

Letter from the Editor

On the HPV mailing list on the internet recently there has been some talk recently about safety on the road. Someone posted an article of a cyclist that was purposely run down by a motorist with 'Road Rage'. The driver was identified when the police discovered a piece of the bike wedged in the bumper after he ran.

Although we probably don't have this sort of extreme here in Australia we still have to be careful. In the past few months I have had several incidences, one where some teenage motorists tried to play chicken with me on a trike, swerving back to their side of the road just at the last second. We're also pretty vulnerable when it comes to dogs as well. Our riding position can place up close to eye level with the dog. Things seem a little easier now that I hear the nationally agreed road rules allow cyclists to ride on footpaths.

Although this doesn't by any means stop us from riding it pays to think about the dangers sometimes and do what we can to minimise them.

Safe recumbenteering.

Timothy Smith



Swift Trike

6 Hour Challenge

There's less than a month to go now till the Canberra 6 Hour Challenge at the Sutton Road course on Sunday 6th June. The date has been moved to June 6th to give OzHPV the chance to promote it a little bit more effectively and for you to train just a bit more!

This is a race over 6 hours for individuals or teams as a relay. Competitors may ride any form of road going HPV, eg upright or recumbent bicycle or tricycle or tandem, or triplet etc..... Held in Canberra again this year - this is a good chance to see some



Trisled Team Machine

sophisticated HPVs in action as well as to try to achieve your own personal km goals. Try to be there and especially try to participate, solo or form a TEAM of 2 to 6 riders. There was even a family team category last year. All standards welcome and encouraged. It will be held on the Sutton Road Driver Training circuit again - there are good facilities there and the curvy nature of the track means that you won't get bored..... ;-) Start time is 9am There may be special visit to the Canberra Bike museum storeroom on Saturday 5th to check out the varied collection that numbers in the hundreds...

There are people going from Sydney and Melbourne offering possible lifts to this event. Contact the respective club contacts if you're interested.

Wonthaggi Pedal Prix Update

Congratulations to Trisled and MR Components teams, 1 and 2 in the Wonthaggi Pedal prix, results of this event are at <http://www.racetime.com.au/racedata/u9913/r01res.htm>.

This is the biggest HPV event I've been to and it had a really good vibe to it, felt like it was being run by young people! The Wonthaggi Rec. Reserve was given over to

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Seats for Homebuilt Recumbents

by Jeremy Lawrence

The pride of every homebuilt recumbent is the seat. This is where the majority of the contact between the rider and the bike occurs. Hence, the seat provides the majority of the satisfaction one derives from propelling one's creation along the road. Seats are discussed in every issue of Recumbent Cyclist News and Recumbent UK. Particular mention should be made of the RCN homebuilder Issue 47, and the RUK introductory article on seats, Volume 1, Issue 3. They are probably also discussed in the British publication "So you want to build a HPV?" The holder of your butt seems usually to be an afterthought on homebuilt recumbents, whereas it should really be the beginning.

Essentially, the bike should be designed around the seat. That way you know you will be comfortable, at the right height, and be able to put your feet on the ground. Most people like to have their back and butt supported by the seat. The amount of weight each part of the seat supports will help to dictate the required design.



Steve's seat with sheepskin cover

Generally, seat design is easier the more reclined a seat is. This is because your back has a larger area than your butt, hence your weight is supported more evenly, and imperfections in design don't matter as much. If you want a more upright position, like a Tour Easy, or BikeE, then more of your weight will be on your butt. This adds extra complexities. Not only does your butt's small area support most of your weight, but it also squirms and moves around as you pedal.

Therefore you will need to concentrate most of your design skill on the base of the seat. The perfect seat for pedalling will cuckold your body and help you stay on the bike through turns and over bumps. The carbon fibre seat on the Windcheetah does this. Unfortunately a seat must also allow you to get on and off the bike with ease. Remember, there is nothing more attractive than having a recumbent pull up and then seeing rider seemingly flow off the bike to end up standing beside you. Awkward grunts, heaves and high swinging of legs are to be avoided. The simplest seat design is flat

plywood, although often the most uncomfortable. Steve Nurse (Melbourne) uses this method, and joins the two pieces with a hinge. His chosen cover is sheepskin, but I have also seen 10 mm camping mat used (similar to mouse pads).



Tube/mesh seat from Paul Segal's new tandem

Experienced woodworkers may like to steam, curve and shape the plywood to suit their body. Many European models have shell seats like this and they work quite well for reclined seats. Beware, Europe is colder than much of Australia, so drill lots of holes through the panels to aid ventilation.

Reclined seats are also suited to using mesh, a la Greenspeed. The mesh is held in place by wrapping it around tubes which run along either side of the seat. This can be seen in the photo of Paul and Lindsay Segal's new tandem, and also in the photo of my homebuilt, which resembles a 'Haluzak' SWB. Tube/mesh seats succeed best where the seats are low (a la Greenspeed) as you have no trouble putting your feet on the ground. However, with a higher seat,

such as those found on most SWB's, the front corners of the seat stop this necessary practice from occurring. This may be OK for tall giants, but normal people like me need 'cut aways'. The 'cut away' on each side of the seat base is a compromise between holding your butt on the seat and allowing your legs to go down. It is a tricky compromise.



Tube/mesh seat on my homebuilt 'haluzak' style SWB

Notable examples of designs exhibiting this remarkable feature include models from RANS and BikeE. The close-up photo of a BikeE seat shows the curved contours and the 'cut aways' for your legs. Both RANS and BikeE seats are mass produced to their custom design in Taiwan. They have injection moulded plastic bases with stiffening ribs and reinforced

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attachement points. Several layers of different densities of foam adorn the curved base, and a durable cloth over the top holds it all together. These fine pieces of engineering are available for purchase from their Australian importer. The BikeE original seat is US\$295, the new sweet seat is US\$390, and the seat cushions are US\$78. I imagine the RANS seats will be similarly priced. When freight is added and the currency convert to Australian dollars, these prices don't seem to be very



Steve Nurse's homebuilt plywood seat

good value for money. I had thought that RCN had listed the RANS seat at only US\$200 or so. I have tested both seats in the US and found the RANS seat to be excellent in all respects. The BikeE seat may be preferred by smaller people. The US manufacturer Linear have chosen a cheaper, simpler option. Their seat base consists of a triangular sheet aluminium base (although plywood would be OK) covered with 50 mm of foam and then cloth. Two large holes are cut into the base under your sit bones. This distributes your weight more evenly, without resorting to shaping or curving the base. I own a Linear bike and found the seat to be good, though not as good as the RANS (the grass is always greener on the other side). This design is so simple to build it's not worth importing a Linear seat. Next up for consideration are seats from recumbent exercise bikes. These stationary monstrosities have gained favour in sweat and torture clubs as people gradually realise you can spin pedals without a sitting on a chamois. Taiwanese manufacture has led to the availability of seat bases at reasonable prices. The



Seat from recumbent exercise

trick is to go into a large store, like Myer Sport, and test out all the bikes. Then ring up the manufacturer and buy the seat as a spare part.

I chose a model from York Barbell (see photo), who are based in Sydney. As of a year ago, their seat base cost \$25 + \$8 postage to Melbourne. Models may have changed, and you may prefer a different seat, so be sure to check them out yourself. When you are trying to order the seat, it may be necessary to pretend to actually own a recumbent exercise bike (but with a broken seat).

Some people have used seats designed for diamond framed bikes as the base for their recumbent seat. Giles Puckett did this on his CLWB. Most DF seats are a little small for my taste, but there are some monster designs out there. Try your local bike store or superstore. The larger the range the better. Other possibilities include seats off trikes. One bike shop close to me has a shopping trike in the window with a large wide seat on it. The main problem with these designs is that they curve downwards and your butt tends to slip off all the time. Prices vary but expect at least \$30. Other seat bases are also available.

One rider at Canberra '98 used a Harley Davidson motorbike seat as the base! A photo of this 'Tour Easy' clone was in a recent issue of HUFF, being ridden by Alyson Macdonald. No matter what base you choose for the seat, a mesh back is usually the best option. A mesh back is easy to build, has good breathability, and all the comfort a back really needs. Performance type riders may worry about the small amount of 'give' that a mesh seat has. The cushioning effect prevents racers from accelerating with maximum velocity. The



Giles Puckett homebuilt seat using a DF seat as the base.

hard shell / thin foam combination is best for these people.

Easy Racers have one of the best (and most expensive) custom made after-market shell / foam seats available.

So, now to actually building the seats.

I've found that it's best just to look at other peoples bikes and then bodge something together that vaguely resembles the one you liked best. Trust yourself that you are capable of making something that will work. In the past I have built tube/mesh seats, but now my homebuilt has a tube/mesh back with a base from a recumbent exercise bike. I had the luck of access to a tube bender at my work, so I was able to get most of the nice curves I wanted. Essentially you need on tube running down either side of the seat, and U shaped pieces holding the two side

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A Pictorial View of Some Machines see around the Country.



Gary Adderton's latest creation, a sociable tandem trike. He's a teacher of Computer Graphics and Design at Rosny College in Hobart.

gadderton@yahoo.com

<http://sunsite.anu.edu.au/community/ozhpn/tas/gary.htm>



Giles Puckett's latest, Project Pandora - a Solar Assist HPV



Alan on his new 700c/20" Windcheetah at the Febuary, ride/try gathering of the Queensland Recumbent Enthuasist Group.



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These are my 2 recent additions.
20' - 16" ASS bike and
20' LWB power assist trike.
Timothy Smith, Devonport
See more details at
<http://www.vision.net.au/~timotsc/index.htm>



26" - 16" Homebuilt ASS bike by Darryl Shelswell, Deception Bay.

<http://www.geocities.com/Yosemite/Trails/9097/index.htm>



Peter Cobine's new homebuilt 26/26
'Greenspeed' trike.



Coming Events

WA Recumbent Riders : Sunday 9th/23rd May, Sunday 13th/27th June, Sunday 11th/25th July: Meeting 9:00 AM at Gino's Cafe, (or across the street from it) on South Terrace, Fremantle (it's on the cafe strip). If you are in the Perth area and have a recumbent or are interested in recumbents, be there! We're there a couple of hours eating breakfast, drinking cappacino and talkin' 'bents. E-mail Geoff Law geofflaw@bigpond.com or Gary King gary@oceandigital.com.au Ph (08) 93411381 if you have queries.

Queensland Recumbent Enthusiast Group :Sunday 16th May, MS Brissie to the Bay ride. MS fundraiser starts and finishes at Southbank. Entry fee applies, hoping for a TEAM entry. Contact Darryl Shelswell Ph 0732033025, Ray Hembrow 20 Murchison St Carina 4152, Brisbane 07 3843 2729 after 6.00 pm or email David Johnston. davej@ecn.net.au

Melbourne Recumbent Riders: Sunday 16th May: 40km, meet at Brunswick Mechanics Institute, Melway 29:G8, 10am This ride will be along with Brunswick Bicycle users group, they have done the organisation and Ross Parks has agreed to have us along! Art Lovers Ride to Heide Gallery: Explore the Yarra Valley where the Heidelberg School painted and visit the famous Heide Gallery. Picnic Lunch by the river or lash out at the Heide Cafe/Restaurant (bookings essential) before returning along the Yarra Trail. Bring Lunch & Money, base cost is \$6.00 or \$3.00 concession. Talk to Steven Nurse for further details phone 94818290.

Canberra 6 Hour Challenge on Sunday 9th May at the Sutton Rd course. This is a race over 6 hours for individuals or teams as a relay. Competitors may ride any form of road going HPV, eg upright or recumbent bicycle or tricycle or tandem, or triplet etc..... this is a good chance to see some sophisticated HPVs in action as well as to try to achieve your own personal km goals.

Sydney Recumbent Riders: Advance notice of June SRR date 19th of June '99.

Queensland Recumbent Enthusiast Group: Sunday 27 th June, ride/try gathering and group discussion at Murrarie/Manly area, more info to come regarding event. Contact Darryl Shelswell Ph 0732033025, Ray Hembrow 20 Murchison St Carina 4152, Brisbane 07 3843 2729 after 6.00 pm or email David Johnston davej@ecn.net.au

Melbourne Recumbent Riders: Sunday, 11th July: Approx. 20km, meet at Hawthorn Bike Track, Melway 59 E3, 10am. Travel on Gardener's Creek and Yarra bike paths up to Chapel St, then along Chapel St. to Malvern Rd. , down Malvern Rd to Waverly Rd, back along Gardener's Creek path to the start, barbecue or go to a cafe. at the end. Only a few hills!

The Biggie!! OzHPV Canberra Challenge 6th & 7th November. Venue Sutton Rd Driver Training Centre. More Details soon!

Tasmania Recumbent Enthusiast Group: Contact Timothy Smith Devonport Ph 0364234559 or Richard Hoad Ph 0362787247 in Hobart.

Bits and Pieces

Video

If you wern't aware we have received a Sport and Recreation grant to produce a video on recumbents and other human powered vehicles this year. Time is running out to get this completed (or we'll have to hand the money back) so some videoing sessions are being planned.

It needs a diverse range of footage so we also are asking "are you able to obtain any footage." It will need to be of a high quality.

Contact Wayne Kotzur.

wkotzur@dynamite.com.au

Ph/fax 02 6236 8265

C/Post Office Gundaroo, NSW, 2620

◆ There's a Web page created exclusively for OzHPV members on the internet. This will include minutes of previous meetings as well as the latest HUFFs. It was decided to withhold the most recent versions of HUFF to encourage people to join so there will be no links to these pages on the existing site, you may like to bookmark the page for future reference.

◆ Paul Segal is needing submissions for the resource database as mentioned in the insert in the last HUFF. There hasn't been much response as yet so please get your information in.

◆ Have you noticed recumbents in the printed media of late. Greenspeed had a writeup in a recent 'That's Life' magazine, Grass Roots mag has an article on a couple of homebuilt recumbent bikes and the latest Readers Digest has a pic of a Tour Easy in the snow as part of a story.

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Seats for Homebuilt Recumbents

tubes apart. Braze or weld the tubes together. For mesh I purchased the stuff used on plastic lawn furniture, it comes in a variety of striped colours from a hardware store. I cut out a rectangle of mesh to fit the seat. The width needs to be extra so it can fold around the side tubes. You need seams running down the long edges so you can poke a straightened coat hanger up the seams. I just folded the mesh over about 30 mm and glued the mesh together (instead of sewing). Cut little semi-circles out of the seams so you can thread your cord over the exposed coathanger wire.

Tension up the mesh with 3 mm nylon cord. Greenspeed uses eyelets to thread the cord through, but you need the proper big eyelet stamping tool to do this. Small cheap eyelets just fall out (I tried). Attach the seat to the bike any way you can. Your bike design will determine whether you wish to use an adjustable seat instead of an adjustable crank position. This makes seat mounting trickier. Finally, your body and your wallet are your own, so don't let others tell you what seat you should have. Construct, ride and enjoy!

jeremyl@mame.mu.OZ.AU

Jeremy Lawrence



Close up from front and below of BikeE seat

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Wonthaggi Pedal Prix Update

camping for competitors and supporters, and the HPV track went through and around the reserve.

The HPV's had 3 or 4 wheels and were equipped with lights, siren / horn, also a radio transmitter to signal completion of a lap to the computer system which monitored the event. There were 20 vehicles at the start, 2 did not complete the race but I'm surprised there weren't more casualties, there was a thunderstorm and heavy rain during the night. Most of the machines started with fairings, but by the end, many of the fairings were battered, partially stripped away, scraping along the ground, and doing no good, or actually slowing the vehicles down. HPV's were built by schools or universities with the exception of Trisled and MR components entries, results were Trisled (Fastback Racing) 1, MR 2, Wonthaggi Secondary Senior Wiz 3. Wonthaggi's entries (8 in all) did very well. "Senior Wiz." recorded the fastest lap time and were leading for much of the race.

Steve Nurse

Rear Wheel Steering Trikes

A number of people have asked about rear wheel steer trikes from time to time on this List.

One of the motivating factors seems to be the desire to have a shorter drive chain, with greater efficiency and lower weight from front wheel drive.

I am doubtful of gains on either score. If you retain two wheels at the front for better stability under braking, and for a better shape when faired, then you are probably going to lose any gain in efficiency or weight with the drive shaft going to one of the front wheels, and the fact you are pushing from one side instead of in middle, from the central rear wheel.

Using a differential and driving BOTH front wheels will obviously give an even greater weight penalty.

However from a racing point of view, it would be good to have front wheels NOT steering, so that the fairing would not need cutest which increase drag, or be so wide as to fair the turning wheels, and increase the frontal area. It also means one can bring the wheels in closer to the rider, seeing they are not turning, thus further reducing the

frontal area.

Most of the RWS trikes I have seen or heard about seem to be unstable above a certain speed. Thus it seemed like a nice challenge to see if we could build one for racing that would behave properly. So we have built one for Pedal Prix racing.

I also noticed that the trikes used by primary school kids were really adult trikes, and far too heavy for 40kg kids. Thus we have been working with a primary school as an extra challenge in weight reduction.....

We got the bare trike finished last week end, and it survived its down hill test runs, the only change required was to lower the steering ratio to make it less sensitive.

This weekend it was raced unfaired in a field of 20 trikes in a new event at Wonthaggi. All of the other trikes were secondary school or open class entries, and most were fully faired.

We ran for 7 of the 24 hours, and were in 13th position when we called it a day at 7pm.

We were very pleased with this result, and will now develop the trike further and build a full fairing for the Maryborough race in November. Bare weight with roll bar was 14kg, so there has been some weight penalty over the RWD, FWS trikes.

Thus we will also build a light weight RWD, FWS trike and run them side by side. As raced the trike weighed 18kg with large aluminium foot shield, chain guard, and safety belt.

Race results are available at www.racetime.com.au

Ian Sims, Greenspeed

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For Sale

RECUMBENT - Wayne Kotzur built short wheelbase design. All cromoly space frame - folds / disassembles for transport. Mesh seat. Front suspension. Mostly Sachs components. Great brakes! Very comfortable and very stable. 2x20inch/406mm wheels, slick tyres, Sachs 3x7 hub (21 speeds), 20watt rechargeable light system, mirror, rack and speedo. Excellent for touring or commuting \$1700 ono. Contact Ian (02) 9550 2805 AH

Fairing mould - Peter Heal is offering this mould to any trike person who wants to pay for a fibreglass specialist to make one. It was made for some Wayne Kotzur-built trikes doing the Norfolk Punch Tour De Nullabor from Freemantle to Canberra to raise money for the Make a Wish foundation. Ph H 0262884103 email: heal@cyberone.com.au

SWB Recumbent Bike

Frame built Jan 1999 by Peter Heal. Hi ten and crom moly, Yellow powder coat, Blue mesh seat. Above Seat Steering, Alloy rims and hubs. 26" Fat Boy slick rear. 20" Tioga Slick front., 21 speed gears. Grip shift, STX derailleurs, Cantilever brakes, Alloy cranks, Proven fast and comfortable bike design, Ready to ride, tour, race, commute, \$850. Ph H 0262884103 email: heal@cyberone.com.au

Tyres

1 - 2 x Primo 16x1 3/8 Herringbone tread. 85psi. New. \$30 each
2 - IRC 20x1 1/8 Roadlite 100PSI. New with tube \$40
3 - Primo 20x1 (rare) 110PSI. New with tube \$50
4 - Primo 16x1 110PSI. New with tube \$40
5 - 3 x Michellin 16x1 3/8 "Universal" blackwall. Used \$10 each
6 - 24 x 1.25 Specialized Fat Boy Slick New \$30
Ph H 0262884103 email: heal@cyberone.com.au

Wheels

1 - 20x1 1/8 Sun Aero M14 Rim, FrontMiche Hub, Radial spokes \$90
2 - 20x1 1/8 Sun Aero M14 Rim, 8 speed alloy shimano rear hub \$110
3 - 16x1 Sun Aero M14 Rim, Shim 105 front hub, radial 32spokes \$95

4 - 20x1.5 Cico aero 36h rim only. 24mm wide. Great match for Conti Gran Prix 406. \$25.

5 - 24 x 1.5 Velocity Aeroheat AT 36H. Rim only. \$50
Ph H 0262884103 email: heal@cyberone.com.au

Converted Moulton Suspension Fork. - 30mm travel. Reynolds crown and blades. Canti bosses. Suits 16x1 3/8 wheel. With 1" aheadset head set. Would need a long head tube. \$100.

Ph H 0262884103 email: heal@cyberone.com.au

Lengths of Steel tubing suit frames.

ERW 2 1/8" @ 1.2mm wall. 2m = \$25

ERW 2" @ 1.6mm wall. \$20/m.

Ph H 0262884103 email: heal@cyberone.com.au

4130 tubing 5/8" @ 0.9mm wall. \$20 bent to your requirements. All parts are in Canberra and for Sale by Peter Heal Ph H 0262884103.

Motor & Controller

Brand new, unused motor and controller that is great for a power assist system.

Motor

Manufacturer: Electric Motor Power

Voltage: 24V

Power: 200W continuous rating

Speed: 1500rpm

Weight: approx 6kg

Controller

Manufacturer: Project Electronics

Type: PWM

Current limit: 30A

This package is the same as the one I used on Sunstrike, my solar assisted trike, in the 1996 and 1997 world solar cycle challenges. It was bought as a spare, but since the original has proved so robust over 6000km of racing, running continuously all day in high temperatures, it hasn't been needed. Together, they cost me A\$595 new. I am selling them for A\$495. Drop me an email if you are interested. Both the motor and I are in Canberra.

Chris Curtis

<http://www.ozemail.com.au/~jcurtis/sunstrike>

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