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From The Editors – George Durbridge and Stephen Nurse

After being rather light on as the deadline for this edition drew near, we have had a flood of articles and this month's Huff is now officially "bumper". Of course "flood of entries" and "bumper" can't be very well defined but we trust there'll be enough reading to keep you satisfied! Thanks to our contributors who made this possible!

At the beginning of December OzHpv is holding its Annual General meeting during a weekend rally in Myrtleford. Separate notices about the meeting and rally are included in this issue. All of the OzHpv executive positions will be declared vacant and we welcome you to stand for office and make your stamp on our organisation.

Christmas Cycling by Rebecca Edwards

Christmas is fast approaching, and that means one thing. No, not that, or that, and definitely not that! No, it means lots of kids the world over will wake up on December 25, and see a shiny new bicycle under the tree from Santa.

Now of course the world would be a better place if Santa (and all his helpers) built more recumbents, but that's another issue. Instead, what I'd like you all to do, is take a moment to think about what all these new bikes mean. Yes, new bikes, mean new bike riders, filled with all the excitement and joy owning a new bike offers.

But just think for a moment about everything else that happens on Christmas day. Now I'm not getting on my moral high horse here and judging anyone, but if the average Christmas day out there is anything like those I grew up with, it's a lot of alcohol, a lot of food, a lot of fights, and a lot of endless talking about anything and everything. The adults basically let the kids fill up on red cordial, lollies and an oversupply of new stuff. The adults are too busy to concentrate on the kids, and after all, with all the new stuff, the kids can look after themselves. Mmmm, shiny new bike.

Can you see where I am going here?

The average first time rider really has no idea of how to ride a bike. When that first time rider is a young kid filled with excitement, the last thing on their mind is road laws, other traffic, or least of all where the brakes are. After all, once you get going (sometimes with the help of training wheels) why would you want to stop? Add in the peer pressure of other kids on their bikes, and you just want to ride and ride and ride and..... OH NO, CAR!!!!!!!

I'm not about to lecture you in how you spend your Christmas day, or the way you raise your kids. But as a member of the cycling community, all I ask is you think about two things this Christmas.

1. If you are driving somewhere, slow down just that little bit. Sure you might get to where you are going three minutes later, but it's not like you are in a rush to go boil an egg somewhere. Be mindful that any child you see on a bike, might be riding for the very first time, or they are so proud of their new bike, that's all they are thinking about. Work on a theory that they have no idea you are there, so be just that little more careful when you drive.
2. If you are the parent of a child, who gets a new bike for Christmas. Don't just give them the bike and then get on with things. Take a bit of time to teach them the

basics of riding, and about traffic. Sure it may take an hour out of your Christmas day, but it's better than waiting for them in a hospital, or worse.

Sure there is only so much you can do, and at the end of the day, you can only do so much. I'm not asking anyone to go out of their way to be "Super Cyclist", keeping the streets safe of scraped knees. All I'm asking is you don't make it a Christmas you'll never forget.

Paris - Brest – Paris by Peter Heal

This long distance classic ride takes place in France every 4 years and has been conducted since 1891. In 2011, 120 years later cyclists still look forward to the challenge of riding 1,200km from Paris to Brest and back although these days, it's not a race (despite what the Americans think) but a randonnee Audax style event.

The aim is to complete the 1,230km course in a maximum time of 90 hours. Some gun roadies complete the course riding non-stop in around 45 hours. A couple of strong Australian riders completed the course in around 50 hours. The majority of riders aim to just complete and take in all the atmosphere and ambience that only this classic ride can offer.

Four Australian recumbent riders took part in 2011 as part of the 100 or so Australians and over 5,000 other riders from around the world.

The riders on bents were:

Andrew Heard from Tassie on a M5 Carbon,

Paul Bertolini from Sydney on a MetaPhysic,

Pete Heal from Canberra on his trusty Velokraft VK2,

Simon Watt from Geelong on his trusty Baron with the mother of all coreflute tailboxes.

It's pleasing to say that all four riders completed within the time cut off and achieved what they set out to do. Simon was especially pleased to complete within the 90 hours having been just outside the 90 hours in 2007.

There were of course many different recumbents and velomobiles to look at and sniff and it was great to meet many riders that one might have had conversations with on internet forums.

The next Paris Brest Paris is being held in August 2015 so get training.

Note: David Cox from Canberra qualified for PBP but was unable to ride due to a deteriorating hip problem which has since been "fixed".



Simon Watt



Paul Bertolini finishes



Andrew, Simon & Pete at the start

Evolve Trikes by Steve Nurse



Evolve trikes hanging in storage and in several stages of folding

Long time Melbourne trike riders Alan and Eric Ball are in the initial stages of commercializing folding trikes they have designed. The trikes were developed from Alan's home made trikes and Eric's experience running the Melbourne High Pedal Prix racing team. Alan helped organize the Casey Fields (Cranbourne, Melbourne) OzHpv challenge and Eric was the immediate past President of OzHpv. The trikes are displayed on their new website at www.evolvebikes.com and have quick and compact folding as a feature, making the trike able to be carried on public transport, in the back of a small car or up stairs to an apartment.

The trikes have already featured at the [1st American Recumbent Cycle Conference](#), Bentrideronline, Recumbentjournal.com, on gizmag.com and even on the [Australian Smart-Car Forum!](#)

Wishing you all the best with the new venture guys and I look forward to seeing the folding trikes in the metal at the upcoming Myrtleford OzHpv weekend.

Evolve Trikes at Recumbent Cycle Con by Eric & Alan Ball

Discussing the show with other exhibitors, we think RCC is here to stay. Recumbent and Tandem Rider Magazine required a lot of courage and did a great job to stage this first event. We are newbies to this but it all went pretty smoothly from our perspective. Having so many recumbent companies, dealers and interested members of the public in one place was an amazing thing to be part of. There was a lot of friendly support between exhibitors and a great atmosphere. There were so many people with neat ideas. We made lots of useful contacts. RCC was the perfect place to debut our folding trike designs.

One of the prime reasons we went to RCC was to assess whether there was sufficient demand for compact folding trikes like ours and that was very quick to confirm. We also wanted to show that our mechanisms could be used in trikes with a wide variety of configurations and get feedback on the most preferred configurations. To that end we built the trikes for the show to be modular. This added a little weight and introduced some compromises that won't be in the final models, but gave us flexibility.

We took two front ends (disk brake, hub brake), three tails (hard tail, suspension tail, and twist-fold tail), two seats (hardshell and mesh) and two sets of wheels (20in and 16in) that could be re-assembled in a modular fashion into a variety of concept trikes. We had intended to change the configuration during the show but we were so busy that it just didn't happen. We stuck with the suitcase fold 16in and mesh seat hard tail 20in which seemed to be the main configurations that people were interested in. We also took an earlier prototype which demonstrated that mudguards/fenders and a pannier rack could be fitted and remain on for the fold.

The first two days were for dealers only and kept us pretty busy. There were some demonstrations and seminars but we missed them all. On the public day most exhibitors had a constant stream of test riders coming through, which was good to see. On that day our three trikes were being folded or test-ridden almost constantly with much good feedback. Some people came back just to see the fold again. Our arms were starting to ache by days end. Even people who had seen videos of our folding still seemed surprised at the ease of folding. Our most surprising question was "could we make a model that would fit the hatch on a private jet? ", the 16in already does.

Travis Pebble made videos of each day of the show. Eric is shown folding the trike at about 6 minutes into this video of day 1:

<http://www.recumbent.tv/home/viewvideo/1755/events/recumbent-cycle-con-day-1.html>

The video also shows the Cruzbike.

There were other new recumbent models at the show too like Greenspeed's Magnum and Anura Quad that were nice to ride, and ICE's and Azub's new trikes. It was a great event to attend!

In a possibly interesting aside; on our first ride into the LA streets after the show we had travelled less than a km before a guy on an upright turned into our street, passed us going the opposite direction, then started YELLING "where can I get one of those?" repeatedly as he turned and chased us down. It turned out he had studied with Chester Kyle. Small world!

Our aim is to get our trikes on the market before end of 2012.

Eric and Alan Ball

www.evolvebikes.com

New Modular Bike by Steve Nurse

After about 5 months of part time work, my new recumbent bike is "as ready as it'll ever be", painted and fairly well run-in as well. I started building the the bike in June to my tried and tested design of front wheel drive, large wheel at the front and small wheel dragging along behind. For this build I lashed out and bought several new components including a Schlumpf Mountain drive (bottom bracket mounted 2 speed epicyclic gearbox) from Greenspeed. Although I've made six or seven of this style of bike now and they've been my main cycle transport for about 5 years, I'm still learning about building them and still dreaming what the next one will be like.

On this bike the corflute which serves as carrying space / visibility flag and aerodynamic aid is very much part of the bike and has been extended downwards by a few centimetres. This makes very little difference to the aerodynamics but increases the volume of the box considerably – enough for it to swallow a carton of beer, hallelujah!

With the Schlumpf mountain drive I was trying to address a problem on all the bikes of this style I've made so far – lack of low gears because I've used a single chainring and 7 or 8 speed cluster. Everything else has worked fine especially on recent versions but when faced with a moderate to steep long hill especially at the end of a long day's riding – well it was never going to make it all the way up. Now I have the Mountain Drive which provides a massive 2.4 times gear reduction and gives me gear inches of about 115 to 17 (46t chainring, 700C wheel and 11-32 cassette).

The bike goes well and I love it but with the mountain drive gear engaged the handling is a bit quirky! With the mountain drive engaged, the gears are really low, and there are massive forces on the chain and some pedal steer. This is because the Schlumpf magnifies the torque and decreases the speed, making the 46 tooth ring seem like a 20 tooth.

A lot of these foibles could be designed out, things will always be better in the next version. I have an old bike of this style to play with now, I mucked around and fixed some bits of it up and plan to try to fit a full set of derailleur gears to this older bike. I also plan to try a Sram dualdrive or its Sturmey Archer equivalent. (ie an 8 speed derailleur and an epicyclic 3 speed 'box all built in to the front hub). Interestingly, with this 3 x 8 installed there would not be such great forces on the chain (or pedal steer) as compared to a Mountain drive, the gear reduction is much less anyway and the reduction happens in the wheel instead of in the bottom bracket.

You can follow latest progress at <http://modularbikes.blogspot.com/>



Painted by Bikes De Ver



After Round the Bay in a Day

A Tale of Two Tilters: Peter Heal & Tim Marquardt

Tilting delta (TD) layout trikes are a relatively new “buzz” among the international recumbent scene and in particular the North American bent forum crowds.

What is a tilting delta anyway? Well, basically the layout is one wheel forward and two behind the rider. The tilting usually is a parallelogram arrangement which allows both back wheels to stay aligned to the front wheel even when the bike is tilted way over in a corner.



Atomic Zombie (non-tilting) Delta Trike



Atomic Zombie Tadpole Trike

Paul Sims of Greenspeed made a proto-type tilting delta back in 1995 and raced it successfully at a Pedal Prix style event. I saw the bike once gathering dust in the Greenspeed factory. Apparently there was no interest for them to start manufacturing them.



Greenspeed Tilter

A few years ago someone from the North American recumbent racing groups hit on this “Tilting Delta” layout as a way to make a very fast racing trike which would beat normal “Tadpole” (two wheels forward, one back) trikes due to the ability to corner like a normal two wheel racing recumbent. This was successful and the rules allowed it. Racers would have one front wheel drive bike with two rear ends so they could quickly change for the various race categories.



**"Black Max Tilting Delta" courtesy
recumbentblog.com**

There has been much discussion and various home built versions have appeared. [Rapto-Bike](#) produced a prototype which was hailed as a marvel by the brand's supporters. It hasn't gone into production yet. There are other successful TD trikes like the [Munzo](#) and [Zox](#). I started thinking about a TD several years ago with the view to using the layout for a faired vehicle, hoping to achieve a much narrower and shorter faired body for long distance rides. My thoughts related to a stable faired vehicle that could be ridden on to the verge in an emergency.

Tim Marquardt started work on a similar vehicle as a development for a Pedal Prix vehicle where the superior cornering ability and narrowed track could have significant advantages.

PETE'S TILTER – “EILEEN”



Pete's trike from the side

It's been a bit of slow progress over at least two years for the build with seemingly major engineering problems to tackle at each stage with the various pivots, tie rods, tilt locks, narrowed bottom brackets, not to mention the fun of setting up a workable front wheel drive.

“Eileen” got her name on the first Canberra Mob ride I took it out on in early 2011. I've spent some time over winter refining the front wheel drive setup including building a new fork and offsetting the hub of the front wheel to better align the chain line. Recently I stripped the frame and added the final braze-ons and fairing mounts.

She's a heavy girl our “Eileen” with a cro-moly frame, rear suspension, tilt lock and dual Sturmey Archer rear drum brakes. Weight of bike without any fairing is approximately 15kg.

This additional weight and the extra drag of three wheel tracks has meant that performance on various rides and commutes hasn't been spectacular. It is slower than a two-wheeler that's for sure. I recently discovered the alignment of the rear wheels was off by about 10mm so this could have been a contributing factor. A hacksaw cut and re-weld of the rear cross beam sorted that out and performance seems to have improved. Some form of adjustment for toe in would be a logical next step.



Steering Lockout Mechanism

I'm eagerly awaiting the frame back from the powder coaters and then will start building the shell in a flexible foam material called LD45 or Zotefoam. Hopefully this will result in a light and durable fairing. Some of the aspects of the TD layout that I have discovered along the way, perhaps best described as “undocumented features” are:

- The tilt lock does not automatically make this the ultimate slow speed hill climbing vehicle.
- Locking the tilt of the rear end at any speed above very slow makes the bikes handling totally different and I have speared off into the scrub a couple of times trying to do this at modest slow speed.

- Two rear wheels tucked in close to the rider makes the rear end skittery on tight fast corners. I think it is something to do with the fact each wheel carries only half the normal load. It is something I have come to expect and allow for now.
- The tilt lock is handy when coming to a stop and parking the bike. No need to find a post or a wall. Starting off from a traffic light in locked state and transitioning to free tilt is tricky. Not sure how that will go when inside a fairing.
- Low and narrow bottom brackets on front wheel drives is difficult to set up. Having your heel hit the derailleur and causing phantom shifts is no fun.



Fairing Mockup

More photos and videos of "Eileen" can be viewed at:

<http://s81.photobucket.com/albums/j211/PoiterH/Petes%20Bikes/The%20HealMobile/>

TIM'S TILTER

I have now made 2 tilting trikes, both equally poorly! My goal was to make a streetable racer utilising my speed bike moulds. V1 worked well enough, but caused too many painful landings in the learning stages for new adopters, who deemed it all too hard, and gave up. This version was made with the help of Paul Sims, who very kindly gave me his initial CAD drawings. He had sold his initial prototype some time previously to a SA resident, and had no plans to produce any more. My V2, made 5 years later, was not made any better, but did have the advantage of a system allowing the rider to force the trike upright, thereby making the initial rides somewhat more successful. SO, a little more about V2...

SA designer Tim Rochford had completed a successful university design process involving a tiltable trike inside a space age type fairing. His design copied the Dutch non parallelogram design, which required much better engineering than he had allowed for. So, as part of the design requirement, Tim made a working prototype, which, you guessed, was essentially unrideable. I bought Tim's prototype, with a view to fixing it (he warned me it did not work!) & add a fairing. If you ever seen my bikes, you'll know I can ride some very unroadworthy vehicles. This thing could NOT be ridden....



Tim's Tilter: Back.....



and Front

So, I did my very best cut & shut on the frame, and re-jigged it to the more easily made parallelogram design, a la Paul Sims. This worked nicely. Cornering was great, and is certainly quicker than a tadpole, with the added advantage of far less tyre wear. I then managed to fashion a tilting tiller, which used rope & pulleys to 'force' the rear end into a vertical orientation when pushed forward, but allowed the tilting to occur when the tiller was lowered. Initial attempts were very crude, but showed the concept had merit. This was essential, as I felt it was imperative that a tilting vehicle had to be able to get back to upright without using ones hands to push it back... Fairings don't allow you to do this!

I then started playing around with frame geometries... Hence the multiple cut & shuts. I tried a vertical fork, which was quite rideable, but a little scary at speed.

I'm now at the point where I will make the race version. This will:

- Have a relatively low seat, but probably more like 30 degrees seat angle, as vision through the feet is a minor issue
- Utilise the tiller to force the rider upright
- Will have a full fairing around the front wheels & rider, but exposed rear wheels
- Use an internal geared front hub, to keep the chainline & foot interference to a minimum.
- Will have flexible rear crossarm, to provide some degree of suspension, rather than a shock, which adds lots of weight & needless complexity.
- Will be AIPP legal, in as much as track width, wheelbase & seat angles are concerned.

Once this is made, I will do some accurate testing to see if there are ACTUAL cornering speed gains to be made. If the speed through corners is better, then I feel development of a fairing made be worthwhile. This being the case, I'd like to produce a Pedal Prix racer which I believe will knock the socks of all previous designs. But, first, I'll need to make a good, lightweight V3 to see if the concept is valid. However, I'm doing Ironman in March. So, this will be a winter 2012 project.

Any questions:

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Tim

Vibration damper for hard shell seats by Paul Worden

Country Australia is not blessed with smooth roads. On the worst of the chipseal a combination of a hard shell seat and rigid seat stays is at best uncomfortable and at worst, will give the rider a headache. This can't be good for your brain!



The Damper Fitted to the bike

Most diamond frame roads bikes (DFs) use carbon fibre seat stays to absorb some of the vibration. It's not quite so much of an issue with DFs unless the riders brains are in an anatomically unusual place, but for recumbent riders having a rigid connection from the rear hub into the small of their back, does cause discomfort. If you use 21mm high pressure tyres it can become so bad you don't want to ride the bike.

Some will say that the answer is rear suspension, but that limits your choice of bike and adds weight. You can solve the vibration problem without adding more than 100 grams of extra weight by fitting a carbon fibre 'spring' between the seat and the seat stays. I call it a vibration damper...or just 'damper.'

The damper takes the sharp edge off road buzz. You do not want too much movement for several reasons. Flex in the seat may cause it to fail. Too much flex at the top mount will reduce the power

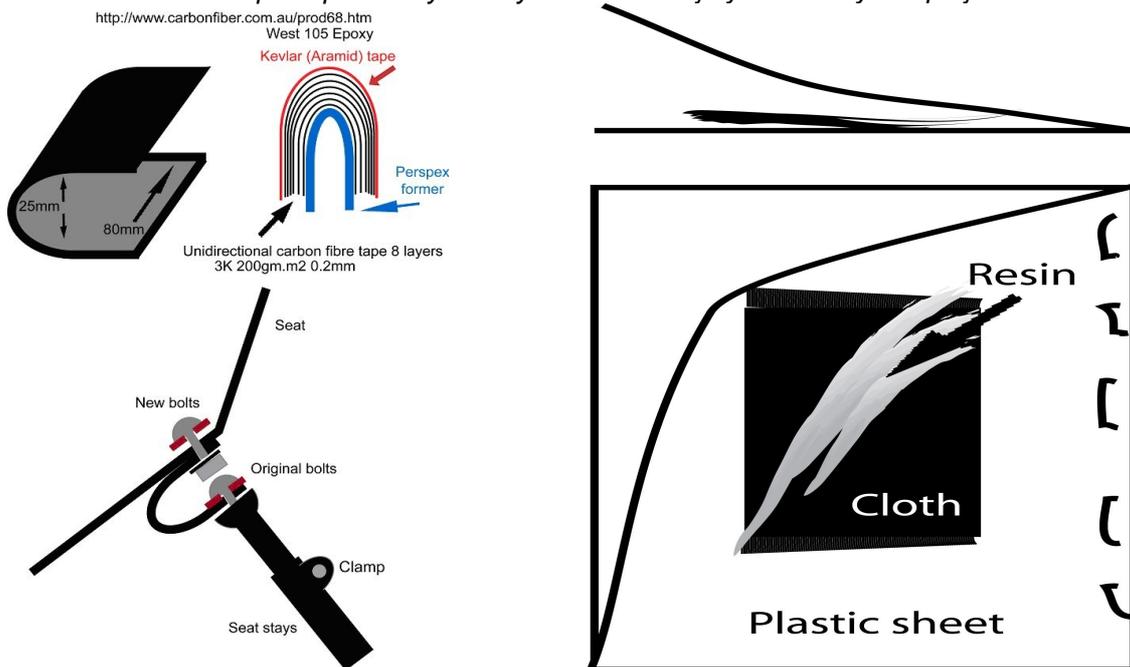
transmitted to the rear wheel. Too much flex causes instability in the seat and rider and affects the bikes handling.



Formed Damper: The electric tape compression leaves undulations on the surface

This solution can be applied to most bents with hardshell seats because the damper is fitted between the seat and the existing seat stays. The seat doesn't have to be hinged at the bottom mount, because the damper is very stiff and only allows about 5mm of movement over the roughest surfaces. This is easily accommodated by the seat and seat mounts but thick rubber washers should be used on the lower seat mount bolts to take strain off the carbon fibre (or fibreglass seat.)

Disclaimer!!!! It's your bike and your seat and your responsibility. To state the obvious, modifications like this void any warranty and messing around with seat stays and seats carries a risk if your work fails. This design has not been subjected to any engineering tests or calculations and I the author do not accept responsibility for any accident or injury caused by this project.



Making it

Before you start you need:

- 1 metre 100mm wide unidirectional tape
http://www.carbonfiber.com.au/category4_1.htm Cost is about \$8 plus postage (at time of writing November 2011.)
- 1 metre of Kevlar from the suppliers above. About \$5. You only use 100mm.
- About half a cup of epoxy resin. Polyester will not do! I used West 105 from the supplier above. You have to buy more than you need but it will keep and is always useful.
- Plastic knife for mixing
- Paper cups, unwaxed

- Nitrile gloves
- 400mm x 200mm of clear plastic for wetting the tape
- A well ventilated warm spot
- Something with a smooth edge to use as a squeegee. Thick plastic is ideal. It should be no more than 50mm wide.

You need a mould or former. I used a scrap piece of Perspex. The Perspex was made malleable with a heat gun and wrapped over a short length of 25mm aluminium tube. You could use shaped foam or aluminium sheet. You just need a shape on which to drape the resin wetted tape. Make the former/mould wider than the finished damper and mount it in such a way that you can wrap tape around it. I placed mine in a vice. Perspex is brittle so don't clamp it too tightly.

I used car polish as a mould release agent, but in practical terms, the resin doesn't seem to stick to the Perspex. You could use commercial mould release or even drape glad wrap over the former.

Lay the clear plastic on a flat surface and fold it so that you have a double 200 x 200 square. It's easier if you staple the fold to the bench.

Cut 8 lengths of tape. If you're a heavy person or nervous cut 10 lengths. Check that the size of each rectangle of carbon fibre is correct and will wrap the former fully. Cut one length of Kevlar. The only reason for the Kevlar is to hold the seat stays to the seat if the damper fails. Carbon fibre has excellent fatigue properties but when it fails it fails 'catastrophically.'

Kevlar is difficult to cut – which is why you're using it. Sharp kitchen scissors will cut it. Stanley knives will cut it. A razor knife will cut it. Kevlar blunts scissors...don't even THINK of heading for the dressmaking shears!

Put on your gloves!

Mix about ½ cup of resin (West 105 is in the proportion of 5:1 resin to order to hardener.) Mix it well and let it sit for a couple of minutes.

Open the flap of clear plastic and lay one or more rectangles of carbon fibre cloth in the centre.

Pour a tablespoon of resin onto the cloth and place the clear plastic over the top. Use the squeegee to spread the resin over and into the cloth. It needs to be evenly wet. You can see the resin and cloth through the clear plastic so squeeze the resin around.

Peel back the top layer of plastic. Remove the wet cloth carefully and don't let it fold in on itself. Drape it over the former and centre it by smoothing it with your fingers.

It doesn't matter where the Kevlar is in the layup, but it will be stronger and look nicer if it's between the carbon fibre layers, not on the outside.

Repeat with more cloth and pouring on more resin as needed.



With all the cloth and Kevlar in place on the former, smooth the layup to remove air and wrinkles, then remove your gloves and put on fresh ones. Wrap electrical tape, sticky side out moderately tightly over the layup, piercing it as you go.

Go away! Leave it to cure overnight. Clean up the mess on the bench! Acetone removes epoxy resin if applied before it's cured. Throw away the plastic squeegee sheet.

Making it pretty

Carbon fibres cured in resin are vicious little beasts. They'll stab you and break off under your skin so be careful.

Pull off the electrical tape.

The cured layup will cut easily with a 32 tooth hacksaw blade. The dust is dangerous so wear a mask when cutting or drilling. Tiny carbon fibres are an irritant to everything and will itch and cause skin problems.

Use the front curved edge as the reference line. Everything should be cut square or parallel to that.

I find the layup quite soft to cut and drill and this may be due to the type of resin used. Always use washers with the bolts. The carbon fibre seat bolts have rubber washers to reduce local stresses.

CAREFULLY mark or measure the holes for the seat bolts. The lower bolts will be at the same distance apart and if you have a bench drill it's the easiest way to get them lined up, by drilling through the top holes into the lower flange.

Fitting

Always loosen all seat mounts when you change the angle. By installing a damper you're raising the seat angle, so you may want to adjust the seat stays lower.

In the case of the Metaphysic High Racer, the original seat stay bolts are installed first and tightened through the top holes in the damper. Then the damper is bolted to the seat using bolts with washers and rubber and either nyloc nuts or plain stainless nuts and loctite. There are rubber washers on the seat side but they're not needed for the upper mount nuts because the carbon fibre damper is compliant and acts to reinforce the seat.

Distance makes the heart grow fonder by Rebecca Edwards.

A few months ago now, getting to be more like six months actually, I made the decision to move from Melbourne to Perth. There was one slight issue with doing this, I didn't have a job fully lined up, but with a few irons in the fire, and the prospect of something happening very soon, I loaded up the trusty van I had been loaned from a friend, and moved most of my belongings.

The trip was a bit of a two fold one for me. First of all, I was moving all the stuff I had in storage, fridge, washing machine, etc, because it was just costing me money, when I could have free storage with a friend in Perth. It also meant I could have a near empty van on the way back, and so could make use of a few weeks of my work holidays, to enjoy some cycling, do some camping, and generally unwind. All in all a good plan, until the van decided that Melbourne to Perth was a long enough trip, and there was no way it was going to be driven back. So much for horse power, I was lumped with a stubborn mule, firing on two cylinders.

Unfortunately while I had the back up plan of putting the van on the back of a truck if needed, I hadn't read the fine print anywhere near enough. As it turns out, having items in the vehicle is a very big no no, and as a result my recumbent would be residing a mere 3,700km away from my current lodgings. Not wanting to be without a cycling means of getting to my place of employment, I purchased a diamond framed "mountain" bike for \$60 from one of those chain department stores.

Yes, as you read this, I can hear the moans and groans already. But in my defence your Honour, I doubted the need to justify purchasing a much better means of transport, given I may only ride this contraption for a month or two, and as such, the purchase price justified the means for which it would be used. Also when it did come to making my interstate move, I could easily palm off the bicycle to an unsuspecting being, who would be most gracious to have craft to call their own, not knowing the evils that lurk in it's frame.

Of course this hasn't all gone to plan, as you all know, and I have been stuck riding this beast for many months now. As annoying as it is, it has allowed me to make many observations, not only about the bike, but also about myself. Please allow me to demonstrate via bullet points.

- I hate riding the bike. It's painful, and I am so glad work is only 5km away.
- No one looks at you strangely when riding a diamond framed bike.
- I would take a thousand weird looks any day to be back on my recumbent.
- I simply don't like riding a diamond framed bike in any way, shape or form.
- The riding position is not enjoyable, and I wonder why so many people put up with it.
- I feel less safe on the DF, than I do my 'bent. It just feels ready to fall over all the time.
- I'm happy to ride my 'bent all day. The DF feels like I'm working in an 18th century factory.
- I have no motivation to get out there and enjoy the ride.

Ok, so most of those are just whiny gripes, but I think the first and last ones are the important ones. Yes, the riding position is painful, something I knew would happen, given previous issues with my back. This pain is the main reason I don't like riding the diamond framed bike, and every time I am on it, I think of my recumbent, and think of how it's only three days to Perth and three days back, I should go and get it.

I also know many of you are wondering why I just don't get it shipped back to me. But I know the good old thing of Murphy's Law will kick in, and while it's on it's way to Melbourne, I'll have got the job and be moving to Perth. So for now I must just endure the ongoing annoyance that is riding a diamond frame bike, and know that it will forever in a day be the last time I ever own one. Sure I may get some weird looks from people when riding a recumbent, but that's a small price to pay. Knowing I have the freedom to not be in pain when I ride, to feel safe when I ride, to enjoy riding regardless of the weather, knowing I can just keep going and going, is worth every wide mouthed stare.

As I write this I want to go for a ride, but knowing what bike is in my shed has me disinterested in a heart beat. Riding a bike is something to enjoy and look forward to, something I hadn't done for years, until I bought a recumbent. Since then I've ridden thousands of kilometres, all over this country. But at the moment, I'm back to being the slacker who has a diamond framed bike out in the shed somewhere. It's said that if you love something, to set it free. Well I may not have set my recumbent free, as I do have the keys to the shed it's locked in, but distance has certainly made my heart grow fonder.

Coming Events

The OzHpv Rally and AGM will be held within a few weeks from December 2-4, See details elsewhere in this issue.

Dates for the 2012 and 2013 World Human Powered Vehicle Championships have been set and are listed on the newly reconstituted [WHPVA website](#). The 2012 event will be on the 2nd weekend in June in England and the 2013 event will be in Germany.

Spezi in Germany is a long-running recumbent and specialist bike show and in 2012 will be held on 28 and 29 April, more details are at <http://www.spezialradmesse.de/index.php?welcome>

Joining Spezi as an international specialist bike show is the 2nd American Recumbent Cycle Conference which will be held late in October next year in California. See <http://recumbencyclecon.blogspot.com/>

Chopper 4 by Don Nightingale

Introduction

Over the past few years, on and off, when I can afford it, I have been trying out an idea to make recumbents a bit better looking. All that speed is great, but do you look cool?

Mission

As you read through these evolutions, bear in mind the kind of bike we're trying to emulate. It's not sensible. It's big, bad, beautiful, emotive and frankly a little impractical. Like this Orange Country Choppers bike:



Sure, it's a gorgeous thing for a guy who sometimes wants to ride a piece of art but would you commute to work on it? And the turning circle...

It just happens that the recumbent seating position sort of fits over this shape. If a person could build a recumbent that rode well and looked a bit like this - then make it light, slippery and therefore fast - they should have a winner. Recumbent bikes could enter a marvellous new world with a lot of cool people riding them for totally the wrong reasons. This would be excellent.

V1 & V2 - 20x4.25 in Rear Wheel

Making the bike isn't that easy. We had the first complete bike made in 2009 or so. It was sprung on the HPV crowd at the Stromlo track in the ACT:



It did look the part but wasn't quite what I'd intended, more the later, racing model. Bit too low, bit too short for me, and of course being a prototype it was heavy. That middle stepout cog kept derailing, the front shifter never worked properly, and you had to remove the calliper to get the front wheel off. Worst of all, the forks rake/trail geometry hadn't been considered so the forks tended to flop to the side and the steering felt twitchy.

But these things were mostly addressed in time, and having done the Sydney Spring Cycle and the Gong ride twice, the V1 and the aluminium V2 certainly have their admirers and smug test pilots.



See <http://www.youtube.com/antipathyincarnate#p/a/u/2/6ZN4fnAL1Ok>

I thought the bikes were tremendous, but I thought I still not quite the heroic proportions of the real thing just yet.

The 20 in rims were mostly to simplify construction. The chopperus.com website supplies the 20 and 24 in tyres, and they don't sell the 5 ½ in wide rear rim that would look right with the 24in wheel, so we went with the 20in to start with. This all changed when, after a couple of years sufficiently encouraged by progress so far, we made a custom 24x5.5 in wide rear rim.

V3: 24 x 5.5 in Rear

The 24 inch tyre ends up about the same look as a motorcycle wheel, almost. Once the wheel was made up, we did a home-made frame out of muffler pipe to see how it would all turn out. It didn't look too far from the desired end result.

So for comparison,



Bike with 20" rear wheel



Bike with 24" rear wheel

The friends are polarised as to whether the lower bike looks better anyway. The new bike also ended up technically somewhat different to the first two.

- For a start, the triple clamps weren't MTB Fox 40's, but straight off a biggish motorbike. The forks were now 45ml.
- We sorted the trail problem with similar tips to the V2 bike.
- Most of all we made a new tumbler for the stepout sprocket.
 - This allows you to put on 4 x whatever 110/80 Shimano chain rings you require with a view to twin central derailleurs.
 - It also stops the chain falling off, as it isn't under so much stress.
 - And those chain rings are quite light.
 - Some time ago picked up a twin disk front hub & brakes from Choppersus.com before it became clear they weren't in it for weight reduction. HPV members helped with the front wheel hub, which is now 8 inches wide.

The V3 bike weighed a lot, but it did demonstrate how this kind of bike would ride. It went pretty well and certainly dwarfed the first two bikes. Therefore with it showing promise, we thought we should build a proper frame one again.

V4: 24 x 5.5 in Rear

We went for the new bike in about June this year. Here it is in the raw:



The bike had 45 degree rake and was therefore long. It had various improvements:

- New tips with Alu fork tubes



- Same twin cable front disks but with fancy dual cable lever



- Adjustable chain ring mount



- Big front chain idler arm
- Machined barrel chain rings running on a hollow 40mm axle tube



- Middle derailleurs
- Aero leading frame tubes

This isn't quite where it's at now. I gave it a coat of paint and decided it needed a better way to cure the trail problem. We are adjusting by modifying the rake in the next triple clamps as per the silver Orange County chopper above. Note the steering tube is at a different angle to the forks. Hence the frame head tube is now a bit steeper, and until the new forks are finished the bike is looking a bit conservative. *(Don thinks it's conservative, I don't! Ed)*



Summary

We still have a way to go, but I finally have a bike close to the one I wanted to buy in the first place (though in aluminium) and it finally, after endless mistakes, works quite well. People have always liked them, they get strangers instantly arguing over which chopper is better.

Any subsequent bikes would inherit the good stuff, like the angled triple clamps, new front axle and the stepout sprocket with the chain rings.

It's been a big project, and I would like to thank those HPV'ers who've helped so far. There's still an awful lot to do though. The spacer to widen the rear wheel will be in carbon, and hopefully sport jewellery such as a fuel tank, a nice head light, carbon mudguard and so on.

We haven't made a company and haven't really tried to sell them yet.

I will report next time on the status of the new front wheel/hub. That's a bit trick. Anyone wants to be involved just drop us a line.

Don

(Don is threatening to bring a bike to the Myrtleford rally Ed.)

Seen at Go-Bike by Steve Nurse

Go-Bike is the bike trade fair which takes place around the start / finish of the Melbourne Round the Bay in a Day ride. The exhibition runs for 3 days but the Sunday of the event is the day of all the Round the Bay rides. Usually I mosey / pootle or tootle in to the show to see who's around and what is on show. Not disappointed this year, I ran into several interesting people and machines, here are the photos.



Bailed up Paul Prentice and had a chat about his 80's model Roulandt recumbent



Ben Goodall explains Trisled's new front wheel drive load carrying trike



A knitted bike cover, no explanation is possible!

Notice of Annual General Meeting of OzHPV Incorporated for 2011, to be held at Myrtleford Hotel Motel, 67 Standish St, Myrtleford on 3 December 2011 at 8.00pm.

Business:

1. Confirm the minutes of the Annual General Meeting held on 12 December 2010. See HUFF December 2010.

2. Receive and approve accounts and executive reports for financial year 2010 - 2011

3. Election of office-bearers. All executive positions ((a) to (d) below) fall vacant at the end of the meeting. One person may not hold the same position on the executive for more than two years in succession.

- | | | |
|----------------------|---------------|---|
| (a) President | Steve Nurse | Eligible for re-election |
| (b) Secretary | Peter Heal | Not eligible for re-election as secretary, but may be elected to any other position on the executive. |
| (c) Treasurer | Tim Marquardt | Tim is not renominating. |
| (d) Executive Member | Eric Ball | Eligible for re-election. |

The following positions are not on the executive, and the two-year limit does not apply to them.

- | | | |
|--------------------|---------------------------------|----------------------|
| (e) Public Officer | Andrew Stewart | Must be ACT resident |
| (f) HUFF editor(s) | Steve Nurse
George Durbridge | |
| (g) Webmaster | Peter Heal | |

Please send any nominations by email to Peter Heal at by 26 November, at secretary@ozhpv.org.au

If you wish to lodge a proxy, you can do so by email to Peter Heal, no later than 1 December 2011, at the same email address, identifying your proxy (by name, by appointing the chairman of the meeting etc) and saying whether you direct your proxy how to vote on any of the resolutions.

OzHpv Rally Weekend, Myrtleford Area, December 2-4, 2011.



The OzHpv committee are pleased to invite OzHpv members, and all those interested in recumbents or gentle cycle touring to **The 2011 OzHpv Rally Weekend**, to be held in the Myrtleford Area from December 2-4, 2011. The weekend is a chance for riders to meet, socialise and ride together in Victoria's picturesque Ovens Valley. Saturday night will include the 2011 OzHpv Annual General Meeting with free refreshments & entertainment. We recommend staying at the Myrtleford Caravan Park, Lewis Avenue Myrtleford, phone 57521598, <http://www.alpineshire.vic.gov.au/myrtlefordcp/>

The Myrtleford area offers excellent opportunities for cyclists of all abilities and inclinations including car-free gentle gradient rail trails and more challenging hilly road routes. Other attractions in the area include fresh produce, fishing, swimming, restaurants, and wineries.

Accommodation and food are at the rider's expense. There is no fee for the rally, however we encourage participants to be current or joining OzHpv members (\$25.00 fee, see <http://www.ozhvp.org.au/membership/membership.html>)

Maps relating to the rides can be found at http://www.murraytomountains.com.au/Pages/Rail_Trail.aspx

Program for Friday, December 2

Meet at Ovens Happy Valley Hotel, 4994 Great Alpine Road, Ovens
6:30 pm, 6k from Myrtleford, <http://www.ovenshappyvalleyhotel.com.au/>
for dinner and or drinks. Twilight ride after dinner with distance and destination to be confirmed.

Saturday December 3

Meet corner Myrtle & Standish Sts Myrtleford,

Early ride, meet 9am: Porepunkah to Bright and Wandilagong, return to Porepunkah (50k) Ends midday Porepunkah cnr Martley & Nicholson Sts.

Late Ride, meet 10am to Porepunkah, 25k
Ends midday Porepunkah cnr Martley & Nicholson Sts.

2pm return to Myrtleford 25k.

7pm: Meet at Myrtleford Hotel Motel, 67 Standish St for Ozhvp AGM 8pm, trivia night begins 9pm.

Sunday December 4

Meet corner Myrtle & Standish Sts Myrtleford, 10am
Ride to Lake Buffalo for swimming, bushwalking, barbecue and Lunch, approx 20k we picnic on the Western/ Lake Buffalo Rd. Side of the lake. Note that there are no shops at lake Buffalo, strictly bring your own. A map of the lake is at <http://www.g-mwater.com.au/water-resources/storages/lakebuffalo>

Rally ends after return to Myrtleford

Look forward to seeing you there! ***If you're coming, please help us to organise the rally by emailing president@ozhvp.org.au with the names and mobile numbers of all adults attending by November 20, 2011. Thanks and Kind Regards Stephen Nurse , OzHpv President.***