HUFF

OzHPV inc.

March-April 2005 - Volume 8 - Issue 2

From the editor

We hope to keep you well informed so there are quite a few pieces of material attached to this HUFF this time.

You may notice the *Crafar Couch Crazy Commuters Race* is actually held in New Zealand but I thought I'd include this as some may just be keen to participate. Have a look at the prize money and this may entice some Aussies.

Also it's not too long till the biggest OzHPV event of the year will occur at Broadford so please assist where you can by putting up the posters in your area/local bike shops and spread the word.

Some may not know that we have a (hopefully) not so public internet mailing list (**http://sports.groups.yahoo.com/group/ozhpv/**) for OzHPV members. You'll find this a great way to keep up to date with what's happening HPV wise and all are welcome to participate in discussions.

Timothy Smith
tas@ozhpv.org.au

Canberra Mob Track racing

The Canberra Mob had a track racing afternoon at Queanbeyan 13th February.

If you'd like to view some photos - check these out Atholl's - **http://tinyurl.com/5nv6c** and David Cox's - **http://homepage.mac.com/davidcox1/PhotoAlbum1.html**

Peter Heal
heal@cyberone.com.au

Tripping south of Adelaide/ sorting out gearing and gear

(or three old geezers and their trikes)

Got a phone call the other day from Bob Braunsthal, 'Feel like a ride to Willunga?'. The idea was to camp overnight and return the following day.

Bob and Mick both had the new folding Greenspeed GT3's, I had my home-made trike, and none of us had ever tried them loaded up with camping gear. Weather forecast was good, for January in Adelaide mid to high twenties isn't too bad.

From my place near the Adelaide Airport to Willunga is about 60 kms, from Bob and Mick's area another 30 kms along the Torrens River Linear Park. Our bike path system meant that we should not have to ride on the roads very much.

After Bob and Mick arrived, had the usual tea of coffee etc, we headed off along the Torrens Linear Park* *to Tapleys Hill Road, followed the bike path past the airport, doing a slalom through the broken glass. The hoons love to throw their bottles and rubbish out of their cars onto this path from the road. We crossed over this road at Glenelg and followed the Sturt Creek path to O'Halloran Hill. There is only a short distance along the creek where there is no bike path, through quiet back streets in Novar Gardens, and near Morphettville Racecourse.

Mick Valentine near Noarlunga

Head Up Feet First is the Newsletter of OzHPV Incorporated. The ever developing Web site can be found at http://www.ozhpv.org.au/index.htm.
If you want to contact OzHPV by mail the address is OzHPV Inc, PO Box 189 HRMC NSW 2310

So far the riding was through the suburbs, flat terrain, the only obstacles are the mazes over the railway lines in a couple of places. At Darlington, it changes. Onto the Veloway and head up the hills. The Veloway follows the southern freeway, but follows the contours of the hills. The freeway has been levelled off a bit with cuttings and so on, but not the Veloway! We were either looking up to the freeway, or looking down at the traffic. Hard work.

Leaving the Veloway further south, we followed the rail trail to McLaren Vale, much gentler hills for three old geezers and their trikes. Onto the road through McLaren Vale and called it quits at the McLaren Vale pub. The first two beers didn't touch the sides.

We camped at the Caravan Park at McLaren Vale overnight, very pleasant and as usual the trikes attracted quite a bit of interest.

Tapleys Hill Road

Next morning we headed back, pleasant riding in the cool of the morning.

We changed the return trip to go through Morphett Vale and Reynella along the rail trail, bitumen in places, packed gravel in others. Plenty of trees for cover. Recommended riding.

The last few kilometres through the hills were back on the Veloway. Down O'Halloran hill that took quite a while going up in granny gear at 4 to 5 kph, was over ten times as fast going down. Bob managed around 70 kph going down the winding path with no stability problems. He is rapt with his GT3 as is Mick. He is also very pleased with his Arkel pannier bags which he says are ideal for touring. Back to the flats after Darlington and back home. Only one puncture, on the Tapleys Hill bike path close to home and that was a pinch flat.

This trip showed us the shortcomings of our gearing. Bob is well set up with a Rohloff and a Schlumpf mountain drive with a range of 8 to 112 inches and had no problems whatsoever, Mick's standard system with the Shimano Capreo gearset would be fine in normal circumstances, but for steep inclines and with full camping gear, 19 inches was not low enough.

He has since installed a Schlumpf mountain drive and has a Shimano 8-speed rear hub on order which will lower his bottom gear to around 12 inches, solving the problem of Adelaide's steeper inclines.

I have also had to adjust my gearing for such inclines taking camping gear. I have resorted to a front chainwheel of 24 teeth and a rear sprocket of 34 teeth. I'm not sure how many inches this represents, but it is clearly fairly low and far more satisfactory than my previous set-up. I have also been busy with the hacksaw and welder, replacing the 26 inch rear wheel with a 20 inch wheel, with a dramatic improvement in stability.

Since this trip Bob and Mick have been south again over some of the same tracks, and Mick is much happier with his new gearing set-up and has found his Bunyip panniers better than his Gearsack motorbike panniers.

There's no substitute for the right gear and gearing for the occasion.

Peter Moller - **pmol2582@bigpond.net.au**

Bob and Another Flat tyre

Packing a GT3

Bob Mick and Peter near McLaren Vale

Modular Bike Developments

Over recent weeks I have been working on 2 variations of my modular bike, first seen in Huff in issue 19, December 2000 (**www.ozhpv.org.au/huff/docs/huff19.pdf**) One is eminently practical and the second is quite the opposite!

The Shopping Bike.

My bike is designed to have additional parts attached to the front and back. All the parts are made up of mild steel tube, and so far I've made a rack and a boom for a recumbent bottom bracket to attach to the basic bike. The Shopper is a new type – two tubes support a large recycling tub which allows large loads to be carried and packed and unpacked easily.

The Back to Back Tandem

The modular bike is designed to be built up as a front wheel drive recumbent. So 2 of these could be built up as a back to back tandem. Why not? I had been thinking about this for a while, and Damian's article in January Huff provided much useful information on how to build it.

Just to try things out, I put 2 straight tubes between the existing single bike frames to make the tandem frame. No stoker drive chain or seat or handlebars, but I put in a linkage from the top of the front fork to the opposite side of the rear fork to make an all-wheel-steering-bike. After several tries with this I decided to quit the all wheel steering idea while I was still ahead. I could ride the bike and the steering worked to make a "small" turning circle (5m or so is small) but tends to be unstable. My last test ride as all wheel steer had the back wheel oscillating wildly through 15 or 20 degrees, much to the amusement of my neighbours! The bike is now conventionally steered and cannot u-turn in the width of our street.

Satisfied that the bike would go, a small, rigid frame was made. The frame has a 15 degree bend in the middle so the slope of the top tube stays the same as on the single bike. The first test rides with all the stoker's gear added went surprisingly well and I am lucky to have a fearless and shameless stoker (my son Ewan) to test it with. It all needs a lot of work and refinement but I am very happy with the initial results. Maybe it'll get out on the streets for a Vichpv ride soon.

Damian has said he wants to start a back-to-back tandem club. Can I join now? Pleeeeease!

Steve Nurse - **cesnur@austarmetro.com.au**

Shopper

Solo recumbent

Tandem test ride

All_wheel_steer

2005 Greenspeed OzHPV Challenge Broadford

At the time of writing we have done most of the work to organise the Challenge with the course hired, the events scheduled and the local Scouts contacted about the catering arrangements. Damian Harkin has been testing the stopwatches & timing gear and working on the numbers for the sides of bikes, getting a full set up to 100 ready. All we need is your entries to start rolling in, so far we have one, thanks Matt Elliston! Please don't forget that there is a "small points penalty" unless you preregister: this is necessary because races will be run on one day only & we don't want to run late due to excessive paperwork.

With a bit of luck, my cousin John (who has a Freedom Trike) & sister-in-law Serena will be at the Challenge so we will have a quorum for a "Nurse family team" in the relay race. We are ready to take on the rest of the world!

On one of the last Vichpv rides, I met Heather & Nick. Nick has a disability but rides a specially adapted Greenspeed trike with great enthusiasm and enjoyment. Heather had picked up an entry at the Hawthorn Velodrome and had some questions about Nick participating in The Challenge. So here are some answers, Heather & Nick:

The downhill drags, the twin slalom and the shopping race are all simple races that can be completed by most people who can control an HPV. Age & physical ability should not be a barrier to participation. Come along & have fun!

Thanks to all our sponsors, Greenspeed, Mitchell Shire, Trisled, CMG, MR Components, Freedom Hpv's, Flying Furniture, Stuty's Bakehouse and Typing 2000. It is great to see continued support from inside & outside our Human Powered Vehicle Community. We wish to apologise to Don Elliott and D & H Enterprises. There was a mistake made sending out their "Invitation to sponsor" with the result that they are not sponsoring a race at this year's Challenge. Don has been a fine and enthusiastic supporter of OzHPV in the past and we look forward to his participation in future events.

For late-breaking news, see the Greenspeed Challenge part of the OzHPV website at **http://www.ozhpv.org.au/events/2005/2005challenge.htm**

See you at Broadford

Stephen Nurse - **cesnur@austarmetro.com.au**

Scorcher Tyres

The 16" x1-1/2", 40-349 Scorcher tyre is now fully tested and available.

This tyre has been developed at Greenspeed over 12 years of tyre testing. It has produced the lowest rolling resistance figures of any bike tyre we have tested. This was also confirmed for us by David Henshaw (A to B magazine), to quote* "and the Greenspeed (scorcher) gives a comfortable ride with the lowest rolling resistance." David uses a real world test on street conditions which is a great compliment to our lab tests.

This is a brand new tyre size using the standard 349 rim size. These wider tyres give a new level of comfort while still keeping the weight down to a minimum. For those of you reaching for the gear calculator they measure 17.0", half an inch larger than the 16x1-3/8 which generally measure 16.5". The Scorcher will also be available in a 406 version later this for people who have trikes or bikes set up as 406's all around or 406 / 349 combination.

The Scorcher is a fully slick tyre with only small wear indicators in the other wise completely smooth surface. They are designed as a road tyre and will have a better grip than treaded tyres as the slick surface grips into the road better than the hard compound treaded tyre. They will suit both trikes and bikes so those with folding bikes, small wheeled recumbents, trailers, anything with a 349 rim will be able to use these tyres. Some folding bikes have fine tolerances so you may want to check fit before purchase. Please note although there is only 6mm difference, they will NOT work on a 355 rim.

Purchases can made through any Greenspeed dealer **http://www.greenspeed.com.au/dealer.htm** or your favourite specialty store, many of which offer on-line services.

Mick Sims - **mick@greenspeed.com.au**

How to True a Wobbly Wheel

Over the years, I have observed many children's bikes with dangerously loose spokes, have helped adult cyclists with loose or broken spokes, and, although I can say nothing about the quality of brands of spokes and rims, I do know how to tighten spokes properly, which will save rims and spokes and perhaps even bones from getting broken.

Continued on page 7

Camping Tour

Who would be interested in something like this, say in September or October 2005? Recumbent tour but others welcome. Camping on sports ovals etc.

Self catered, but some meals cooked by service groups in the towns. Support vehicle carries heavy kit like tents, clothes, etc. Riders carry day gear and food on their bikes. "Limited" to 40 riders? Using secondary sealed roads where possible (no dirt). Countryside on this loop is gentle to undulating. Can be quite hot in summer out there.

"Interstaters" could fly, train or bus into Canberra or Yass to meet up or drive to Canberra an leave a car with one of the mob. Bit like an 8 day "Canberra Mob Breakfast ride". Costs minimal.

Proposed route starting from Canberra.

1/ Canberra - Yass 62km
2/ Yass - Harden 65km
3/ Harden - Temora 82km
4/ Temora - Young 90km
5/ Young - Cowra 75km
6/ Cowra - Boorowa 80km
7/ Boorowa - Murrumbateman 72km
8/ Murrumbateman - Canberra 50km

Thinking September school holidays (ACT) between 24/9/05 & 9/10/05. Just thinking at this stage nothing definite.

Pete Heal - **heal@cyberone.com.au**

Cycleops 12 Hour Cycling Classic Race at Eastern Creek International Raceway

The organisers of this event to be held Sunday 15th May 2005 have relented and posted officially on their website that recumbents, tandems and aerodynamic aids are permitted.

There's scope for several recumbent teams to take part and some of the Canberra Mob have already shown interest.

Unfortunately the event concludes at 8.00pm on a Sunday night, so it would be a hard drive back if one had been riding all day. A designated driver/team manager would be a very good idea.

http://www.endurancecycling.com/race_info.htm

Peter Heal - **heal@cyberone.com.au**

Bicycle Camping and Touring

Why Go Touring By Bicycle?

Long-distance bicycle touring is by nature a Quixotic activity. In these days of light-speed communications, multimedia entertainment, fast, powerful, and prestigious automobiles, luxurious homes, exotic restaurants, and instant gratification, why would someone choose to pedal at slow speeds up high hills carrying a heavy load to boil rice in a small pot in the dark, insect-filled woods alone at night? Are bicycle tourers and bikepackers driven by a masochistic self-hatred that causes them to perform painful and anachronistic pilgrimages?

Actually, long-distance, loaded, bicycle camping is one of the most pleasurable activities I have ever experienced. I generally sleep poorly at night; but in the woods on a tour, I sleep like a baby, lulled to sleep by the music of insects. In the morning, I am awakened by the cheeping of birds. I eat a snack before getting up, and then I quickly pack my sleeping bag, air mattress, tent, and other gear and get on the road. I'm slower in the morning, having less speed but also a greater desire to stop at pleasant spots, dawdle, and enjoy.

Travelling by bike allows me to stop anywhere, such as meadows, lakes (especially places to swim), woods, and scenic spots, not just at the tourist traps and overlooks. My large panniers may look very heavy to the passing motorist, but I barely notice their weight; actually, the bike feels better loaded than empty; it's a lot more stable.

Somewhere near lunch, I find a small grocery and buy some bread, sandwich materials, and fruit. I find a town park or other shady spot to wait out the high mid-day sun and maybe nap. In the afternoon, my speeds are higher, and I spend less time at stops (but I still usually stop fairly often, sometimes a quick dash into a grocery for bananas, sometimes a stop to pick wild berries). My body, tanned, lean from cycling, hardened by climbing, feels fantastic. I relish the climbs. In the late afternoon, I start riding slower, and I start having thoughts about stopping. I finally find a place in the early evening, cook a simple meal, and rest and cool off. As it starts to get dark, I pitch my tent, crawl in, and fall asleep.

There are exciting times and difficult times as well. Visiting strange or famous places and accomplishing goals are always exciting to me. I meet and talk with interesting people along the way, sometimes other travelling cyclists. Beautiful views, strong tail winds from nearby storms, encountering wild animals (usually at my camping site), and travelling up and down hills also stir me up. On the other hand, I may run into a rainy or hot spell, have to repair my bike or tire, encounter a hostile motorist, or just find myself in a bad mood. The problems are infrequent and are easily dealt with; the pleasures remain in my mind for years.

Ron bottrell - **bottrell2001@msn.com**

Odd Bits

* Pedapod trike for Sydney

News down the grape vine, Sydney will have its own version of the Velotaxi soon. See pic below.

http://pedapod.4t.com/index.htm

Gilbert Grace - **gilbertgrace@bigpond.com**

* Salamanca 6hr in Tasmania

Lot's of things are happening in Tassie at the moment.

On April 3rd 2005 Hobart is hosting a new recumbent event. The Minister of Education Paula Wreidt is going to be in the celebrity race (5 laps) and there will be some other well known personalities also.

The two main requirements are roll bars and a seat belt. The roll bar could be attached by a couple of u-bolts around some inner tube so it doesn't damage the frame! Public liability is now covered so that is a big hurdle finally overcome.

We are at the moment seeking sponsors and the RACT seem happy to help, they have been great to our college in the past two years.

- High school div. team of up to 8, equal girls and boys
- College div. team of up to 6, equal etc
- Open or Community div. with up to 4 riders, any combination of male or female.

Entry fee will be $50

Gary Adderton -**gadderton@yahoo.com**

For Sale

*** WAHPV**

http://www.wahpv.org/sale_swap.htm

* Something that doesn't happen very often. Pete is cleaning out all the bits and pieces in the shed that he has been squireling away for several years. Some bikes included. Haggling acceptable. Details at: **http://users.cyberone.com.au/heal/Sell/ItemsForSale.doc**

I also have some material for fairing builders which I forgot to list: - 5 sheets of white LD45 foam. Heat formable to convex/concave shapes. As used by John Tetz for his fast street streamliner. http://www.recumbents.com/mars/pages/proj/projfoam.html Good for tailboxes, full fairings and seat pads. 1800 x 1200 x 10mm sheets. $20 a sheet. - 1 sheet of "Vivac" clear plastic sheet 2400 x 1200 x 2mm. Suitable for blowing your own fairing canopies. See http://www.wisil.recumbents.com/wisil/bubbles/hpvbubbles.htm for ideas. $50. Peter Heal - **heal@cyberone.com.au**, 0422103139

Flying Furniture Flight

The new Flying Furniture Flight Touring model is pictured below. It is an above seat steered bike with "n" style handlebars originally seen many years ago on the famous UK "Kingcycle" – newer "T" style handlebars are also available. Major features of the FLIGHT are: clean lines and good aerodynamics, longish wheelbase for excellent stability , 4 pannier capacity, convenient Flying Furniture signature underseat rack for Camel back style drinking system and tools etc and adjustable seat angle with cool airfilter foam padding and mesh cover – as well of course it has the Euro style curved frame elegance – precision mandrel bent cromoly steel! Disk brakes and Rohloff hub upgrades available on many models! With the legendary Flying Furniture steering stability! The Flight is designed and hand crafted in Canberra, Australia by Ian Humphries in the Flying Furniture Cycles workshop!

Ian Humphries - **ian@flyingfurniture.com.au**
Flying Furniture Cycles - **www.flyingfurniture.com.au**

Continued from page 4 - How to true a wobbly wheel

In spite of false beliefs to the contrary, fixing a wobbly wheel is an easy process, requires a simple and inexpensive tool, and normally takes very little time. Truing a wheel usually will be easier than replacing a chain.

In an emergency, it is even possible to use a small crescent spanner to true a wheel, but I would not recommend that practice, as rounding the nipples even slightly will ruin them. The one tool that you need to true a wheel is called a spoke spanner, which tightens the spoke by twisting the nipple. Don't go into a bike shop and buy one without thinking, because spoke spanners come in various sizes. Fortunately, for those who are uncertain about the size or who have multiple wheels, multiple-sized spoke spanners are sold. These aren't as comfortable to use as the single-sized spanner; however, and there is also a danger of accidentally using the wrong size and thus rounding the nipple (which means it must be replaced).

Bike shops and catalogues also sell truing stands and dishing tools. However, the bicycle itself, if turned upside down, makes a perfectly adequate truing stand and dishing tool, even for rebuilding wheels. Truing stands and dishing tools are ideal for wheel-builders but are unnecessary for occasional truing and wheel building.

Let's start by first looking at the wheel itself, as an understanding here will lead to more satisfactory results. Note that I am not explaining how to build a wheel, a more complicated process, which I have done quite a few times.

The modern tangential spoked wheel was an invention of James Starley, who — along with his son Matthew and his nephew John — was largely responsible for the modern bike. Originally, wheels were radial spoked, that is the spokes ran straight from the rim to the nearest part of the hub, but Starley discovered that tangential spokes (the spokes run at an angle to a part of the hub which faces another part of the rim) were much stronger, especially for the driving wheel. If you look at a wheel, you will see that the spokes on each side cross other spokes (they are usually laced together rather than just crossing; that is, each spoke goes over one spoke and under the next). Most wheels are three cross (3X), although rear touring wheels are often 4X, and some tandem wheels are 5X. When wheels are crossed and laced, the spokes help strengthen each other, rather than standing alone. In addition, when you are braking and accelerating, the tangential spokes help distribute the load better. Nonetheless, the spokes that most often break are the eight or nine (out of 64 or 72) that directly transmit the driving force from the rear wheel.

Each spoke has a head on one end and screw threads on the other. The spoke heads alternate facing in and out on the hubs, with the holes they fit countersunk for the bends in the spokes (not for the heads!). Likewise, on the rim, the holes are usually slightly off-center. On the front wheel (and some rear wheels), the spokes are the same length on both sides, but on most derailleur bikes, the spokes on the freewheel side are shorter and tighter to help center the wheel on the axle (they would otherwise be off-centred due to the space taken by the freewheel). A broken spoke must be replaced with one of the same length, which must travel through the hub and spokes following the same pattern as its seven or eight identical fellows.

On the rim end is the nipple, which although much less visible, is just as important as the spoke, as I discovered one time when a spoke broke off inside the nipple, and I had a spare spoke but not a spare nipple. Quality nipples can stand more tightening without rounding than cheap ones. Of course, to see the entire nipple, it is necessary to remove the tire, tube, and rim tape. The nipple has a notch for a screwdriver inside the rim, which is helpful when replacing a spoke, but it also has a four-sided face on the outside, for your spoke spanner, where most of the adjustment will take place. It is usually not necessary to remove the tire to just tighten spokes.

If we had a perfect wheel to work with, every nipple would be turned the same number of turns, and every spoke would be just as tight as its fellows. When making a wheel by hand, every effort is made to approximate this situation, although some slight differences are going to occur due to slight variations in the materials. However, most wheels are made by machines, which only approximate the perfect wheel. With a machine-made wheel, some spokes are a little too tight and others a little too loose, and as time goes on the difference grows, leading to a wobbling wheel.

All that would be necessary to correct a perfect wheel once it became wobbly would be to find the loose spokes responsible and tighten them sufficiently. It would never be necessary to loosen any of the tightest spokes, as there is no force acting on the bicycle wheel that can tighten them. However, on the machine-made wheel, some spokes may have been too tight to begin with and may have been the cause of other spokes becoming loose. Therefore, while most attention should be paid to the loose spokes, some attention must be paid to the very tightest spokes. Indeed, these very tight spokes are the first (or the next) that are going to break.

Generally, I ignore the spokes and concentrate on their effect on the wheel. However, at the very beginning, it is worthwhile to see if some spokes are extremely tight or extremely loose. I mark any very tight or very loose spokes with different colored tape, say black for too tight and red for too loose. If a wheel is badly out of whack, I might go ahead and approximately match these to their fellows; however, if the wheel needs only small adjustments, adjusting them now can make the whole job more difficult.

I would highly advise to start with the worst problems first. After you take the worst wobble out of the wheel, then the wheel is prepared for fine adjustments and, by that time, you will feel more comfortable about making them.

There are two kinds of adjustment that need to be made to the wheel through tightening the spokes. One is for roundness, the other for straightness. When truing for roundness, two spokes next to each other pull in the same direction, but when truing for straightness, two adjacent spokes pull in the opposite direction.

If you must make both kinds of adjustments, true for roundness first. However, as the roundness is less important than side-to-

side motion (because the tire itself is only approximately round), if you are not making major changes, truing for straightness is all that is required. Sometimes the wheel may need major adjustments, but you are on a bike trip and just need to get home (or to the next stop first), but more often the wheel is basically OK but a wobble needs to disappear or a spoke needs to be tightened.

To correct a wheel for roundness, it is best to remove the tire and tube, to make it easier to observe the rise and fall of the rim. The wheel is put back on the bike without the tire, the wheel is spun, and a pencil, flat piece of metal, small board, or whatever you wish to use is placed below the wheel against the fork, very close to the wheel, so that even very slight variations of roundness can be observed. If you position your object just right, the wheel will strike it only at the most out-of-round position. Take your truing spanner and tighten the spokes where the rim hits, never tightening any spoke more than half a turn until you have also tightened its fellows and then tested for the result. Be careful to not tighten the spokes on one side more than the other, as this increases the wobble.

To true for straightness, it is generally not necessary to remove the tire (if the spokes were longer than necessary, removing the tire and filling the spokes may be required to avoid flats). Turn the bike upside down and spin the wheel, and apply the brake very slowly until the wheel starts to hit against the brake.

(NOTE: I am assuming here that the brake is centred properly and doesn't pull against one side more than the other. If the brake does not work properly, use a pencil, piece of wood, or whatever, and move it gradually against the spinning wheel to see where the wheel will stop. You might want to use something, such as a felt-tipped pen, which will mark the rim. Be very careful when not using the brakes that you don't overcorrect.) When you find that the wheel is hitting on one side at one point, you know that the opposite spoke needs to be tighter at that point. In the event that the rubbing is pronounced, you may need to tighten more other-side spokes, perhaps the ones on either side of the rubbing point (but not as much as the one in the middle) or perhaps two spokes or four spokes. This is an art, not a science, so it's OK to experiment; however, keep all changes minimal until you perceive what you are doing. I would suggest turning the nipple spanner no more than half a turn on any spoke at any time. I would also suggest marking the spokes you have tightened, perhaps with a little clear tape.

After the wheel runs true; that is, it does not hit against either brake pad even when the gap on either side is only about 1/8 of an inch, go back and check on the extra tight and extra loose spokes that you started with. If they are now like their fellows, the wheel is done. If there are still loose spokes and tight spokes, then the loose spokes need to be tightened and the process repeated. I don't pay as much attention to looseness and tightness as I do to the rim because comparing tightness is difficult to do, while aligning the rim is fairly easy.

Why have I said nothing about loosening spokes that are too tight? If the wheel was made very well, it won't be necessary to loosen any spokes. Think a second: is it possible for the spoke to gradually get tighter as the wheel is used? No. Then we should only have to worry about loose spokes, unless one or more spokes were too tight when the wheel was originally made. There's a common cause of one spoke being too tight that must be mentioned. Assume we have spokes A, B, and C on the same side of the wheel. If A and C become loose and B does not, B will continue to hold the wheel straight until it breaks or you loosen it. So, it is a better philosophy to assume the wheel was made correctly and not to loosen any spokes unless it is unavoidable. Even then, it should be only one or two spokes that are too tight; otherwise, the rest are all too loose.

This probably all sounds more complicated than it is. To demonstrate that it is not all that difficult, I can point out that I completely rebuilt one wheel on the road. On my 1990 touring trip, I discovered I had overtrued my rear wheel (all the spokes were too tight). I spent the morning at my camping site in removing the tire, completely loosening all the spokes, and rebuilding the wheel on the spot. The wheel has never given me any trouble since. When merely adjusting the side-to-side wobble of a wheel, fifteen minutes to half an hour is ample time, and you won't even get your hands dirty, if careful.

ron bottrell - **bottrell2001@msn.com**

If this Newsletter cannot be delivered please return to:
OzHPV Inc
PO Box 189 HRMC NSW 2310