

September 2016 Volume 20 Issue 2 - Number 87

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From the Editor (Steve Nurse)

Hi, It's good to have a variety of new articles this month, thanks especially to new contributor Nerrida Scott and also to Rebecca, Richard and Peter.

The vintage Australian HPV magazines discussed in last issue are now available online through the OzHpv website, and this was a team effort, Alan Bishop had the magazines, I scanned them and Andrew Stewart put them online. The magazines are , 1 Edition of Manpower from 1982, 4 Editions of HPV Times from 1991, and 2 Editions of Laid Back from 1994. They are available at <http://ozhvp.org.au> Enjoy!

Speedbike HPVs are still going fast, Francesco Russo has recently broken the hour record and at the time of writing, the World Human Powered Speed Championships are underway at Battle Mountain, Nevada USA with Gareth Hanks competing in a Trisled Completely Overzealous. For up to date information, please visit <http://www.recumbents.com/wisil/whpsc2016/results.htm> . At the other end of the spectrum but still on HPV's, Seattle cycles have a new lightweight folder which is presented in this issue. You couldn't go to the shops for some milk on a speedbike!

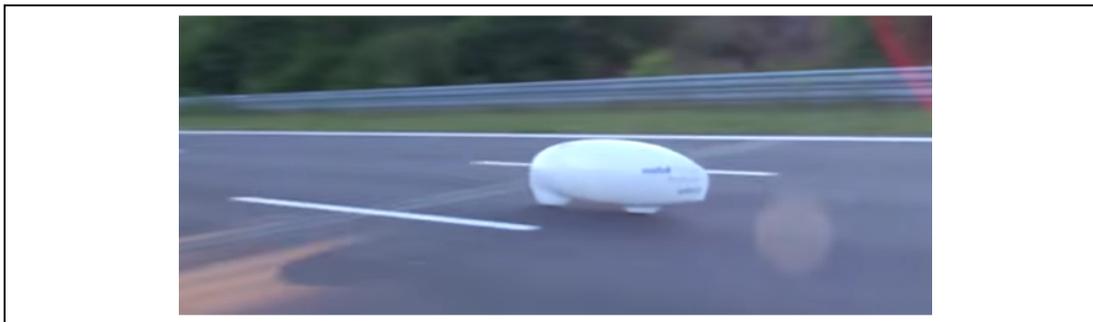
The Annual Ozhvp rally is coming up at the end of September. Canberra is great in the springtime and there are a variety of rides and activities planned for riders of all abilities. The Ozhvp annual general meeting will be held on the Saturday night of the rally, please consider volunteering for a not-too-taxing executive position. If anyone is considering being Huff Editor I will happily pass on the reins.

Regards, stay safe!

New Hour Record & Some Background Steve Nurse

Francesco Russo broken the all comers hour record on June 26 with a distance of 92.432 km at the DEKRA Test Oval, Klettwitz, Germany. On September 9, the WHPVA ratified the record and the official entry can be found here [https://en.wikipedia.org/wiki/Hour_record_\(recumbents\)](https://en.wikipedia.org/wiki/Hour_record_(recumbents))

Russo's speed bike "Metastretto" is fully-enclosed for low wind resistance and is unusual in that the riding position is head first and face up. Forward vision is limited to a view through a small clear window at the front, observed through a mirror.



Metastretto at speed from <https://www.youtube.com/watch?feature=youtu.be&v=kKpZIRaJz7s>



Metastretto with front fairing removed and trolley used for support when starting.

Since 2008 this record has been broken 4 times, with 3 of these records going to head-first streamliners like Russo's. There is some logic behind this: an important work on the Aerodynamics of human powered vehicles (Albert Gross and all, the Aerodynamics of Human Powered Vehicles, Scientific American, December 1983) rates head-first streamliners as more aerodynamic than their more common and slightly more practical feet first cousins. This is because the ultimate shape for fully enclosed fast HPVs is with the widest point toward the front, and the shoulders are the widest part of the body, so "should" be at the front too.

Damjan Zabovnik pioneered this type of streamliner with bikes like Eivie 2

(<http://www.eivie4.com/bikes/eivie-ii/>) in which he set a previous hour record, but bikes using this principal for locomotion were made back in 1981. From little things, big things grow!

PERFORMANCE OF HUMAN-POWERED VEHICLES is summarized. The numbers listed under forces for each vehicle represent air resistance and rolling resistance respectively. The five columns at the far right represent respectively the horsepower required at 20 m.p.h. as a percentage of the touring rider's performance; the all-day touring speed in miles per hour at an output of 1 h.p.; the maximum speed at an output of 1 h.p.; the steady speed in miles per hour up a 5 percent grade at an output of .4 h.p., and the coasting speed down the same grade.

THEORETICAL LIMITS		FORCES AT 20 M.P.H. (POUNDS)	AERODYNAMIC DATA					LEVEL*	GROUND, NO WIND		EFFECT OF HILLS	
			DRAG COEFFICIENT	FRONTAL AREA (SQ. FEET)	EFFECTIVE FRONTAL AREA (SQ. FEET)	ROLLING-RESISTANCE COEFFICIENT	HORSE-POWER REQUIRED		ALL-DAY TOURING	MAXIMUM SPEED	STEADY-SPEED UP	STEADY-SPEED COASTING
	PERFECT RECURRENT	DRAG ON RIDER ONLY	.72 0	.5	1.2	.7	0	14	27.1	58.3	16.8	66.9
	PERFECT PRONE BIKE	DRAG ON SMALL BUT STRONG RIDER	.51 0	.5	.8	.5	0	10	30.4	65.3	23.2	65.3
	PERFECT PRONE STREAMLINER		.07 0	.05	1.4	.07	0	1	58.3	125.9	25.8	174.5

Extracts from Scientific American article by Albert Gross. Yes, the units are very old fashioned!

Figure 9.10
Stability test of reverse-direction bicycling.
Courtesy of Milton W. Raymond.

EIVIESTRETTO

Designed By Damjan Zabovnik and co-designed by: Gregor Vebler, Leon Plestenjak and Francesco Russo in 2010, built in 2011 as upgrade of Eivie III for Francesco Russo.

Milton Raymond's prototype (Whitt & Wilson, Bicycle Science 1982) and Eiviestretto.



Nerrida's GT3

Nerrida's HPV links by Nerrida Scott

I'm fairly new to recumbents and velomobiles and in the process of researching I've been compiling a bit of a list of resources from my own finds and other people's suggestions. There's still a truckload more so please feel free to edit/add. I don't consider it as an authored document, just a handy list, so take it and use / add as you please. Perhaps it could go in "the shed" section of OzHPV's website after people have made more suggestions. It would be great if others who have come across interesting / useful links not on this list could add them so that this can become a more comprehensive resource.

After all the research, I bought an old Greenspeed GT3 trike from another Brisbane Recumbent Riders group member. I'm now the fourth owner and it has been a great introduction to recumbents for me!

General Info

<http://www.crazyguyonabike.com/?o=tS>

<http://analyticcycling.com/>

Technical Info / Manuals

www.sheldonbrown.com

<http://www.phred.org/~alex/kenkifer/www.kenkifer.com/bikepages/>

Nasa wind tunnels <https://www.grc.nasa.gov/www/k-12/airplane/bgt.html>

http://www.hellbentcycles.com/trike_projects/Recumbent%20Trike%20Design%20Primer.pdf

http://www.zzipper.com/documents/HPV_Paper.pdf

<https://janheine.wordpress.com/2012/05/02/aerodynamics-of-real-world-bicycles/>

Recumbent Specific

http://www.recumbents.com/forums/topic.asp?TOPIC_ID=6374

http://www.recumbents.com/forums/default.asp?CAT_ID=2

<http://velomobiles.ca/index.html>

<https://au.pinterest.com/pin/52424783132223646/>

http://www.blueskydsn.com/kit_hpv.html

<https://etrike.wordpress.com/2014/01/05/velomobile-shell-for-trikes/>

<http://www.bentrideronline.com/index.php>

<http://www.kingcycle.co.uk/page8.htm>

<https://lonniemorse.wordpress.com/about/>

<https://lonniemorse.wordpress.com/2013/02/21/low-tech-testing-any-one-can-do/>

<https://lonniemorse.wordpress.com/2012/03/22/velomobiles/>

<http://www.ohpv.org/HPC/page3/page24/page24.html>

<http://www.ozhpv.org.au/>
<http://www.brisbanecyclist.com/group/bentriders>
<https://www.facebook.com/groups/986598251399938/?fref=nf>
<http://www.recumbentbicyclesource.com/>
<http://hvp.tricolour.net/links.html>
<http://pedalyourselfhealthy.org/>
<http://pedalyourselfhealthy.org/Velos/OtherVelos.html>

The Human Power Institute. <http://www.hupi.org/>

Ventilation in velomobiles... <http://www.hupi.org/HPeJ/0002/ventilation2.pdf>

Editor's Picks

Auntie Helen: Velomobiles and cake in Germany <http://www.auntiehelen.co.uk/>

Jun Nogami's Biking in a big city <https://jnvyz.wordpress.com/>

A Brit in Holland: <http://www.aviewfromthecyclepath.com/>

Burke 8 titanium Folder by Steve Nurse



"Burke 8" Titanium Folder with 8" wheels

Folding bikes and trikes come in all sorts of interesting shapes and sizes and I occasionally buy cheap, interesting ones from ebay and follow up links in blog posts. So from [Biking in a Big City](#) comes this one, a folding Titanium mini-cycle with 8" wheels, in the [Velocino](#) style. There are other bikes in the Burke range but the Burke 8 is the smallest, lightest at 8kg, and quickest to fold. The Burke 20 has 20" wheels, takes longer to fold and is larger but the advertised weight is still only 8kg. The website (<https://seattle-cycles.squarespace.com>) doesn't currently include availability or pricing. You could bet \$\$\$ not cheap but the larger bikes in particular seem promising and very light.

Riding in the West by Rebecca Edwards



Perth OzHpv members riding, photos by Cat Lacey, of Riverside Drive Cycleway, north side of Swan River and Rebecca Edwards, back to the start point again at Garland Cycles

So what do you do if there's no recumbent rider groups in your area? Well if you follow the example of OzHPV member Glen from Perth, you create your own group.

What started out as a simple idea of creating a Facebook group (Perth Recumbent Riders), and spreading a bit of word of mouth, certainly proved a hit, leading to group rides and new friends. Here is a bit about a recent ride.

Despite a cold morning, it was warming to see more than a baker's dozen riders turn up for the first ride, of which I'm sure there will be many more. There was a variety of three wheelers (both tadpole and delta), two wheelers, commercially made, home built, and even one of those weird diamond framed things. Strange design those, I don't see them ever catching on myself.

The ride was a relatively short 15km cycle, serving more as a meet and greet. Meeting up at [Garland Cycles](#) in Victoria Park, the group set off in a clockwise direction, on the bike path through South Perth, on the bank of the Swan river. We got many a double look from people enjoying a stroll, and cyclists alike, as the path meandered through the parkland, offering stunning views across the river to the city itself.

From there we crossed the river over the Narrows Bridge, and through to the newly developed Elizabeth Quay. The ride then continued along Riverside Drive, and up through Claisebrook, on one of the many fine bike paths Perth has to offer. One of the best bits of planning that has happened in Perth, is where there is high cycling traffic, a second path keeps pedestrians out of the way. With the gentle undulations and no roads to cross, you really get to stretch the legs.

Another river crossing, this time over the Goongoongup Bridge, where the new Perth Stadium is being constructed. As part of this stadium build, a new pedestrian bridge is being built across the river, but we will have to wait until 2018 to test that one out.

The ride then returned to Garland Cycles, where fresh hot coffee and banter was enjoyed by all participants. Nick Garland is the owner of the shop, and he has seen a steady climb in business, when it comes to recumbents, which is certainly pleasing to hear.

So if you're a Perth local, or just passing through Western Australia, you'd be most welcome to join the group, be it for a one off event, or as a regular rider. The group can be found on Facebook by looking for Perth Recumbent Riders or email PerthRecumbentRiders@gmail.com for more information.

1991 Rotary Melbourne to Adelaide Pedalcar Ride by Richard Ferris



My first involvement with recumbent bicycles occurred when I participated in the 1991 Rotary Melbourne to Adelaide Pedalcar Ride. This was the 6th annual 'Rotary Ride for Research Dollars' fund-raising event, which was started in 1986 by the Rotary Club of Knoxfield under the guise of the 'Pedlin' Pete' Rotary cycling fund-raising events. For the 1991 event, Rotarians from various clubs were set the challenge to build a 'pedalcar' and ride it 735km from Melbourne to Adelaide in a sponsored attempt to set a World Record time for the event. The pedalcars were accompanied by riders on normal bicycles and support vehicles with daily distances averaging 120km.

The challenge was accepted by one group of Knoxfield Rotarians ('Shawry and his mates') who built a behemoth trike, stating they wanted to build "...something that would be noticed", whilst another enterprising Rotarian borrowed a recumbent racing trike that had been imported from Japan by a Hawthorn bicycle shop. A third Greenspeed trike was also taken along and was set up as a child's trike so that kids could have a ride in a 'pedalcar' at our various fund-raising stops along the way. Details about the trikes themselves are a bit sketchy after all this time, but 'Shawry's Machine' and the 'Red Rocket' made it the entire distance to Adelaide, while the 'kids trike' was usually only ridden into towns and around carparks at our fund-raising stops.





The 'Red Rocket' was a low-racer trike that had been built and raced around the Kieran circuits in Japan and featured the standard road-bike running gear of the day with a triple chainring and flat pedals. It was imported by a Hawthorn bicycle shop owner as a window display, who was glad to get it on the road and was able to get some publicity from Leader Newspapers in Camberwell. From memory, I recall that this machine was quite fast and pleasant to ride

on the flats but was a bit hard to get up the hills. And it wasn't until half way down the descent to Pykes Creek Reservoir on the Western Freeway that I discovered the front wheels would start to bounce alternately once downhill speeds got over 50kph. Yikes!

'Shawry's Machine' was a large juggernaut of a trike built from chromoly steel and standard road bike parts. It featured triple chainrings, an unreliable Sturmey-Archer 6 speed hub that kept breaking down and a very comfortable home-made seat. It was designed to have a large frontal area for maximum impact and a high ground clearance for ease of mounting by the various dignitaries at our fund-raising stops. Whilst pleasant to ride around the carpark at slow cruising speeds, it proved to be quite hard to ride for extended periods on the road and was almost unmanageable on the downhill at speed. Climbing hills took a lot of effort and downhill runs were just plain frightening, but thanks to the perseverance of a determined group of pedallers in our team, it was ridden all the way to Adelaide.



OzHPV Rally 2016 – Canberra Friday 30th September to Monday 3rd October.

As in previous years an annual gathering and rally has been organised to be conducted in Canberra. There has already been some strong interest from riders coming from Sydney and Adelaide.

A loose schedule of events has been put together and depending on the number of attendees and interests, this can be expanded to longer rides, low key racing on a velodrome or circuit and some interesting night rides and visits to the Floriade Flower Festival.

The Yarralumla Scout Hall at Yarralumla Bay will be the venue for a Friday night welcome BBQ and will provide basic sleeping accommodation for those that wish to use it.

<https://goo.gl/maps/coFdDcRHK2B2>

The OzHPV Annual General Meeting will be held at The Yarralumla Scout Hall at 4:00pm on Saturday 1st September 2016.

Canberra's long running and very popular Floriade Festival will be running at full steam on the same weekend, which rally attendees might also like to attend.

Access during the daytime to the flower show is Free.

Access to the after dark "Night Fest" entertainment event is by pre-purchased tickets and it would be wise to buy tickets on line as soon as possible if you wish to attend. See the website for more details. <http://www.floriadeaustralia.com/>

SCHEDULE OF EVENTS

Friday 30th September

- 2:00pm Afternoon ride around Lake Burley Griffin starting from Scout Hall
- 5:30pm Welcome BBQ and rider get together at Yarralumla Scout Hall

Saturday 1st October

- 7:00am Ride from Scout Hall to nearby Yarralumla Bakery for Breakfast
- 8:30am Long ride 40+km and Shorter ride 25km starting from Scout Hall
- 12:00pm Both groups meet for lunch at location to be determined.
- 1:30pm Racing at Mount Stromlo Criterium Circuit. Subject to interest and **Non Motorised cycles only.**
- 4:00pm OzHPV Inc Annual General Meeting at Scout Hall
- 6:30pm Nightfest gates open at Floriade for those with tickets.
- 7:00pm Night ride around lake followed by dinner at restaurant to be decided.

Sunday 2nd October

- 7:00am Ride from Scout Hall to nearby Yarralumla Bakery for Breakfast
- 8:30am Long ride 40+km and Shorter ride 25km starting from Scout Hall
- 1:00pm Both groups meet for lunch at location to be determined.
- 3:00pm Human Powered Boats try out session at Yarralumla boat ramp subject to weather conditions.
- 5:00pm technical presentations at Scout Hall.
- 7:00pm Dinner at restaurant to be decided.

Monday 3rd October

- 7:00am Ride from Scout Hall to nearby Yarralumla Bakery for Breakfast
- 8:30am Group ride to Arboretum Visitor Centre.
- 11:00 Rally ends
- Visit Floriade again or other major Canberra institutions like:
 - The National Gallery of Australia
 - The National Archives
 - The National Library
 - The National Museum of Australia

It is recommended that riders bring a good lock arrangement if they are intending to leave the bikes for any period of time. Likewise, good lights and reflective gear will make the night time riding safer and more enjoyable.

This event is conducted and organised by OzHPV Incorporated for its members.

Other riders are welcome to attend although we encourage all participants to be OzHPV Members.

OzHPV is a Human Powered Vehicle enthusiasts organisation.
Our Public Liability arrangements extend only to the activities of a cycling club.
Electric assist cycles are welcome so long as they comply with Australian Standards.
Motorised vehicles are not permitted on the Mount Stromlo cycling facilities.

It would assist with planning and organisation if interested riders to complete and return the following form as soon as possible. Cut and paste to a separate email if you like. Please return to president@ozhpn.org.au

2016 OzHPV Rally Attendee Information

Name:

Address:

Email:

Mobile Phone:

OzHPV Member: Y/N

Attending Welcome BBQ Friday 30th September: Y/N (Approximately \$20 per person)

Accommodation

Made own Arrangements : Y/N

Scout Hall sleeping on floor :Y/N (Approximately \$10 per night)

How many nights?

Interested in low key racing on Mt Stromlo Criterium Circuit if available (non- motorised): Y/N

Staying in Canberra for all three days of weekend: Y/N

Other Information comments or suggestions:

AGM Details

The 2016 OzHPV Inc Annual General Meeting will be held at 4pm on Saturday October 1 at the Yarralumla Scout Hall, Yarralumla Bay, Canberra, see <https://goo.gl/maps/coFdDcRHK2B2> for location details.

The President and Treasurer positions will be declared vacant as Peter Heal and Duncan Cleland will be stepping down after their two year stints. Richard Ferris has agreed to stay on as Secretary unless opposed. If you wish to nominate for any position but can't attend the AGM yourself, please contact Peter Heal, president@ozhpn.org.au .