

# From the Editor

Recently Evandale Tasmania was the host for the World Penny Farthing Championships. This is usually the only event the Tasmanian HPV group attends but why a Penny Farthing event? I guess they saw recumbents as unusual and a possible attraction to spectators, a considerable number I might add. It's not uncommon to see the public 4 or 5 deep in the viewing areas - the whole town of Evandale is practically closed for the day and many interstate and overseas participants and spectators attend. Steve Nurse came over from Melbourne and

took out the race gaining him a medal and chance to speak to the crowd about OzHPV and International HPV activities. The back page and pic on right of this HUFF features a few pictures of the event.

Timothy Smith

# **Postcards**

The crew from the Channel 9 program 'Postcards' will be at the Broadford Challenge on Saturday

March I only (they are doing a program on the Kilmore area and attending a music festival at Wandong on Sunday).

Geoff Cox will be interviewing people about HPV's, about the beautiful location, racetrack etc. The producers asked me if Coxy can be filmed having a ride in one of the events. I'd hope people don't mind too much if the TV crew 'interferes' a little with our program - this could be great publicity for us.

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# **Tailbox Drag and Stability**

To reduce drag, the airflow passing a body must be smoothly spread out past the body and then turned and directed back in to meet the flow passing the opposite side of the body. The key word is **SMOOTHLY**. Unfortunately the forward position of the cranks on a recumbent has already messed up the airflow. A well shaped nosecone could do a lot of good drag reduction. In fact a nosecone can do much more to reduce drag than any tailcone. Why aren't they everywhere. Apart from being bulky and increasing the package size of the vehicle, the biggest problem is the large area located so far forward decreases the crosswind stability. This is an area ripe for exploration by someone.

This brings us to a tailbox fairing. A functional method of carrying all my bits and pieces is essential when you cannot wear a backpack or fill up pockets. The obvious answer is a tail box. What has to happen to reduce drag, is the messy airflow from the front must be collected up and directed to flow along the surface of the 'box'. To

get free stream flow to stay attached to the side of a bluff body, the minimum radius of the corner from front to side is Width/10. For a 200mm wide seat, the radius of the front edge of the box needs to be about 20mm. This radius would need to start at least as wide as the body of the rider to achieve this effect. This is where the 'wide' tailbox/ narrow tailbox difference occurs. Frontal area still needs to be kept to a minimum.

Once you have attached flow along the side of the box, you need to gently curve the flow back toward the centre line of the vehicle. A good solution involves curving the side surface gently back towards the centre-line starting from parallel to the centre-line along the side of the seat. The box should be closed top and bottom for best results.

What does the added area do to the aerodynamic stability? Crudely speaking, crosswind stability is



Andrew Page struggling with the Rowcycle at Evandale

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improved if the centre of side area is located both behind and below the centre of gravity of the vehicle. The reason for the area to be behind the mass is easy to see. An arrow has the mass(heavy point) at the front and the area(tailfeathers) at the back. If deflected by crosswind, the mass tries to continue along its direction of motion, and the reaction of the tailfeathers realigns the shaft of the arrow. This also applies to aeroplanes tails. There is a limit to how far the area should be behind the mass. Too much is like too much trail. The vehicle would become hard to turn at high speed, and it would also strongly turn up into a crosswind gust. A comfortable balance is required.

The reason for area below the centre of gravity is not so clear. You would think that the side area should be as low as possible so that the side force acts near where the tyre resists lateral motion. This is not the case. There is already plenty of low area in a diamond frame bike. This comes from the conventional wheels. The extra area of a disc wheel destabilises the bike. On the other extreme, If the area acted above the centre of gravity, the bike would simply roll downwind. The best place for the side area of a bike is somewhere below the centre of gravity but still well above the ground. Because a recumbent centre of gravity is much lower than a diamond frame, more area may be required below the centre of gravity. A rear disc wheel or wheel

fairing may even improve crosswind stability.

There is another factor which really mucks up the crosswind stability. The front wheel of a bike has a detrimental response to crosswind. This is due to the aerodynamic force acting ahead of the pivot axis of the steering. Thus the wind gust will tend to turn the wheel downwind. This gets even worse with a disc wheel. Here also, a recumbent has an advantage over a diamond frame bike. The front wheel is usually smaller. Less area means less force. Also there is often less rake on a SWB bike. This puts the area of the wheel closer to the pivot axis, reducing turning forces.

Without careful measurement, the real effect of any addition of surface area to a cycle cannot be totally predicted. Caution should always be used. It must be remembered that all aerodynamic forces, not just drag, increase with the square of the airspeed. The good news is that the reduced drag of a tail fairing could also be making the bike handle better in a crosswind. Done correctly, aerodynamic treatment should make cycling faster and easier. Just don't ask me what happens down the hill at Broadford!

Ken Houghton

# World HPV Championships in Germany 2003

I thought I'd let you all know that a week or so after Paris-Brest-Paris (which is? 18-21 August depending on your finish;-) the WORLD HPV CHAMPIONSHIPS are to be held in Friedrichshafen, Germany. (ie Southern Germany - near the shores of Lake Constance / Bodensee) which borders northern Switzerland.

(After a very brief tour in Western France and Switzerland before PBP 1999 I can say it is a nice part of the world.)

Date: 28-31 August, 2003

This event alternates between Europe and Nth America, but is in Europe in the same years as PBP and Edinburgh-London Audax events.

These are the sort of World Championships that (at least at the moment) anyone with a HPV can enter if they like so there are no barriers to competing (other than the embarrassment of being well over 10kph slower than some of the fasties - Like me in '99!). It is quite a spectacle and very much worth attending anyway!

It is a fairly social affair too especially if the British HPV crowd show up. But seriously the Euro HPV races are TOP class and they are quite serious about it - lots of carbon fibre, very fit riders & sleek bikes, both fully faired and unfaired classes and events for males and females.

Speeds of competitors range up to 53kph (averages!) for 20km Time Trials etc in the unfaired classes, and faster in some races where drafting is allowed but there is a wide range of competitors.

Usually there are a few days of events: 200m, Time Trial, Road Races, Criterium etc It would be great to see a few other Australians there.

I think it is possible that most PBP riders should have recovered post PBP enough to at least participate. I raced in the Worlds at Brighton, UK, 2001, about 10 days after the 800km of Edinburgh-London (though I was a bit "flat" afterwards, surprise surprise, as my pre EL training had been fairly limited).

Or if you are in Europe before PBP you could aim for the British Human Power Club Race 7 of the 2003 series on July 26th - In Leicester I think with the "Spokesfest" cycling festival and thus a strange collection of eccentric cyclists on various upright bikes will also be found there. And I think there are bound to be some other Euro HPV events on too in France, The Netherlands, Belgium, Switzerland etc etc.

I'll keep you informed. Also there is the Fifth European Velomobile Seminar also in Friedrichshaven, Germany: "Towards commercial velomobiles" during the HPV World Championships.

Ian Humphries - ian@flyingfurniture.com.au

# Two recumbents on the Adelaide to Melbourne "Melbourne Express" 1000km Audax event, September 2002

This was a well attended Audax ride with about 28 starters. Although the previous days were a bit wet, the skies had almost cleared. Overnight rain had left the roads initially a bit on the wet side though. You can see the sheen of the early morning sun on the roads in photos 1 and 2. The ride was nicely organised by Matthew Rawnsley and started outside his house in the Adelaide hills!

I arrived about 40min before the start and wondered where everyone was. They soon arrived and everyone chatted nervously...Some were well prepared but on their first ride, while others were experienced PBP veterans. I was somewhere in the middle - with just a recent 200km ride as preparation and a history of starting these long rides without enough training....I started the ride with Duncan McDonald from Brisbane. Duncan was on his new recumbent bike and on his first ever really long event. As usual as soon as the time to start passed everyone soon was off. We started at the back of the field and then shortly after the start Duncan realised his LightSpin dynamo had been left engaged from the previous evening and stopped to pull it from the wheel.

The first few kilometres being a bit up and down and a bit drizzly meant it was punctuated by frequent stops to remove

and add clothes and my rain coat and also to water the roadside trees - all of which tends to hamper early progress. I was nervous about the ride and the wet slippery roads early on and took it very easily until the roads looked like they had dried out a bit. Duncan was taking it cautiously too I think and with stops etc we were soon separated. The riding in the Adelaide hills was quite lovely though - little traffic and good scenery.

The weather looked liked it would be fine for the event after the previous few days of rain, with more rain expected later in the week. After some rolling ups and down we encountered a long run downhill which allowed me to freewheel past the first group and be the first into the first control at Strathalbyn (Prices bakery!) Well I didn't know I was in front until we got there actually - and I wasn't actually racing but I saw no reason to

brake on that nice downhill and wait for anyone ;-). I was pleased to see Duncan arrive before I left and wished him well on the ride.

Photos were taken with a disposable camera I carried in one of my jersey's pockets throughout the ride (it was in a small ziplock bag and pretty easy to access while riding).

After rolling from the ferry, the small group of us in front rode on until we met the main highway and we turned right into quite a severe head wind.

After a short break and some riding into the wind with Aldo tucked in my draft we decided to wait for a larger group following and meet the challenge of the winds together. So after another short roadside break we reformed with quite a large group. Riding in the group should be a social and usually I am less bothered by headwinds and so thought I could help the group and chat to some people I hadn't met before. The group however was very regimented at their "roll overs" which seriously limited the possibilities for conversation and made riding in the group a bit less interesting than usual. Drafting in the gusty conditions made it difficult for some I think.

So I got pretty quickly bored and headed off down the road at my own slightly faster pace....A few hills were encountered shortly after this and I think the group splintered again anyway, because not long after Matt Rawnsley came zooming up in my mirror and we rode into the second control at Meningie together. A few others were not long back at this stage but most were now a bit strung out. I didn't see Duncan. We did see the three supported riders aiming for Beachpoprt or Millicent for the last time as they were quickly back on the road while we fed up at the local bakery.

I refilled my Hyrapack and hit the road with Aldo and Otto. The

road out of town was again a bit rolling and I felt it better to set my own pace along here. I caught and zipped past John (whose riding secrets seem to be very brief stops and a litre of milk at every control!) on another downhill bit and was soon alone with the wind and scenery again. The weather through this section in the Coorong was cloudy and I certainly didn't feel like swimming in the nearby water but there were pretty nice views of it to be had. I cruised along enjoying

the open air and my first experiences of this area.

I was riding a M5 ShockProof for this event because it could be pretty easily packed down into a smallish package with removable seat and by folding the rear suspension swing arm forward. Thus I had a pretty bus friendly package if I were to have had problems on the ride.

So the road continued on its merry way to (?Kingston I think?) where we had talked about stopping for dinner. Luckily for me the place mentioned was closed as I had not recognised what looked like a plain old servo as a "homestead diner" or some-such and went on to the next tiny one shop oasis and stopped there for some eaties. The (almost) lack of vegetarian food left me with only a fried egg sandwich and chips to devour. It all tasted great though!

A refill of my hydrapack was then sufficient to get me on my way again and I left the next few people who arrived to finish their meals and got back to some more pedalling.

I cruised along alone as darkness fell, with the bike, my helmet and I nicely and well covered in reflective tape...Apparently I stood out quite dramatically :-)! As for the front, the constant beam  $3\,\text{LED}$  light was just sufficient along most of the roads but use of my  $5\,\text{x}$  C-cell battery powered 2.4 watt halogen headlight was required to actually to see by when I was blinded by oncoming headlights. I rode on alone seeking the comfy bed at

Robe and some sleep, and was the first to arrive there to stop for the night. Basic motel in a quiet little town where nothing was open (quite late but can't remember what time it was). I was thankful to have a pre-packaged lasagne in my kit bag carried along by some of the rider's supporters as there was no food to buy at the towns we stopped in at the late times we got to them. The Adelaide Market's gourmet lasagne went down well after reheating it in the motel room microwave. The aim was to get up and on the road before 4am, so it was to be just a few hours sleep here. As on other rides I didn't sleep at all well on the first night but felt ok when we got going - over 400km to do on day 2 so just as well! I saw Duncan's bike in the shed and so he had made it this far...

course he was aiming for and achieved 2000km!

I arrived at Portland and turned right into town for food and to get my card signed - there was no sign of Matt or any of the support crew(s), so I chose a little takeaway place and ordered some sandwiches and following John's lead, ordered a milkshake. I didn't know where everyone else had got too and started back onto the road after a longish break.. Finally I saw a few more riders stopped elsewhere (a servo again).

In the "cockpit" of the M5 the speedo and mirror are positioned just below my eye height so I can watch the road ahead, watch the k's slip by, watch out for good photo opportunities and keep an eye on the traffic coming up behind and all simultaneously!

Aldo and I teamed up here but we had a bit of trouble then working out which road to take but soon got on our way. Night riding is a whole lot more interesting with company and probably safer too as it is less likely the "sleepies" will creep up on you without you knowing. We stopped at Port Fairy for



# **Day 2:**

Breakfast was provided - a small box of cereal, jam and some bread to toast and instant coffee! Aldo, Otto and I left the basic but comfy motel together. We saw John leave just before us but he stopped to ring home at the first phone box. We stopped at the bakery in Millicent for breakfast #2 and met up again and surprise, John drank another litre of milk...

Photo on right shows the border signs (?about halfway I think?) and that the clouds were still looking threatening. The wet stuff held off for the rest of the ride thankfully.

I rode most of the afternoon at my own pace and alone again, except at the controls where I'd wait for the first few to catch up. But after Mt Gambier Matt joined me very briefly at the front before shooting off down the road at 100mph.. I think he must have been time trailing against some fast cycling demons within! But he has finished the Alpine Classic in near or under 7 hours! My overall average speed (24.6kph) was about the same on the ride as Matt's but it wasn't near his this day and of

dinner. We left with a small group and rolled along nicely into the night along the first part of The Great Ocean Road to get to Port Campbell about 11:55pm. This time I was in a room with Matt who was already tucked up in bed, so I showered as quietly as possible and sat outside to have another snack. It was a quiet and lovely evening to be out! I planned to sleep in a bit the next morning - at least until sunrise anyway so that the ride on the remainder of the GOR would be in daylight as I'd not been along it before.

## Day 3:

After allowing myself a very good nights rest I didn't even get up at sunrise and so I thought a lot would have been long gone. There were only 6 bikes in the shed when I left anyway, not sure whose they were (or how many were still to come) but they must have been pretty late arrivals to decide to leave even later. No sign of Duncan. I'd decided I'd climb Laver's hill and ride the last day at my own pace, stopping at the lookouts and taking in

the scenery of my first visit to the area and of course take some photos. After all, I was here to enjoy the ride! Photo on right was taken just after leaving Port Campbell. It was a perfect morning and beautiful weather for the GOR. I couldn't come all this way and not stop at the Twelve Apostles either.

I found the GOR a very enjoyable ride with its sweeping bends, roller coaster hills, fabulous scenery and nice little towns all contributing to the days fun. I started catching a few people along here too-passing John twice this day (both times uphill!) while riding only to be passed at controls again as I stopped to chat at the 1000km controls. (John and Matt had fewer controls I think on this section of the 2000km Brevet.) The famous "Otways" weren't quite so big as I'd imagined in both height and the park size and were but a brief section of this day's ride. My average road speed from morning until dusk on Day #3 was pretty quick and I reeled in most riders even with the breaks for photography. The scenery was uplifting which seems to give me a lift too and make the riding easier...I found the road pretty good with mostly fine shoulders and not too much traffic. Might be a bit narrow for a trike in some places though I thought.

Sardinia Café. Victorian audaxers are apparently very familiar with this sight. I'd hooked up with Aldo again (though this time

he could hardly talk with a very bad sore throat) and Peter and Kathryn on the last leg to Geelong. We saw Otto determined to finish leave the cafe earlier. I had a very enjoyable final day, snacked regularly and had felt strong throughout. As we rode off into the early evening we figured we had plenty of time to finish but the last leg was plagued with stoppages to don extra warm clothes, to attempt to fix Peter's main light etc etc and dragged on a bit. I gave Kathryn a banana and a muesli bar as she seemed a bit short of food later on and then we managed a good run to the FINISH! Yay! We were all happy to be finally there. I'm sure Otto must have finished well before us but no-one had seen him and we finally concluded he must have used the "other" finish at the servo on the east-bound side of the freeway.

Overall it was a really fine scenic ride! I was pleased with the ride too as it was comparatively a much faster riding time (relative to distance) than I did on PBP 1999, approx almost 5 hours in it in fact, but I think the first half of PBP may have been as fast before I got really sleep deprived (insert random hallucination here;-) It seems more sleep helps keep the riding speed higher? Different number of wheels too. I felt much better after this than PBP too. Note for reference: PBP 1999 for me was ~55 hours riding time, 69hr17min total for 1250km. My overall stats for the 1000km: Average riding speed: 24.6kph, and 9+ hours sleep! Sleep at Robe (~3hours?), Sleep at Port Campbell (6 hours). Total time: 63 hours 36min / Riding time: 41hours 29min / Time off bike: 22hours 7min

Finally, many thanks to the bag carriers and the other friendly riders, especially Joy who arranged my (all?) accommodation at Robe and Port Campbell.

### Melbourne Express 1000km Checkpoints

Dist(km)	(arrival)	SA time	
0	29/9/02	07:00	
55	29/9/02	09:20	
148	29/9/02	13:45	
458	1/10/02	10:10	
562	1/10/02	15:00	
869	2/10/02	14:00	
936	2/10/02	17:05	
1020	2/10/02	22:36	

Postscript: The next evening I rang Duncan to find out he had abandoned after about 600km due to lack of sleep. He was in pretty good spirits though and seemed to treat it as a learning experience - two months later I had the opportunity to ride with him again in the Fleche Opperman and he seemed quite a bit stronger and faster there...

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# Sydney Velodrome Meet 16/2/2003

Just a quick note to tell everyone the Merrylands velodrome meeting seemed to go down pretty well. Thanks Tony for organising it!

I rode the 32km out from Newtown just to act as support /

timekeeper but it was quite fun to watch and some events were even a bit exciting!

I think Tony will publish complete results...

..but here's a brief account of the "14 minute plus 2 laps" race, as viewed from the sidelines:

Everyone assembles on the track, riding instructions and a direction to riders given

that slower riders should keep to the inside of the track ie all overtaking should be on the right...race run anticlockwise around the 420m nicely surfaced oval.

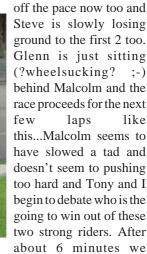
### Riders:

Malcolm: Flying Furniture SWB with tailbox, Glenn: Optima Baron racer, (rear spoke cover but no tailbox), Steve: Optima Baron racer with tailbox and spoke covers, Greg: self-built "muffler tube" low racer "prototype", Paul A: upright road bike, Kevin: GTR with tailbox, Paul M: Cycle Science SWB, Jens: Visiting from Germany on his SWB HPV Velotechnik Street Machine...

The race starts seemingly pretty leisurely but the pace soon picks up...Malcolm warmed up by his 15km ride out to Merrylands and the 3 lap time trial first event, goes to the lead and riders start falling in behind, Glenn in second, followed by



Steve, Paul A, Greg, Paul M, Jens and Kevin (I don't think I've missed anyone?)...The pace quickens and they're soon lapping at over 40kph...and they're pretty strung out by lap two...with Paul Alves on his upright road bike desperately trying to find a draft behind the 4 leaders, at about this point we hear some funny chain noises coming from Greg's bike who is just behind Paul A. Greg's bike is in its first race and he's discovering his nylon chain tube is slipping around...he has to slow to push it back into place but eventually has to stop altogether and get out the gaffa tape:-(. But back at the race, Paul A has dropped well



Last man out race start

wonder whether the race should be shortened from the original 14+ minutes as it appears a bit of a procession...we decide to let it run its course and see what tactics come to light...the two leaders are still circulating at over 40kph, Steve still just behind going almost as fast...Malcolm and Glenn lap a few of the others and at one point Malcolm puts in a big surge which catches Glenn by suprise...the pace reaches 54kph at this point! Spectators (;-) wonder whether the gap is going to remain but Glenn is slowly winching himself back and after another lap or so eventually catches Malcolm's draft enough to pick up speed and pass ... and go out to a 5 metre lead himself... Malcolm is holding on though and with 4 minutes to go we wonder whether Glenn can sustain the pace...Malcolm isn't giving up but is puffing pretty hard. Glenn isn't able to get further away though but is holding his pace. After another lap Glenn eventually starts to pull away to a 20m lead he holds to the finish... Steve finishes third. Paul M 4th as Paul A, although a strong rider too, has given up, sweating profusely and pretty wrecked;-) after his too fast start (HPV victory here but Paul A will be back on his race trike soon ;-) Meanwhile, Jens and Kevin cruise into the finish...



PS Glenn and Steve had finished a 200km Audax ride the previous day and at least Steve was looking a bit tired - didn't seem to effect Glenn though, although because of this we could understand why he didn't lead early in the 14+ minute race!

PS More pictures by Paul Maynard of the velodrome meeting are up on http://www.wordwright.com.au/paul/



A Barron with an Optima tailbox

Click 'Sydney Recumbent Riders' on the LHS under Photos. Thanks to Paul Maynard for providing the technology and hosting the photos.

BTW I forgot to mention that we got the track for free hence the event was able to be held at no cost to SRR or OzHPV or the participants. Thanks are due to Holroyd council, the Parramatta Eels RL club and Parramatta cycling club who administer the facility between them.

Ian Humphries - ian@flyingfurniture.com.au

# For Sale

BikeE AT 3.0
Cane Creek AD-5 shock absorber
Magura hydraulic disk brakes
SRAM ESP 5 derailler and twist shifters 11-28 7-speed cassette

Sachs 3 speed internal hub Shock pump BikeE bag Dirt and road tyres Make an offer

Contact: Ross Flewell-Smith

07 54966712

Email: val3nt1n0\_r0551@hotmail.com

# **OzHPV** Banners

I have just been given approval to order 6 banners made for Ozhpv. Size of banners is 900 X 2000, we will get a 300mm high logo and 100mm high writing on the banners, eyelets and ropes on each . (Similar to our one & only current banner!) All should be ready for distributions to the states / branches when the Challenge is on in March. Cost will be \$110 each plus gst.

# **Coming Events**

### Wonthaggi 24 hr HPV Grand Prix

14th-16th March: This is a three day event involving primary school and secondary school students racing human powered vehicles over a 1.4km street circuit, including a non-stop 24 hour race for senior students. Primary students are involved in a series of pushcart races on the Friday. The pushcarts, which are built by the students, are based on the old "billycarts". Students must be able to dismantle and assemble their pushcart on the day. The Human Powered 24 hour race involves the racing of 3 or 4 wheeled recumbent vehicles around a 1.4km street circuit in Wonthaggi (view Grand Prix track). The race involves teams of 8 people and is a test of endurance for the vehicles and the competitors. Further details can be obtained from Peter Hanley Assistant Principal of Wonthaggi Secondary College (5672 1344) phanley@wonthaggisc.vic.edu.au http://www.wonthaggisc.vic.edu.au/

# Product announcementM5 Compact

How about a very compact "CMPCT" recumbent! Could you use a stylish folding recumbent? Recently I was happy to import an M5 CMPCT folding recumbent bike for a customer in Sydney. The M5 CMPCT is a "SWB/CLWB" design, with cranks just ahead of the head tube on the main frame and this bike seems to ride quite nicely. It would make a pretty fine commuter bike. Quality is to the usual high M5 standard. Fully length adjustable and various gearing choices available.

Enquiries to Flying Furniture Cycles on 0419 697 405 or via email at: ian@flyingfurniture.com.au



Look Ma - no hands!!

### Continued from page 1 - Postcards

I believe Simon Boyle who filmed at Canberra last November will be attending also.

### Postcards 2003 - 5:30pm Saturdays

Postcards is channel 9's exciting Victorian based travel program. Each week, the Postcards team, fronted by the affable Geoff 'Coxy' Cox, scour the state to uncover new and exciting things to see and do in Victoria.

Postcards offers more than just the obvious, however. You will learn about the history and geography of an area, often through the eyes of the locals and those people with a close association to the area. In addition to Coxy's feature story, the rest of the team will seek out new adventures and sample some thrilling activities available in Victoria.

### Damian Harkin - damianharkin@optushome.com.au



David also visiting from Melbourne taking a corner on the rear wheel steering trike - as you can see it's tips over pretty easily.





All together in the mid day parade.



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