The brand new bike parking at Utrecht Central Station.



With many new bridges, tunnels and other bicycle related improvements. There was a lot of new ground to cover. In 2009 we were expecting about one hundred participants, this time we made sure that we could scale up to twohundred or even a few more. When expecting that many people, you have to start early to get everything right. We started by asking a few venues for the options they have for groups of that size. We rather quickly settled for Anafora, as it is a nice venue that is easy to reach both by velomobile and by car – for those that require this. We agree on the food options with them, they will take care of the *oliebollen* and the food after the ride and the coffee and tea beforehand. This gives a start and finish, two essential points on a ride. If you go to Utrecht, then you have to visit the Domtoren (Cathedral Tower). Due to the background of one of the organisers, this monument being open at street level, a passage through the Dom tower is a must for any tour in Utrecht. From the starting venue this could be combined with a passing of the brand new bike parking at Utrecht central station. This largest bike parking in the world has three levels with room for 12 500 bicycles, and there is a public bike path going through it. From the Dom we can go in any direction. In 2009 we went to the north-west, into the flat and green area between Amsterdam and Utrecht. This time we decided to go to the east, to the hills – yes, still within the Netherlands. We originally aimed for a literal high point for the break, but this could not >

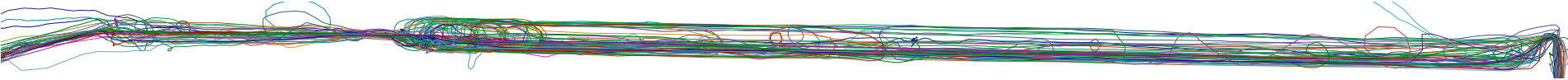


> be combined with a suitable venue. On this scale on-street catering is impossible. If you are curious, we wanted to have the break at the Pyramid of Austerlitz. I'm very glad we didn't, because this change meant that we could include the runway of the former airforce base Soesterberg, the widest bike path in the Netherlands and possibly in the world. Seeing the group on the runway, having a lot of fun is something I will remember and cherish. I later requested the GPS tracks of all participants, the resulting figure is included here.

A venue for the break was found, and then all details had to be sorted out. This includes all details for the venues, and the details of the route. As there were more roadworks on the route, we contacted some officials to inquire when these might be finished. As the end of December is a common moment for contracts to end, we were rather lucky in that all obstacles on the route gradually disappeared. Unfortunately we did get a last-minute change in the centre of Utrecht, but even that wasn't too bad, and it may have made the

route better. When riding with a large group, there are many details that you need to pay attention to. We didn't want to ride with the whole group in a single block in the centre of Utrecht. To avoid that we split the group into smaller groups of up to twelve riders each. This worked out fine, but getting everyone started with the intended one to two minute interval was impossible. Getting everyone on the road took a good twenty minutes longer than intended. I'm not sure how we could have accelerated this, but I would

GPS tracks of 30 participants on the 50 meters broad landing strip of airport Soesterberg.



do the same next time. It made a safe passage of the Central Station area with several traffic lights and some sharp bends possible without any incidents. Also small groups are acceptable to other road users even when not all traffic rules are obeyed in complete detail. We asked a few people outside Utrecht to test the route to provide feedback, and we rode the route ourselves twice for testing and to prepare a photographic guide of the route. That guide was intended for the riders for each of the smaller groups at the start of the route. We rode the route a final time to check all the details early December. Besides the pre-

paration of the route and discussing the details with the venues, we also prepared for the riders. We tried to find a scouting group to host people from further away, but none of the local scouting groups wanted to host us, perhaps from experience with students. We decided to announce early that there would not be a central 'sleeping' facility, but we did ask and prepare some youth hostels where individuals could reserve a bed if so desired. We coordinated safe parking for these bikes of the people who wanted to stay in the centre of Utrecht. We prepared tickets for everyone, detailing what they had ordered. This made it easy to

make sure everyone got what they ordered at the venues. This worked well as everything could be automated and pre-printed. Organising a recreational ride for velomobiles through a large city is a high risk, but also high profile event. When well-organised it can generate a lot of positive attention in the media. Therefore, this has become an additional goal in later years. Our message is that, even in wintertime, it is possible to travel large distances with human power only. There are a lot of details I have omitted. The preparation was a lot of fun, and we may do this again, in 2029. No promises though! <

