

# HUFF



September 1997

Issue 02, Volume 01

---

## IN THIS ISSUE....

- [Letter from the Editor](#)
- [Testing the limits on a recumbent.....](#)
- [Converting a MTB into a recumbent](#)
- [In Focus - The Queensland HPV Enthusiasts](#)
- [HPVs and the Internet \(a beginners guide\)](#)
- [Human Powered Vehicles CD 1997](#)
- [Upcoming Events](#)

---

## LETTER FROM THE EDITOR

In the process of editing the first issue of HUFF I was hoping that I would be able to let people know more about the background and the group that makes up OzHPV at the moment. Due to time constraints this will have to wait until the next issue in November, which will be distributed soon after the HPV challenge.

It's possible that you were somewhat bemused at the appearance of the first issue in your mailbox. The mailing list we used was a consolidation of two mailing lists from two HPV challenges. We felt that in order to prove to people that OzHPV are serious about HPVs in Australia that we should provide a total of three newsletters to people on that list. We need you as members for OzHPV to work, but we also want to prove to you that we are serious about our work.

This is the second of three newsletters that you will receive. If you join as a member (\$15 per year for an individual membership) then you will continue to receive further issues after the next issue in November.

In this issue I have included a copy of the constitution for OzHPV. One of the conditions of OzHPV membership is the requirements to abide by the conditions of the constitution, however we realised that few people outside of the OzHPV committee knew what the content of the constitution was.

Enjoy this issue, and please think about joining OzHPV if you have not already.

Best regards,

Karl Nissen

## TESTING THE LIMITS ON A RECUMBENT.....

\* copyright [Ian Humphries](#) 1997

Recently the Internet recumbent discussion list has had a few stories of recumbent riders crashing, for various reasons. A few have involved feet slipping from ordinary (non-clipless) pedals, and the consensus is that clipless pedals (which hold the feet to the pedal) are almost an essential safety item for these designs, especially if the SWB has straight bar USS (underseat steering). It is easier to stop your feet dropping and your body rotating forward with ASS (above seat steering) or USS with upright bar-ends or side-sticks.

Other riders have also been surprised at how quickly the front wheel on SWBs can "let go" in wet, or slippery conditions, while some riders have described poor steering traction on LWBs on similarly slippery gravel or sand.

It seems that some recumbent designs behave quite differently in slippery conditions compared to the standard diamond frame upright bikes, or even to other recumbents. Of course there is an amazing number of different recumbent designs out there, though I think the less predictable handling recumbent designs will not last very long.

Bear in mind that experience on any one design may make up for any perceived flaws and is more important than any hypothetical discussion.

I will first consider the reasons for these sudden losses of front wheel traction. After some "tricky" moments on my first SWB configuration and after having two crashes on a wet road circuit while racing a fast lightweight 20/16 SWB design last November at the HPV Challenge in Canberra,

I came to some dramatic realisations. My custom made SWB was somewhat of a nightmare to ride in wet or slippery conditions. It was just plain scary really, and when I needed to grab some brakes in the middle of a roundabout one wet day and felt the front wheel slip I decided some "cro-moly surgery" was in order. My SWB was ASS, with a seat angle of about 40 degrees. It had a wheelbase of 980 mm. Measured weight distribution was 35% front, 65% rear. This was not good. I didn't ever crash but I could feel that the front wheel was tending to slip and the bike was tending to "wheelie" on steep hills. It was controllable but I had to be ultra-careful. As for the lightweight 20/16 SWB, I think that the tyres it wore were just not suitable for riding in the wet. Slick 25 mm diameter tyres at 100 psi just don't have enough grip.



My solution was to move the rear wheel back 150 mm, on my own bike. The wheelbase grew to 1135 mm, but, more importantly, the weight distribution is now 44% front, 56% rear. If I lean forward I can achieve 52% front, 48% rear. I discovered this technique recently and since I started leaning forward in sharp corners I have become more relaxed about riding in the wet (but I am still cautious!). The longer wheelbase has also improved high speed stability, but

the main benefit I think was improving the weight distribution! A large amount of rain in Sydney recently with slick and slippery roads has allowed me further evaluation time.



My recumbent has handled it very well and its about time I communicated some of the riding and commuting experience I've gained over the last few months.

My advice and conclusions are as follows:

Firstly, take it easy where the road is wet or sandy. (Obvious!)

In wet and/or sandy conditions lean forward in the seat to give the front wheel more traction. Also probably good advice in criteriums to allow faster, safer cornering, but very difficult if the seat angle

is less than 40 degrees. (Moving your weight forward is just too hard to do)

3. Measure how much weight is on each wheel when you are sitting on the bike. Then try leaning forward and back and see how this affects the weight distribution. This helps to understand the dynamics of the bike. Moving your upper body forward and back is probably easier to achieve with ASS.
4. In the wet you must steer more and lean less, just as you do on a MTB in slippery conditions, and moving your back off the seat allows you to do this.
5. Don't pedal through corners in the wet, to achieve the smoothest possible line and balance.
6. If you race and push the limits, you will probably find them.
7. Never trust anyone surrounded by 1000 kg of steel.

My SWB bike is now at the stage where it's handling rivals that of my MTB in wet and sandy conditions. They are on a par, but it doesn't stop me being extra careful. Bikes are bikes (if they are properly designed) - they have two wheels and you must observe the laws of physics. I have noticed that in some corners I am just going way faster on my 'bent, but it doesn't feel faster. Ride safely!

Finally, in conclusion I must say that in no respect is my (newest configuration) recumbent less safe than my MTB upright - but of course it's safety is many times superior in other ways. I really am a recumbent convert now, but it took time, quite a few kilometres and a bit of "cro-moly surgery" !

## CONVERTING A MTB INTO A RECUMBENT

By [Wayne Kotzur](#) (a.k.a the Bikecologist)

One of the problems in owning an HPV is the currently small market, low production runs and customised parts which tends to make new machines expensive. The cost of ownership can be a barrier to those potential owners who would be interested in HPVs, but may not have the resources (often several thousands of dollars) to purchase a new machine.

It is possible to purchase second hand HPVs from time to time but these are rare in Australia as most recumbents are the hard-won treasures of their owners. These usually have been personally imported or custom-built and so tend to be sold at a premium. However, with the ready and cheap supply of mountain bikes, I have had increasing demand for a professional sleigh-of-hand conversion to convert a standard mass production mountain bike into a recumbent bike. Steel or chro-moly mountain bikes are ideal candidates for conversions because:

The frames can be cut and brazed/welded without heat-treatment,

1. Running gear is usually robust , practical and can be completely reused,
2. The rear wheel can be retained, and
3. Most unicrown forks can be cut to use a 20 inch (BMX size) tyre with a reduced fork rake.

It is possible to create a short ( around 1000 mm) or long wheelbase machine. For above-knee steering the straight bars can be cut down and used as is, or else fitted with extensions or alloy roadster-type bars. Below-seat steering will require more components (second set of head bearings, two universal joints and a connecting rod) but can use the mountain bike bars and extensions. These add about \$110 compared to that of above- knee steering model. Long wheelbase machines will need modified long reach stems or dragster style bars.

The unavoidable modifications involve rebuilding or replacing the front wheel, the fitting of a longer and/or alternate chain path (nylon tubing and/or chain pulleys) and modifications to the frame. Very little of the bike is lost. The 26 inch rear wheel can be outfitted for narrow racing (26x1-1.25 inches), for commuting (1.5 inches) or with wider tyres for touring and bush tracks, as can the front wheel. The lightest seat would be a moulded fibreglass/carbon fibre, but for the budget user a mesh seat is cooler, more comfortable and cheaper. By making the tubular seat frame part of the main frame the bike gains an increased stiffness and a better location for mid- and rear- racks. I'm in favour of a moderate seat angle with a perch height that is low enough to suit most riders (50-55 cm) - many European recumbents seem to have quite high seats that make frequent traffic stops awkward.

Generally, the resulting fully powder-coated and reassembled recumbent will cost about \$900-\$1000, and will be indistinguishable from a new machine with a little component wear. I also supply budget recumbents made for new wholesale bikes which are a little more expensive but have all-new componentry.

[Wayne Kotzur](#) can also be contacted at (02) 6236-8265 ph/fax for further information.

## IN FOCUS - THE QUEENSLAND HPV ENTHUSIASTS

An interview with Ray Hembrow (RH) of the [Queensland HPV enthusiasts group](#).

HUFF: What sort of HPV activities are happening in Brisbane?

RH: The 'Qld HPV Enthusiasts' have been around for about 2-3 years as a group. At this time we are organising a ride activity approx quarterly as a generally social style event with lowish distances and a gathering afterwards; either a BBQ, lunch or coffee shop. The general thrust of the group is to enable some networking to happen. I also liaise with the Pedal Prix organisation based on the Gold Coast and usually help out in some way with the event behind the scenes. Rides have been organised around major cycling events in Brisbane like the MS fundraiser and BiQ's Bikeweek ride. We also have been organising 'our own' rides around these activities. One ride was a rally style ride where riders collected clues. Of late someone from the group has been away to the 'Challenge' in Canberra. In the past a couple of Qld Pedal Prix teams have been to the 'Nationals' in Adelaide and put in a good effort with first places in class and overall one year. Representation in Adelaide has been limited by funding from sponsors of the individual schools as opposed to lack of enthusiasm from the student teams.

HUFF: Who's doing what (frame building, ride organisation, newsletter....)?

RH: We have about 3-4 home builders in the group at various stages of design and construction. Generally the rides calendar has been a couple of heads together setting some dates and getting someone to host and/or organise a route and venue after. I have been putting a single sheet newsletter together to send out, mainly containing any calendar updates and ride reports from previous events as well as snippets re other groups such as OzHPV. Other publicity has been small and that is an area for improvement in the near future.

HPV clubs or special interest groups most of my contacts come via Ian at Greenspeed ( I enable people to test ride my trike here locally) or through BiQ. A moulteners group exists in Brisbane and we send our newsletter to their convenor.

HUFF: What is the approximate number of members, and what sort of HPVs are being ridden?

RH: To date we have 2 stock Greenspeed touring trikes, 1 sports tourer (supplied as a kit), 1 Greenspeed trike (supplied as a tube-set), a new speedy (not viewed yet), a Peer Gynt style LWB, Roulant LWB, a home design/prof constructed SWB-ASS bike, Doug Young's 'Ocelot' 4 limb bike (of Beyond 2000 fame), 2 SWB-USS Visions, 2 homebuilt SWB bikes, a Linear LWB and a genuine Peer Gynt. We get 4-5 regularly on rides as a group. Numbers are 35 mail out and 8 emails at present.

HUFF: Contact details for anyone in the region who may be interested in finding out more?

RH: Contact Ray Hembrow, 20 Murchison St Carina 4152, phone (07) 3843-2729 [after 6.00pm]  
E-Mail on request.

# HPVS AND THE INTERNET (A BEGINNERS GUIDE)

by Karl Nissen

Firstly what is the Internet? The Internet is essentially a global network similar in extent to the phone system. With the correct protocol (computer network language) it is possible to connect to any computer on the Internet, in the same way that you can contact someone anywhere in the world on a telephone, assuming that:

1. You and they are connected on the same telephone network
2. You both speak the same language (protocol).

The Internet allows access to computers that may be half way around the world, and like the phone system, can also give you access to people who use those computers.

In order to be able to communicate with other users the computers on the Internet need to be able to understand each other in order that information can be shared. There are a number of standard languages, or protocols that computers on the Internet use to achieve this, and the most useful of these are:

1. Electronic mail (or email)
2. World Wide Web

Electronic mail is probably the simplest of the two languages. Using an electronic mail program you can write a message addressed to another person on the Internet, This message is then relayed to the computer that this person uses. They will use a similar electronic mail program to read the message you sent and send a reply if needed. One of the advantages that electronic mail offers is that the message can be half way around the world in a number of hours. Other advantages are that the cost of sending the message is cheap (considerably less than postal rates or international telephone calls), and that the recipient of the message can read the message in his or her own time. There is no need to calculate time zones to ensure that the recipient needs to get out of bed at 02:00 am to answer the phone.

The World Wide Web (often abbreviated to WWW) is the newest computer dialect, and can be thought of as a large number of linked electronic documents. It is possible to access a document on one computer, which may have references or links to documents stored on other computers. As the Internet is global these documents can be stored on computers in different countries.

Enough of the lecture, now for something a little more practical.

## Electronic mail and mailing lists

A mailing list is essentially an electronic forum based on electronic mail that discusses topics of a particular interest. Our interest here is HPVs, and there is an [HPV mailing list](#) run under the auspices of the IHPVA. One of the nice features of this list is that you do not have to be a member of the IHPVA to make use of the mailing list.

To subscribe you need an Internet mail account on your local machine (usually as part of your computer system at work, or via dial in access through and Internet Service Provider (ISP) from your home). Once you have an Internet mail account you subscribe to the HPV mailing list by sending the following message to [majordomo@ihpva.org](mailto:majordomo@ihpva.org). (majordomo is an automated mailing list administrator).

subscribe hpv <your electronic mail address>

You will (after a short interval) receive an electronic mail message from the mail list administrator on what other lists are available (such as the HPV-forsale mailing list) and information on how to unsubscribe yourself from the mailing list if you want. Save a copy of this in a safe place as you may need this information later. Soon after this you will start to articles from other members on the list. Current activity on the HPV mailing list is about 30 messages a day although a single message compilation called a "digest" is also available.

It is a good idea to read the list messages for a couple of days to get an idea of the tone and content before you post your first message. This is optional and is only a matter of courtesy (or "Netiquette" in Internet speak) to other list users.

As with any special interest group the HPV mailing list is an ideal place to swap ideas and knowledge on the subject of HPVs. All of the list members have had some experience with HPVs, a large number have technical backgrounds, or are experimenting with frames and fairings.

## The World Wide Web

The World Wide Web is an elegant and easy to use access method for retrieving information off the Internet. One of the nice features with the World Wide Web is that it integrates a number of features into one easy to use "point and click" interface. If you have had limited exposure to the Internet this is the best way to start to learn about what the Internet has to offer.

Again the best starting place for HPV related information is probably the IHPVA web site. This contains a number of sections dealing with construction, sources of parts, contacts, and links other sites. In order to access the site you need to know the Uniform Resource Locator (or URL), which describes the computer, the document name and the type of document on that computer that you want to read. You may have heard the term "home page" used in the media, this describes the URL at the top of the WWW document set on a computer, and it is normally the first document that you would read when connecting to a WWW site.

For the IHPVA group the home page is:

<http://www.ihpva.org>

A very small selection of other sites that contain HPV information are:

<http://www.nexus.edu.au/TeachStud/aipp> This contains information on the upcoming Pedal Prix at Murray Bridge in South Australia.

<http://members.aol.com/buildhpv/bike.html> is the home page of Gaerlan Cycles in the United States, who specialise in parts for HPVs (20 inch wheels, forks, etc).

<http://www.recumbents.com> is the home page of the Recumbent Bicycle and Human Powered Vehicle Center. There are a number of links here to other sites that carry HPV information.

<http://www.bikeroute.com> has an extensive list of recumbent manufacturers.

<http://carol.fwi.uva.nl/~wijkstra/Fiets/bike.html> has a collection of HPV bikes and trikes built by various Dutch manufacturers

<http://sunsite.anu.edu.au/community/ozhpv> is the OzHPV website.

More information can be located through World Wide Web search indexes if you wish. There are a number of these available, I use AltaVista at:

<http://www.altavista.yellowpages.com.au>

A couple of searches from this search index returns 5051 matches on the word "recumbent" and 10,217 matches on "HPV" as possible starting points for more documents.

And remember that while the Internet can be a useful tool in locating information around the world, there is another world just outside your door, so get outside and go for a ride from time to time as well.....

## **Human Powered Vehicles CD 1997**

by Karl Nissen

Christian Meyer, Oliver Zechlin and Carsten Zerbst have put together a CD-ROM of HPV information which is now available in Australia. from Ian Sims of Greenspeed. I received my copy last week and have been working my way through an incredible amount of content.

This CD-ROM contains information and pictures on all sorts of HPVs, which are grouped into four categories - land, water, air and rail, and provide information on both home building efforts and commercial sources. Some of the content has been sourced from the World Wide Web, and may be familiar to those with Internet access, but much of the available information was new to me. In addition to information on HPVs, both commercial and homebuilt there is information on shops and components. There is also a collection of documentation that includes a small number of HPV plans.

In the few hours that I have had to look at the collection I've seen some very interesting and diverse work on HPVs. The entries are generally a fair representation of current HPV activities globally, although some of the information is only presented in German. I felt that the scope and depth of the machinery presented more than makes up for the occasional lack of an English translation.

To run the CD-ROM you will need a standard PC or Macintosh computer with a CD-ROM drive and a Web browser such as Netscape's Navigator or Microsoft's Internet Explorer to view the images and documents. Suitable software is provided on the CD-ROM if you don't happen to have these installed on your computer.

Our rating - Highly recommended.

The [CD-ROM](#) is available from [Greenspeed](#) for \$35 plus \$5 postage. Greenspeed can be contacted at:

69 Mountain Gate Drive, Ferntree Gully, VIC 3165

Tel: (03) 9758 5541 Fax: (03) 9752 4115

E-mail: [greenshp@ozemail.com.au](mailto:greenshp@ozemail.com.au)

## UPCOMING EVENTS

Tour De Festival, the Tuggeranong Carnival of Cycling.  
(Canberra) Sunday 30 November, 9.00 am to 3.00 pm. Oz HPV will be running a Come'n Try session and a criterium during the afternoon, probably also in the Italian Pursuit.

Contact Paul Segal 02 6286 4092

Pedal Power ACT Achievement Ride Series # 5 200 km,  
Sunday, 07-December-1997, Bungendore to Goulburn and return. OzHPV will be there.

Contact [Pedal Power](#) for details.

Sydney Recumbent Riders meeting Saturday 20-December  
in Centennial Park.

Contact [IanH@nch.edu.au](mailto:IanH@nch.edu.au), 02-9845-3988 (w)