

## New year Bumper Edition

### Letter from the Editor

Well this is my first go at putting together HUFF as the new editor taking over from Damien Clark.

I'll attempt to get the newsletter out bimonthly this year so can I encourage you to send in any articles/photo's you can muster. We're particularly keen to let others see what's happening in the different HPV communities around Australia.

With 1998 just gone I reflect on how many new things have been for HPV's in Australia. It's been amazing to see the explosion of Australian commercially produced HPV's on the market and wonder where it is all heading. I think it's fair to say 2 wheelers have been most dominant in the market World Wide (with Greenspeed an exception here in Australia) but wonder if this is starting to turn around. Ian Humphries has a great review of most of these machines in this edition of HUFF. *T Smith*



Jeremy Lawrence riding Paul Sims' FWD bike

### Canberra Challenge 98

There is a strong group of HPV riders in Canberra. It's only a small group which has evolved over the past 9 or so years. Probably the presence of Wayne Kotzur and his frame building business in the area has had something to do with this as Wayne is a devotee of HPV's of the wheeled kind and for the past 9 years has had a major role in organising the ACT HPV Challenge.

The Challenge has become an annual gathering of HPV enthusiasts from around Australia who come under the disguise of taking part in a competitive event but



Ian Humphries

really just come to talk eat and breath HPV's for a weekend. This years event came together like always right at the last minute with the Canberra OzHPV members taking last minute obstacles on the run and each doing the job they were assigned in their usual (seemingly) efficient manner.

OzHPV members generally fit in a ride between organising duties or give up their riding for the weekend to run the Challenge, something many participants don't realise me thinks. Friday night saw many participants rocking up from around the country including Perth and on Saturday morning there were something like 40

happy campers on site. Fine weather graced us for most of the Saturday which in Canberra with it's altitude and clear sky's means mega UV and sunburn for the unwary. This year there seemed to be an abundance of trikes of all types as well as

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# Overall results for the OzHPV Challenge 98

No	Name	Vehicle	Category	SumOfPoints
40	Colin Dedman	Greased Lightning	Electric assist	20
46	Andrew Puckett	Rola Trike	Junior	64
17	James Howe	Easy Shark Easy tour Clone	Junior	56
36	Geoff Welch	MTB	Junior	51
35	Ben Crutchett	Recumbent	Junior	46
18	Col Cameron		Junior	28
22	Ben Curtis	Sunstrike GFR trike	Junior	28
56	Matthew Heal		Junior	13
13	Steven Anderson	Legend 2	Junior	10
9	David Anderson	Legend 1	Junior	8
55	Erin Cleland		Junior	4
60	Lloyd Cleland		Junior	2
19	Ian Humphries	Golden Rough Low Racer	Men	64
31	Scott Setford	Agent Orange	Men	53
30	Ken Rubelli	Clockwork Banana SWB	Men	29
11	Josh Anderson	Legend 2	Men	26
8	Ben Goodall	Fastback trike	Men	26
41	Harry Gordon	Quike	Men	24
37	Michael Wood		Men	22
57	David McCook		Men	18
12	Adam Kercher	Legend 3	Men	17
50	Bill Guthrie	Blue Thing Greenspeed	Men	17
14	Keith Griffin	Tu'ring Machine Greenspeed GTR	Men	15
39	Peter Heal	Lizard SWB	Men	15
7	Paul Segal & Heather	Same speed tandem recumbent	Men	14
34	Jeremy Lawrence	Fairlane Linear LWB	Men	13
10	Roger Anderson	Legend 1	Men	14
20	Paul Sims	Buffy	Men	13
3	Steve Nurse	SWB	Men	11
5	Erik Vandamme	Vision	Men	10
27	Robert Braunsthal	Old Sims Rims SWB	Men	10
1	David Doust	Greenspeed GTS	Men	10
45	Giles Puckett	Oberon Trike	Men	10
53	Scott Setford	Blue Mol	Men	10
32	Ian Knox	Knox Bent	Men	9
24	Myles Higgins	SWB	Men	9
16	Stephen Howe	Easy Racer LWB	Men	9
25	Michael Rogan	Swift trike	Men	8
47	Ross Harrop	MWB	Men	8
33	William	Greenspeed	Men	7
28	Glen Forrest	MTB	Men	8
4	Philip Pillar		Men	7
63	Mike Dippy		Men	6
6	Lloyd Charter	Go Easy Trike	Men	6
21	Bill Shelley	Billspeed XP1 trike	Men	6
54	Damien Clark		Men	5
26	Mike Dippy	SWB	Men	4
48	Philip Walford	Trike	Men	3
49	Stephan Tillman	Trike	Men	3
51	Greg Connoly	Trike	Men	2
38	Helen Curtis	Kotzur SWB	Women	86
15	Frances Griffin	Blue Space Cabbage Trike	Women	69

a whole new batch of two wheelers from home builders. Not a lot of thought or effort has been put into fairings by home builders which I find surprising but perhaps comfort is the main reason for riding a recumbent anyway.



There was a fully faired Ian Humphries low racer for about 15 minutes using a Peter Heal fibreglass nose cone and corflute body but this was removed after a few 60km runs up and down the main straight showed not enough benefit considering the overall event, so it was hastily removed. This left a solitary Zzipper front fairing and Peter Heal's front and rear fairings to promote the aero cause.

There were enough different and interesting bikes around to keep every body enthralled. There were carbon fibre bikes, there were new recumbent tandems, there were front wheel drive bikes and there were trikes, trikes and more trikes.

Ian Humphries had put in a lot of work pre event to arrange for seven test trikes to be on site from Australian manufacturers - namely Greenspeed (of course), MR Components, Tailwind, Tri Sled. Ian had enlisted a team of HPV riders who were all somewhat the same height and after the events on Saturday, the trikes were put through their paces with riders swapping from trike to trike and doing cornering,

**Harry Gordon in the Slalom** coasting and general quality of finish assessments.



This was my first time on a trike and coasting the back roller coaster hill at 60+ km and not being able to use the brakes "exciting" to say the least. Ian's report on these tests is featured on the OzHPV web site and apparently will be in some overseas

magazines - well done Ian for getting OzHPV on the map.

Saturday evening saw the Scout BBQ feast which was greatly appreciated. At about this point the locals nick off home leaving the campers in charge of the site. A significant thunderstorm rumbled through Canberra about 9.00pm making things interesting for the campers and washing gravel and debris on to the track. No major injuries were experienced over the weekend although there were some spectacular come offs, in particular

Harry Gordon's front wheel drive Roller Blade Bike skated off sideways in the 200 metre drags due to a lack of grip for the roller blade wheels on the damp bitumen. Robert Braunsthal also did a "specy" crash and slide in the water on the skid pan during the shopping race.

## Special Thanks to..

The Tradesmen's Union Club & Canberra Bicycle Museum



Start of the road race.

were very kind this year again supporting the event and donating a significant sum of money towards the running of the Challenge and we thank them very much.

Thanks also go to the many helpers who organise things like tents, timing gear, loud

speaker systems, walkie talkies etc etc... Do I need to list the individuals? Yes - Duncan Cleland, Chris Curtis, Michael Carden, Lindsay & Paul Segal, Don Thomas. Next year is the 10th annual ACT HPV Challenge - will you be there?? PS: Bring a fairing!

**PETER HEAL**

Harry Gordon? roller blade rear wheel



## Review of Recumbent Trikes made in Australia

Recumbent trikes sit side by side with the recumbent bicycle as perhaps the most exciting re-inventions of the cycling world. Modern recumbents bikes and trikes, still banned from racing because of their aerodynamic advantage, have the potential to provide the public with comfortable and fast non-polluting individual transport. For those who still want to ignore them, take note, recumbents more than doubled their sales in the US market last year with sales of over ten thousand.

Recumbent trikes are particularly infectious - ride on one for even a short time and you will start to see the world in

ride on a recumbent trike has the potential to change the way you think about personal transport!

There were 7 trikes from 4 different Australian manufacturers present at the 1998 ACT HPV Challenge in Canberra, Australia and this provided the perfect opportunity to review the current state of the trike scene in

Australia. There is little doubt that over the last half decade or so some Australian designers and builders have contributed very significantly to recumbent trike evolution and this looks set to continue with several innovative new machines appearing recently. The impetus for these manufacturers came from either the lofty desire to build something human powered that fulfils the role of a car or just to give people a comfortable, efficient and easy to ride alternative to the upright bicycle. Some manufacturers also provide vehicle frames and/or plans for schools to build up a vehicle for the very popular pedal prix races that are currently held in Qld., S.A. and Vic..



### For Sale

**Two wheel short wheel base recumbent** with rear suspension. Wayne Kotzur custom frame with BillSpeed fibreglass seat.

Great commuter or tourer. Includes custom Wayne Kotzur rack. \$990.00 ono. Telephone (02) 6256 5625 (wk) or email Rino Damiano on Ridamia@ibm.net

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

**12 Speed LWB bike**, USS, index gears, suit riders 5"6 to 5"8 in current setup. Michael Roghan, 0359835886, Hastings Vic \$400 Built by Len Oates, good condition.

**10 Speed SWB bike**, Hammerhead special, choos under or over seat steering. Steve Nurse 03 9481 8290, Clifton Hill, Melbourne \$200 or I will rent it for \$2 a week.

a different light as well as from a different perspective - apart from being exceptional fun, you begin to wonder just why more people aren't riding them, and then begin to think just how much better this world might be if everyone were to replace their car (arguably a single occupant vehicle on most trips) or most of their car journeys with a human-powered trike! A

### The testing

The aim of the trike testing was to compare the trikes as quantifiably as possible - comparing them side by side gave each tester a good idea of their relative merits. The initial rides provided the surprise that all have quite a different feel and character, even though each of the designers have adopted the "tadpole" or two wheels in front layout seen on the first of the modern recumbent trikes, the UK made Windcheetah designed by Mike Burrows about 20 years ago. The trikes here each seem to fill a different niche and will have different appeal. The Greenspeeds were the first of the new breed of low recumbent trike to appear in Australia, designed to be easy to ride, safe and practical human transport. They were also designed to improve the efficiency and comfort of the everyday cyclist, whether they are setting off to tour around Australia or the world, on a commute to work, or just for a shopping trip down to the local store.

The Greenspeed trikes made in Melbourne since 1990 have probably provided some if not all of the inspiration for the

newer trike manufacturers in Australia and along the way set a very high standard by which others can be compared. They have certainly proven to be popular vehicles and have been exported to many countries around the world. They are a well proven and mature design, with a grand reputation and perhaps are the recumbent make with the best known identity among Aussie cycling enthusiasts. They were our defacto benchmark for these tests.

**The reviewers**

6 riders provided comments about the machines. The testers were experienced recumbent riders (I commute regularly 35km across Sydney on a Short Wheelbase Recumbent Bike) and most had built or were building their own machines, and included two riders who ride almost exclusively on trikes. None owned any of the manufacturers products, though some like myself had previously bought parts from Greenspeed's mail-order service.



**The Greenspeeds: GTR, GTS and Race Trikes**

The standard touring machine, the GTR, and the Sports Tourer, the GTS are both very refined machines - with excellent and predictable handling, and are demonstrably the most stable of the machines under review, due mostly to their wider track. Although the 800mm track / 900mm width does provide some greater difficulty in getting them through doorways and past the occasionally misplaced bollard, in practice the wider track provides little disadvantage over the other trikes at most obstructions as the excellent steering setup allows a very tight lock and very

good turning. I was pleasantly surprised to be able to manoeuvre a GTS around the posts at the end of a suburban bike path not only without getting off but with precision and ease - although I would have a few problems with a trike on my regular commute, as local councils haven't made any of the bike path chicanes standard, and there are a few very narrow ones. I also have to consider, as you might, that I need to carry my HPV up and down stairs if I use a train on part of the trip. The added weight and space needed for a trike would make a difference to me and those around me during peak hour. An unladen GTR has the balance point at and can be lifted by the handlebars but carrying it with gear on the rack requires you to lift it by the seat. It can then be balanced using one arm with the seat on the hip.

**The GTR and GTS:** The GTR and GTS have the well-proven Sachs drum brakes with the crossed arm steering linkage front end. There is little to choose between them, the GTS having a more reclined seat, and narrower and lighter rims and tyres. These seemed to be of no advantage over the GTR's fatter Comp Pools when rolling, but the lighter weight of the GTS's wheels probably would be of some advantage accelerating and uphill. The more reclined GTS seat would also allow the rider to slip through the air slightly faster. If you are a heavy rider or tour with a big load it is recommended that you order the disk brake option as I have had two 100kg plus Greenspeed owners tell me the drums begin to fade on long mountain descents. The other cheaper option could be to add a third drag type brake to the rear wheel - either a drum or disk to provide a third source of heat dissipation.

**The race trike:** The Greenspeed race trikes are speed machines, the fastest commercially available unfaired trikes



photo by Ian Humphries Nov 1998: ian@ozhpv.edu.au

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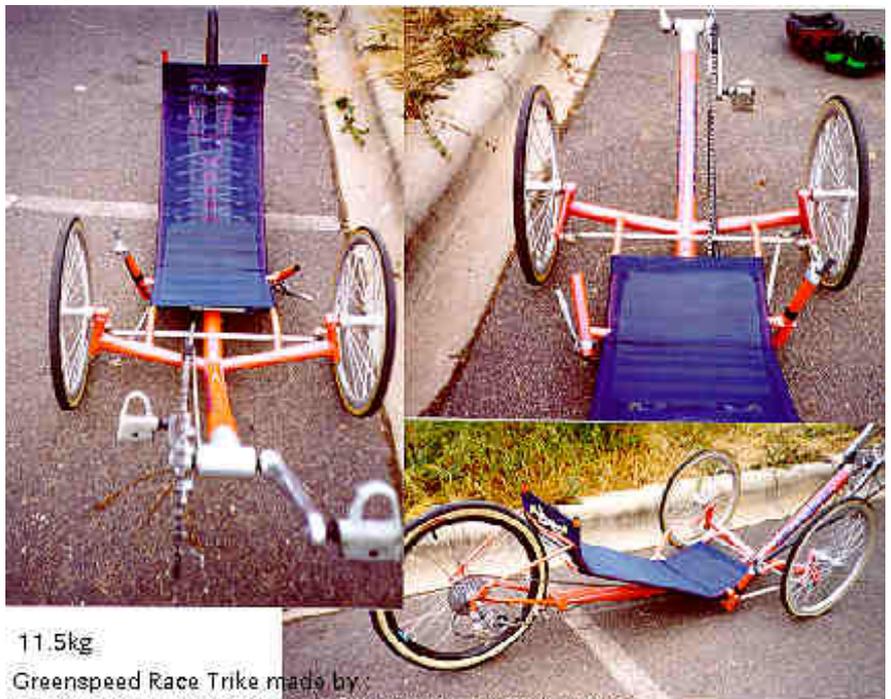
made anywhere in the world. Only a short time was spent reviewing the race trike but it is a manoeuvrable and fun machine - the current version weighed in at only 11.5kg. It was made from thin-walled cro-mo and Reynolds 531 tubes and had 349mm (16inch) front wheels and a 406mm (20inch) rear wheel with narrow high pressure tyres and a very aerodynamically reclined, 20 degrees from horizontal, mesh seat laced with elastic shock-cord. (A previous version I've seen used 20inch wheels all round.) It is steered by a single lever operated by the right hand, which also has the bar-end gear shifter, with a single rear wheel brake operated by the left on another (fixed) hand grip. While racing it is often seen sliding through corners under power, at its limits on only two wheels or with the rear wheel locked up to skid around tight hairpins!



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 photo by Ian Humphries Nov 1998

**Frame:** The Greenspeeds have a long history of both expedition touring and in racing circles, and the design with the seat tubes running back from the cross member provides a triangulation in 3 dimensions, giving the frame excellent stiffness and a high strength to weight ratio. It is, to say the least, a well thought out design. Greenspeeds also are likely to be extremely durable with all tubes being either Reynolds 531 or an aircraft grade cro-mo alloy of steel. Each one is made to fit the customers size and requirements - for although most Greenspeeds look similar, Greenspeed choose the appropriate size and weight of tube used for each customer. You can also order the lightest tube-set on offer and this would provide a machine comparable in weight to just about any on the market. Greenspeed seem happy to discuss and cater to any individual requirement. The frame is set-up with braze-ons to attach front and rear lights, a quick-release flag and a standard touring pannier rack. An integral rear rack can be ordered which also improves frame stiffness further. The frame has grease nipples to make regreasing the brass kingpin bushings with a grease gun a simple maintenance task.

plasticised open weave mesh material, with brass eyelets to allow it to be laced to the seat frame with elastic bungee/shock cord. It is a comfortable design, offers some suspension effect and is available at various reclined angles - 40 or 35 degrees on the GTR and an even more laid-back



11.5kg  
 Greenspeed Race Trike made by:  
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 photo by Ian Humphries ianh@nch.edu.au Nov 1998

**Seat:** The seat is composed of a sewn

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30 degrees from the horizontal on the GTS. I have heard many rave at the comfort of this style of seat and only a few complaints - one reviewer questioned whether the bungee cord could, if the mesh is too loosely laced, provide unwanted pressure points on protruding bits of vertebrae.

**Steering and Braking:** The steering and handling of the Greenspeeds is excellent. The 800mm track allows enough room for the wheels to turn sufficiently to provide excellent manoeuvrability. Braking is via the reliable and long wearing Sachs drums. I recommend choosing the low-friction Gore / teflon lined cables for the brakes - they offer a very noticeable improvement over ordinary brake cables, and help to improve the braking when the drums are new and haven't quite bedded in, though you can also help this bedding in by unbolting the wheels and lightly sanding off any high spots on the brake shoes. The Sachs drum brakes require virtually no maintenance and the shoes are very slow to wear.

**Parts:** The standard parts on the GTR and GTS are well chosen and good quality - perhaps the only things that will need replacement at any interval, are the cables and tyres. I have heard of tyres wearing out quite quickly if the rider corners "enthusiastically" or if the adjustable front wheel alignment should go out of whack. Wheel building is top class and rims should last a long time without rim brakes sanding them away. The Shimano bar-end shifters are probably the best shifters made, foolproof, reliable, and with a friction mode - the GTS has an narrow eight speed rear cluster and uses the new extra narrow nine speed chain. Whilst this set-up worked well during the test, I'd opt for the more standard 7 speed cluster as found on the GTR and a standard narrow chain if going touring.

The addition of a Sachs 3x7 hub and derailleur gear

system as standard provides the rider with the widest possible gear range, including suitably high gears, which are sometimes difficult to achieve with a small 406mm drive wheel. It also allows the useful ability to change the internal hub gears when stationary, but does require a spanner to remove the wheel to fix a flat, and fiddling around with the internal hub gearing cable after reinstallation.

**Options:** Greenspeed also offer many potential accessories - one of which is mudguards / fenders on the front wheels - I like the idea of riding a trike on those days when the roads are made treacherous and slippery by rain, but only if I could fit mudguards to each front wheel so as to avoid the gritty slop normally thrown up by these wheels - Greenspeed has finally worked out a good method of attaching these, via a kingpin extension. Development of a full fairing, which adds further to a trikes all-weather capability and potentially to its speed, is also nearing completion. As well, there are many gearing options, and for travel, the S+S coupling version allows the trike to be dismantled to fit into a suitcase and this is proving a popular option. Mirrors and

a speedo can also be fitted neatly to optional extensions of the kingpins - a mirror is recommended.

**Overall:** It is apparent that the Greenspeeds still excel as refined examples of tadpole trikes. The Greenspeeds have been intelligently designed and the impressive attention to detail shows, from the clean and neat chain management to the ability to lock the brake levers when stationary, so the trike doesn't roll away. I liked the GTS over the GTR on this test, probably because I prefer the



Greenspeed touring trike GTR  
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more reclined and faster 30 degree seat angle. Otherwise its difficult to choose between the GTS and GTR - if pressed perhaps, because I'm light I'd go for a lightweight version of the GTS frameset with GTR drive-train, perhaps swapping the largest two chainrings for higher tooth versions to eliminate the Sachs 3x7. Given the quality and refinement of the Greenspeeds it seems safe to predict they will at least maintain their desirability and the new entrants will find their niche in providing people a lower cost opportunity to experience the thrills, excitement and potential of trikes.

**Pricing:** With the GTR priced at \$4400 and a GTS at \$5200, it is easy to dismiss the Greenspeeds as expensive, though they are not anywhere near the most expensive cycle nor even the most expensive trike on the planet - the UK Windcheetah at about \$6000 earns that mantle. Greenspeeds are however, the equal of any, and a buyer of the base model 21 speed Greenspeed GT trike at \$3700 can even be assured of that. The frame-set or parts can also be ordered separately and built up at home to reduce the expense. Greenspeed also manufacture tandem trikes and hand-cranked machines (see [www.greenspeed.com.au](http://www.greenspeed.com.au)).

### The MR Components "Swift"

Michael Rogan has designed and built numerous pedal prix trikes and custom HPVs - he has even ventured into the world of Human Powered 4-wheeled over-snow-mobiles! The Swift tested was the touring version, with a triple chain-ring setup, the standard model having just a dual-chainring setup.

**Frame:** The Swift frame is the usual cruciform design with triangulation via the fixed seat tubes - the frame is stiff and strong - the main difference between the Swift and the others on test here being that the main Hi-tensile steel frame members are of rectangular cross section. The Swift has a history in the pedal prix races and is very robust. Michael has also tested the robustness of the frame on very rough off-road sections and expresses great confidence in its ability to withstand punishment. A sliding boom provides easy size adjustment and the Swift has an optional and novel under-seat "linear pulley system" to take up excess chain.

**Seat:** The seat frame is integral with the frame and wrapping nylon webbing around the seat frame forms the seat. The webbing is nicely

woven together to stop it moving about and it was comfortable over the test period. The seat frame itself is nicely contoured, giving it a good appearance. The provision of a handy pocketed neck support as standard is a good feature. This trike was Michael's demo model and it appeared the seat was a little more reclined than the specified 40 degrees, a good move as the more reclined the seat, the more the body weight is spread out, decreasing pressure points. The seat also was variable in length with the upper section telescoping to achieve a perfect fit.

**Steering and braking:** The steering is by the "all-in-one" design which was first used on pedal prix vehicles, with the handlebars and grips attaching directly to the kingpin and the handlebars extending further to form the arm to attach the front-wheel rim-brakes. The track-rod connecting the steering mechanism of each front wheel attaches to small steering arms behind the kingpins. The steering is free of the dreaded bump-steer and Ackerman compensation is maintained for all turning radii. The frame has adjustable steering stops as standard. The kingpin mechanism fits into tough self-lubricating Teflon impregnated nylon bushings and should need little maintenance. The brakes with short cable runs from lever to brakes were very good, the equal of the Sachs drums in the dry - the disadvantages of rim brakes is that they wear the rims, can have reduced stopping power in the wet and may perhaps overheat the tyres and tubes on long twisty mountain descents, as the small rims have to absorb lots of frictional heat as generally these quite aerodynamic HPVs rocket downhill at quite



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photo by Ian Humphries  
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The Trike Specs:

Manufacturer	Greenspeed	Greenspeed	Greenspeed	Freedom HPV	TriSled	TriSled	MR Components	Bikecologist
Designer	Ian Sims	Ian Sims	Ian/Paul Sims	Peter Holloway	Ben Goodall	Ben Goodall	Michael Rogan	Wayne Kotzur
Model	Tourer GTR	Sports tourer GTS	Race trike	Sirocco	Cool Cruza (Touring)	Fast Back (Sports)	Swift (touring)	
Price	A\$4400	A\$5200	A\$POA	A\$3200	A\$1800	A\$1900	A\$1880	
Frame	4130 Cromo	4130 Cromo	Specifications to suit	4130 Cromo	Hi ten steel AS1450 Round	Hi ten steel AS1450 Round	Hi ten zinc plated Rectangular section	
Construction	Mig welded	Mig welded		TIG welded	MIG welded	MIG welded	MIG welded	
Specified Wt	18 kg	16 kg		Not specified	15 kg	Not specified	15 kg	
Sizes	Custom	Custom		2 sizes 165-205cm	Custom	Custom		
Adjustment	Sliding boom	Sliding boom		Sliding seat	Sliding boom	Sliding boom	Sliding boom	
Track/width	80/90	800/900		740/810	700	650	660	
Wheelbase	1000	1060		1040	1100	1100	1000	
Length	1830	1950		1750			1800	
Turn diameter					3.8m	3.8m	3.8	
Ground Clearance	120	90		90	130		80	
Seat height	300	250		250	250		150	
Seat	Cromo / Mesh	Cromo / Mesh		Cromo / Mesh	Nylon webbing	Nylon webbing	Webbing	
Seat angle	40 or 35	30 degree		Adjustable	35 degree	28 degree	40 degree	
Colour	Choice	Choice		Flame Red / choice	French blue /custom	French blue /custom	Blaze Blue	
Paint	Powdercoat	Powdercoat		Powdercoat	Powdercoat	Powdercoat	Powdercoat	
Handlebars	Underseat Cromo - inclined	Underseat Cromo - inclined		Underseat Al & Cromo	All-in-one direct to kingpin	All-in-one direct to kingpin	All-in-one direct to kingpin	
Steering	Centrepoint Ackerman	Centrepoint Ackerman		Centrepoint Ackerman	Centrepoint/ Ackerman	Centrepoint/ Ackerman	Overcentre	
Front Hubs	Sachs VT 70mm drum Sealed bearings 2 x Drum	Sachs TOP 70mm drum Sealed bearings 2x Drum		Sachs VT5000 70mm drum Sealed bearings 2x Drum	Joytech (machined to fit sealed bearings) 2 x Tektro V	Special Quick release (Joytech with sealed bearings) 2x Tektro V	Sealed Bearing Alloy 36H Tektro V (Caliper as tested)	
Brake levers	BMX freestyle locking function	BMX freestyle locking function		Tektro	Tektro	Tektro	Tektro	
Rear hub	Sachs 3x 7	Sachs 3x7		STX-RC	Shimano	Shimano	Formula 7	
Crank set	30/42/50	39/53		Triple (double as tested) xx/60	Triple (Lun-chi)	Double (Sakae SX)	Triple 26/40/54	
Cassette	Shimano IG 11-30 7 speed	Shimano 11-28 8 speed		11-34 8speed Megarange	Shimano 7 speed	Shimano 7 speed	IG 11-28	
Speeds	63	42		24	21	14	21	
Gear range	15-126	19-120		-104	20-98	30-114.5	18-100	
Rims	Araya 406mm 1.75"	Sun Cr20 406mm		Velocity triple V 406mm x 1.5"	Alex 406mm x 1.75"		Alex 20x1.5 (Velocity on request)	

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significant speeds. The addition of a third drag type brake to the rear wheel - either a drum or disk to provide a third source of heat dissipation may be justified if riding with a heavy load. The test trike was fitted with BMX side-pull brakes although V-brakes are now standard - making one complaint I had irrelevant - the cables from the side-pulls seemed to get in the way when gripping the handlebars after signalling or drinking - the V-brakes cabling should be neater and avoid such problems.

**Parts:** The front wheel hubs are machined to fit the larger axle and sealed cartridge bearings and all the wheels have a quick release mechanism standard. The shifters are low-end Shimano thumb-shifters, while the front derailleur was also one of the least expensive models - perhaps there is some room to upgrade some parts - but on this test everything seemed to function and there weren't any complaints from any of the reviewers. Wheels seem well built and the tyres are the excellent Tioga Comp Pools. The addition of a mirror and flag as standard also must be commended, although the mirror extending from the handlebar grip did vibrate excessively on rough tarmac, reducing its usefulness.

**Options:** The trike comes standard with most desirable options, although I'd specify a mirror with stiffer mounting hardware and specify a computer braze-on on the main frame because it too suffered from excessive vibration on the steering arm. A pannier rack is optional. Mudguards should be easy to fit.

**Overall:** At a specified 15kg it is among the lighter trikes - the simplified steering arrangement obviously contributing to weight savings, along with a lighter rear hub. It has a great range of adjustment, and the frame, seat and chain length can be adjusted quickly to suit a wide



range of riders - a good feature if the trike is to be used by a few riders. This design is quite innovative in these features, and although its rectangular tubing may make it look a little less refined its elegance should be appreciated. With a seat reclined more than standard the test trike cut the air well.

**Pricing:** The "Swift" standard double chainring model at \$1700 is the least expensive trike by a small margin - but comes with quite a few desirable features. It is an excellent buy. The touring model as tested is \$1880.

**The Tri-Sled "Cool-Cruza" and "Fast-back"**

Built by Ben Goodall, these trikes are very similar, both eye-catching machines in blue with yellow and black accessories. The main differences between the two being that the Fast-Back has a more reclined and lower seat. Compared to the Greenspeeds the Tri-Sleds have a narrower track which is compensated for on the Fast-back by a lower seat height and lower centre of gravity, but makes lifting a wheel slightly easier on the Cool-Cruza. Both machines are reasonably light and build quality is good.

**Frame:** The Tri-Sled trikes are elegantly designed - the layout obviously owes its heritage to the Greenspeeds with seat tubes running back from the cross member to provide triangulation in 3 dimensions, but with the main tubes of large diameter Hi-tensile steel, not cro-mo steel (cro-mo can be requested). In practice the use of Hi-tensile steel should provide very little disadvantage, as tubes of this diameter are very stiff - perhaps only the most extreme use could show up any shortcomings. The trikes are well proven and compete regularly in the tough 24hr pedal prix races. There is very little MIG weld splatter and everything is powder coated. One quibble was with the

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naked front derailleur cable, which simply wraps around the crank housing. In time this will rub through the powder coat. As well, the fixed point of the cable is back on the frame, so any adjustment of the boom will upset the front derailleur adjustment - this could be neatened up.

**Seat:** The seat frame is again of steel, forming an integral structure with the main frame, with a long length of wide nylon webbing wound around the seat tubes to form the covering upon which you recline. This approach functions reasonably well and is secured at one end by a nylon buckle which provides a simple method to retension or remove the webbing. The webbing does appear to move around a bit though and was in need of readjustment at the end of the weekend - it would be a simple matter to make this webbing in three pieces so a rider could have different tension on different parts of the seat. This would probably reduce the need to readjust the webbing quite so often. The seat on the Fast-Back was the narrowest on test, and while I didn't have any problems, one reviewer thought that it didn't offer sufficient support. A wider seat can be ordered.

**Steering and braking:** The Cool-Cruza and Fast-Back both have a simple direct steering control via the "all-in-one" design as per the "Swift". It has however, been simplified slightly by attaching the track-rod directly to the brake-arm / handlebars. Sealed cartridge bearings are fitted to the upgraded front hub axles. Ackermann alignment and centre-point steering to eliminate bump-steer are standard. The steering works very well apart from parking-lot turns at extreme lock where the steering tends to get a little heavy. The kingpin mechanism turns in tough self-lubricating Teflon impregnated nylon bushes and should need little maintenance. The hand position is high compared with the Greenspeeds, but does allow for mounting of mirrors etc. A mirror was not fitted to the test trike so it was

not possible to tell whether it would have suffered from vibration on rough tarmac like the one on the Swift. The V-brakes were very impressive - designed to slow fast moving mountain bikes with one or two fingers, when you add two

to the front of a vehicle with such a low c-o-g it is possible to generate quite amazing braking forces, although with such power the brakes did tend to grab a bit. Emergency braking in a corner might be a bit tricky - it is possible to lift the rear wheel, and so staying right side up under such circumstances might need a bit of experience. A modulating feature to limit brake power (found on some V-brakes) might be a desirable safety feature. The disadvantages of rim brakes are outlined above - the addition of a third drag type brake to the rear wheel is again recommended to

provide an alternative source of heat dissipation if carrying a heavy load.

**Parts:** The torque required to change gear using the Gripshifts is sometimes transmitted to the steering, though the Gripshifts can easily be changed for something else. The front wheels on the Fast-Back have a quick release mechanism standard (optional on the Cool-Cruza). Other parts are mid-range quality and should last well.

**Option:** The benefit of the all-in-one steering is that mudguards should be easy to mount onto the brake-arms - though I'd request the suitable braze-ons for this during construction. It will be necessary to request light-mounting-tabs if you wish to fit lights.

**Overall:** The Tri-Sleds are elegant, neatly assembled and well-built machines - a good product with, I think, a certain future in the HPV market place. Although the steering does not have the sophistication of the Greenspeeds or the Sirocco it none-the-less works very well - the slight heaviness in the steering on very tight turns at low speeds would be something I think that you would get used to and forget about very quickly if this was the only trike you rode. The Cool-Cruza with a 40 degree seat angle was slower than the Fast-Back, but would make a good commuter and touring machine and the more upright seat is better for seeing over



The Fast-Back  
(racing trike)  
Ben Goodall (TRI-SLED)  
57 Boundary Rd.  
Dromana VIC 3936  
Australia  
Ph 03 5987 2696  
Mobile 0412 220 854

photo by Ian Humphries  
ianh@nch.edu.au  
Nov 1998

a front fairing if you wish to add one to provide weather protection.

**Pricing:** Although Ben is talking about raising his prices - for the moment they seem to be fixed and at under \$2000 - the Tri-Sleds are excellent value!

**The Freedom HPV "Sirocco"**

Peter Holloway of Cycle Science is an experienced recumbent designer and builder with a commitment that spans many years. He also offers a short wheelbase recumbent bike called the "Tailwind" and has developed a compact long wheelbase bike model - the "Breeze". The Sirocco is the Freedom HPV model that is aimed to provide the 3 wheel stability of the Greenspeed trikes at a slightly lower cost - and it does this by simplifying some of the Greenspeed's features.

**Frame:** The Sirocco offers two sizes of frame and a sliding seat adjustment instead of a sliding crank/boom arrangement. The fit for different riders can be adjusted without tools. The frame uses larger diameter tubing for both the cross member and main spine compared to the other trikes on test, to compensate for the lack of frame triangulation which is normally provided by a fixed seat. The frame as tested was stiff and nicely welded - TIG welds appear slightly smoother than MIG - the test trike was powder-coated a brilliant red. The seat also reclines handily and so it can be set to suit each rider and conditions - a nice feature if you need to lay it all the way back to overcome a serious head wind - and it can also be removed, along with the wheels to pack the trike into a smaller package if necessary. The frame has braze-ons for adding the Sachs 3x7 gearing as standard. The Sirocco is unusual among the trikes here in that it uses two standard cycle headset as the kingpin bearings.

**Seat:** The seat is good quality mesh over a cro-mo steel frame and is supportive and comfortable - a standard design used on the other Freedom HPV models as well. It does however lack the shaped shoulder section of the other trikes on test and this may be important when the seat is fully reclined, when a shoulder/neck support becomes more important. It shouldn't be a concern if you ride with the seat up around 35-40 degrees. The seat as tested was laced at the rear with shock-cord, although the no-extra-cost option of side-lacing is possible and may be desirable to avoid minor pressure points.

**Steering and braking:** The trike shared the Greenspeed crossed steering rod arrangement, with additional adjustment

in the handlebars which pivot from under the seat - this gave it the excellent feel of the Greenspeeds at the cost of a little extra complexity. The Sirocco's handling was excellent and always predictable. The braking was via twin Sachs drums and they worked well, however I'd opt for low friction cables to improve their function further.

**Parts:** Comments were that paint and component quality was good but one reviewer thought there was one place where the chain routing could be improved. He noticed the potential for chain-slap on the front cross member, especially if a small granny gear is fitted - due probably to a slightly lower crank position, which also placed the heels very close to the ground at the bottom of the pedal stroke. A tubular nylon chain guide would probably be all that is necessary to alleviate the above problems and would also save the leg from the occasional greasy encounter. The test trike was fitted with fat lightly treaded BMX freestyle tyres (1.9") which provided excellent grip, made for a very comfortable ride, but were a little noisy at speed.

**Options:** Freedom HPV have the resources to offer almost any option you care to wish for, including the Sachs 3x7 rear hub, and S&S couplers. An integral rack can be ordered and although the test trike lacked a front light



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mount on the derailleur post, it is specified as a standard feature and so should appear on all future frames. A custom spar is available to mount a mirror and mudguards.

**Overall:** The Sirocco is a new model from an established builder with a good reputation and history - the minor criticisms that are outlined above will undoubtedly be sorted out on future models. The Sirocco provides an excellent package and would make an excellent choice for touring or commuting. 2 of the reviewers thought that the Sirocco was probably the pick of the trikes here, if price and features were weighed up. With a few small improvements to the chain management and the ability to fit through narrower openings than the Greenspeeds, it looks certain to be popular.

**Pricing** At an approximate price of \$3,200 this trike looks very good value for money.

### Conclusions

It is obvious that each manufacturer has chosen a different goal or set of goals when designing their particular entry into the trike market. The Sirocco is the closest to the Greenspeed in design, components, and price. The Tri-Sleds and Swift both opt for a simplified steering arrangement and for powerful V-brakes over the more expensive Sachs drums. The manufacturers must be commended because the trikes seem to satisfy the design objectives and will, I think, also more than satisfy the requirements of the more-modest-budget triker. Each of the newer trikes have a narrower track than the Greenspeeds - with the reasoning that they may make the trike easier to wheel through doorways and narrow openings, and take up a few less centimetres of road space. Although this meant that it made each of these trikes a little easier to get up onto two wheels, the inherent stability of these tadpole designs made this seem like no big deal - each trike felt neutral even at the limits of cornering and with just a bit of body lean into the corner they were all easily controlled.

Testing these trikes provided me with a fun HPV experience - I was especially at home hopping from the 20 degree seat of my low racer recumbent bike to the more reclined race and sports oriented trikes on test here - I found screaming around on the Tri-Sled Fast-Back especially enjoyable - it was as fun to ride as any of the other machines on test and as fast as all but the Greenspeed race trike. With the V-brakes and 44mm tyres it is a very fast and road-worthy machine. Two reviewers chose the "Sirocco" as their favourite. Everyone acknowledged the build quality and near perfection of Greenspeeds. Although a large price

variation exists between the trikes tested here and the differences are hard to detect for the uninitiated, perhaps the answer could possibly be summed up by one of the reviewers who suggested that "You get what you pay for".

It became obvious by the end of the test though, that a potential buyer wont find a better selection of recumbent tadpole trikes anywhere else in the world - there is certainly one to suit your purpose among these. The new models fill very adequately the gaping holes at the mid-price-range level in the trike market. Each is well finished with durable powder-coat paint and all steer, handle and brake very well. Each trike tested has its merits, they are all fun to ride and perform well - one reviewer described them all as "ownable"!

Note: specifications, prices and options may change - contact the manufacturer for confirmation.

Thanks to Giles Puckett, Don Thomas, Peter Heal, Chris Curtis and Jeremy Lawrence for their help and comments and to the manufacturers for supplying the trikes.

Footnote: One manufacturer of recumbent trikes who could not supply a trike for this review is Wayne Kotzur , phone 02 6236 8265, last seen working on an interesting folding version.

### *Ian Humphries*

*Sydney Recumbent Riders / Sydney OzHPV ride coordinator.*

*(Copyright Dec.1998 Ian Humphries Ianh@nch.edu.au)*



(ED. A 'tongue in cheek' reflection of the Canberra Challenge)

## The Mighty Divebomber (Canberra 1997)

'Twas Ian Knox of Ferntree way that caught the 'bent' bike craze,  
 He pondered, planned, then welded and reamed for many nights and days,  
 And when at last his new machine was ready to be tried,  
 He was off and riding like the wind before the paint had dried.  
 He hurried off to Canberra town to put it to the test,  
 At the annual "Bent Bike Challenge", he look on the field with zest.  
 He raced off madly at flat chat but 'ere he'd gone a lap,  
 His back tyre hit a nasty snag that left it pancake flat.  
 But such hard knocks do not stop Knox 'cos Knox has got the mettle,  
 And so to the enduro race, he took his brand new metal.

Now some metal's mettlesome yet much seems all awry,

Some bikes ride like leaden rein, but the Knox machines can fly,

So foxy Knoxy shot off rating through that fearful tray,

But down Mount Kotzur's dreadful slope he aviated away.

He hit a snag and looped the loop, a-cursing Colourfully,

In all his air force years, he'd not flown this recklessly.

As suddenly he came to earth with a loud resounding thump,  
 His chainstays like a pretzel bent, and strawberry red his rump.  
 Now luckless Knox from Ferntree way limped home - but was he beat?  
 Like hell! He's heading back again to conquer next year's meet.  
 So if you spot his orange recumbent be sure to give him space;  
 He's training grim for Canberra, you can see it on his face,  
 A tortured soul in torment, with shocking dread disease,  
 severerecumbentitus. You should catch R, it's a breeze!

By the immutable law of Karma the tables were neatly turned on the author in 1998 when it was his turn to sit down during a race, ensuring that he who laughs last laughs best..... But ..... will the last laugh be??



Ben Goodall doing 'splashouts'

## The Mighty Waterbomber (Canberra 1998) (a sequel)

'Twas snow-topped Bob from Athelstone who thought he'd go a shopping,

But though the weather was nice and fine he ended up quite sopping,  
 He strove to race the speedy Ken and found he was too slow,  
 So harder through the corners was the way he tried to go,  
 He bounced across the tack and grass and headed for the pond,  
 Instead of looking at the ground his gaze was far beyond,  
 His world spun quickly 90 degrees complete with shower and scrape,  
 And some spectators saw it all, their jaws were wide agape,  
 Old Bob sprang up to a chainless bike but briskly forced it on  
 And reached the shopping station just before quick Ken had gone.  
 And irony of ironies, he picked up still more water,

And said some shocking things that he really shouldn'tve oughta.

At least his chase was nice and cool, being soaked through to the skin,

But when the chequered flag did fall, twas Ken that claimed the win,

While Snow-top missed his gear-change on that last exhausting slope,  
 Knowing that for sure by now he run right out of hope.

He jumped off, ran and dragged his

bike to end the comic farce.

His spirit was undampened still, though wet and bruised his ar##.

He put some salt upon his wounds and uttered dreadful curses,

Then realised he had an excuse to go and see the nurses,

And fill their ears with empty chat, and savour the female touch

He's old and should retire soon, eh? Perhaps it's all too much?

"Not \*#@\*#! likely!" growls old Bob, just look now at his face,

Yes, he'll be back again next year, that ageing, hardened case,

A snowy-haired old skeleton with a permanent, dread disease,

Advanced recumbentiits - you should catch it - it's a breeze!

*Robert Braunsthal* (beyond cure)

### New Web page

There's a new Web page created exclusively for OzHPV members on the internet at (deleted for security)

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

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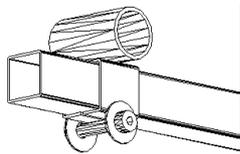
## Using square steel tubes on homemade recumbents.

For the homebuilder with limited access to tools, square tube is much easier to work with than round tube. It offers the following advantages:

- \* Available in a range of sizes and thicknesses at low cost
- \* Common 1.6mm thickness is easy to weld.
- \* Various sizes of tubes nest inside each other and around standard bike parts: this can provide a good alternative to jiggging and simplifies the making of folding/seperable bikes.
- \* Bottom brackets that use nested square tube cannot rotate around the boom as can happen with brackets on round tube.
- \* Complete bikes can be made with a minimum of welding: drillpress, bench vice, file and a bit of sweat are the main tools you need.
- \* Easier to drill accurately than round tube (always has a face at a right angle to a bench-press drill)
- \* Supports seats better than round tube ie a timber seat sits on the face of a square tube but only on the top of a round tube.

My last bike was made with square tube, my current project uses it too. Amongst professional builders, Michael Rogan from MR Components makes the main boom for his trikes in square tube.

The photo shows an example of an assembly that could be used to hold bike front forks: the larger tube is 35sq x 1.6mm wall and the smaller is 31.8sq x 1.6mm wall. The sizes (of the inside of the larger tube and the outside of the smaller) match exactly and the assembly shown cannot be separated by hand. The headset (fork bearing housing) has an outside diameter of 30mm where it fits into the tube.



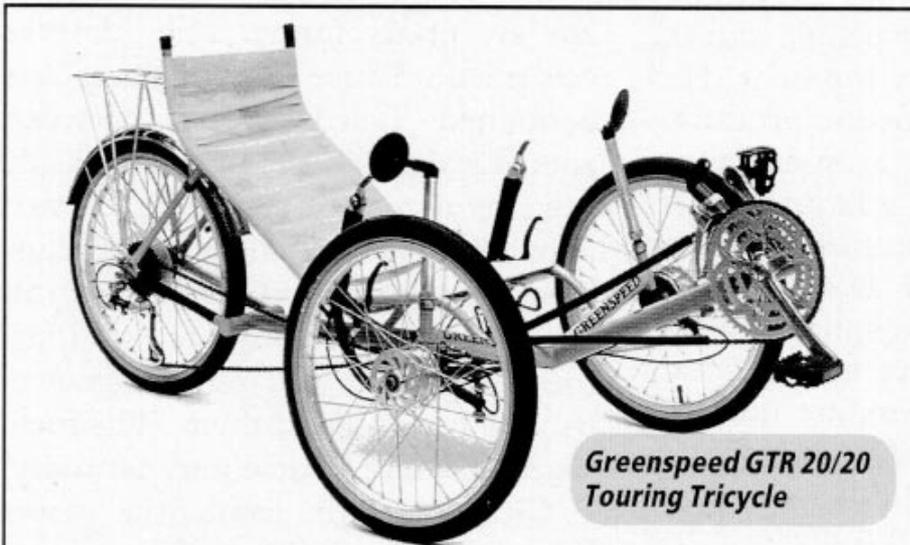
To make this sort assembly: \* Draw the joint you want to make to scale to determine the size of the opening to be made in the large tube. \* Scribe the large tube where it is to be cut. \* Drill holes all around the inside of the scribed lines so the edges of the holes almost touch. Use a hammer and cold chisel to remove the material you don't want. \* File away excess material. To avoid stress concentrations, the

inside walls of the large tube should be free from burrs and there should be no sharp corners in the holes you cut. \* Headset and small tube to be filed or ground before attempting assembly (slight interference fit between these two)

The drawing shows the adjustable bottom bracket on my current bike.

Good luck, wish you many hours of happy tinkering.

*Stephen Nurse*



**Greenspeed GTR 20/20  
Touring Tricycle**

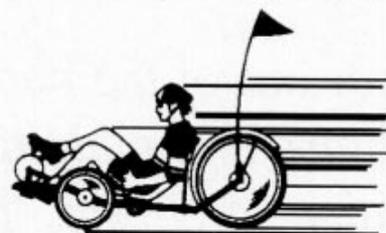
## Want comfort, safety and performance?

Greenspeed offers a range of recumbent bikes and trikes with greater comfort, safety and efficiency than ordinary diamond-framed bikes. Our most popular models are our Touring Trikes which, unlike LWB or SWB recumbent bikes, require no balancing and no learning period to ride. Just get on, and go!

Our trikes are world renowned for their centre-point steering and excellent handling qualities. Thoroughly tested in around-Australia tours through the outback, they are now exported to Europe and the Americas.

Visit, phone, fax, e-mail or write for a free information package and/or visit our web site.

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**Ferntree Gully Vic 3156**  
**Phone (03) 9758 5541**  
**Fax (03) 9752 4115**  
**E-mail: ian@greenspeed.com.au**  
**Web site: http://www.greenspeed.com.au**



## Newly elected OzHPV office-bearers

- **President** - Wayne Kotzur re elected Ph/fax 02 6236 8265  
wkotzur@netinfo.com.au
- **Vice president** - after some discussion decided position not required as constitution does not detail this position to exist.
- **Treasurer** - Duncan Cleland re elected Duncan @ CES.com.au
- **Secretary** - Peter Heal elected heal@cyberone.com.au  
H 0262884103
- **Committee Members**
  - Ian Humphries IanH@nch.edu.au  
Ph (02) 9550 2805 (home) (02) 9845 3988 (w)
  - Steve Nurse cesnur@eisa.net.au Ph 039481 8290
  - Paul Segal pauls@atrx.net.au
- **Region Contact Persons**
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  - Gary King - Perth gary@oceandigital.com.au  
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- **Membership officer** - Lindsay Segal (see footer for address)
- **Newsletter/Web Page Editor** - Tim Smith 0364234559  
timotsc@vision.net.au 143 Upper George St, Devonport, Tasmania, 7302

## HPV CD

*Have you had a look at the 1997 HPV CD (available from Grenspeed) Oliver Zechlin is working on the next one and is asking for submissions. I (ED) have sent off the full OzHPV site as well most of the other Web pages I work on and you may be interested in having something of your own in it. There isn't much time for him to get it by mail so see me if there's a problem, I may be able to help. Here is an extract from his last email.*

'As you might know I was and I am asking for submissions to the '99 edition of the Human Powered Vehicle CDROM. the next CDROM will be declared "freeware", "public domain" or something along that line.

This means I am asking you to prepare whatever you have and think is worthy of submissions. Digitized photos or total websites, text, small mpg's/mov's. The photos I do prefer in a html-setting (this is a great time to get your homepage done!) but also take gladly just the photos. Please send your data on floppy disc, ZIP disc or CD as well as complete webpages (on media) which I will incorporate on the CD. Commercial recumbent manufacturers- and dealers are also still welcome to participate. So as deadline I would like to ask you to send it to me directly:

Oliver Zechlin Rud.-Breitscheid-Str. 10 D-90547 Stein Germany. If it is less than 2MB you might as well send me a compressed ZIP/ARJ/RAR file via eMail. But please use my work-account which is <oliver.zechlin@mch.siemens.de> and use HPV as first word in the subject (for filtering)

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## Upcoming Events

**WA Recumbent Riders**, The meeting place for Freemantle recumbent riders is every second Sunday at 8:00 AM at Gino's Cafe on South Terrace, Fremantle (it's on the cafe strip). If you are in the Perth area and have a recumbent or are interested in recumbents, be there! We're there a couple of hours eating breakfast, drinking cappacino and talkin' 'bents. E-mail Gary King if you have queries. gary@oceandigital.com.au

**Queensland HPV Enthuasists**, contact Ray Hembrow 20 Murchison St Carina 4152, Brisbane ph 07 3843 2729 (after 6.00pm) or email David Johnston davej@ecn.net.au

**Tasmania Recumbent Enthuasist Group**, For 1999 quite a few of our members have been spread over the State so we are still trying to work out how to organise the times we get together. It looks for now like we will meet at least for some of the time at a location at least central to most of us in Tassie, possible near Launceston. Contact Timothy Smith timotsc@vision.net.au 143 Upper George St, Devonport Ph 0364234559 or Richard Hoad Hobart Ph 0362787247

**Melbourne Recumbent Riders**, Rides are held 2nd Sunday most months. Contact Steve Nurse cesnur@eisa.net.au Ph 039481 8290 ah

**OzHPV Canberra**, 1st Sat of each month. Contact Peter Heal heal@cyberone.com.au, phone 0262884103 H between 7.00-9.00 pm

### Sydney Recumbent Riders

Contact Ian Humphries (02) 9550 2805 (home) (02) 9845 3988 (w) IanH@nch.edu.au

The **Adelaide recumbent group** has gone into suspended animation, since its leader (Ian Knox) and acting leader both moved out of town. Direct your requests to Grant Sellek [grant.sellek@roads.sa.gov.au](mailto:grant.sellek@roads.sa.gov.au)



**Alyson Macdonald on a homebuilt "Tour Easy"**

### January

Great Southern Sunrace 99 Australian Rally for Solar/Solar-HPV Hybrid and Electric Vehicles Mid January 1999 Refer to Sunrace web site <http://www.sunrace.netlink.com.au> for more information. Race from Adelaide to Melbourne via Mildura Australia Day Parade Finale

## February

Melbourne Recumbent Riders, Sunday 7th: 1st ride for the year. Mordialloc to Melbourne: Get to Mordialloc by train, then a flat 20k return ride to Melbourne. Check out Steve Nurse's Web site for latest details. or Phone 039481 8290 ah



**Paul Segal on a Kotzur Tandem - 3 months old, think he's picked a winner!!**

Sydney Recumbent Riders, Sunday 21st: Grade : M-H Bobbin Head Loop 50 km Organised by Greenspeed trike riders, Keith and Fran Griffin 9614 0777(H) meet at Beecroft station at 7 am. Ride with the fun BikeNorth group.

Sydney Recumbent Riders, Sunday 28th: 9-11am at the Cafeteria on Grand Drive, within Centennial Park. Come and chat, eat and drink (we will meet at the Cafe forecourt - the takeaway section!) and then ride a few laps of the park or do a 5km loop to one of the nearby beaches afterwards. Contact: Ian Humphries (02) 9550 2805 (h) (02) 9845 3988 (w)

## March

Melbourne Recumbent Riders, 19th-21st: Pedal Prix in Wonthaggi. Possible accommodation at Glen Forbes, staying at the old Primary School there for 1 or 2 nights. The weekend will naturally include a visit to the Prix, with plenty of chances to ride your recumbent and tourist around a bit. Ben Goodall has said that Trisled will enter a team in the event.

Wonthaggi HPV Grand Prix, March 19th - 21st 1999 Planning for the 1999 Wonthaggi HPV Grand Prix is well underway, with Bass Coast Shire Council having been asked for a seeding grant to develop the track at the Rec. Reserve, and donations and support being so far offered by several businesses and organisations in the town, including Coldon Homes, The Workman's Club, Eastern Energy and Radio 3GG. Further

detail can be obtained from HPV Grand Prix organiser Terry Earl (5672 5258), Peter Hanley Assistant Principal of Wonthaggi Secondary College (5672 1344) or Tony Guzzupi of Wonthaggi Business and Tourism Association (5672 1722). Applications are currently being taken.

## April

Sydney Recumbent Riders, Saturday 18th A social get-together and ride for recumbent owners and those interested in HPVs. Centennial Park and beach ride. Contact: Ian Humphries (02) 9550 2805 (h) (02) 9845 3988(w)

## September

The Australian International Pedal Prix 1999- Scrutineering: Friday 17th September, 24 hour Endurance race: Saturday 18th, Sunday 19th September Held at Sturt Reserve, Murray Bridge, South Australia.

## Guide to submissions for HUFF.

Receiving text and pictures in electronic form (either on disk or via electronic mail) will save me a little time but will need to be in IBM compat format. To be of good enough quality for printing, pictures will need to be scanned at about 150 dpi and in color if possible. I can however work with standard text on paper and photographs. Including a caption for each photo is very helpful but remember ink writing on the back of photo's

may come through the print or mark the photo facing it. I would suggest a soft lead pencil. Please remember to include your return address if you want your submission back. Contact me by email [timots@vision.net.au](mailto:timots@vision.net.au) or phone 0364234559. Send any contributions to 143 Upper George St, Devonport, Tasmania, 7302



**If this Newsletter cannot be delivered please return to:  
25 Wilkins St,  
Mawson, ACT 2607**

