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Freewheeling is published seven times a year by Mason Stewart Publishing Pty Ltd in the months of January, March, May, July, September, October and November. ISSN No: 0156 4579.

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Editorial correspondence: PO Box K26, Haymarket NSW 2000. Telephone (02) 264 8544 Fax (02) 264 8357.

Distribution: Gordon & Gotch (A/asia) Ltd Melbourne.

Typesetting: Everysize Typeart Service (02) 982 1163

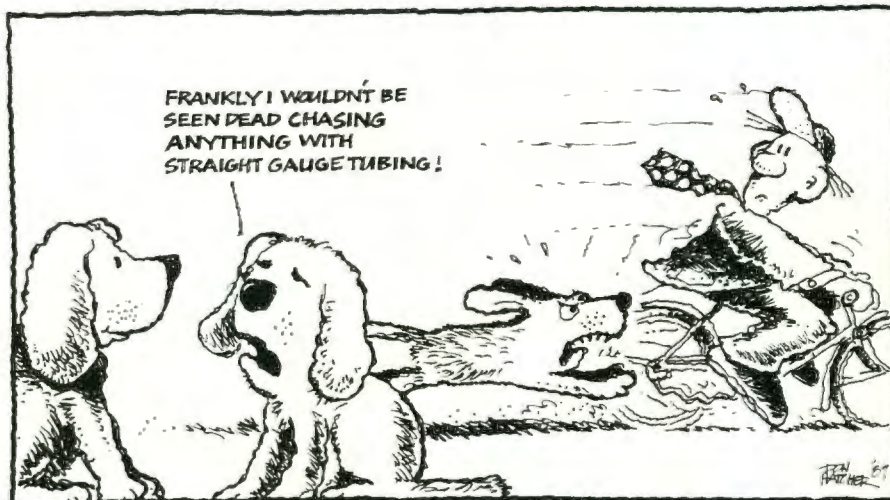
Printing: Offset Alpine Pty Ltd Derby & Wetherill Sts, Silverwater NSW (02) 647 1000.

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Cover photograph by Chuck Smeaton taken during a very muddy NSW Mountain Bike Championships held recently near Newcastle. Our coverage of this event starts on page 35.

Freewheeling



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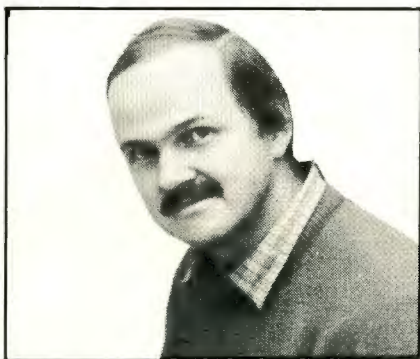
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Warren Salomon

A bumpy road ahead for Melbourne's cyclists

How a new Minister has set back the cycle scene by at least a decade.

IN THIS ISSUE OF *FREE-wheeling* we are continuing our series on the great cycling cities with a look at what the fair city of Melbourne has to offer. When one thinks of Melbourne as a cyclists' city one immediately thinks of bikepaths, wide tree lined boulevards, flat terrain and a benign and sympathetic government to inject a bit of equity back into a transport system loaded heavily against the humble pedal pusher.

Things have unfortunately taken a turn for the worst in Victoria and its capital Melbourne. The bikepaths, wide streets and flat landscape are still the attractive features but the government has turned negative and even antagonistic.

Recently I was in Geelong with representatives of the country's state bicycle committees and bicycle advocate groups to attend a three day workshop hosted by the State Bicycle Committee of Victoria. Before I set off to that conference I even wrote about it our last issue. Perhaps I was too harsh when I predicted that the gathering would be no more than a gab fest for junketeering bureaucrats because for the West Australians, New South Welshpersons and others it was not.

It was good to see so many earnest and hard working professionals meeting in one place for a free exchange of ideas. However I was amazed when one of the suspicions I mentioned in my last editorial – the Victorian Government's ulterior motive behind the choice of Geelong as the venue – was proven to be reasonably close to the mark.

The selection of Geelong as a venue (when it should have been held in Melbourne) was apparently made because of the lack of a suitable venue with live-in conference facilities – at relatively short notice – in the capital. Regardless of the physical reasons for the choice of venue it still served its political purpose to keep the influential meeting at a safe distance while dirty work was being done in Melbourne.

As the conference proceeded I became aware that up in Melbourne the fate of the State Bicycle Committee was being decided by Transport Minister Jim Kennan and his advisors. His SBC chairman, who some say was appointed last year to oversee the dismantling of the committee, only managed a short speech before he took off back to the seat of power leaving all the other SBC chairpersons to chat among themselves.

The SBC staff put up a brave front and were gracious hosts but they were plainly embarrassed by the disgraceful political manoeuvrings which were going on behind the scenes. Later in the week after a bit of public skirmishing in the media Bicycle Victoria representatives met with the minister and received a tongue lashing seemingly intended to make them feel like naughty school children.

At the end of the Geelong conference a valuable consensus was reached when the delegates agreed to a statement of direction summing up the findings of the gathering. To date this statement has not been released to the public by the SBC and a number of the interstate delegates feel slightly miffed by the Victorian government's new found lack of interest in the welfare of cycling and cyclists of the state.

As matters stand now the State Bicycle Committee has been disbanded and will be reconstituted as an advisory committee probably similar to the commuter council or the like. The staff of the old SBC have now been taken to the bosom of the Road Traffic Authority which is soon to be combined with the Road Construction Authority to form the Roads Corporation.



Cartoon by Phil Somerville

► Those in favour of the move say that as a legitimate part of the state road construction authority the staff of the Bicycle Coordination Unit (as it is now known) will have a much better chance of influencing the way roads are built and be better able to integrate the needs of cyclists into the overall road building program.

No matter what is said to defend the Minister's decision it is plainly obvious that in the past cyclists had a high level body with direct access to the top decision maker, with its own budget and able to initiate programs for the good of its constituents – the cyclists of Victoria.

Both the RTA and the RCA have embarked on cycle related programs of their own and even have specialist staff who work on these projects so it is hard to see what the new arrangement will change within these very large bodies other than a loss of staff working in that area as the departments merge into Roads Inc or the like.

It is important to note that all the state bicycle committees around the country started their lives as advisory committees to the minister and were upgraded to full status as their work proceeded. In this light it is clear that what has happened in Victoria is a conscious downgrading of the status of cyc-

lists in that state and no amount of smarmy explanations can hide this fact.

By also shoving cycling in with the roads authority it will make it much easier for the lazy bureaucrats in Education and the railways to wash their hands of the whole cycling business and the programs they are supposed to undertake as part of the Melbourne Bikeplan.

As Australia hurtles towards an uncertain environmental future strapped to the wheel of a petroleum guzzling transportation system (which already pumps more carbon dioxide and other Greenhouse gasses into the atmosphere than anything else) it would seem sensible to regard the bicycle as a useful contributor to the health and future well being of the community as a whole.

Bicycles are the ideal short haul vehicle and can be used very effectively to get people around their local neighbourhoods to railway stations, to work and the like. Instead cyclists are being treated quite cynically as insignificant nuisances who ought to be put in their place.

At a time in history when the bicycle needs to be put to use as transport its role is being downgraded and all this is happening in the state which has lead the country in the past decade. ●

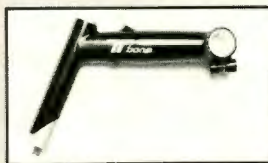
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John Drummond

A question of survival

*We're a small nation with an impressive cycling record.
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After a series of earth shattering performances at the Seoul Olympics in 1988 and the world professional track cycling championships Australian Cyclists emerged overall as our most successful international sporting competitors in 1988. On the track at the Olympics our five individuals and the pursuit team contested six events for a return of two silver (Martin Vinnicombe and Dean Woods), two bronze (Gary Neiwand and the team pursuit), a fourth (Robert Burns) and fifth (Julie Speight).

It was a truly remarkable performance against the world's best eligible talent. But that is not all. Eddie Salas finished the narrowest of sixths in the road race without the help of his team mates, Scott Steward and Stephen Fairless, who had withdrawn because of mechanical problems. The road time trial finished a creditable ninth.

Only the Soviets had a better strike rate at Seoul in which 375 competitors competed in the cycling events for 27 medals.

Across the other side of the world in Ghent, Belgium, Danny Clark and Stephen Pate won world titles at the professional championships in the motor paced and the sprint events respectively.

In the World's second largest spectator sport Australia now rates third behind the USSR and East Germany and all the world still marvels at how a nation of 16 million people holds this exalted position.

It is basically the result of good leadership/administration in the Australian Cycling Federation, the influence on the sport of the Australian Institute of Sport (the Charlie Walsh link) the positive action of the Australian Sports Commission and the dedication of the cyclists in overcoming the lack of modern track facilities on mainland Australia.

Over the past decade the Australian

Martin Vinnicombe photographed by Frank Walsh at the end of his 1/000s win in the 1989 Canterbury Velodrome title.

Cycling Federation saw the provision of International competition as the principle means of achieving its aims. This could be accomplished by either bringing world standard cyclists to Australia to compete against our riders or by assisting Australian cyclists to go overseas. While both alternatives had their merit the cost involved in fully implementing the plan was prohibitive. Thus concentration on track cycling was indulged at the expense of the road.

With one of the best track coaches in the world in Charlie Walsh we returned to the winners podium at the LA Olympic Games and had a clean sweep at the Edinburgh Commonwealth Games. The Federal Government established the Australian Sports Commission with a view to organising a sports development

Tasmania's magnificent all purpose indoor velodrome/sports centre where Vinnicombe set a new world record within days of his blustery outdoor win at Canterbury.

program. Grants through the Commission have enabled the Australian Cycling Federation to expand its scheme to both the road and track. Riders in Senior, Junior and women's categories now travel to international competition and world championships.

The idea of bringing world class riders to Australia has an attractive bonus. More of our racers are given the chance to compete against such riders and thus increase the possibility of uncovering potential champions, who might otherwise remain obscured through lack of opportunity or incentive.

The presence of leading international riders also adds glamour to the sport. This facet has in recent years been necessarily neglected in track cycling by the Australian Cycling Federation with the result that the public and potential new recruits were attracted to other sports. Now that is about to end.

It is Australia's pleasure to host the Oceania Continental Championships for the region later this year. They will be held in Tasmania with Launceston Indoor Stadium being the venue for the

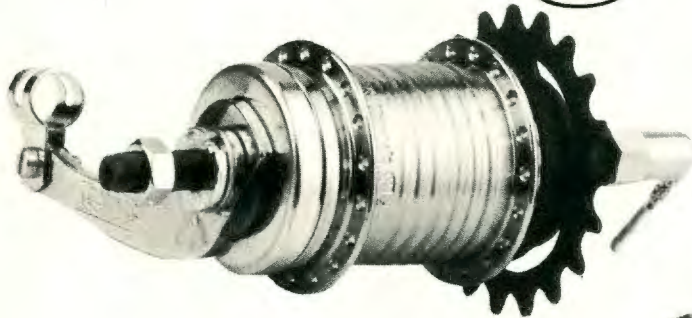


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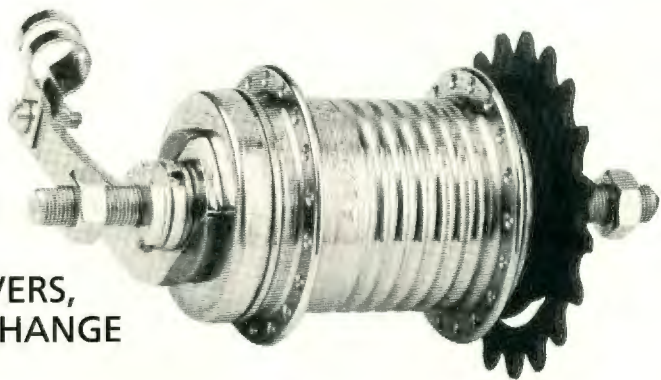


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Following the championships will be the Oceania International Grand Prix open to all Commonwealth Games nations and other invitees. All these events will be conducted by the Australian Cycling Federation as a forerunner to the 14th Commonwealth Games, to be conducted in Auckland, New Zealand in January 1990.

A total of 15 nations have so far indicated that they are considering having their Commonwealth Games teams in Australia for prior Games competition.

Whilst modern facilities have been built to accommodate the structure of the gambling sports of horse and dog racing and the traditional sport of football and cricket, the Olympic sports by contrast have languished on the Australian mainland. Only little Tasmania supplied the ultra modern facilities and comforts now available.

Having to race on yesterdays cycling venues, track cycling in the television age fell away. Sponsorship became thin because promoters could not guarantee television owing to poor lighting and the possibilities of rain washing out the fixture. Without public support riders lost interest to concentrate on all weather criteriums.

Since Seoul there has been a change. An indoor stadium is nearing completion in West Australia. Another has commenced building in Adelaide to supplement the cycling satellite of the Australian Institute of Sport. We understand Victoria is in limbo pending the 1996 Olympic Games determination.

But what of New South Wales who has twice as many racing cyclists as any other state with the worst track conditions. It became a question of survival for the Premier State when the 1989 National Track Championships were transferred from Perth to Sydney.

It was a rerun of what happened in 1984 when the National Championships were the selectors guidelines for the LA Olympic Games. Then, as now, a week of rain left spectators and cyclists awash with disappointment.

The 1982 season of track cycling saw the newly built Canterbury Velodrome come into operation. It was built to replace Sydney's old Wily Park Cycling Arena which was located in the Canterbury Municipality and was demolished by the Department of Main Roads to widen a road.

The original estimate of \$1.75 million for the completed velodrome was funded by a grant from the DMR, the NSW Department of Sport and Recreation, Canterbury Council and the NSW Amateur Cyclists Union now NSW Cycling Federation Inc.

The track is a magnificent circuit and was to be fully operational by 1983 with an arena large enough to accommodate a Hockey field. But to this day it has never been completed.

NSW and VIC who have long provided the bulk of Olympic and Commonwealth Games teams have lost the initiative and that is sad, for despite the embarrassment of the weather NSW emerged the Premier State from the national carnival With 6 track cyclists on scholarship at the Australian Institute of Sport plus a remarkable depth of junior talent the state is poised to take National Leadership in Australian cycle racing.

Despite the achievements at world level of NSW cyclists there has been a reluctance to finish Canterbury Velodrome. The only improvement I noticed since 1984 was the addition of plastic bucket shaped seats replacing bare boards. These were of little advantage in the uncovered stand when the rains came.

Generally there has been no improvement in the rider or spectator facilities in five years. It was a sorry sight to see the world champion and olympic silver medallist, Martin Vinnicombe, along with fellow olympic medallists Brett Dutton and Steve McGlede huddled with Gary Neiwand and Scott McGrory and sheltering from the elements in the entrance tunnel underneath the track.

In a week of rain not one session of the championship carnival was not inconvenienced by the weather. I am certain the conditions were the reason for Martin Vinnicombe's slow time of 1 minute 09.38 seconds in winning the Kilometre Time Trial. If proof of this was needed it was evidenced a few days later when the World Champion blazed a trail around the surface of Launceston's indoor cycling track in 1 minute 02.84 seconds to lower the world kilometre record set by East German Lothar Thosm in 1980.

The sporting public of Sydney love to witness contests between cycling champions, this has been conclusively proved since the turn of the century but they will not extend their support to a sport that operates in obsolescent conditions.

NSW track cyclists have a fine World and Olympic record extending from Dunc Gray who won Australia's first Olympic Gold cycling medal in 1932, to Martin Vinnicombe, 1987 World Time Trial Champion and Seoul Olympic Games Silver Medallist. If NSW wishes to see that record continue it cannot afford a repetition of the 1984 and 1989 debacles. The only way to avoid this appears to be to join the approaching track cycling push by finishing and roofing Canterbury Velodrome, or alternatively, pushing to have cycling in Newcastle included in the feasibility study of a \$20 to \$40 million sports and entertain-

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It's all in the hands of the NSW Cycling Federation. They have to take the initiative and lobby the state sports minister Rowland Smith. An enormous amount of Government money is being spent, or about to be spent, on providing facilities for less successful sports in the Newcastle region while the cycling velodrome, like Canterbury, remains unfinished.

International teams

The Australian Commonwealth Games team left Australia on May 16 for Dusseldorf, Germany, for special training

and International competition prior to competing in the world track championships in Lyon, France, commencing on 14 August 1989.

The Team is: Robert Burns VIC; Brett Dutton NSW; Mark Kingland NSW; Stephen McGlede NSW; Scott McGrory QLD; Gary Neiwand NT; Shaun O'Brien VIC; Julie Speight NSW; Clayton Stevenson NSW; Martin Vinnicombe NSW; Darren Winter SA.

The 1989 Junior world team for Moscow USSR July 9-16 is: Brett Aitken SA; David Brink NSW; Simon Calder NSW; Danny Day QLD; Brett Dennis QLD; Steve McMahon NSW; Dean Mather VIC; Nathan Page QLD; Jamie Rennie SA;



Distinguished guest

Carla Guiliani the Italian secretary of the International Federation of Amateur Cycling (FIAC) attended the Commonwealth Bank sponsored National Track Championships in Sydney during March. Mrs Guiliani was present in an unofficial capacity as a guest of the President of the Australian Cycling Federation, Mr Ray Godkin. The visit to Australia by Mrs Guiliani is indicative of Australia's high standing in the hierarchy of world cycling.

Cycling's world cup

Government legislation banning the advertising of Liquor Products at sport promotions in France has had some repercussions on cycling, not the least is a discontinuation of the long time Pernod consistency competition for professional cyclists.

However, it's an ill wind that does nobody any good and its place has been taken by Perrier, a mineral water company who have signed a three year contract with the Union Cyclists Internationale for sponsorship of cycling's first World Cup.

The driving force behind professional racing's biggest shake-up in years is Federation International Cyclists professional President Hein Verbruggen whose mission is to make cycle racing a true world sport. After 5 events the first Perrier World Cup series seems to have really gripped the imagination of bike fans everywhere, with many lesser-known riders getting a look in and the racing proving imaginative and with no processional riding as so often has been the case in the past.

Edwig Van Hooydonck was holding a slender two point lead as the series halted for the major Tours (Spain, Italy and France).

This column will review this interesting series and the World's greatest sporting event the Tour de France in our next issue.

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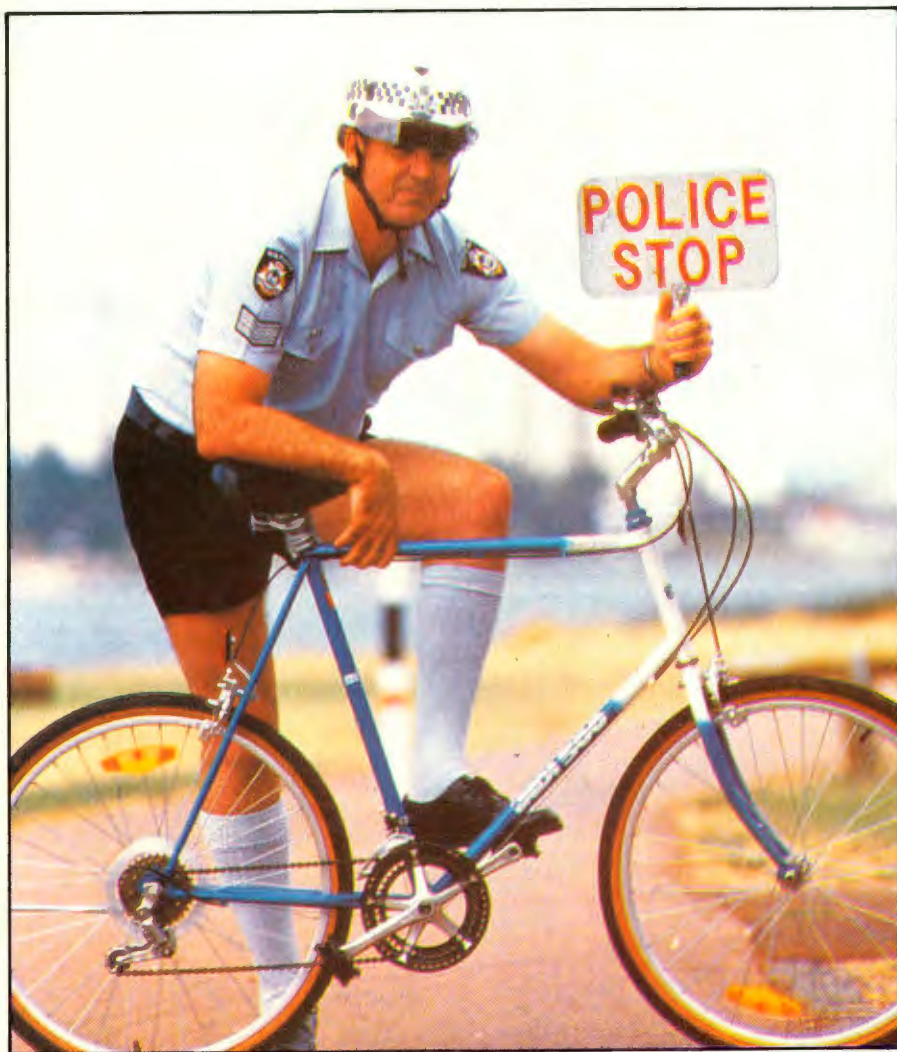
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The big race

Now here's a good way to greet the spring. The trans Australian ultramarathon bike race start on 15 October and is a straight through race from Melbourne to Perth, some 3500 km. Last year the current record was set with a time of four days and 22 hours. Competitors are to be in teams of four cyclists and six back up crew, and the first prize is \$10,000. Enquiries to Lisa Watkins on (03) 456 0211 or John Turner on (03) 456 0295.

NSW SBC relocated

Changes in the New South Wales transport administration have resulted in the State Bicycle Committee being relocated to the newly formed Roads and Traffic Authority which is itself an amalgamation of Motor Transport, Main Roads and the Traffic Authority. The State Bicycle Committee will operate as part of the Road Safety Bureau.

Stop Police! Sergeant Bill Robertson of the WA Police force shows how the new law enforcement programs will affect some riders in that state. The WA Police have one of the most progressive law enforcement programs in the country.

The Minister claims that this relocation will enable the SBC to provide policy advice on cycling matters more effectively. Let's hope it's not only a matter of providing advice but also having it listened to and acted upon.

Contra flow lane

A new development in bike paths is the introduction of a contra flow lane for bikes on a one way street in Sydney's inner west suburb of Ultimo. The need for a radical solution arose after a new arterial road system effectively blocked off the existing cycle route at Wattle Street from the western suburbs into the city. After a while the Department of Main Roads got wise to what had happened and reinstated the lost section of route.

There is a 150mm concrete median strip to separate the cyclists in their own lane from the motorised traffic, which is of course travelling in the opposite direction. This sounds a good idea, giving far greater visibility to motorists and thus giving cyclists a safer ride, but one has to wonder about the head winds that commuters will now be battling with as the traffic whizzes by.



The Wattle Street contra flow lane in Sydney protects cyclists from the traffic. This type of road treatment is common in Europe where bicycle aware traffic engineers are more commonplace.

New cycleway

In Sydney's far south the longest on-road cycleway has just been completed: 15 km through Bradbury, Campbelltown and Leumeah. This type of bike way is cost effective when compared with off-road facilities and the only concession is that motor vehicles are allowed to use the lane for parking.

Around Oz record attempt

While you're reading this, one Rod Evans will be attempting to break the around Australia cycling record which currently stands at eighty days (didn't someone else travel around somewhere in eighty days?) and was set by four Danish cyclists in 1985.

He sets out from on 14 May from Perth GPO and will ride in an anti-clockwise direction following the coast and Highway 1. He takes a support crew of two Canadian females and is using the attempt to promote the work of the Asthma Foundation of Western Australia and encourage the wearing of bike helmets.

The total distance is 14602 km. Daily stages range from a few days with about sixty kilometres to days with a massive target of over two hundred kilometres.

Rod is 31 years old and Secretary of the WA Audax Club. He retired from

competitive cycling a few years ago and commenced training for this attempt in May 1988.

US National Congress

On 30 June a tradition that dates back to the 1800's is being revived with a one day National Congress of cyclists in Salisbury, Maryland on America's East coast. The congress will consider the role of bikes in our society and the need to co-ordinate the plans of action of the country's biking organisations.

The following three days are devoted to the League of American Wheelman's National Rally. This includes over sixty workshops, a consumer show and a choice of forty bike rides to participate in. The Rally has been held since 1880.

The Congress is expected to have 300 participants and the Rally 1500 participants.

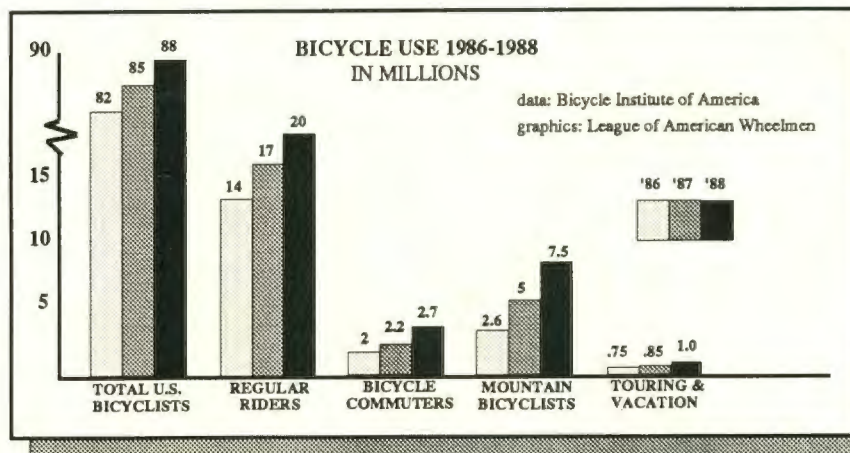
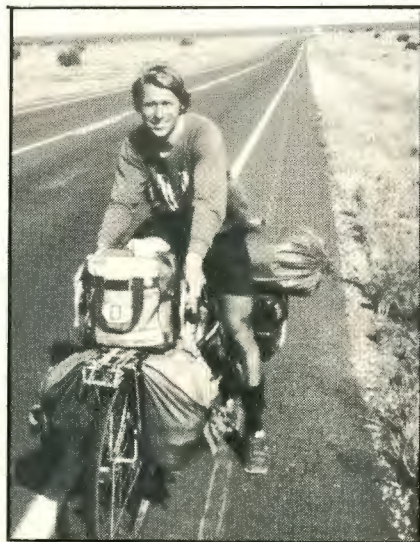
Biathlon titles

The National Biathlon Championship is set for 13 August. The event takes place in the ACT's Stromlo Forest and you have a choice of distances: either 6 km run, 40 km cycle, 6 km run; or 3 km run, 20 km cycle, 3 km run.

For an entry form send a stamped addressed envelope to PO Box 2384, Civic, ACT 2601. You can get further details from Rob Caune of the ACT Triathlon Association at the above address or by phone on (062) 47 5360.

Round the world tour

Here's a fellow who's just done what many of us dream of. Bernd Schubert of Frankfurt has cycled 77,971 km around the world, visiting 45 countries. The trip took him three and a half years and after crossing Australia he went to Alaska from where he rode down to Argentina. That's a lot of bike riding.



Figures released as part of Bike Month (May) in the USA show some interesting trends: cycling is growing in all sectors but most rapidly in mountain biking. Bicycle commuting is alive and well but the bulk of cyclists are occasional riders cycling mainly for fun and fitness.

The rural town of Castlemaine in Victoria was overrun with almost a thousand people this Easter as Bicycle Victoria held its second successful Easter Bike rally. A tent city of three hundred and ninety tents provided shelter for the participants who spent their days eating, riding, swimming, eating, more riding and even more eating. This young participant was photographed by Andrew McDowall on one of the guided day rides to Chewton. Easterbike raised funds for the National Heart Foundation and will be run again next year.

Easterbike fun for all

Bicycle Victoria in conjunction with the National Heart Foundation hosted a successful Easter extravaganza, Easterbike. Over 1300 cyclists descended on the central Victorian town of Castlemaine to camp, take part in rides, and enjoy the film shows and bush dance.

A highlight of the weekend was the parade on Easter Monday from Castlemaine to Maldon which included several riders on penny farthings dressed in period costume. Charlie Farren won the coveted "Best decorated bike" award, and the townsfolk of Maldon are still reeling from the influx of cyclists. ▶



Maps

The Victorian Road Construction Authority has nearly completed its new series of road maps for the state which aim to show every road in the state. The state is covered by eighteen sheets, of which the sheets for Ballarat, Melbourne and Warburton are as yet unfinished.

The scale is 1:250,000 which should make the maps useful for cycling and especially for planning a tour. The maps show roads and waterways but give no topographical information other than a few spot heights.

Crocodile Cycles

It's getting cold isn't it? Why not head up to sunny (or is it wet?) Queensland for a cycling holiday with Crocodile Cycles who organise tours from their base in Cairns.

They have three cycling tours on offer, all on mountain bikes, and using quiet mainly unsealed roads, logging trails and bush tracks. The tours are fully supported with bikes provided and use either lodge accommodation or camping beside rivers and waterholes.

You also get to try your hand at canoeing and there is swimming and walking at many of the spots visited.

The three tours are: seven days on the Atherton Tableland, starting at Kuranda and finishing in Cairns at a cost of \$740 out of Cairns; three day in the Cairns hinterland exploring the forested mountains and valleys at a cost of \$295 from Cairns; twelve day outback safari start-

ing at Kuranda and following backroads with the Valley of Lagoons as a highlight at a cost of \$1085 from Cairns. The tours take place between late April and early November with several scheduled departures.

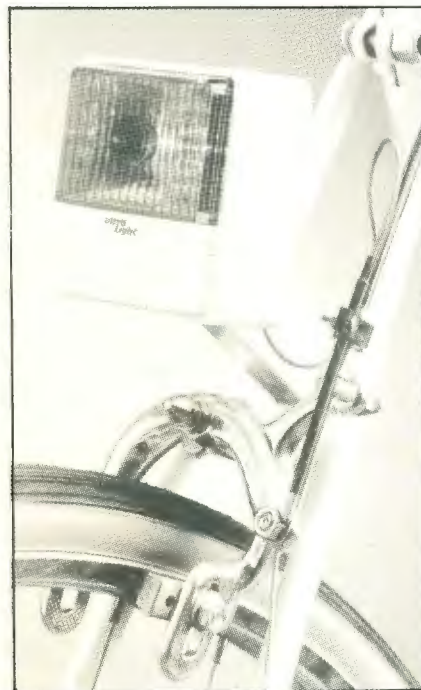
For a brochure or other information contact Crocodile Cycles, PO Box 5155, CMC Cairns, Qld 4871 or telephone (070) 93 7689. In New Zealand you can contact Suntravel Ltd at PO Box 9778, Auckland, telephone (09) 54 3521.

Speaking of socks...

A little piece of advice from the South Aussie Touring Cyclists' Association newsletter advises riders who wish to cut down on weight (in their luggage, not body fat) to take three socks when they tour. The idea is to wear two when you leave home; then wash one, change your left sock to your right foot and put the clean sock on your left foot; later you take the right sock off and wash it, having moved the left sock over and put the spare on your left foot.

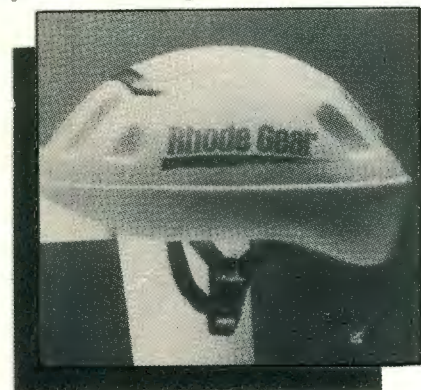
There's only one catch: socks aren't sold in threes so you'd have to buy two pairs and leave one sock at home, and that's poor economics. Or can you buy socks in threes in SA? ●

Freewheeling fitness writer and bicycle racer Cyndi Holmes is off to the USA to race with her team the Brisbane Blasters. The blasters ready to ride (L to R): Anita Crossley, Robyn Molan, Cyndi Holmes and Trish Maude.



Brake light

Bicycles can now be fitted with a rear stop light made by the British Ultralight company. The unit fits to the rear brake bridge and is activated by the action of the caliper brake. The Ultralight comes complete with two AA size batteries plus all mounting hardware.



Ultralightweight helmet

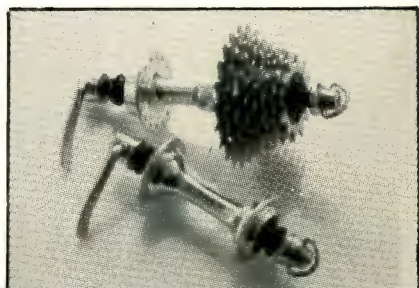
Rhode Gear have released what must be the helmet of the future – a polystyrene ultralightweight helmet for sports use. The helmet weighs about half that of the average hard shell helmets and unlike other ultralightweight helmets has no lycra/mesh cover to keep the helmet from splitting in the event of a severe impact. Instead the helmet is sealed with a thick plastic spray on coating to strengthen the helmet and enable it to be easily cleaned.

Shimano 8-speed hub

The Japanese parts giant Shimano has released an eight speed hub as part of its

NEW PRODUCTS

top of the range Dura Ace component group. The cassette freewheel works only with the Dura Ace rear derailleur and levers to give fast positive indexed shifting. Because the freewheel is fitted to a cassette type hub improved wheel spoke dishing can be achieved even with the extra cog. The 8-speed gear system is available in 12-19, 12-21, 13-24, 13-21 and 13-26 ratios.



New SunTour ensembles

Corporate allegiances have shifted in Japan as three smaller component makers regroup to compete more effectively with the world's largest bike parts maker – Shimano. SunTour has combined with Dia Compe and SR to produce the new GPX component range. The range which features smooth modern styling consists of brakes, chainwheel set, hubs, freewheel, seat post pedals, headset and derailleurs.

Power brakes for bikes!

With the lightest touch to the brake lever the SunTour XC9000 SE rear self energising brake mechanism begins moving the pad in a 'three dimensional arc' towards the rim. As the pad engages the rim a helix mechanism uses the energy of the turning rim to multiply the braking force. The SE fits all standard cantilever mounting bosses

Apollo to handle Fisher

One of the top US mountain bike brands will now be distributed in Oz by the Apollo Bicycle Company. Four models will be available through Apollo dealers from July onwards. Some of Fisher's models will feature an oversize steering head and bearings (called Evolution) designed to add stiffness to frame handling characteristics.

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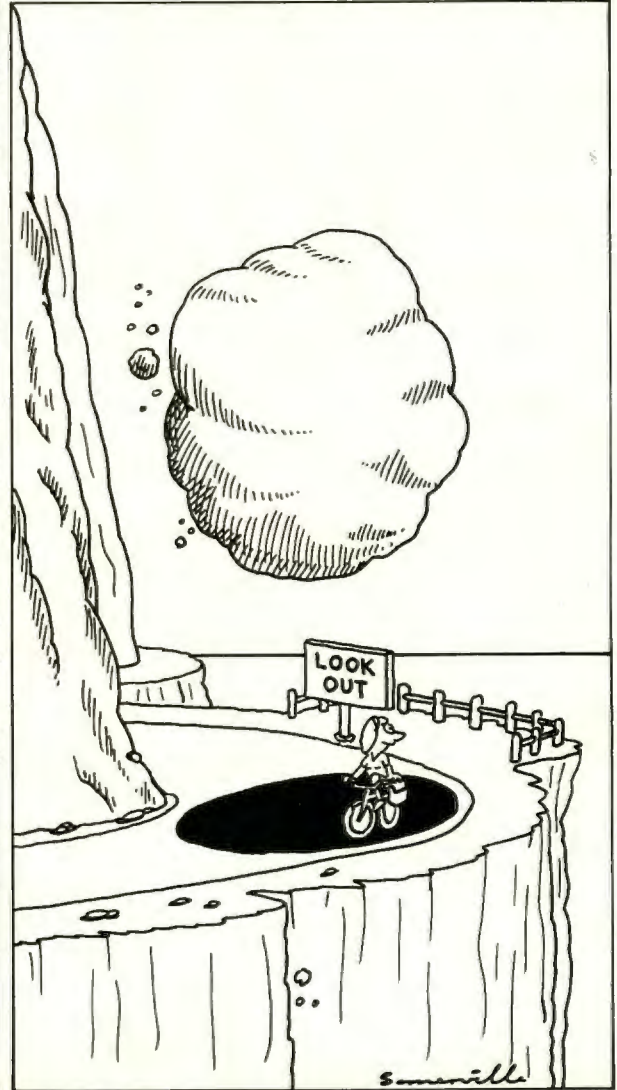
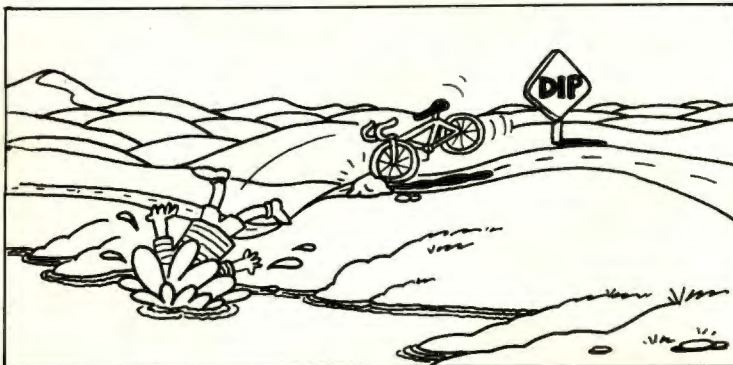
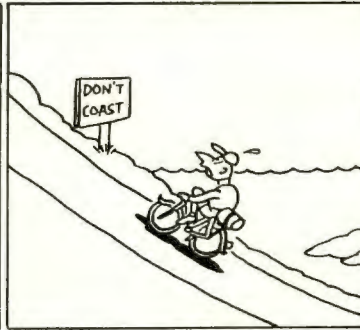
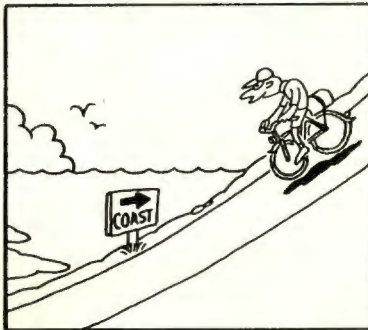
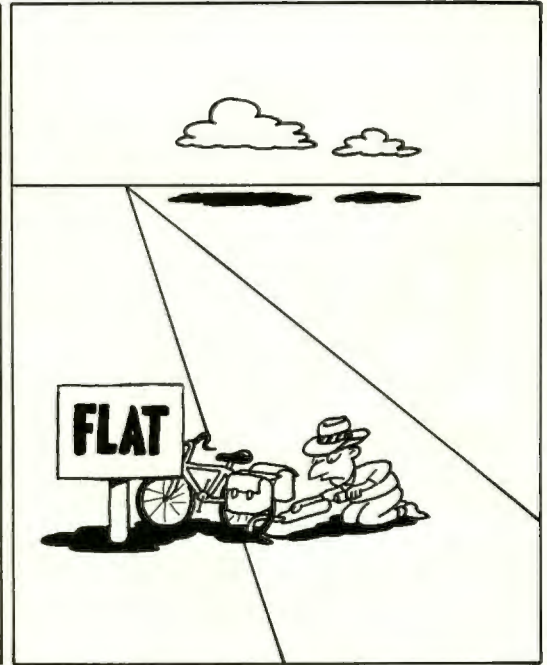
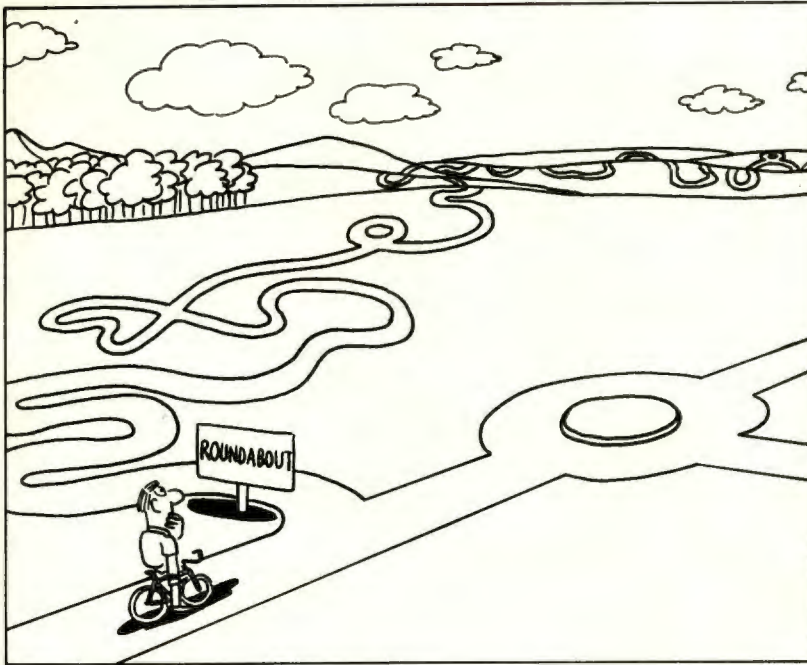
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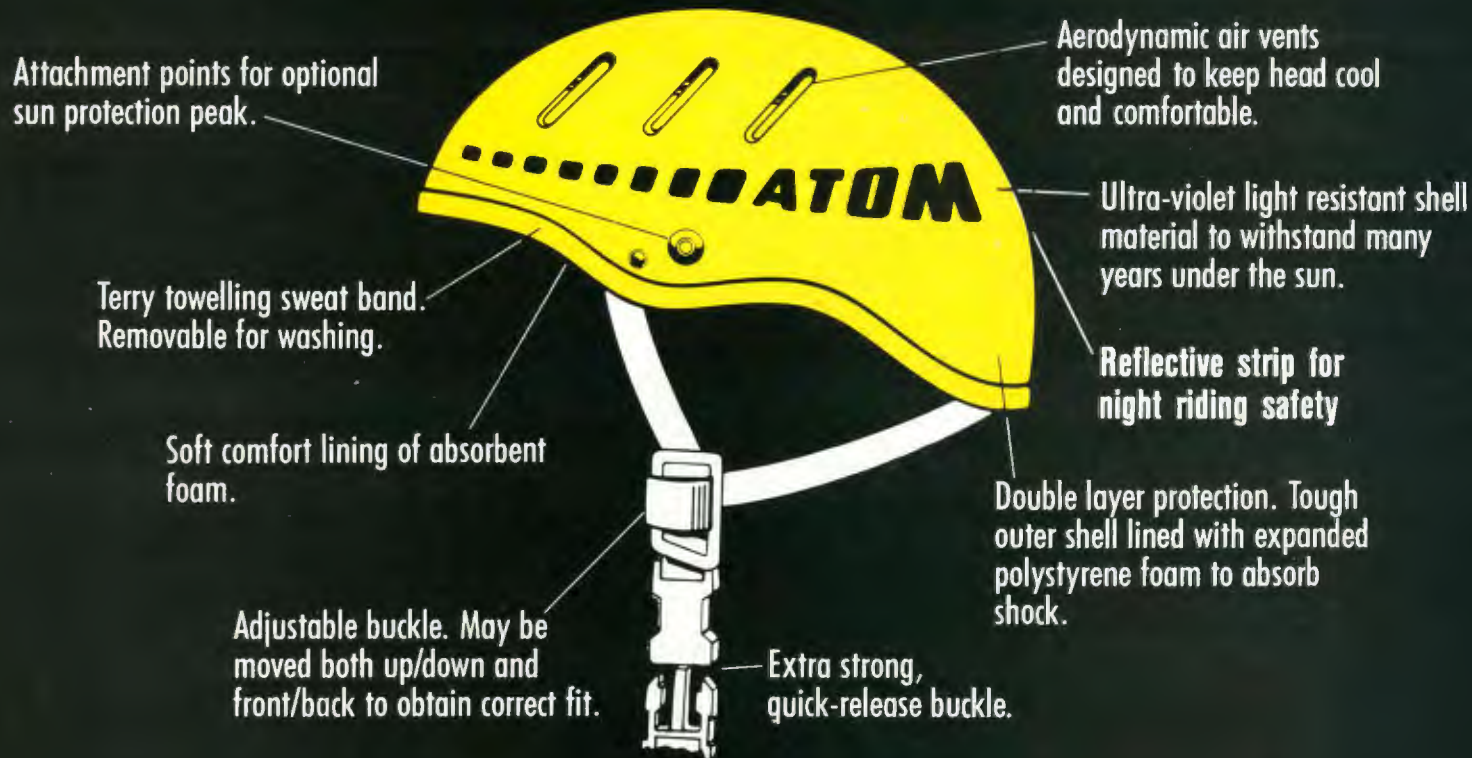
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ULTRA LIGHTWEIGHT HELMETS

A Freewheeling market survey

BY WARREN SALOMON

This year's crop of bicycle helmets proves once and for all that head protection doesn't have to be hot or heavy. Since our last helmet survey (this time last year) the ultra lightweight type helmet – often called the shell-less or EPS helmet – has arrived in force and in this survey we take a close look at the fifteen models available to the Aussie cyclist.

Scott Tinley third place winner in the recent World Cup Triathlon held on the Gold Coast wears the latest aerodynamic ultra lightweight helmet the Giro Aerohead. Photo Nigel Barber.

Top to bottom: The Atom Airlite has lycra covers to match all Netti tops and knicks. The LT has multi density EPS. The Avenir has plastic tape reinforcing. Shades by Oakley, Clothing by Netti.

Ultra lightweights were originally developed for competitive use but nowadays many recreational and fitness cyclists are preferring head protection without the bulk and weight of a traditional hard shell helmet. As well as the weight factor this type of helmet generally has much better ventilation than many of the older designs.

Ever since the first cycling helmet went on sale back in the mid seventies helmets have been getting lighter. Why? Because unlike motorcyclists bicycle riders have to propel them selves along and often in a crouched forward position. Pushing the pedals also produces sweat and a heavy, bulky, unventilated helmet is uncomfortable and even unbearable.

The ultra lightweight is usually made from a thicker than normal expanded polystyrene (EPS) base without the traditional hard plastic shell covering (see box – “How a Helmet Works”). In place of the hard shell manufacturers have substituted one of a number of measures; sprayed-on plastic coatings; embedded plastic bands; plastic perimeter tape; varying density EPS; or lycra/nylon mesh covers. These measures are designed to prevent the EPS from cracking apart during a crash (see box – “Replacing the Hard Shell”).

Some of the ultra lightweights have even passed the Snell standard (see box – Performance standards) the most stringent test available in the USA so they are not just a gimmicky design aimed at a transitory market sector.

In this country and elsewhere they have rapidly become the choice of a majority of competitors in sports where mandatory use is required such as triathlon and mountain bike events.

For a helmet to properly protect you in an a crash it has to be properly fitted and have a strapping system which holds the helmet securely on your head. Of course it should be comfortable to wear. To do this its padding/fitting and retention/strapping systems should correctly position and hold the helmet on your head at all times. The strapping should also allow adjustment for different head shapes.

Most helmets have holes in their shells and liner to allow air in. For a helmet to offer effective ventilation it also must allow air out. In the marketing jargon of the manufacturers this is called flow-through ventilation.

For flow-through ventilation to work the helmet shell must have holes at the rear and some form of channelling in the EPS liner or pad arrangement to encourage the air flow and generate the suction that will pull the hot air out.

Recently the respected US cycling magazine *Bicycling* conducted its own tests on helmet ventilation. The results of its test have been printed in its May 1989 edition. In the main the ultra lightweight helmets included in our current survey turned in good results in the *Bicycling* study.

The helmets which gave only fair ventilation results were the models which had large foam fitting pads which formed a band around the inside of the helmet and prevented hot air from exhausting around the rim. Of the helmets in our current survey the Avenir, Bell Ovation, FFM Vivo, and the Sorelli are of that type. ▶

Top L-R: Bell Ovation, Vetta Corsa Lite, Nolan Force Flow. **Centre L-R:** Bell Quest has a reinforcing ring embedded in the EPS, Rhode Gear's helmet has no cover but is coated with an easy to clean Shellex finish, The Giro Aerohead. **Bottom L-R:** Mistral, FFM Vivo, Sorelli Supremo.





Cooler Heads Prevail.

In the heat of competition or on a long training ride, nothing helps keep you cool like the Bell Quest. The Quest features a more efficient ventilation system with ducts not only at the front and rear, but also on the top (because after all, hot air rises). The Quest is the only lightweight foam helmet with an internal *Surround™* reinforcement ring for shatter-resistant protection. And, for your comfort, simple *Web-Lock™* retention moves adjustment hardware away from your face.

Try on the Bell Quest. And discover just how cool wearing a helmet can be.

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The Quest passes both ANZI Z90.4 and Snell bicycle helmet standards.

Replacing the Hard Shell

A helmet is made up of three important parts: the outer shell; the inner shell or liner; and the strapping or retention system. Doing away with the outer shell completely is not the aim of the makers of ultra lightweights because the outer shell has to perform the important task of keeping the liner in one piece during a crash.

In order to substitute the weight of a traditional thick plastic hard outer shell with something less bulky and weighty, helmet makers have resorted to a number of measures from lycra slip on covers to special surface treatments.

The Bell Ovation is the only ultra lightweight to be made with a "hard shell". It has a thin plastic outer shell which is glued to a thicker than normal EPS liner. Bell has patented this design and even plans additional models in this style.

Apart from the Ovation only one other helmet does not have a lycra outer cover: the Rhode Gear Ultralight. Its outer surface is coated during manufacture with a thin film of Shellax plastic (a proprietary coating). This is also supposed to keep the shell from splitting in a crash.

Given the availability of even tougher spray-on coatings the Rhode Gear style

of helmet could become the design of the future as this type of helmet has the advantage of better ventilation (even the mesh used in lycra covers inhibits to some extent the flow of air through a helmet) and a surface which is easier to clean offering better protection from minor knocks and abrasions.

Expanded polystyrene can also be made in differing densities and hardness and the LT 700 helmet uses this fact in its multi-density liner/shell. LT uses softer EPS on the inner surface of the shell and harder density on the outer with a lycra/mesh cover to maintain overall shell integrity.

In addition to the lycra cover a number of helmets use other methods to further strengthen their shells. The Bell Quest has a ring of plastic imbedded in the shell material and the Avenir Advantage, FFM Vivo and Nolan Force Flow have plastic tape around the outside of their shells.

A word of caution though; the ultra lightweight type helmet can not be absent minded thrown into the boot of a vehicle or in the corner of a room and covered with gear. Without the hard plastic shell the expanded polystyrene could break or crack if struck or squeezed from the sides. Similar advice could also be applied to teenagers careless of their possessions.

► Performance standards

Because safety equipment has a life saving role it is important that some form of testing and technical evaluation be available to guide purchasers and protect the community from shoddy manufacture. Most manufacturing countries have performance standards to govern a wide range of safety equipment sold to the public. In most cases the standards vary little from country to country.

A performance standard consists of a list of design requirements and a series of tests laid down by a national association designed to make sure that helmets function properly as this type of safety equipment should. The Standards most commonly affecting helmets sold in this country are the Aussie Standard (the Australian Standards Association's AS2063.1), the New Zealand Standard NZS 5439 - 1986, the two US Standards - ANSI Z90.4 and Snell.

A number of tests, such as energy attenuation (which evaluates a helmet's ability to absorb an impact similar to that experienced in a crash) are common to all the above standards. The energy attenuation test is the most important test and it is now used by the Federal Trade Practices Act to restrict the sale of sub-standard helmets within this country.

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sell helmets in Australia which can not pass the AS2063.1 EAT.

Buying an ultra lightweight

Never buy a helmet with out properly fitting it first. It is important that the helmet fit you securely and comfortably. If it feels too tight then it will probably be irritating to wear for more than a few minutes. If it feels too loose then you run the risk of it falling off your head in a crash.

There are many different types of fitting systems. This is important as not all heads are the same shape. Sometimes one brand will fit better than another. Some models fit oval shaped heads better than round ones. If your head is an odd shape you may find that those hel-

metts which have removable (velcro tabs) and replaceable sizing pads in varying thicknesses will give you the best fit.

Helmets that sit further down on the head require less strapping to hold them in place. Compare a full face motorcycle helmet which only has a chin strap. The design trend for bicycling helmets nowadays is towards a helmet that exposes the ears and the lower part of the neck. To keep this type of helmet securely on the wearers head extra strapping to the rear of the helmet is needed. These nape straps generally need to be adjusted to suit the wearer.

Non-adjustable nape straps often result in a helmet that will tip forward on

the wearers head if the helmet sits up high. The correct strap adjustment should be made when you buy your helmet so that you get a good fit right from the word go.

Much has been done in the past few years to improve the buckle or strap



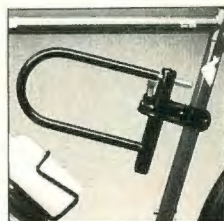
Bell Streetrider is designed for kids and has a simple easy to operate quick release buckle

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1989 Market - Ultralight helmets

Brand/model	Price \$	Weight (grams)	Surface cover	Fitting	Standards	Retention	Comments
Atom Airlite	59.00	188	Lycra/mesh	TV	AS* ANSI	FQ	Numerous coloured covers
Avenir Advantage	75.00	234	Lycra/mesh	NV	AS* ANSI	PQ	Reinforcing tape on shell
Bell Ovation	79.00	298	Microshell	NV	AS* Snell ANSI	FQ	Lycra bottoms to dress up helmet
Bell Quest	79.00	275	Lycra/mesh	NV	AS* Snell ANSI	FQ	Nylon reinforcing ring
Bell Spectrum	69.00	210	Lycra/mesh	NV	AS* ANSI	FQ	
Bell Streetrider	59.00	210	Shellex coating	NV	AS* Snell ANSI	FQ	Sticker set supplied
Brancale XP-7	56.00	220	Lycra/mesh	NV	AS* ANSI	FQ	
FFM Vivo	56.00	243	Lycra/mesh	NV	AS* ANSI	FQ	Reinforcing tape on shell
Giro Prolight	130.00	235	Lycra/mesh	NV	AS* Snell ANSI	FQ	
Giro Aerohead	190.00	284	Rubberised lycra	NV	AS* Snell ANSI	FQ	Aerodynamic shape
LT 700	75.00	211	Lycra/mesh	NV	AS* Snell ANSI	FQ	Multi density shell
Nolan Force Flow	59.00	218	Lycra/mesh	NV	AS* ANSI	FQ	Reinforcing tape on shell
Rhode Gear Ultralight	75.00	253	Shellex coating	NV	AS* ANSI	FQ	
Scott Aspen Mistral	59.00	178	Lycra/mesh	NV	AS* ANSI	FQ	
Sorelli Supremo	59.00	172	Lycra mesh	NV	AS* NZS ANSI	FQ	
Vetta Corsa Lite	59.00	260	Lycra/mesh	FV	AS* ANSI	FQ	

Abbreviations used in chart:

Fitting:

N - Nylon faced foam pads;
T - Towelling faced foam pads;
V - Velcro removable pads;
A - Adhesive fixed pads.

Standards:

AS* - Australian Standards AS2063 energy attenuation test only;
ANSI - American National Standards Institute Z90.4; Snell - Snell Memorial Foundation USA; NZS - New Zealand Standard NZS 5439 - 1986.

Retention:

F - Fully adjustable straps;
P - Partially adjustable straps;
Q - Quick release buckle.

fastening device. Most models tested used some form of quick release device capable of being undone with one hand. The newer Bells (Quest and Streetrider) have a clasp that is wonderfully simple, easy to operate and removes a usually bulky object from under the chin to the cheek.

What's the price on your head?

When considering the cost of a helmet it is important to realise that you are buying something to protect yourself from injury so you should consider its performance and fit before you put a price on your head. ►

How a helmet works

The most important thing a helmet does in a crash is to absorb, spread and to a lesser extent deflect the impact your head encounters as it collides with a solid object or surface. It also has to protect your head from abrasions. To do this effectively most modern helmets use a moulded helmet liner made from expanded polystyrene protected by some form of outer shell.

The most important part of a helmet is the polystyrene liner. It's job is to absorb the energy from the impact of the fall. Expanded polystyrene (EPS) is the material most commonly used because it crushes on impact and cushions the blow. EPS is also used widely in industry and in the home as an insulation material. EPS can also be made in varying grades of hardness so the type used in helmets must not be too soft (it will compress too easily) or too hard (otherwise it will damage the head).

As the EPS material absorbs energy by collapsing and compressing you must always replace your helmet once it has

received a significant impact. Helmets only work once!

One further advantage of EPS over other materials is its extreme lightness an important factor in reducing wearer fatigue. Though other materials have been tried (such as closed cell polyurethane) EPS continues to out perform all others.

If the liner's job is to absorb the impact of the blow then the outer cover or shell has to spread the impact over a large area and keep the liner material from splitting and falling away from the head. Ultra lightweight helmet makers employ lycra covers, spray on coatings plastic tape and bands to perform this function and this is dealt with at length in the box: "Replacing the Hard Shell".

Some critics of the ultralightweight type helmet have claimed that the lack of a hard shell increases the helmets adhesion to the road surface in a crash resulting in the helmet being dragged with great force from the wearer's head. Tests conducted by the British Standards Institute on behalf of Bell Inc USA (and reported in the May edition of *Bicycling* have shown that there is no appreciable difference between both hard shells and ultra lightweights on simulated road surfaces.

Will ultra lightweight helmets be banned in Australia?

Though there has been much public debate in Australia over the past ten years surrounding the current helmet Standard the answer to the rhetorical question posed by the heading is – not likely.

Much of the heat in the helmet debate has been fuelled by Victorian Road Traffic Authority's tentative moves towards making helmet wearing compulsory in that state. Since its plans were originally drawn up the idea seems to have fallen from favour.

One of the reasons for this is the current 'incomplete' nature of the Australian Standard AS2063.1.

The helmet Standard (compared to other similar product safety standards) has received an inordinate amount of attention and criticism since it was originally drafted. Part of the problem seems to be that the committee responsible for its drafting has, in the words of one delegate at the recent Geelong State Bicycle Committee Workshop, been too obsessed with the engineering aspects of helmet design and has not paid attention to the needs of the users.

This has primarily resulted in a Standard which is open to accusation as being design restrictive. For example one of the world's most popular hard shell helmets the Bell V1-Pro will not pass AS2063 because its ventilation holes exceed the 25 mm maximum hole size allowed.

Thus critics of the Standard say that it favours hot and heavy helmets and restricts innovative newer designs like the ultra lightweights.

However the main reason AS2063 would fail all the ultra lightweights reviewed in our survey is because of its penetration test. The rationale behind the penetration test (which involves dropping a pointed weight like a plumb bob from a set height to see if it penetrates the helmet's outer and inner shells) is to check shell integrity – that is to see if the helmet will remain intact and not split apart in the force of a crash. It is not (as some would have us believe) designed to ensure that helmets are made bullet proof as well as crash proof!

The crudeness of this test plus the fact that most overseas Standards do not test at all for penetration has placed pressure on the Standards committee come up with a set of tests which will achieve the respect of the international cycling community and provide an adequate check for overall helmet integrity.

Supporters of the original Standard say they want the Australian Standard to be the best in the world but if this means that three quarters of all the helmets made do not pass the test then what use is that to the Australian cyclist.

For example: none of the helmets included in our current survey would pass AS2063 because of its penetration test. Competitors and recreational/fitness riders who currently use these helmets are worried that their comfort is being overlooked in a futile quest to provide perfect head protection.

This quest for perfect cycling head protection is futile simply because it has already been achieved. And you don't even need a helmet – all you really need is an indoor trainer!

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AGENTS IN MOST STATES



MARVELLOUS MELBOURNE

Continuing our series on the great cycling cities

BY JULIA THORN

IS MELBOURNE THE TOP cycling city? Certainly the city streets are wide enough to encourage more cyclists than in many of our other cities even if you have to seer clear of the tram lines.

For many people the tram is their favourite symbol of the southern capital. But a recent survey showed that more people commute to work by bike than on the trams. This should mean that Melbourne is a good cycling city, and it does, but only up to a point. The good routes and pleasant touring areas exist but public funding which was formerly used to provide advice and guidance either in written or verbal form has dried up. Let other pens dwell on the politics of this sad turn of events; suffice it to say that this is a tremendous shame and I hope the situation will soon change.

Much of the Melbourne area has the advantage of being flat and consequently popular with pedallers. Over the years many bike paths have been developed both for recreational riders and for commuters. There is a fair amount of variety in the areas where you can ride and you do not have to go far out of the city for an enjoyable outing – a couple of hours or a whole day.

On one side of the city are the Dandenong Ranges, rainforested mountains with unrivalled views, to the south are bay beaches with calm waters or surf, and in between is flattish land with places of historical interest and rural farmland.

There are many bike paths in the metropolitan area. Usually these are off the road and are either solely for cyclists or have to be shared with pedestrians. This is great: it's safe and also means you

Above and below: The wonderful Maribrynong River bikepath constructed along the river between Footscray and Brimbank Park was built under a Federal Government CEP scheme. Photo Alan Parker.

have the opportunity to enjoy the area you're riding through without having to worry about what the other crazy road users are up to.

The most central, and best known bike path in Melbourne starts at the Arts Centre and follows the Yarra River as it winds its way to Richmond. It makes an enjoyable Sunday morning ride for the family and is also well used by commuters from the suburbs to the east of the city. The path is at the river's edge for virtually the whole nine kilometres and passes many parks, gardens, recreation complexes, colleges and stately homes. Attempts are currently being made to extend the bike path and to make it continuous through to Hawthorn but there is a problem with a stretch of route crossing land owned by Scotch College which is taking a while to resolve. There is another short stretch of Yarra bike path from Hawthorn Bridge to Abbotsford which is nearing completion.

Slightly away from the Yarra in Hawthorn are more bike paths for visiting some of the suburb's reserves and historical mansions. You can leave the Yarra bike path at Wallen Road and ride past Hawthorn station then continue westward through Glenferrie and Auburn. The City of Hawthorn has produced a leaflet on biking in this area.

Other stretches of Yarra bike path follow the river from Ivanhoe to Bulleen and do a short circuit of Westerfold Park in Templestowe. There is a further short section at Birrarung Park.

If you don't want to follow the Yarra north you could ride along Merri Creek instead. There is a bike path linking the Yarra path at Collingwood with Coburg Lake and continuing to Broadmeadows.

Another popular area to ride that is not far from the city is the sheltered



beach front stretch along Port Phillip Bay between St Kilda and Brighton. There are plans to make a continuous route from the city out to Frankston but at the moment the bike path follows grassy dunes from Bay Street to St Kilda pier. Further south the path starts again at Mentone and parallels the beach to Mordialloc.

Inland from this area there are bike routes through Sandringham on quiet roads and bike paths, passing reserves and golf courses.

Several of Melbourne's Board of Works parks have paths which are intended for riders and walkers. One such area is the Maribyrnong River path which starts in Footscray and extends for eighteen kilometres to Brimbank Park, Keilor. The route passes a number of parks, fishing platforms, landing stages and picnic areas. Along the route you have good views and some of the less attractive areas are being turned into parkland. There are several bridges including a pipeline bridge to which cyclists can gain access using a Chinese bike ramp. At Brimbank Park there is a small network of bike tracks.

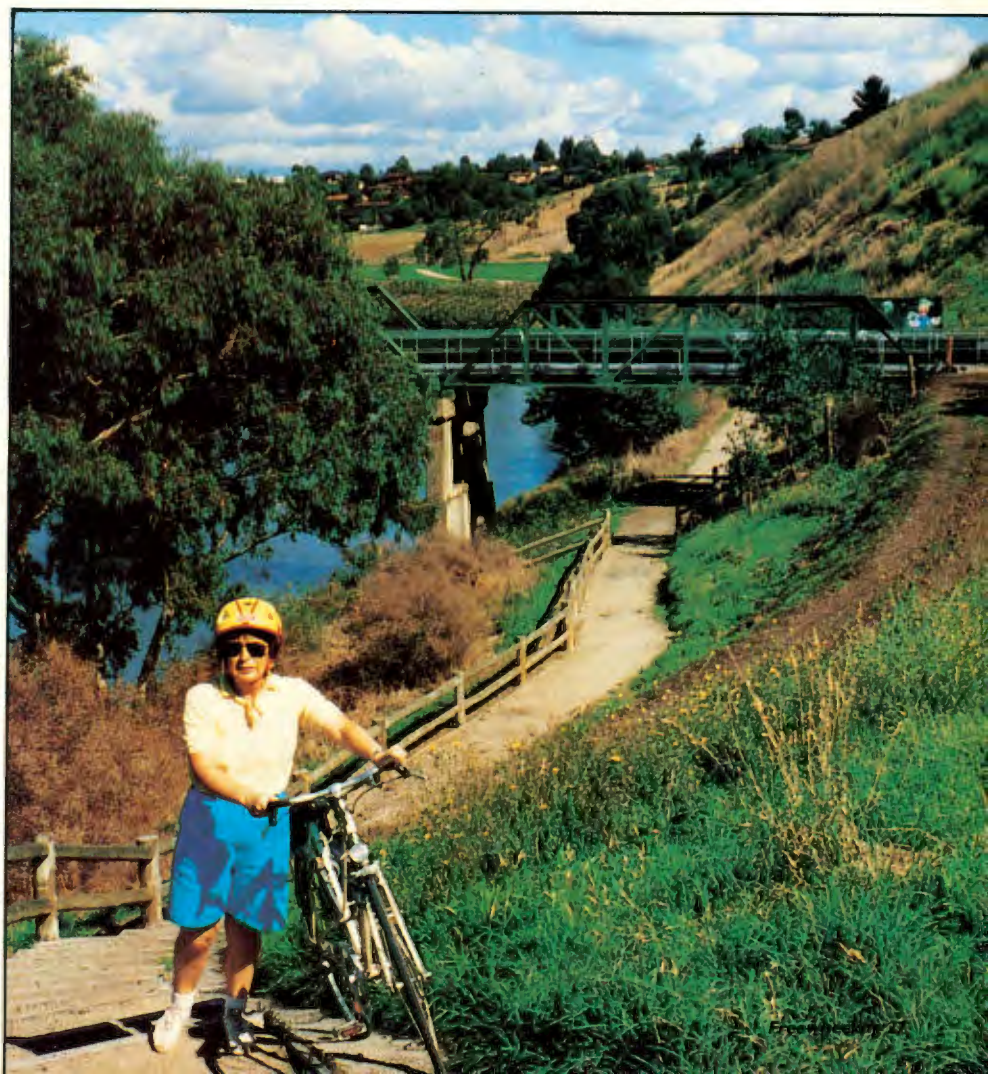
Another area is Jells park in the Dandenong Valley Metropolitan Park which has both sealed and unsealed paths.

There is an extensive network of bike paths around the Dandenongs. You can ride along Dandenong Creek from Bayswater to Wantirna through bush and open grassland. From Wantirna you can ride to Upper Ferntree Gully through parkland. Or you can ride from Ringwood to Upper Ferntree Gully following the railway line through the treed railway reservation. Another route to Upper Ferntree Gully takes you along Corhanwarrabul Creek and Ferny Creek starting in Scoresby.

Most of these bike paths are fairly short and would only form a part of a full or half day ride, or can be incorporated into commuter routes. If you want to go for a longer ride there is no shortage of choice, even within the metropolitan area.

Right near the city you can make a short tour of South Melbourne and Port Melbourne by riding from Flinders Street Station south to Albert Park Lake, then head for the bay and pay a visit to the merchant vessel Polly Woodside and return via the World Trade Centre and Arts Centre. Or if you want to have a look at some of the city's great architecture why not do a loop around Carlton, Fitzroy and North Melbourne. There are plenty of places where you can stop for a snack on the way. ►

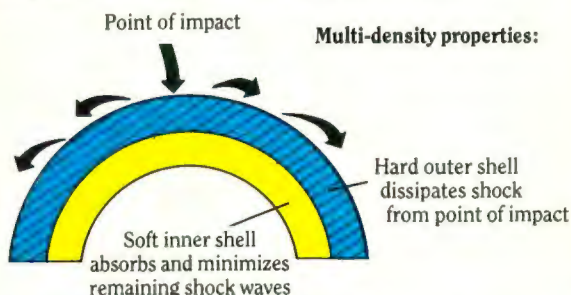
Above: In Melbourne's eastern suburbs the Knox municipality has constructed an extensive network of bikeways. This bridge takes cyclists over a busy major road. **Below:** Where the terrain is too steep a Chinese bicycle ramp has been constructed on the Maribyrnong bikepath. **Photography Alan Parker.**



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HELMET	TEST	AVERAGE "G"
LT 700	ANSI	84
LT 700	SNELL	131

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► Slightly further out you can tour the parks of the Moonee Ponds area, many of which have picnic areas on the Maribyrnong River. See how many parks you can visit in one day.

To the north you can do a short ride from Coburg to Bundoora Park, visiting La Trobe university on the way.

Beyond the northern suburbs is excellent riding towards Kinglake National Park. Kinglake is up on the Great Dividing Range so there is some steepness as you pedal these roads but the views from the plateau make it all worthwhile.

And not too far from here is the pretty Yarra Valley where there are many wineries to form the basis of a tour. The roads are flattish and quiet despite being so close to the built up areas. You can start at Lilydale, which is easily reached by suburban train, and visit four or five wineries in a circular ride of up to fifty kilometres.

The Dandenongs are of course well suited to a short tour. A long one may be too exhausting. The roads here do get fairly busy at weekends so you want to try to pick a quiet time of year and keep to minor routes. There are several places where you could stop riding for a while and do a forest walk instead, such as at Olinda State Forest.

Publications

There are a number of useful publications available to help you decide where to ride your bike and assist in planning a trip. A good starting point is the *Melbourne Bikeways Book* produced by the State Bicycle Committee of Victoria. This book lists and describes all the main bike paths in the metro area with an accompanying map highlighting points of interest. The routes are nicely presented to encourage you to ride them. The book costs \$7.95 and is available from newsagents, some bike shops and Bicycle Victoria.

Another useful source of information is the series of *Melbourne Bikeplan* route maps. These cover the entire metro area in seven sheets: Keilor/Sunshine, Broadmeadows/Melbourne centre, Epping/Eltham, Moorabbin/Dandenong, Chelsea/Frankston, Hawthorn/Melbourne and Nunawading. The maps are available from newsagents, some bike shops and Bicycle Victoria for \$2. They also include advice for bikers on taking quiet stress-free roads and details on hazards.

Bicycle Victoria have produced a useful map showing the best routes out of the city for cyclists. The map is entitled *Melbourne Day-tours and Approaches* and as well as suggesting routes it indicates major hills, hazards and what sort of facilities you can expect to find at the various settlements you pass through. Contact Bicycle Victoria for your copy.

MOUNTAIN BIKING AROUND MELBOURNE

BY JULIA THORN

THE EASIEST PLACE TO GO with your mountain bike is one of the as yet unfinished bike paths of the metro area. Since these paths have not been tarred they are far more comfortable to ride on a mountain bike than a racing bike and access is not difficult. Your *Melbourne Bikeways Book* shows rideable tracks as well as bike paths and often the intended continuation of an existing path is shown.

You can also follow creeks, riding along beside them and following their course. Doing this it is possible to pick a route from Ferntree Gully (in the city's east on the edge of the Dandenongs) back to the city. Merri Creek, Kororoit Creek and the Maribyrnong River can be followed for many a happy hour.

To the north of Melbourne are many good areas for mountain biking. The Brisbane Ranges National Park is easily reached via Bacchus Marsh (only twenty minutes away from the city by train) and offers many dirt roads into the bush. These are fairly rough roads through eucalypt woodland and not suited to a touring bike. There is camping in the park and the spring wildflowers are considered by some to be the best in Victoria.

North of here but still only a short distance from Melbourne the Blackwood State Forest offers more possibilities with forest roads radiating from the small town of Blackwood and fire trails. This is an area of mineral springs and some people still try gold panning.

Climbing onto the Great Dividing Range there are scenic areas to be explored around Woodend, Hanging Rock and Lancefield. For an enjoyable ride you could take the train out to a point on the Melbourne-Bendigo line and return home from a station on the Ballarat-Melbourne line. Preferably this would be a weekend trip but this is sufficiently close to the city that you could go just for the day.

Distances between settlements are not too great and the scenery is superb. Carrying a lot of supplies would not be a problem as facilities are available at many points.

Nearby Daylesford, just over 100 km from Melbourne, is another good base for off road riding. The immediate vicin-

ity has many walking tracks which you could also do a day ride so long as you are considerate of the other users. Wombat State Forest has tracks and the scenery up there on the Dividing Range is worth all the effort. The air in the eucalypt forest is fresh and smells great.

Nearer to Bendigo is the Whipstick State Forest which has forest trails. Enter the forest from the Eaglehawk direction. And east of Bendigo is the Rushworth State Forest which is crossed by a maze of roads fanning out from the historic township of Whroo. Take a good map because there are so many forest roads that you could easily get lost, but the roads are wide and quiet.

To the west of Melbourne there are good places for your MTB near Healesville. Access is via Lilydale on the suburban rail network. The terrain starts to get pretty mountainous as you go towards Marysville or Warburton but if you stick to the valleys you still get the mountain views but with less effort. There are trails in Kinglake National Park, which is in three sections and features waterfalls, dense gum forest and rainforest gullies.

In the state's south Wilsons Prom is crossed by many tracks which take you to remote beaches and to lookout points over the park. There are plenty of lovely places to bush camp. Some of the tracks do get a bit sandy so you may have to combine your ride with walking, but that's part of the fun, isn't it? You get to this area either by driving to the park and leaving your vehicle at the Tidal River visitor centre to do a day ride.

Or make a longer trip of it and approach the park by bike having driven to Foster, the official gateway to the Prom which is 62 km from Tidal River. Allow three days for this latter option to give time to travel to and from the park and enjoy its tracks.

And close to the Great Ocean Road, seventy kilometres west of Geelong, are many places for mountain biking in and around the Otways. This is a region of dense dripping rainforest and offers quite a contrast to the dry forests of the north and central parts of the state. The Department of Forests, Conservation and Lands do a useful map of the Otways which shows all the minor roads and tracks.

Apart from the inland Otways you could explore dirt roads to the south of the Great Ocean Road, riding out to Cape Otway lighthouse (a detour of 17 km off the Great Ocean Road). If you ride down to Blanket Bay on the east side of the cape their is a secluded campsite. Or ride the sandy tracks around Lake Craven on the west side of the cape, getting access from the hamlet of Hordern Vale.

However the really top area to take your MTB to get away from it all and see what mountain biking is all about is the ►

Bogong High Plains. Go for a ride in the Bogong National Park and see the true splendour of the Australian alpine kingdom. If you can, spend a week up there; a weekend will only make you hungry for more.

This is an area for the warm months and hopefully for fine weather. Up on the treeless tablelands the views are endless and you are in sight of eleven of the state's twelve highest peaks. There are gravel roads, fire trails and for night time you can shelter by or inside old stockmen's huts. At slightly lower altitudes there are stands of snow gums, alpine ash and black sannies, and all over the plains are a profusion of wildflowers in spring and summer.

You would be best off to go to this area by car and do a circuit from Falls Creek or Hotham. If you want to go right off the beaten track see if you can follow some of the many cross country ski trails – the signposts stay there all year.

Further information

There are several bike clubs in Victoria solely for MTBers. Contact Bicycle Victoria, tel. (03) 670 9911 for details of the one closest to you.

Always take a reliable and detailed map with you. If you can't find what you need at an outdoor specialist try the Map Shop at Information Victoria, Sec-

ond Floor, 318 Little Bourke Street, Melbourne, telephone (03) 663 3760 or get in touch with Bicycle Victoria as they may have a copy of what you need in their library.

For information about the National Parks contact the Dept of Forests, Conservation and Lands. Their head office is at Victoria Parade, East Melbourne, telephone (03) 412 4111 and they also have a number of regional offices.

TOURING VICTORIA

Freewheeling suggests some places to ride outside of Melbourne

BY JULIA THORN

VICTORIA IS SO COMPACT. Within a couple of hours you can be virtually anywhere in the state. Which means that there's never too far to go for a good bike ride when you need to get away from the suburban sprawl.

One of the best areas for cycling is the west coast of Victoria. Wet though it often is, the Great Ocean Road is a per-


fect place for a tour. Especially if you can travel outside the peak holiday season so that traffic is at a minimum.

For mile upon mile the road hugs the indented coastline between Geelong and Allansford near Warrnambool, coming inland only to skirt around the Otway range whose rainforested slopes reach down to the shoreline. The scenery has you constantly reaching for your camera.

When you get tired of pedalling there is likely to be a golden sandy beach to relax on, or, for those who do not find the cycling exercise enough, there are many signed walking tracks in the rainforests. These lead to waterfalls, into deep gullies and pass huge ferns.

The coast is extremely rocky, which makes it all the more attractive but has caused numerous shipwrecks. Before the lighthouses along this section of coast were constructed ships frequently used to lose their bearings and not realise how close to land they had come. Along the coast are numerous lookouts with fine views – to my mind Cape Paton gives the best views.

For most visitors the most impressive area is the section enclosed by the Port Campbell National Park. Here you will find the famous stacks known as the Twelve Apostles, many natural arches, grottoes, bays of islands and high sheer cliffs.

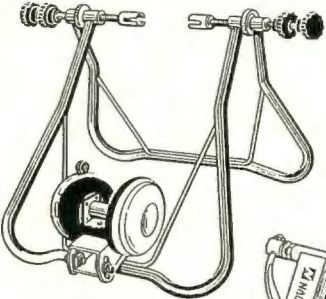


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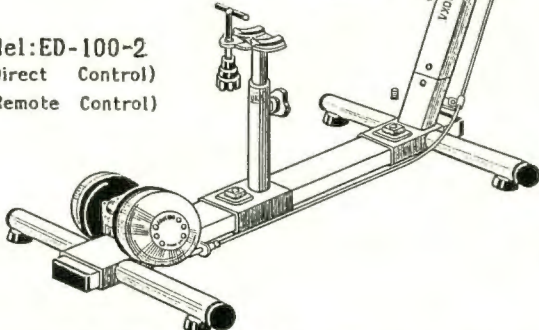
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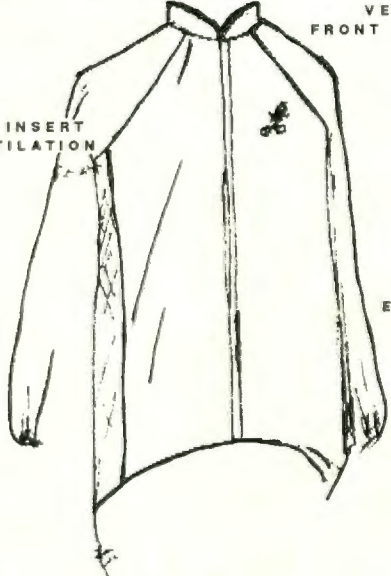


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To ride the whole Great Ocean Road you should start at Geelong which is easily reached by train from Melbourne, and finish at Warrnambool, from where you can return home by train. This would be a five to seven day ride. The inland return route from Warrnambool to Geelong is across dairying country and takes about three days.

Because the area is popular with holiday makers there are plenty of places to stay and lots of cafes and restaurants. On the first part of the route the road is almost continuously built up, in a spread out sort of way. The resorts of Anglesea, Aireys Inlet, Lorne and Apollo Bay follow fast on each others heels with many other small settlements in between. All these places have at least a van park or camping reserve, if not a row of motels as well.

But once you leave Apollo Bay there is little in the way of human habitation for quite a distance, the tiny hamlet of Lavers Hill offering the only shop, motel and van park for just under eighty kilometres until Princetown. Then the commercial enterprises start up again around Port Campbell and Peterborough but this section is far less built up than the first hundred kilometres.

The route is not especially hilly apart from a long climb up to Lavers Hill and a few short climbs around Lorne. It's more the rain you have to worry about.

Just north of the Otways is Victoria's wettest town, and all along the coast the weather is unpredictable.

For more strenuous riding you should take to the hills. North eastern Victoria, where all the state's high mountains are to be found, has some very special countryside.

In summer the mountains are pleasantly cool for riding and in the autumn you can see the fabulous display put on by the deciduous trees that the early settlers planted – the leaves are a blaze of reds, oranges and golds.

However it is certainly hard work riding the mountains. The roads are frequently twisting and steep with little respite. But as ever, hard work is rewarded. Riding around Healesville and out towards Marysville you are assured of great scenery. If it's raining the mountain tops may be hidden in mist which makes them look mysterious.

Further north there's the challenge of riding to the top of Mount Buffalo. You have an uphill climb of 26 kilometres to the highest point in the Mount Buffalo National Park. Easiest access points are Bright and Myrtleford. But don't go in winter, unless you have snow chains on your bike.

East of Melbourne is the route along the tops of the Strzelecki Ranges, the 138 kilometre Grand Ridge Road. There are few facilities along the route so you

need to be self sufficient in food, water, spares and accommodation. The road is mostly unsealed and reaches 620 metres above sea level. Access is from Korumburra which can be reached by train from Melbourne.

Another ride from Korumburra would take you down to Wilson's Promontory, otherwise known as 'the Prom'. The route is hilly but scenic, all on sealed roads and a return trip would take two or three days. As you reach the southern end of the Prom you enter the national park of the same name where there is an abundance of wildlife. Emus and kangaroos graze by the roadside and at the visitor centre there are hundreds of crimson rosellas waiting for your food scraps. There is a camping reserve at Tidal River in the south of the park.

For an area of great historical interest you should try the gold towns of central Victoria. The gold rush of the 1850's left an indelible mark on the area, not only in the form of tailings heaps but also in terms of period architecture which is being carefully preserved.

You can make a very pleasant tour visiting several of the old towns, such as Castlemaine, Maldon, Dunolly and Clunes as well as the larger cities of Bendigo and Ballarat. The grades are gentle until you reach the Great Dividing Range foothills north of Ballarat and

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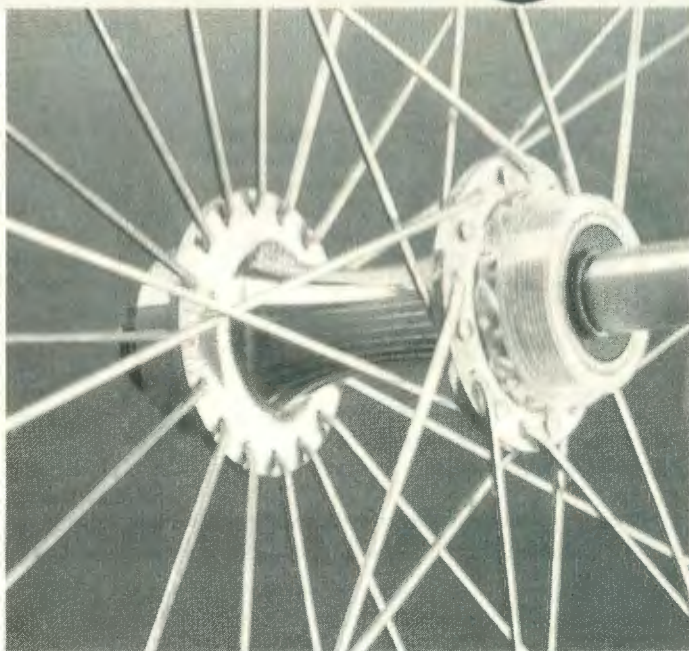
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► the scenery is green hills and farmland. All the towns have accommodation and the distances between places are not great.

If you visit the area you should call in at the local tourist information offices – there are offices in Ballarat, Bendigo, Maryborough, Avoca, Maldon and see if they have special suggested tours for cyclists. The shire of Bet Bet has put out several leaflets with cycling tours, centring on Dunolly and the so called Golden Triangle. Maryborough has many signed bike paths and recommended tours.

The little towns, now returned to being rural service centres after the gold fever has gone, have pretty verandahed shopping streets, ornate civic buildings and many churches. The locals can tell you many stories from the gold rush era and each town has a small museum.

Possible weekend rides include the circuits Bendigo – Castlemaine – Maldon – Bendigo; Kyneton – Trentham – Woodend – Hanging Rock – Kyneton; Ballarat – Ballan – Daylesford – Ballarat.

Finally Philip Island is a good destination for riding not too far from the city. Outside the holiday season the roads are quiet and you can enjoy the fine coastal scenery or visit the historic sites. There are many caravan parks and tea rooms. You reach the island by ferry (which takes bikes) from Stony Point on the

Mornington Peninsula and the ferry operates October to April.

Incidentally remember that Victoria closes down after midday on Saturday so if you are out for a weekend ride be sure to have ample supplies on you. If you wreck your tyre or tube it could be a long wait to get a new one.

Information

For cycling information you can contact Bicycle Victoria at 29-31 Somerset Place, Melbourne, telephone 03 670 9911.

For general tourist information go to the Victour office in your capital city. They can provide you with a reasonable road map of the state to help you decide where to go, and also a camping directory. In Melbourne they are at 230 Collins Street, telephone 03 602 9444. If you want to find out more about the National Parks contact the Department of Forest, Conservation and Lands, telephone (03) 412 4111.

Tours in Victoria have appeared in *Freewheeling* over the years in the following issues (the number in brackets is the issue number): *Melbourne to Sydney via the coast* (26) Viola Wiedmann; *The Grand Ridge Road* (5) Peter Sigorini; *Great Ocean Road* (11) David Martin; *Ocean Road Odyssey* (24) Gayle Sprengewski; *The Geelong-Otway Century* and *A Great Ocean Road* (21) Ray

Peace; *Rushworth Again* (18) Ray Peace; *Melbourne to Beechworth* (12) Michael Burlace; *Melville Caves* (17) Ray Peace; *Cycling through Victoria* (13) John Pilgrim and Jane Quin. Copies of these back issues are available from our editorial office.

Maps

Bicycle Victoria has brought out a series of cycling maps covering many of the most popular areas of country Victoria. Unfortunately only the map for Upper Murray and High Plains is currently available, the others being out of print. Hopefully it will not be long before funds are available to enable the whole series to be reprinted.

For road and topographic maps go either to bookshops, newsagents or outdoor specialists, or for the official 1:25000 and 1:100,000 series go to the Map Shop at Information Victoria, 318 Little Bourke Street, Melbourne, telephone (03) 663 3760.

Bike clubs

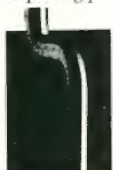
Bicycle Victoria organises weekend rides most weekends, either one or two day rides for all levels of ability, including mountain bike rides and BMX rides. For more details contact them on the number given above. They can also tell you about regional bike clubs in the major cities.



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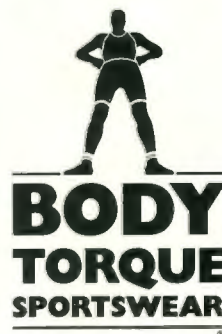
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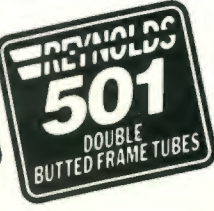
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MUD MIST AND MOUNTAIN MADNESS

Recent rains may have dampened the trails but not the competition

BY WARREN SALOMON

RECORD SUMMER AND Autumn rains throughout the eastern states has provided mountain bikers with some of the slushiest conditions for years. And as the weather cools down there is every indication that the competition is hotting up. Reigning Australian Mountain Bike King, Werner Wohlrab received a severe jolt to his unbeaten winning

streak when he was defeated at Falls Creek the weekend after Easter.

In what could only be described as miserable weather for most of the weekend approximately 60 competitors and their supporters took part in the country's first advertised Fat Tyre Festival held at the Falls Creek ski resort in Victoria. Upset of the weekend's races was the defeat (on overall points) of current



Out of the mist and into a tight turn – Jamie Hales on the Short Enduro. Photo Kevin Hoare.

A very muddy Werner Wohlrab crosses the line happy to have retained his NSW title on home territory. Photo: Chuck Smeaton.

national champ Werner Wohlrab by ACT rider Graeme Allbon. With \$10,000 worth of prizes at stake the competition was hot in spite of the cool weather.

The racing kicked off on the Saturday with the Uphill, Downhill and Sprint events followed by the Falls Creek Classic long enduro and a short enduro on the Sunday.

Graeme Allbon recorded the fastest time on both the Uphill and Downhill with Wohlrab runner up in the Uphill and Ian Downing in the Downhill. The Short Enduro saw Dave Perry take line honours from fellow Hunter Club member Werner Wohlrab. Karen Wells was the top woman; Colin Paynter won the Novices, Bryan Wright the Veterans and Ben Munroe was top Junior.

The main event – the long enduro – saw a close contest between Dave Perry, Graeme Allbon and Werner Wohlrab in which Perry came out the victor only a second ahead of Allbon with two minutes to Wohlrab. The event was run in cloudy misty conditions throughout placing extra strain on the competitors stamina and handling skills. ►

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► In a weekend highlighted by upsets national Trials champion Glen Roche fell during a crucial part of the competition and was defeated by his close rival Ewen Gellie. Last year's Trials title also witnessed a close tussle between these two expert bike handlers which resulted in a play off after both had tied in the finals.

In spite of the poor weather and the low turnout of competitors (due mainly to the late change of venue from Thredbo to Falls Creek) the event was considered a success and the organiser Gary Patterson looks forward to a bigger and better fat tyre fest next year. Patterson says that he wants to stage a proper festival with recreational rides to some of the High Plains' best scenic spots.

The promoter received good support from sponsors Scott USA, Reflex bikes and the Victorian Alpine Resorts Commission. That organisation is to be commended for possessing the foresight to take on an event concept so new to this country. In the USA the fat tyre festival is now a well established event type with up to a week of activities offered to both recreational and competitive riders. In most cases the events have been staged in ski resort areas as these have accommodation, facilities and mountains in abundance.

For news of future fat tyre festivals be sure to read *Freewheeling*. We'll keep you posted.

Wohlrab retains his NSW title

Hunter Valley club hosts a muddy championships

Though moss may be growing on the walls and pavements throughout the soggy eastern states it is certainly not growing on mountain bikes this year. And the sports keenest adherents were out in moderate force recently to keep the rising damp at bay with a sticky slushy round of events to decide the NSW mountain bike champion.

On Sunday May 14 the Hunter Valley Mountain Bike Association played host for the third time and staged an exciting event over a partly muddy 3.5 km enduro circuit. Over 90 bikers signed up for the day and raced in sunny conditions on only one of the two fine weekends experienced so far this year.

After the preliminary classes were run the main championship field charged at the first hill in close formation with eight laps ahead of them. After three laps the incumbent and home club stalwart Werner Wohlrab drew clear of a tena-

cious duo Graeme Allbon (ACT) and Nigel Perry (Hunter).

Laurent Vignes, despite a strong early showing had to retire with mechanical problems. The pace of the roughly 12 minute laps produced large gaps back to the rest of the field and a spate of retirements (10 out of a field of 30).

Wohlrab maintained the pressure to record one of his solo victories well ahead of the chasing Allbon and lanky Queenslander Tony Whitely. Next to cross the line were: Grant Croese, David Collings, Brad Maund, Nigel Perry, D Foster, P Smith and T Clark in 10th position.

Winners of the other sections were: Sport - A Hawke, C Paynter and N Irvine; Women - K Wells, P Thompson; Veterans - W Hipwell, R Williams, R Moyston; Juniors - A Cable, M Schipp and T Datson.

1989 Paterson Cross Country Classic

Sunday August 20 is the date for the sixth annual Hunter Valley Mountain Bike Association's classic cross country race held at Red Hill in the northern part of the Hunter region. All levels of competitor will be catered for and a generous prize list is guaranteed.

The club members are also willing to provide orientation rides for keener entrants by arrangement prior to the event. The Paterson Classic has grown to be one of the more popular events on

▶ the MTB calendar and is expected to attract a large field this year.

For details contact Bob Jones (049) 341 919 (w) (049) 385 193 or Bruce Richards (049) 327 820.

AMBA sends Australian team to Worlds

The Australian Mountain Association's first national team will leave the country late in August bound for the USA to compete in the World Championships held at the Mammoth Mountain resort in California on September 9 and 10. The team selected is headed by the current national champion Werner Wohlrab and consists of the country's most promising expert, women and junior category riders: Karen Wells (NSW), Robbie Van Nooten (NSW), Pete Smith (QLD), Travis Temme (VIC), Ben Munroe (QLD), Leigh Nilsson (NSW) and Scott Finlay (QLD).

FIAC to administer the sport

The world governing body of amateur cycling the International Federation of Amateur Cycling FIAC has recently established a technical commission to facilitate the international administration of the sport. The commission has already issued some findings to interested national bodies such as our AMBA and has to report by July next year.

There are considerable advantages attached to FIAC involvement in the sport apart from a formal association with the most prestigious amateur cycling body (which is its self part of the UCI - the peak world sports cycling organisation). Most importantly FIAC will sanction the world championships bringing them onto a recognised and legitimate footing. At present the world

championships are alternated between private promoters in the USA and France.

With the arrival of an officially sanctioned Worlds moves are now afoot in this country to study the feasibility of hosting the event here in 1993. As the sport is still in its infancy it is not sure what the outcome of the investigations will be. What ever happens we can look to a time in the not too distant future where we will be able to witness the cream of the worlds best mountain bikers deciding their champions on Australian soil.

With FIAC involved the winners will be able to be issued with rainbow jerseys - the most obvious physical sign of an international champion. A further benefit resulting from the FIAC connection looks likely to be the inclusion of mountain bike events in the Olympics some time in the future.

More clubs affiliate with AMBA

The recent affiliation of the Canberra Mountain Bike Club has brought to twelve the number of local clubs officially involved with mountain biking in this country. According to AMBA president Martin Whiteley there are even more clubs in the process of forming (including new groups at Nowra and Wollongong) and he expects all of these to apply for affiliation. AMBA is its self affiliated with the Australian Cycling Federation and its members have access to a common competitors insurance scheme.

One of the most interesting trends in the recent growth of the sport is that more and more road and track racing cyclists are finding that mountain bike



Dave Wells in the cold misty conditions powers on through the Short Enduro. Photo Kevin Hoare.

racing is an ideal complement their regular training programs.

The Mersey Valley Club in Tasmania has taken this one step further by renaming its self the Mersey Valley Racing and Mountain Bike Club. The club is now affiliated with both the Tasmanian Cycling Federation and AMBA. Members



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The field starts up the hill from the Falls Creek Village on the Long Enduro. Photo Kevin Hoare. Misty weather for these riders competing in the Uphill event. Photo Kevin Hoare.

who wish to race in both disciplines still need to pay a little more to obtain their racing licences but they don't have to join a different club to do it.

While the ACF says that the average age for its top competitors is around 20

the average age for mountain bikers (calculated at last years AMBA Nationals) is 27. This means that many talented track and road riders may switch to fat tyre competition once they have passed their athletic peak on narrow tyres.

AMBA will hold its annual general meeting this year on Saturday August 19 at Swansea prior to the Paterson Classic.

The USCF 'buys' NORBA

The US National Off Road Bicycle Association has been sold to the United States Cycling Federation. NORBA was set up originally to encourage, sanction and administer the sport of mountain bike racing in that country but has experienced difficult times in past years. As the organisation is legally set up as a private company able to be bought and sold it has seen a number of owners including a BMX group and now the main amateur cycling body.

While it may be a good thing for the two sports to pool resources and administrative matters (licencing and race sanctioning in particular) many mountain bikers are concerned that the sport will suffer an identity crisis if it doesn't have its own administrative body.

In Australia though the Australian Mountain Bike Association has very close links with the amateur cycling body they are still nevertheless separate organisations both serving the differing needs of their own members. Fat tyre freaks all around the world are watching with great interest to see what will happen next. With the world amateur controlling body FIAO moving to set up an effective administration of the new sport the possibility that the USCF may have to eventually divest its self of NORBA is a scenario that can not be ruled out.

NZ to send team to Oz MTB Nationals

A team of 24 riders will represent New Zealand at the 1989 Nationals to be held near Canberra on the weekend of November 18 and 19. The team is being sent by the newly set up New Zealand National Off Road Bicycle Association which now represents around 500 members organised in regional clubs. Mountain biking is one of the fastest growing

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► sports on the other side of the Tasman and the size of the NORBA numbership compares well with the older established road and track racing organisation whereas AMBA individual membership only represents about 5% of the ACF's total. Members

The Nationals have established a tradition of open international competition (similar to other major sports). Last year a number of Europeans took part but what makes the New Zealand effort different is that they will be sending a full national team.

AMBA officials believe that open Nationals are good for the sport and will give local riders the benefit of international competition on our home soil – or should we say: home mud! As the sport develops and strengthens it will then be possible to establish a national points series which should have the benefit of fostering our own riding talent apart from the national and international events.

We live in exciting times. Stay tuned.

Pichi Richi MTB Classic

On Sunday 30th of July the Adelaide Mountain Bike club with assistance from Repco Cycles and Zig Zag Port Augusta will stage a mountain bike race at Pichi Richi Pass north of Port Augusta. The days activities will consist of Trials and Enduro races for all classes.



Stephen Kidd puts his special 20" wheel bike through the Trials course. Photo Kevin Hoare.

For entry forms contact Zig Zag 92 Commercial Rd Port Augusta 5700 phone (086) 42 3277.

Winter series

The Adelaide MTB club will hold its Repco Cycles Winter Series (racing and trials) on three Sundays – 25 June, 23 July and 20 August. For full details of the events contact Andrew Field (08)

271 5152 (h) or John Hosking (08) 468 780 (h).

Nobbies Enduro

16 July is the date for the 1989 Shogun Nobbies Enduro which takes place at Hidden Valley near Maroota north of Sydney. There are to be five classes: novice, women, sport, expert and observed trials. Entry costs \$10.

For more information telephone (02) 411 5466.

Simpson Desert race countdown

More news about the Simpson Desert Cycle Classic which is happening 26 to 30 September. The event is being held in aid of Paraquad, the Paraplegic and Quadriplegic Association of NSW which was formed in 1961 to help people with severe spinal injuries.

Funds raised by the race will be used to assist Paraquad in its current program, particularly with regard to accommodation for the physically disabled.

Entries for the event have opened and will close on 28 August. Participants will receive a pre event briefing on 25 September and the after race awards will be handed out on 30 September in Birdsville.

Contact Jack Mullins, telephone (02) 588 5617 or Ian Hese, telephone (08) 281 0966 for entry forms and other information.

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IRELAND'S BEST

A memorable day trip in the Emerald Isle

BY IAIN LANGUSCH

MY QUEST FOR THE ULTIMATE day trip took me recently on a three and a half week tour of Ireland. Two weeks into the tour, we found ourselves in a charming fishing village on the most westerly piece of land in Europe, the Dingle peninsula. This village is called Dingle, and we reached it after one of the least pleasant days of our tour.

I had never expected to stay particularly dry on our tour of Ireland, but the day took dampness to extremes. It took us eight hours to ride 40 kilometres. We faced 40 knot winds and continuous face stinging, morale sapping, Gore-tex testing rain blowing in from the Atlantic.

After arriving in Dingle, it was not hard to pass over the "tent set up in a delightful spot by a stream" in favour of

a private hostel with hot showers and warm dry beds.

Despite our low morale, a warm shower and dry clothes and some hot food soon had us ready to see what Dingle had to offer by night. Pubs are not hard to find in Ireland, many of them have traditional folk music, the Irish people are friendly and I had developed a particular fondness for Guinness. So O'Flahertys provided a recuperating good night out. The bad memories of earlier that day were lost among the sounds of flutes and fiddles, pints of enriching black liquid and friendly conversation in O'Flahertys.

When next day dawned clear and sunny, the appeal of another night at O'Flahertys as well as the prospect of a day tour around the end of the peninsula

The Ring of Kerry one of Ireland's magical places. Photo by the author.

(about 40 km) removed any thought of morning packing up and pannier loading.

Our first move was to have a look around Dingle. It is the epitome of "quaint little fishing villages" with colourful cottages nestled around a central wharf area.

Heading west out of Dingle, we found that the westerly wind of the day before was still blowing, but the sun was shining and the thought of a tail wind home made the low gear we were peddling in seem justifiable.

The first few kilometres out of Dingle revealed everything that was most memorable in our tour of Ireland. Rolling green hills cut into a patchwork by a myriad of stone walls. Ireland is not called the Emerald Isle for nothing, and to say that Ireland exhibits at least one thousand shades of green would not be an exaggeration.

The reason for the greens is not hard to find as it rains all the time in Ireland. It did not rain for one four day stretch of our tour and the locals were talking drought.

The stone walls also fringe the road and are usually overgrown by blackberries and fuchsias. It was September and both these plants were at their full glory. The blackberries were covered with the biggest and juiciest blackberries I had

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► British readers who have had the history of the Republic drummed into them and don't need to hear any more about it, but I think a couple of paragraphs about the reasons for the creation of two countries out of the one island would not have been superfluous.

The main problem with a book such as this one is to know when is the most suitable time to read it. You have to peruse it before planning your route so that you get an idea where to go but until you hit the road the more detailed descriptions make little impact; it's not the sort of book to read as you ride along as it isn't intended as a gazetteer; so maybe the answer is to read it twice, once to help with your planning and a second time when you get back home and want to compare your experiences with the author's.

Many of the route descriptions feature an account of a night's camping at some scenic spot. I found it a great surprise that the writer was able to spend so many nights under canvas as I had always presumed it was far too wet and soggy in Ireland to even contemplate taking a tent. But he seems to have fared well and had many interesting encounters with the locals as a result of pitching his tent in someone's meadow or on a peat bog they were cutting peat from for winter fuel. ●

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TOURING SOUTH OF SYDNEY

**BOOK REVIEW BY JULIA
THORN**

**Cycling the Southern Highlands and
South Coast of NSW** by Richard D
Kenderdine. Published by Bicycle Institute of
NSW 1988. Paperback 80pp, \$7.95

THIS SLIM PAPERBACK contains 30 suggested cycle tours of varying lengths in the Southern Highlands region of New South Wales plus helpful information on the area's history, land use, and touring tips. It is a revised version of the author's earlier touring guide to the Southern Highlands and adjacent coastal areas of NSW and contains additional rides not included in the previous volume.

As well as covering the areas around Moss Vale, Bowral, Nowra and Berry thoroughly, the new version includes rides based on Picton, Albion Park and Goulburn to give a broader appeal to readers. All the best touring spots are there: Kangaroo Valley, Fitzroy Falls, Bundanoon, Robertson to name a few.

The peripheral touring hints section provides brief advice on what to take with you on a tour, whether to camp or seek hotel accommodation on an extended tour, how much to eat and where to get tourist information. Meteorological data, location of bike shops and types of accommodation available are included as appendices.

The information is all sound and is clearly presented. My only criticism would be its brevity. For example addresses of accommodation are not given; the reader is advised to consult the tourist information offices, but I think it would have been useful to know what camping areas are most suited to cyclists travelling with a tent as opposed to motorists travelling with the kitchen sink. Another omission is the address and telephone number of all the relevant tourist offices; their location is given, but prospective visitors may have liked to give them a tinkle before their visit to do some planning.

The detailed tour guide forms the bulk of the book. The rides are intended for novices and experienced riders alike,

with an emphasis on the beginner end of the market. Lengths range from eleven to 95 kilometres but most rides are around thirty to forty kilometres. The rides are on sealed roads and are suited to any geared bike.

Each tour description is accompanied by a clear map, usually on the facing page for ease of use on the road. The text provides a brief overview of the tour area followed by a more detailed description of sights along the way. Instructions are precise and the text includes spot distances to ensure that you keep on the right trail. Details of the type of terrain are given including mention of hills that you will encounter.

The only problem with this rather clinical presentation is that the descriptions are somewhat lacking in liveliness. Personal reminiscences are absent, and few of the rides leap off the page urging the reader to pack his panniers and get on the road.

The rides are not precisely graded in terms of difficulty and it is left to the reader to decide which ride is suited to his level of ability. For the most part one can judge this from the length of the ride as the roads are relatively undulating throughout the Southern Highlands. The order of the tours is according to geographical location of the starting point, working southward from Campbelltown to Kiama.

In the majority of cases the author has designed tours which enable you to start and finish at a railway station; sometimes this involves a loop route and at other times the tour takes you from one station cross country to another.

Being able to access a touring area by train is very convenient for several reasons. Not everyone wants to leave their car parked unattended outside a pub or by the roadside for a prolonged period while they are off touring and not everyone has a car which can readily accommodate one or two bicycles.

The only sector of the Highlands that is not reachable by train is the Kangaroo Valley region, so to get there you would have to ride up from Berry or Nowra, or down from Moss Vale. Tours approaching Kangaroo Valley from both these directions appear in the book.

The author has certainly done a thorough job in including virtually every road in the Southern Highlands in this book. It all goes to show what an excellent area this is for touring. Even if you didn't want to do one of the suggested tours you could easily use the book to construct your own.

This book is a useful addition to the touring literature. The Highlands are easily reached from Sydney or Canberra and this volume provides plenty of ideas for the tourer who wants to expand their horizons beyond the metropolitan areas of New South Wales.



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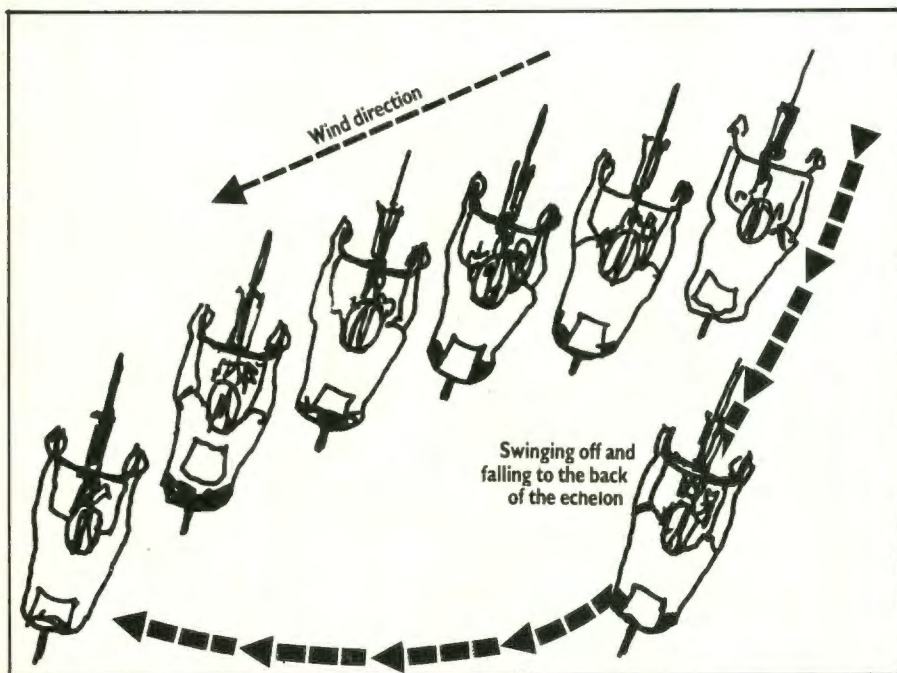
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RIDING IN A BUNCH

The Freewheeling training guide to pacelines and echelons

BY CYNDI HOLMES

MEMBERS OF THE NON-cycling public (they tell me there are a few out there) often marvel at how fast and close together experienced cyclists ride. Maybe you've shared their awe, not being exactly sure yourself how to ride this way. The key is pacelines. Pacelines are necessary for continued fast riding, and bike handling skills are a prerequisite for pacelines.

Pacelines take advantage of the drafting effect. Because wind resistance has a great affect on speed, it is easier to ride when you are sheltered or sitting in behind another rider than it is to ride alone or at the front of the paceline.

Riders in a paceline take turns at the front of the line, pulling at a speed faster than they would be able to maintain for extended periods. Because of the drafting effect, the other riders in the line are able to travel at the same speed while recovering and awaiting their turn to pull again. The effect becomes more apparent at high speeds and in windy conditions.

Pacelines provide for fast riding and aid physical conditioning from the interval training effect. They also allow riders of differing abilities to ride together with the stronger riders taking longer pulls at the front.

The bike handling skills you'll need before you attempt to join a paceline include being able to ride straight and relaxed, without extra movement. You'll need to keep your head up and look past the hips and shoulders of the rider in front of you, while riding close behind that rider.

Practice riding close with another rider to build your confidence. First allow about two feet of space between your front tyre and your partner's rear tyre. Don't yo-yo back and forth but rather keep this distance constant. If your wheels touch, you will be the most likely one to fall.

Don't make the mistake of just watching the wheel in front of you without regard to the road or traffic. Learn to judge the gap by looking down at the wheel occasionally, but looking forward most of the time. As you learn to judge the distance, reduce your gap to about

30 centimetres. Join longer pacelines of four or more riders once you feel confident with your basic bike handling skills.

When riding in a paceline, there are a few points to keep in mind. Your pull at the front normally lasts twenty to thirty seconds or a set number of pedal strokes, usually thirty. Riding smoothly and at an even pace is important.

The responsibility for selecting the line that the riders will follow belongs to the lead rider. Gradual movements are better than unpredictable swerves.

As you approach a road hazard, such as a pothole, smoothly pull out in the road to pass it, give it space and point to it so the following riders are aware of it.

Likewise, always signal turns. Many times there may be someone in your group who does not know the route. Crashes can be caused because of riders not knowing when to turn.

When riding with a group it's common courtesy to stop if someone in the group punctures a tyre. Usually someone will yell "puncture" and the group will carefully come to a stop. You'll all get back to riding quicker if one person assists the unfortunate individual with changing his tyre or tube. If you are the one who punctured, continue in a straight line to allow the other riders to see you and safely go around you. When you are clear of other riders, pull over to the side of the road.

When you finish your turn at the front, pull off into the wind. If it's a headwind it's usually safer to pull off towards the curb rather than into traffic.

Don't slow your pace until you have pulled off. If you slow before you pull off, the rider coming through to lead may have to stop pedalling briefly or even brake to avoid running into your rear wheel. You won't be a popular training partner if you do this frequently!

In small groups of up to six riders go straight to the back of the group and get back in the line. Soft pedal as you move back, staying close to the riders moving forward. Relax a bit to aid your recovery and get ready for your next pull.

In larger groups of more than six riders, the paceline will resemble more of a circle, with riders in two lines, one moving forward and one going back.

It takes a bit of practice to get back in the forward-moving line without having to sprint. You'll need to practice judging your speed so that you can smoothly move over diagonally to get behind a wheel.

At first you'll probably find yourself drifting to the back and realising, a little too late, that the wheel you need to be on is a metre up the road. You'll learn to watch over your shoulder so that you can time your move so that it's gradual and doesn't waste energy, otherwise you'll end up suffering from all those

little sprints you'll need to do to stay with the group.

Riding in a paceline might be a bit frightening at first, but once you feel comfortable with it, you'll find that you've become a more fit and skilled cyclist.

The Echelon

The pros know what to do when a crosswind starts. They form an echelon. An echelon is a paceline that is staggering to the side, with the riders overlapping depending upon the wind direction. Proper echelons are most commonly seen in top amateur or professional races. As a race tactic it takes a bit of skill to master, and usually quite a bit of road too.

You can make small group rides more efficient and less uncomfortable in windy conditions by learning how to ride an echelon. First determine the wind direction. Remember to always pull off into the wind. For instance, if the wind is coming from 11 o'clock, your front tyre should be just to the right, but not overlapping, the rear tyre of the rider in front of you.

As the wind becomes more of a crosswind, you move more to the front and to the side of the rider you're following to get sheltered from the wind.

In large echelons, particularly in racing, every rider immediately pulls off when they reach the front of the group. This keeps the pace much higher than an individual could ride. In small echelons in touring or training, the pulls can be longer depending on how fast you want to go. However, you'll find that in really strong winds, short pulls will not wear you down as much as long pulls.

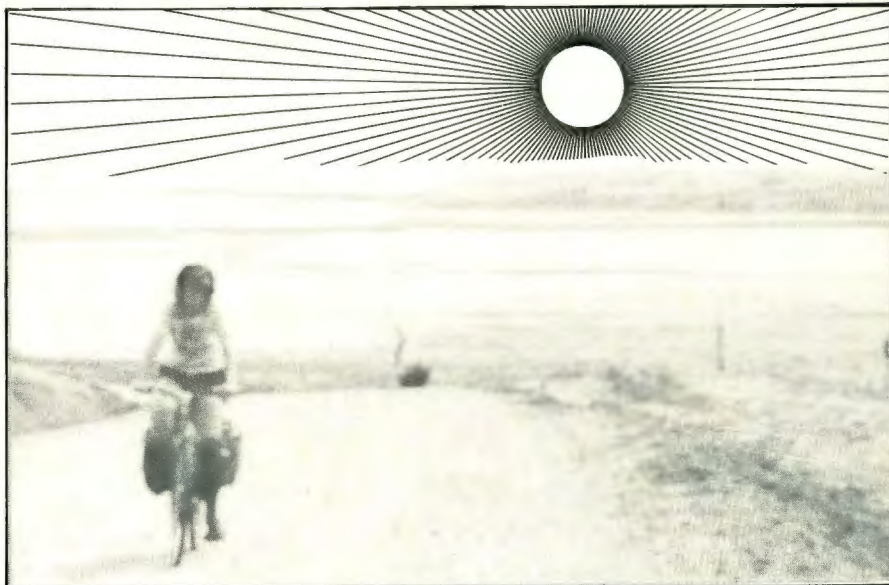
The technique used in an echelon is to pull off into the wind, slow your pace as you slide back, staying close to the riders who are moving forward. Take it easy, but keep pedalling and slip in behind the last rider.

As with pacelines, never reduce your speed when riders are on your wheel, wait until you've moved to the side. And because in echelons riders' wheels are often overlapped, ride relaxed and avoid swerving or over reacting.

The Double Echelon

A common sight in the early stages of a long race or when you see a group of racers training is a double echelon. It's a good formation for social rides as well as quick training, as the riders ride two abreast. At a comfortable pace you can get to know your riding partners better.

The technique used is for each of the two lead riders to pull off at the same time, one to the centre of the road and one toward the side of the road, leaving enough space for the following pairs of riders to ride between the former leaders, who slip in behind the last pair. ●



DEHYDRATION CAN BE DEADLY

BY MARK JENKINS

Ever forget to fill your water bottles? You probably race through work, shot home, jumped into your bike shorts, banged through the screen door and were hammering for half an hour before you realized it. Suddenly you were on the edge of nowhere with no water. Like most people you probably just "toughed it out" and rode on. But toughing it out can knock you out, even kill you. Dehydration, believe it or not, can be deadly.

Sweating is the culprit. Sweat glands are like a radiator, they keep the engine from overheating. But they also deplete the body of both salt and water. Perhaps surprisingly, water loss without almost instant replacement can cause acute dehydration. The two most common hazards of acute dehydration are heat exhaustion and heat stroke. Symptoms of heat exhaustion, the lesser of the two evils, include undue fatigue, headache, dizziness and mild confusion, all central nervous system malfunctions simply remedied -- just drink a litre or more of water.

It is heat stroke that is life threatening. Without constant rehydration while riding, even if the day isn't peculiarly hot, sweating ceases and the body's core temperature can quickly soar above 104 degrees F. Premonitory symptoms include dizziness, headache, muscle cramping, in some cases collapse and even unconscious seizures.

Stephen Brown and Eric Banister, both researchers at Simon Fraser University, state that "when core tempera-

ture exceeds about 105 degrees F, the risk of potentially fatal heat stroke is markedly increased."

Treating heat stroke must be quick, the best method being bodily immersion in cold water. During an afternoon ride, any water will do: a river, a lake, a swimming pool, a front yard hose. The researchers at Simon Fraser determined that: "elevated heart rate and core temperature are produced by dehydration at 2.8% to 5.5% of an individual's weight." After 40 or 50 kilometres of riding... even when you have drank the contents of one waterbottle, you may have lost 3% of your body weight.

Preventing acute dehydration is simple. Be aware of the weather. What is the day's expected high, the expected humidity? If you plan to pedal parched country take at least two litres of water and drink them both. Contrary to beverage advertisements, the best drink -- when you're truly, physiologically, thirsty -- is water. Plain old water.

When it's really hot, cotton (for jersey material) is better than lycra or any other synthetic because the fibres absorb water. When you sweat wearing cotton, the fluid is retained in your shirt and cools your body. Another trick is to soak two T-shirts before setting off. Wear one and wrap the other in a plastic bag. When the first one has been blown bone dry, trade it for the cool wet relief of the second.

Finally, warding off heat exhaustion or heat stroke can be accomplished simply by rearranging your cycling time table. During the summer, the hottest time of the day is between 12 and 4 pm. Just ride in the morning or late afternoon.

Dehydration is probably the most easily avoided mortally dangerous cycling hazard. A drop of forethought and a few litres of fluid are all that are needed. Two full waterbottles? Never leave home without 'em. ●

MUM AND ME

The youngest participant in the 1988 Melbourne to Sydney ride tells her story

BY DONNA CLARK FOR SARA CLARK

MY NAME IS SARA AND my mum's name is Donna. Some of you met us on our bike ride in Australia. I was the youngest rider (I didn't actually pedal a bike but I did ride – in my trailer which mum pulled behind her bike).

Since I had such a great time on this ride, I wanted to tell you all about it. Now, you have to realize that since I'm only five years old, my mum is writing this for me. And because she's doing all the hard work, she gets to interpret my thoughts and interject hers when she wants.

One day in the early summer of 1988, mum took out the globe, spun it half

way around from where we live in Ohio, and pointed to a place she called Australia. She told me we were going there on vacation in November on a bike ride from Melbourne to Sydney as part of their Bicentennial celebrations.

So we started practising. We started with short distances and gradually worked up to metric centuries. We worked out an acceptable combination of things mum would have to pack for me in my trailer: helmet, flag on a tall pole with an American Flag windsock, water bottle, lunch box with peanut butter and jelly sandwiches, bananas or grapes and, most important, bubble gum. I also had a backpack of toys, dolls, books, a small pillow and a beach towel I used for a blanket so I could take naps whenever I wanted.

Finally, on a drizzling Saturday morning, the bike ride began. We took a train in Dandenong and rode over to the fair grounds to the official start of the bike ride. We had an hour to wait before the big send off and, during that hour, mum and I realized that not only was I the only child in a trailer, but a lot of the

people around me had never seen a trailer specially made to tow behind a bike before.

So right away, I was attracting lots of attention. Well, I wasn't used to this, so after a while I buried my head under my blanket. Mum told me that if I just smiled for people while they talked to me and took my picture it would be a lot more fun and they wouldn't have to spend so much time trying to coax me into a smile.

Mum soon learned she didn't need to worry about me or traffic. My trailer is a bit wider than a single bike, so people driving motor vehicles can't squeeze by in one lane and have to slow down and pass using another traffic lane.

I thought the road conditions were fine. The bumps and the rolling motion put me to sleep. One day, a lot of people were asking mum how she did on dirt and gravel road, which apparently lasted about 17 or 18 kilometres. She said it was really hard to negotiate because the dirt was soft and even though she tried to keep her bike's two tires on the packed part, my trailer's two tires were on the soft part which made the pulling difficult and tended to make her bike slide all around. Well, I slept from the beginning to nearly the end of that road so it didn't bother me. And I ate my peanut butter and jelly sandwich when I woke up. What dust?

I liked the mountains because I could see so much from the tops. Most of the time it felt like I was riding in a roller coaster going backwards. (Oh, I forgot to tell you that my trailer faces to the rear so I go to see Down Under backwards.)

On the mountains I helped out by singing when it got really tough. Mum had to pedal rather than walk up because she's not strong enough to push the bike, trailer, and me up. "No options," she would say. It's very hard to stop on an incline and get me out of the trailer because I'm all strapped in and everything would roll downhill.

Some people thought the downhills would be the pay off for difficult uphill because we could go faster being heavier. But the fastest we ever went down any hill was just under 50 km/h because we would reach a point where the added rolling resistance of the trailer, and especially the wind resistance against it, would negate any added benefit the extra weight gave us.

The weather conditions were not the best for me. I especially didn't like the mornings because we had to wake up so early and it was almost always cold.

Mum always woke up first at about 5:30 to 6:00 am – her alarm clock was the sound of zippers (tents, sleeping bags, duffle bags, etc) being zipped open and closed. The first thing she did after she opened her eyes was slide my clothes for the day into my sleeping bag

Illustration by Jeff Hook



with me while I slept to warm them up. Then, she tucked my jacket under my sleeping bag so it would be warm too and ready for me. Next she got dressed, rolled up her sleeping pad and bag, packed everything up that she could and began collapsing the tent around me. At the very last second, she woke me up, helped me get dressed into my warm clothes, and then I climbed outside to check out the new day. Then mum rolled up my sleeping bag, and finished packing. On the really cold or drizzling mornings, mum collected breakfast for me so I had breakfast in bed.

The other part of the weather I didn't always like was the rain. When it rained during the day, mum rigged up a tarp which covered me like a tent. I didn't have windows, but I could peek out the side if I wanted to.

On a rare occasion I got to enjoy some heat and sunshine. I really liked that because then I could paint my face with all difference fluorescent colours of zinc oxide just like lots of other people. I felt really cool then.

I think more mums and dads should take their kids along and then I'd have more playmates.

I really liked camping. That is when I got to run around and play with my friends and burn off all that energy I saved all day while riding in my trailer. While mum set up the tent and took her shower, I explored the campground and looked for my friends.

Mum said she didn't have to worry about watching me all the time because I had 2200 baby sitters – that's how many people were on the ride. My best campsite was in Cooma because there were two ponies in a stable and the owner let my new friend Nicki and me ride them all by ourselves. Cooma is also the place where mum and I talked to Jeremy and his mum from Australia. Jeremy is only nine years old and he rode his bike all by himself for the whole ride.

I also made friends with Domini who's five and Jillian who's four. Their daddy rode his bike while Domini and Jillian rode in their car with their mum and met at each campground.

Sometimes mum and I walked into the little towns that we camped near. I remember when we walked to Orbost with Dave and pulled our dirty laundry in my trailer. Well, the laundromat was very busy so we just knocked on the neighbour's door and a very nice lady named Marge washed all our clothes while our friend Dave (from Ohio) chopped wood for her fireplace.

Orbost was where we went to the beach. There were a lot of big rocks to climb and we hunted snails and sea shells. I also remember that Cann River and Bombala had festivals while we were there so I got to go on some carni-



Sara asleep in the Cannondale trailer with her mum hard at work on one of the dirt mountain road sections of the Melbourne to Sydney route.

Sara and her mum on their new bike "Blue Beauty" training indoors.

val rides and be part of the festivities.

At Eagle Point we went to a wild life reserve and walked up close to kangaroos. In Cooma I rode the Ski Tube up to Mt Blue Cow and hiked around on the mountain top. I could even see snow on top of Mt Kosciusko. And I held a baby wombat at the lodge.

Canberra was a really neat city. I went to the new Science Centre to see the dinosaurs – they really moved and roared. Next I walked through the new Parliament House and Prime Minister Bob Hawke came outside and spoke to our group of cyclists – mum and I got to stand right up next to him when he spoke. And the neatest thing was I got to go up in the Tower and view the city from way up high.

In Goulburn I saw the Big Merino: it's a building shaped like a big sheep and it's three stories high. I learned how sheep are sheared and got to feel fresh wool. And in Camden, the last night of the bike ride, I got to see fireworks. In Sydney, after the ride was over, I went to another wild life reserve and hold a real live koala.

Mum used to joke that she had me on a diet so I wouldn't gain weight so I'd be easier to pull. I'm a very selective eater. I'm sure there were many people who hear me say "yuk" or "gross" as I passed through the food line getting served. But I liked the corn flakes and bread rolls. So every morning I ate corn flakes and buttered bread for breakfast (some-



► times Elizabeth and Michele who were my friends and worked as food servers would even give me two bowls of corn flakes).

Mum always asked for four slices of bread so she could make me two peanut butter and jelly sandwiches to pack in my lunch box (I'm really glad she brought my peanut butter and jelly from America) and I ate lunch whenever I wanted during the ride. The servers at the lunch stops gave me my own fruit and that was good.

At dinner time, I went through the food line and asked for some of everything, and every now and then I actually ate it. Anything I didn't eat was never wasted because mum was always hungry. Even after eating her own food, she ate all my leftovers.

Now I am going to tell you about the very best part of the whole ride. All the PEOPLE. Mum says she's sure all 2200 people knew who I was by the end of the ride but I think she exaggerates a little and it was closer to 2000. Some people even said we gave them the inspiration to keep on going when the going got tough. A lot of people would ride up and ask if they could trade places. Mum always said "yes" with great enthusiasm but I don't think they wanted to trade with her, they wanted to trade with me.

My friend, Nicki, rode along with me lots of times and we told each other

stories. Norma was from Australia. She has four kids and her oldest son, who is 17, was on the ride but she never rode with him because he was too fast. Norma rode with me a whole day once and she taught me about Australian words. I was really curious about what words might be different. So, I asked Norma how she said "sky"... "sky" she said. Then I tried "clouds"... "clouds" she said. I got frustrated because all the words I could think of were the same in Australian but they were pronounced differently.

A Canadian rode by one day and gave me a little Canadian flag. An American gave me a compass so I could be the navigator for mum. And lots of Australians threw candy into my trailer - my favourite were Red Skins and bubble gum.

And Poppo from California, let me carry his stuffed koala in my trailer because it was a better ride than his bike. Gabe and Thomas from California took videos of me blowing bubbles with my bubble gum and after the ride, they sent a copy of the video to mum and me so we can enjoy it for years to come. Lots of people took our picture and some have even sent us a copy which we really appreciate.

And now my friends who made up our camping circle each night. They were very special because they helped mum

out a lot and with their team effort and support. Ed from Connecticut and Al from Indiana both used to work with mum, and Dave from Ohio who went on some Ohio bike rides with us, always got to camp before mum and me so they selected a campsite and collected all our gear from the big trucks that hauled it from place to place each day. If you can imagine 2200 people's camping gear and duffle bags all scattered around three huge semis, then you can imagine the difficult task it was to simply find your stuff.

Shirley from California, shared our tent with us. She read me my bedtime story and then rubbed my back so I could fall asleep. Don't tell mum, but Shirley gave better back rubs than mum, and I usually fell asleep in two minutes.

I made so many more friends. I can't remember everyone's names and neither can mum but we hope they know how much we appreciated them as they passed us on their bikes and yelled "Good on ya mate."

So now, what's next? Well, I'm afraid mum had had enough of pulling me around because she just got a tandem and guess who gets the back seat? Me.

Donna and Sara Clark are currently living at: 1344 Donwalter Lane, Worthington, OH 43235, USA and would enjoy hearing from others who participated in this trip. ●

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SURVIVING INDIA

What it's like to see the subcontinent by bike

BY GREG WEAR

IMAGINE A HOT DUSTY plain, flat and smooth, for as far as the eye can see, which is not very far because of the thick dust haze. On this smooth flat plain imagine an uneven potholed stony strip of bitumen, barely one lane wide. On either side of the bitumen, a similar width of well traversed dirt.

Now, for every kilometre of road, imagine about five hundred people, men women and children, armed with an assortment of picks, shovels, brooms, wire brushes, tree branches, and of course little chipping hammers, the latter for making gravel out of larger rocks. The people wielding these tools are the road workers. Their mission it seems, by the strategic placement of rocks, digging of holes, and positioning of themselves, is to make sure that traffic does not flow safely in both directions at once.

Now picture convoys of trucks and buses with single minded drivers who want to proceed in their respective directions. Every second truck will be carrying twice what could sensibly be called a full load. Similarly, imagine what sensible number of people could ride in a bus, and triple that.

To each of these trucks and buses, give a loud constantly sounding horn, so that they may warn all smaller vehicles that "might is right", and all slower vehicles, "watch out! I'm coming through".

Into this scene add heavy wooden carts with big wooden wheels. The carts are stacked high with harvest and drawn by slow moving water buffalo. After each horn blast picture these animals trying to divert back onto the bitumen, before being blasted off by another attack of high decibel sound.

Visualise other carts of various sizes, drawn by various animals, at various speeds, all suffering the same fate, to varying degrees.

To this add the three wheeled auto rickshaws, with their distinctive high pitched horns, propelled along by noisy underpowered motorbike engines along with the hundreds of trishaws and bicycles propelled along by underpowered Indian legs.

Let's not forget that a small number of cars are also doing combat. The cars will nearly all be 1950 style Morris Ambassadors fresh from the production line. These too have their own characteristic horns. And all the above are weaving in and out of each other in futile attempts to obtain maximum speed.

Somewhere in amongst all of this a camel has escaped from its driver and is running in a fearful frenzy. Perhaps also a couple of elephants are lumbering along, each carrying a rider and a small load of wood. On either side of the road there are, of course, a good many pedestrians trying to cross from side to

side and hardly heeding the warnings given out by horns, bells or screeching brakes.

At one side of this scene a goat herder is trying to coerce his goats through the traffic. In the distance is a recently overturned truck; its very presence warning others of the implications of not sounding the horn loud or long enough.

And in the midst of all this activity a blessed sacred cow ambles absent mindedly back and forth, searching for a piece of cardboard to chew upon.

This is your typical Indian road. You may not see all of these vehicles nor all of these animals on every stretch of road, but over any reasonable period you'll certainly encounter every one.

Somehow the traffic keeps flowing. People continue about their own business. Day in - day out.

Picture in this scene just one more vehicle: a conservatively dressed Westerner on a completely conventional touring bicycle, slowing to a stop by a street stall. Everybody converges on the figure. Pedestrians, cyclists, rickshaw wallahs, the lot. Even the elephant driver turns his elephant so that he may inspect the bizarre sight without straining his neck.

Everybody has something to offer the Westerner. Such friendly genuine people. The children offer the only line of English they know.

"Hello. One Rupee?"

The commission agents, with a slightly wider English vocabulary offer much more.

"Room Sir? Very nice."

"Change money? Good rate."

"You want drugs? Very cheap."

Depending on the region, others will offer jewellery, silk, woodcarving, papier mache, or maybe moulded marble miniatures of the Taj Mahal.

The cyclist, trapped, dismounts and pushes his way through to the fruit stall. It becomes evident that the he wants some oranges. The crowd swarms around like bees. The buzzing intensifies as the Westerner opens the petals of his wallet. The hive give vocal support to the fruit seller over his suddenly inflated prices. Finally a compromise is made between the 'local' price and the 'tourist' price.

The Westerner pushes his way back to his bike, crunches his gear levers back to the position in which he had left them, adjusts any other tabs or straps that have been tampered with in his momentary absence, retrieves the hand pump from a curious old man, intent on dissecting it to examine its operation, and finally sets off in an optimistic but futile search for somewhere to eat his oranges in peace, and perhaps reflect on how Custer encountered a related problem at his legendary last stand:

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Biketech has been operating as a wholesaler of specialist bicycle accessories and componentry for 12 years and is the Australian distributor for DT-Swiss stainless steel spokes.

With the recent profusion of rim sizes and designs combined with the variety of hubs available and the choice of spoking from 24 to 48H, it has made the selection of spoke length for a wheel-build often a matter of guesswork even after consultation of usually highly inaccurate tables. It is no wonder as there are at least five factors that determine spoke length. They are, hub flange diameter, hub flange separation, rim diameter, number of spokes and most importantly, the type of wheel (front, rear, dished, wheelchair etc).

Biketech offers to bicycle retailers a free computerised spoke length advisory service which not only does the calculation but also incorporates 25 years of personal specialist wheelbuilding experience with the findings of recent overseas research on the aspects of wheel strength. Not all configurations are appropriate. Many wheel problems stem from inappropriate wheelbuilding patterns.

The information required from the retailer is either the brand and model of the hub and rim as well as the number of spokes in the wheel.

To back the service, Biketech stock a wide range of spoke lengths with most of the range in 2mm increments. Spoke types stocked include plain gauge 14G, single butted 13/14G, double butted 14/15G and 15/16G as well as the DT Aero spokes.

The results of the spoke length advisory service come in the form of an easy to read half-page print-out, indicating the spoke length(s) and the number of 'crossings' that will eventuate.

If you are a bicycle retailer, to avail yourself of this service and help you "Do it Right the First Time" you can telephone or fax your information to Biketech. PH: (049) 524403, FAX: (049) 561621.



BEING SEEN

PRODUCT REVIEW BY
JULIA THORN

One of the big problems with winter riding is being seen in the dark. Any new product that helps make cyclists more visible at night time has to be welcome and Sidelights is such a product.

Sidelights is a set of highly reflective stickers which you peel off a sheet and stick around the inside of your rims, in between where the spokes enter the rim. You stick a few of these stickers onto each rim and the idea is that as the wheel rotates car headlights pick out a band of luminous white light which indicates your presence.

The pack of stickers comes with a information card which gives tips on cycling safety, and a logo sticker for you to put on your lunch box or whatever. Curiously, the information card does not make it abundantly clear exactly where on your rims you position your Sidelights, although I suppose it is fairly obvious because if you stuck them anywhere else on the rims they would interfere with the brakes.

The stickers are acrylic coated and oil/water resistant, and the self adhesive backing bonds to the rims in 48 hours. You can also attach them to helmet, shoes and pedals, making them visible too.

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JOURNEY THROUGH JORDAN

A ride to the Red City of Petra

BY SHELLEY HORMANN

THIS WAS THE LAST LEG IN an odyssey that had begun four months earlier in London. We had survived the worst that winter could throw at us as we battled our way through Europe, Turkey and Syria. It was a trip approaching epic mental proportions, just scratching the will power together each day to mount our bikes.

Now we were standing on Mount Nebo, the spot where Moses had supposedly surveyed the "promised land" over two thousand years ago.

Looking across the Jordan Valley we could see our destination, Jerusalem. We felt almost as though we could reach out and touch it. Camping that night on Mount Nebo, conversation was limited as we gazed at the lights of that holy city in Israel, each lost in thought.

But first we had to see more of Jordan. The friendliness and welcome we had received so far from the Jordanians made it seem insulting to leave again so shortly after our arrival.

So we decided to extend our stay by riding the old King's Highway south to Petra, the fabled Red City.

This turned out to be slightly more of a challenge than originally envisaged. Not only did we have strong head winds the whole way, but the ride was punctuated at regular intervals by enormous drops into river canyons. Unfortunately, what went down also had to climb out the other side. Our morale was saved by the spectacular nature of the downhill; the speeds reached depended on the strength of the death wish on the day.

The first "wadi", or river, we came to was particularly welcome, as it represented the first bath we'd had in a number of days. It was also the first time in three months – since leaving the coast of Yugoslavia – that both the water and air temperature were sufficiently high enough to consider such a dip.

Getting undressed without being seen presented a problem. Arab shepherds had the habit of appearing when least expected or wanted and we didn't wish to offend the high standard of morality displayed by the local populace.

This wasn't the only trouble we were to have with the locals. Kids in the Middle East have a nasty habit of throwing rocks; nothing malicious in it, you just make a good moving target. But it still hurts when a rock connects. One day the urge to retaliate came over me, so I rode back and demolished the latest offen-

Jordan is located right in the centre of the Middle East next to Israel. The West Bank of the Jordan River is still occupied by Israel.



der's rickety clothes stand by riding my bike into it. Revenge is sweet, and paybacks are a bitch!

One night, when camped in the bottom of a river canyon, a strong wind came up. My efforts to bang my tent pegs in further had the unfortunate result of waking the local junk-yard dog. He continued to bark all night despite the friendly visits of a rock or two.

It was two disgruntled cyclists who dragged themselves onto the road in the morning, in what had become gale force wind. Climbing out of the canyon was a tortuous task, with each bend seeing us blown either to a standstill, or right off our bikes. Not having any form of medical insurance we were a bit concerned about the consequences of being blown over the side, as there were no guard rails to break our fall.

When I was nearly at the top, a rather strained sounding, rattly old Suzuki van pulled up beside me. Its driver was quite persistent in his attempts to have me accept a lift. There was no way I could make it to the top on my bike according to his way of thinking. I refrained from pointing out that having made it this far I had a good chance of survival and that he should be more worried about whether his own hunk of junk could make it. It sounded in infinitely worse shape than me.

I caught up with my friend Les outside a small shepherd's house. It seemed we'd been invited in for tea. After innumerable sugary teas (twelve heaped tablespoons of sugar to a small pot) we were happy to accept the offer of a nap.

On awakening several hours later we found the weather conditions had deteriorated markedly. The temperature had fallen and the sky had turned a highly unusual shade of yellow. The wind hadn't weakened. It seemed we were destined not to proceed that day.

In fact we were left stranded with this family for the next two days as the worst storm of the year descended on the region, with quite a bit of snow falling.

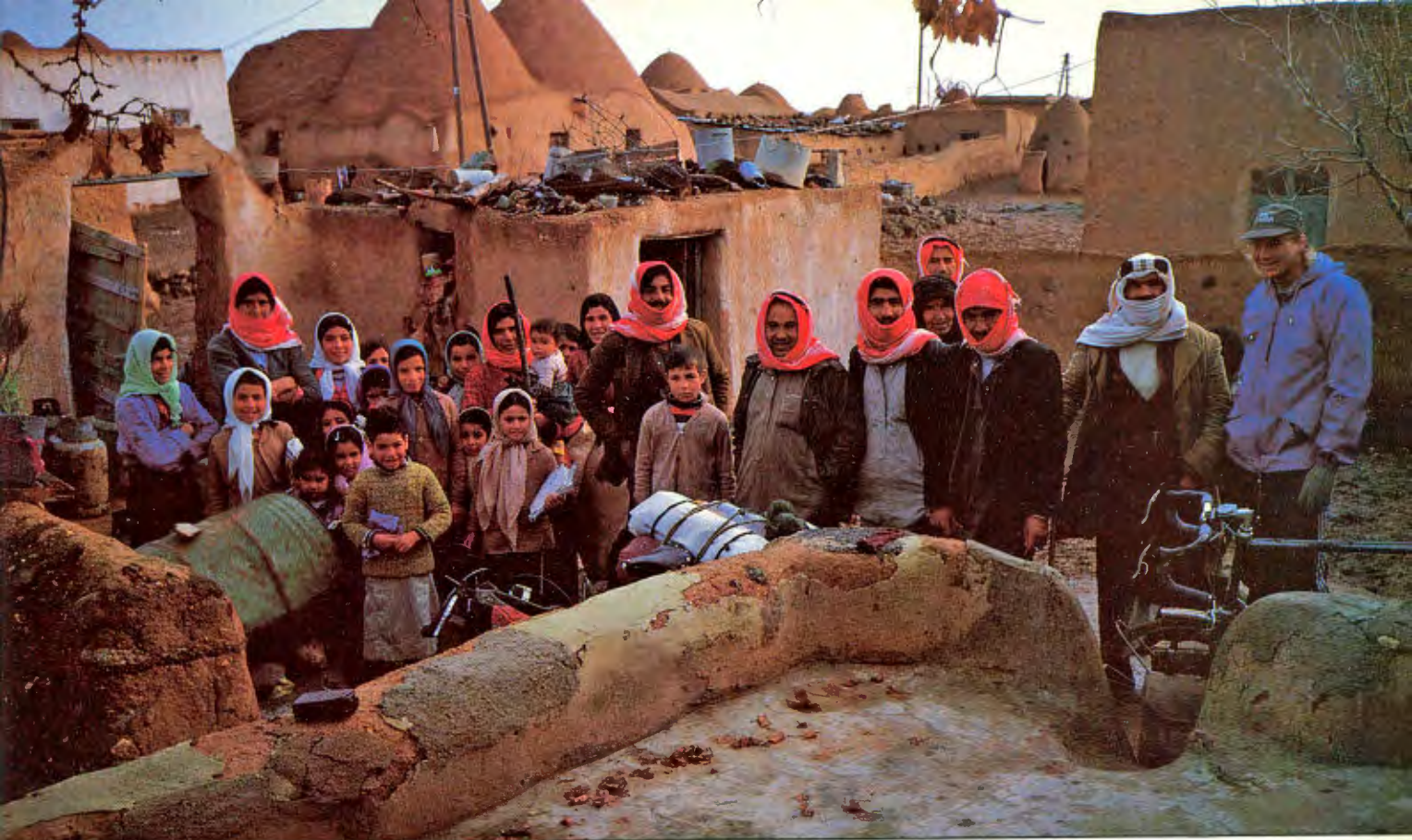
The family we had inflicted ourselves on accepted the situation with the minimum of fuss. But despite our gratitude for the shelter and hospitality given we found it hard to cope with the constant noise level. Much of the day was spent crouched around a diesel heater while the TV went on noisily in the background. Endless cups of tea were prepared. Our initial thirst upon escaping the wind had left us with a tea consumption record to maintain.

"More tea" the daughters would cry.

"No, no more tea," we would reply, waving our hands over the tops of our cups. "Finish".

"No finish", they would reply as another onslaught of tea came our way.

Huge meals appeared at irregular intervals, with the men eating first in tradi-



Village people welcome weary bikers



The impressive Roman ruins at Palmyra.

tional Arab style, using pieces of flat bread to scoop food up from a communal tray.

As a guest I had the dubious honour of eating with the men instead of waiting with the other women for a share of the leftovers.

Every so often either the son or the father would leap up and after putting on many layers of clothes venture outside to check on the goats.

The girls' job on arriving home from school was to make the daily "hobbis" (bread). Inevitably this resulted in more arguments culminating in one girl leap-

ing up and slapping the other soundly on the back making a great floury hobbis hand print.

We were glad when the time came for the bedding to be pulled out for the night. After months of free camping, in relative peace and quiet, we weren't mentally prepared for such a level of commotion.

We were pleased to hit the road once more. It was only a few days ride to Petra; despite bitterly cold weather and riding through snow fields, we were keen to be there.

We weren't in so much of a hurry as to turn down hospitality though. One of our most welcome encounters was with

a man holding dual citizenship of Jordan and Australia who invited us into his restaurant for lunch, then told us to take whatever other food we wanted for the road ahead.

Our last night before reaching Petra was spent with a high ranking and wealthy family, the father being a personal friend of King Hussein. It was interesting to note the difference between their living standard and that of less well off Jordanians. Their house was a mix of Arabic and Western style, with one lounge room furnished with sofas and coffee tables, another retaining traditional mats on the floor for seating.

On awakening to yet another fresh fall of snow, it was hard to feel much like riding the remaining sixty kilometres to Petra. But once there we knew we could have a hot shower and a rest, maybe even get to wash our clothes.

Coming down the last mountain we paused at the view. The sun was just beginning to set on the rose-red rocks in the valley below. We knew that nestled in there somewhere was Petra, the city carved out of rock over two thousand years ago by the Nabateans.

Red City, here we come!

Additional information

A Jordanian visa will be issued either overnight or on the spot (depending on where you get it) and should be free.

An exit tax of \$15 applies unless you are exiting via the West Bank. We were

▶ flatly refused entry into the West Bank with our bicycles as it is forbidden to take private vehicles across the King Hussein bridge.

Ways of leaving Jordan are to the north through Syria (provided you have an entry stamp for Jordan), to the south from Aqaba to Egypt by ferry, or from Amman by plane. It is difficult to obtain a suitable visa for bicycle travel in Iraq and next to impossible for Saudi Arabia.

It is possible to come to Jordan from the West Bank if you thought to get a Jordanian visa before entering Israel (and have no passport evidence of having done the latter). While you know that you've been in Israel and they know you've been in Israel, the official line is

that you've never even heard of the place.

Roads. There are only two roads that run the length of Jordan. One borders on Israel and goes through several restricted military areas. Because of this you need a special permit to travel along this road.

The Desert Highway runs from Amman to Aqaba. With Aqaba being a main port of access for goods bound for Iraq, as well as the home market, this road is heavily used by trucks. Despite this it is safe to travel on, but the scenery is boring. The road surface varies from good (though with no shoulders) to downright atrocious.

The Kings Highway runs to Petra, before entering the Desert Highway just south of Ma'an, 100 km north of Aqaba. This road has the most spectacular scenery, travelling through enormous river canyons and past the ruins of important Crusader castles, at Karak and Shobak. A good free map is available from any Jordanian tourist office.

Bike shops. There is a small racing club in Amman and several bike shops. It is best to come equipped to do your own repairs though its nice to know that the ten speed is a recognised breed in Jordan.

Weather. Unless you enjoy freezing your tootsies I don't recommend a trip in the winter. On the other hand, in a country where displays of bare flesh aren't appreciated and in the case of women may be the cause of riot, cycling in the heat of summer may not be very enjoyable. I would recommend spring (March/April) as a good time to visit.

Food and water. Most of the food that you find in Europe is available, in canned or packaged form, but at a price. If you enjoy more traditional arab foods such as flat bread, yoghurt, goats cheese, olives, etc, you'll find yourself living a lot more cheaply, fruit and vegetables were plentiful and reasonable priced, even in the winter.

Tap water is safe to drink, though bottled water is freely available if you prefer.

Camping. Camping out is no problem in Jordan, though if anyone sees you you'll probably be invited home. Due to prevailing social customs I would suggest that women camping alone should choose their spot wisely. I never saw any camping gas in Jordan and there is a distinct shortage of firewood, so if you're into self catering bring either a multi-fuel stove or a good supply of gas. The only place we saw anything resembling a commercial campsite (and the resemblance was slight) was in Petra.

In the more touristy towns you can find hostels/hotels of varying quality. Starting prices are around \$10. Feel free to bargain.

People. "Welcome to Jordan" seemed to be the only thing many people knew how to say. Arab hospitality is at its best in Jordan and English is widely spoken.

Women. While the Jordanians are more westernised than some of their neighbours they still aren't prepared for the sight of a woman on a pushbike. Leave the lycra knicks at home. Avoid embarrassing the local male population by doing a bicycle rebuild in their front yard ("women in our country don't do this sort of thing"). If travelling with a friend of the male variety, its best to be related. ●

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The author on her way down the mountain with the granite dome of Kosciusko in the background. The road is closed to motorised traffic.

ALL THE WAY TO THE TOP

A ride to the summit of Australia's highest mountain

BY JULIA THORN

The challenge to ride from the nation's capital to the nation's roof was one I could not resist. I flexed my muscles, massaged my knees and set out to conquer that pinnacle of the Snowy Mountains affectionately referred to as Kozzie.

When I studied the map it seemed an excellent trip because I could climb along one side of the Main Range and descend by another route, avoiding any need to backtrack. By ascending via the Summit Road through Perisher and Charlotte Pass and then coming down through Rawson's Pass and descending Crackenback I was spared having to ride to the top of Kozzie only to turn around and retrace my steps back down. Little did I know that I was giving myself a route down that was considerably more arduous than the climb up.

The ride from Canberra to Jindabyne was absolutely no indication of what was to follow. Everything was very dry and yellowish and the Monaro Highway undulated interminably. Probably I was just anxious to get to the mountains, but the tiny villages along the road seemed curiously lifeless. Even the cows looked bored. The only memorable parts of the early stages were the views of the parallel Tinderry and Brindabella ranges on either side of the highway before Bredbo, and the huge granite boulders that adorned the fields between Cooma and Berridale.

Around Jindabyne the hills start in earnest. This small town is in a lovely setting and I could see the buildings around the lake many kilometres and several hills away. It's a shame to think of the old town lying submerged beneath the waters of the new lake that

was created by the Snowy Mountains scheme.

Once I left Jindabyne I knew I was in the mountains. The rate at which I was climbing accelerated rapidly. From Cooma to Jindabyne I had only gained 130 metres in 61 kilometres but then I started to soar. The road wound upward to Sawpit Creek and the Kosciusko National Park Headquarters. There is a pleasant camping area, with tame kangaroos lolling about among the snow gums, and I was tempted to camp there as there was hardly anyone around out of the holiday season. But those muscles that had sprung into action at the sight of a winding mountain road bade me continue.

By the time I reached Rennix Gap where the first of the alpine meadows appeared I had already been passed by two cyclists speeding down the mountains. As we waved I was afraid that they might topple over, they were flying by so fast. I hadn't expected to see any other bike riders but I saw quite a few day trippers on bikes.

Then I began to feel cheated. Because after struggling to an altitude of over 1500 metres I was confronted by a long downhill to a creek, so I lost most of this hard won height. My enjoyment of the respite from effort was tempered by the feeling that the climbing had been in vain. This happened several times and on one such descent I passed a mountain biker toiling up towards me as I sped down; and I was the one who was going UP the mountains.

Diggers Creek is in one of these dips and at the side of it I saw Sponar's Chalet in delightful isolation. It seems a pity that so many of these resorts can't be open in summer so that non skiers could take advantage of the great setting.

By Perisher I was getting tired. But at 6 pm it was still warm. It was a beautiful evening, little wind and the lengthening shadows making pretty patterns in the valley. There wasn't much going on at Perisher apart from a small group of people drinking on a sundeck outside the pub. The valley looked so inviting with a glistening stream trickling through.

Beyond Perisher it felt truly alpine. Gone were the snow gums and the road meandered through grassy meadows with increasingly abundant wildflowers – white, yellow and violet. I passed the occasional fisherman by a roadside creek but apart from them there was nobody.

I had been aiming for Charlotte Pass for the night. This is the end of the road for motorised vehicles and the gravel track beyond is only open to bikers and

walkers. Here the snow gums reappear, a small patch of forest looking rather curious amid the treeless expanses.

There would be lovely camping by the Snowy River a few hundred metres below the road. But when I took a quick look at the continuation of the road I knew I had to keep going. Some hidden strength (endorphins?) helped when I knew I was exhausted.

For bike riding that eight kilometre stretch of gravel road is perfect. As I rode along, climbing imperceptibly, I felt as though I had the whole of the alps to myself. The going may have been a little stony but the views were unrivalled; peak after peak along the horizon, wildflowers carpeting the grassy meadows and silvery slivers of streams crossing the valleys. Only a few birds broke the silence.

After several kilometres I saw the Seaman's hut, one of two emergency shelters remaining in the summit area, perched between two granite outcrops and I decided to make that my stop for the night. It was such a solid looking building made from big lumps of rock that it welcomed me like a home away from home.

Cooma, which I had left that morning, was in a world apart.

The hut was in a bit of a state. Dust and soot coated the walls and ceiling so thickly that the graffiti artists had been able to use their fingers rather than have to chisel out their messages. There were four bunk beds with amazingly sagging mesh bases and two thin lumpy mattresses plus some blankets. Some of the window panes were broken which gave me a nice breeze at night but might not be so welcome in winter.

It was a bit eerie with some odd creaks and rustles in the dark but I got a buzz from thinking that I slept at a higher altitude than anyone else in Oz that night.

In the morning I watched the orange dawn envelop the mountains and bring a perfect clear day. I made a quick assault on the summit two kilometres away. The track became a bit hard to ride in places due to slippery granite chippings but I was surprised to find that you can ride right up to within ten metres of the 2228 metre top. I had Kozzie to myself for a brief twenty minutes before the first walkers arrived. The sight of tier after tier of bluish peaks far into the distance was stupendous.

There followed a steady stream of walkers approaching from both Charlotte Pass and Crackenback directions. I had had no idea that the mopuntain would be so busy. One group was climbing to celebrate a 75th birthday and had last been up in 1951 by motorbike which they had to carry some of the way over snowdrifts.

The first stage of my descent was easy due to the iron mesh walkway con-

structed to protect the alpine flora from excessive trampling by walkers. A lot of people were somewhat surprised to see a bicycle on the path.

It was when I reached the top of the Crackenback chairlift that my problems began. For a start the sight of Thredbo so far below, say 600 metres, made me feel quite dizzy. The mountain dropped down sheer at my feet.

I located the walking track down and decided to give it a go. This was Merritt's Nature Trail and clearly not intended for bicycles as it wound down the slope like a corkscrew. I tried a scree slope as an alternative but it was so hard to keep the bike under control and stop it from racing down ahead of me that I returned to the nature trail. Pretty soon I realised I was going to have to carry my bike down. The path was narrow, had steep steps with log retainers and was flanked by bush so I was unable to wheel the bike by the side.

With an unladen mountain bike it would have been an exhilarating trip down the mountain across the grassy slopes I could glimpse through the trees. With a heavily laden touring bike I was denied the pleasure. Instead I developed blisters on my hands and found this the most tiring part of the ride. The beautiful stands of snow gums were some compensation as were the views over the mountains behind Thredbo. Tiny purple flowers peeped out from the undergrowth around me.

Eventually I reached the chairlift access road and went the rest of the way down on it. I couldn't really ride it because the rock chips and gradient made it too slippery - whenever I braked the bike spun around sideways. So it took me two and a half hours to go the five kilometres to the village. And coming down is meant to be the fun part of it!

In contrast with the other resorts I'd passed through Thredbo was bustling with walkers and tourists. Many of the shops were closed but the pubs were doing a good trade and there were plenty of picnickers by the river.

The road down from Thredbo to Jindabyne was quite different from the road I had taken uphill the day before. I rode along high above the Thredbo River on densely wooded hillsides. I camped that night at Ngarigo rest area near the park entrance where I found a large grassy area with picnic tables, fireplaces and an opportunity to have a cool swim in the river.

The descent through the foothills seemed fairly gradual. In fact near Jindabyne there were some climbs that had me back in my granny gear when I was least expecting it, before I was back to to grazing land and old farmhouses. But the town and the lake were a welcome sight after all this hard work. Maybe next time I should take a parachute for the return trip.

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AUSTRALIA'S WONDER WOMEN

Cycling once dominated by the men is now a sport for female champions too

BY JOHN DRUMMOND

THE WORLD'S FIRST bicycle race for women was conducted over two miles at Ashfield, NSW in 1888 and won by Dot Morrell. It attracted little public interest. The press of the time continued to regard women racing competitively as almost a criminal offence.

This attitude persisted until after the First World War when objections gradually softened and women's cycle races occasionally appeared on European programmes. Meanwhile in Britain whilst women's cycling had developed after the First World War there was even greater progress after the second conflict ended. A real breakthrough in fact. The road time trials council organised a women's

25 mile championship event, while the conservative National Cyclists Union – founded in 1878 – at last officially recognised the girls by giving them two title events on the track.

Encouraged by that success at national level the British girls made international recognition their next target. Led by Eileen Gray, who had been a good rider in the mid 1940's they eventually convinced the UCI (the world controlling body) that women had a role to play in cycling and the first woman's world cycling championship was staged in France in 1958.

Later Beryl Burton won Britain's first world championship and was destined to prove the greatest female cyclist the

The brilliant Kathryn Watt whose 7th placing did much to aid the Aussie women's third team placing in last year's Tour de France Feminin.



Doreen Middleton, 19, of Victoria who in 1931 made history by riding to Adelaide in 4 days 21 hours then returning in 3 days 23 hours 56 minutes.

world has known to present time.

In Australia women's cycling made slow progress with little recognition by the sports hierarchy, but nevertheless some intrepid women indulged in setting some capital to capital records at a time when Hubert Opperman was re-writing the record book. Notable among these was Doreen Middleton, a member of a famous Victorian cycle racing family who at 19 years of age cycled from Melbourne to Adelaide in atrocious weather in 4 days 21 hours, then returned in 3 days 23 hours 56 minutes.

In the early 1950's the Australian Cycling Council decided to permit women to race in club events with men. In 1952 Iris Bent (VIC) won a national all round championship at Mount Isa, Queensland, when women's titles were revived. A daughter of George Bent, a prominent Melbourne road rider, Iris was regarded as the fastest ever woman cyclist up to that time.

However, the practice of women riding with men proved embarrassing in NSW when Newcastle's Barbara Whitcher and Margaret McLachlan of the Dulwich Hill club were both barred from racing males in their clubs after several wins.

In June 1966 the same Margaret McLachlan reduced Joyce Barry's Sydney-Melbourne time when she thrashed her slim body over the gruelling 880 km (553 miles) in 58 hours 10 minutes. Although Margaret admitted she was so weak that she covered the last hours without knowing where she was – within 12 months she was at it again.

On 21 April 1967 she attacked Fatty Lamb's 37 year old Canberra to Sydney, 323 km (203 miles) record of 11 hours 37



Margaret McLachlan photographed on the Melbourne Velodrome – Picture The Herald.

minutes 14 seconds, and although no sane person thought the lightly built Sydneysider could beat the time of that great male champion, she shocked the whole of the cycling world by getting to the Sydney Post Office within 28 minutes of his time, and in doing so officially created a women's record with 12 hours 5 minutes 19 seconds.

I was fortunate enough to be present at the Melbourne Velodrome when Margaret McLachlan attacked Valda Unthank's 29 year old hour record. When the intrepid lass came on to the track to start the record attempt her arms and legs, were literally covered in bandages.

Before she was ten minutes into her task she discarded the medical aids which revealed the stark evidence of three severe training falls from which she sustained multiple cuts and abrasions.

The Melbourne Velodrome track was originally a concrete surface which was later covered with vertically placed boards to comprise a steeply banked board track. it was difficult for a rider not skilled in riding banked tracks to master and McLachlan had great difficulty handling her bicycle because she couldn't generate enough speed. Consequently she fell on her first training session and again a few minutes after remounting.

Three days later she had conquered the steep slopes, but blew a back tyre high up on the track and tumbled. The smile of achievement left her face but the determination to succeed never left her mind. Against medical advice she insisted on proceeding with her record attempt which amazed hardened offi-



Tasmania's 14 year old schoolgirl Leonie Roach who extended Margaret McLachlan's one-hour record.



Sian Mulach (Mulholland) won a national double in 1982 and was the first to give the reviving womens racing movement a new dimension.

cials who declared that her injuries would have caused the average male rider to call for a postponement.

The story of Margaret's achievement is perhaps best told in a comparison of her progressive sectional totals.

In the first 15 minutes Margaret covered 8 kilometres. At the 30 minute mark the Sydney girl had covered 16.18 kilometres. At the 45 minute mark, McLachlan pedalling well within herself, had covered 15 kilometres. And for the full hour the total distance was 32 kilometres. A new Australian record. It was a controlled ride – the hallmark of every true record breaker.

After her plucky feat Margaret McLachlan said she was overcome at the warmth of the Melbourne people who gave her the encouragement to see the thing through.

But no sooner was the ink dry on the record book than Leonie Roach, a 14 year old schoolgirl, who attended Tamworth High added 1,088 yards to Margaret McLachlan's one hour Australian womens unpaced record at Glen Innes cycling track on 23 March 1968. Leonie rode 21 miles 55 yards compared with Margaret's 20 miles 727 yards in Melbourne on February 3.

But despite these deeds final recognition of womens cycling only came in 1980 when the Australian Amateur Cyclists Association added two womens titles to its championship list after a lapse ►



Kathleen Shannon surprised the whole cycling world by finishing 9th in the 1985 World Road Championships.



West Australian Jacqui Uttien who was forced out of the 1986 Tour de France Feminin with a broken arm.



The consistent Linda Orrow defeats Jenny Albrecht to win the right to represent Australia in the world titles.

of several decades. Diane Brown of West Australia, won the sprint title from Sian Mulholland. Michelle Byrnes won a five kilometre scratch championship from Vickie Carne (both Sydney women).

In a 446 kilometre road race conducted in Tasmania in July 1981 victory went to a 17 year old Victorian, Heather Kelson. Thus opened a new era in Australian womens cycle racing.

It was the ACT Public Servant Sian Mulholland (now Sian Mulach) who first gave impetus to a new dimension in Australian Women's cycle racing. In 1982 Sian was winner of both Women's National Track Titles decided at her own expense to test her skills against the world's best, the Titles being held in Leicester, England that year.

Women were scheduled to enter Olympic Road Cycling at the LA Games in 1984 and the articulate Canberra lass reckoned that given some success in the Worlds championship on the track, then switching to the road for a season she would be on line for an Olympic berth.

Besides being of Welch descent Sian had relatives in Wales whom she had not seen and was anxious to visit. But all her plans became unstuck when she had a fall in the only track championship.

In 1985 two Australian cyclists startled the cycling world by finishing close up in the world championships in Italy over 75 km. They were Kathleen Shannon, then 21, of Sydney and Robyn Battison, 25, of Burwood, Melbourne, who flashed across the finish line 9th and 12th respectively.

Those two rides at the highest level of the women's sport signalled to a cycling world that Australian women were a force to be reckoned with. Communications flooded into the Australian Cycling Federation office inviting participation in the worlds top line womens events, including the American Tour of Texans and the Tour De France Feminin.

The Australian team shook the very foundations of the continent's favourite sport from the first year of participation. A team of Elizabeth Hepple (QLD), Robyn Battison (VIC), Donna Rae (VIC), Kathleen Shannon (NSW), Debbie DeJongh (ACT) and Jacqui Uttien (WA) took part in the 1986 Tour De France Feminin.

On the mountains Liz Hepple just kept going up the steep slopes, matching the European women at every turn of the pedals with a precision that saw her in fifth place when the girls rode into Paris. Elizabeth finished only 35 minutes and 25 seconds behind winner Maria Canins of Italy, and ahead of some of Europe's finest cyclists.

It was ride equalling that of Aussie Phil Anderson when he finished 10th to Bernard Hinault in the men's Tour of 1981.



Elizabeth Hepple had a magnificent inaugural Tour de France Feminin matching the European women in every department and riding the Pyrenees to finish fifth.



Julie Speight was the fifth best woman sprinter at the Seoul Olympics a position she hopes to improve on in this years Worlds.

Back for the 1987 Tour the Australian girls had a difficult race marked by acclimatisation problems and Hepple's indifferent health, nevertheless she was the first of the Australians to arrive on the Champs Elysees in 15th position, Robyn Battison, Donna Rae and Kathleen Shannon also arrived at the finish.

1988 was a big year for the Australians. The Italians had organised the inaugural Womens Giro (Tour) and Australia had accepted an invitation to ride as a lead up to the Tour De France and Seoul Olympics. Elizabeth Hepple headed a team under the control of Australian Institute of Sport Road Coach, Shayne Bannon, comprising Kathleen

Shannon, Donna Rae-Szalinski, Robyn Battison and former Olympic athlete turned cyclist Donna Gould.

The girls performed with great distinction when Liz Hepple won a stage and came second placed in General Classification, with the team third placed in the teams section.

Joined by Kathy Watt of Victoria, and Marissa Gori of Queensland, for the Tour De France Feminin the Australian girls were in the top bracket for most of the Tour. The team ended third in general classification. Elizabeth Hepple was third placed individual. Other placings were: Kathryn Watt 7th, Donna Gould 11th, Kathleen Shannon-19th, Donna Rae-Szalinski 27th, Robyn Battison at 31.45 and Marissa Gori at 34.25.

Australia was the only nation to have all seven team members finish in the top 35. That was an earth shattering performance at the highest level of Womens cycling in the world. But sadly diminished by the lack of effective reporting in the Australian media.

Bravo Girls.

Conducted on what most cycling critics throughout the world, and even some Koreans would agree was an unsatisfactory course, the Olympic road race was reduced to little more than a farce. Not even World Champion Jeannie Longo of France could get away on the flat criterium circuit.

Elizabeth Hepple was the first to arrive in a massive bunch sprint officially being declared 20th.

On the track, sprinter Julie Speight came fifth. Very good at Olympic level. With Linda Orrow, the 1989 National Sprint Champion, Julie Speight will represent the women in the 1989 World Championship Sprint in Lyon, France in August. Kathryn Watt of Victoria will represent Australia in the Women's individual pursuit.

It was sheer delight to see Linda Orrow return to the winners rostrum in the women's sprint at Canterbury Velodrome and win herself a chance at the World title in Lyon, France, later this year. No one deserved the chance more than this dedicated Queensland lass.

Now 23, Linda won the Women's National Title in 1984 and again in 1985. She is the current Queensland sprint champion for the ninth time and a past winner of the Australian Woman Cyclist of the Year Award.

The incumbent champion, Julie Speight, was absent recuperating following a recent accident at Canterbury Velodrome, but victory was none the less easier for Linda as SA's second placed Jenny Albrecht is no slouch.

Julie was also selected in the Australian team for the Worlds on account of her fifth in the Seoul Olympics Sprint, while Kathryn Watt won selection to represent in the womens individual pursuit.

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WORLD CUP TRI- FAST AND FURIOUS

The World Cup Triathlon

**BY WARREN SALOMON
PHOTOGRAPHY BY NIGEL
BARBER**

THE WORLD CUP TRIathlon held on Queensland's Gold Coast on April 30 proved to be a big drawcard for the cream of triathlon talent. The event comprised of a 3 km salt water swim on the Southport Broadwater (with some assistance from a flood tide), a 130 km cycle leg on a large loop through Surfers and Nerang back to Southport and a 30 km run to Hope Island and return.

Heavy rains in the lead up to the event created poor road and running surfaces for the 400 competitors who numbered among them some of the worlds top ranked triathletes. The race was won by Mark Allen (USA) who finished in 5 hrs 26 min 52 sec and took home a purse of \$20,000. Runner up was Dave Scott (5:50:57) and third was fellow American Scott Tinley (5:33:42) with New Zealander Richard Wells coming in on 5:37:47.

First Australian across the line was Greg Stewart (5:39:31) from Victoria who came in fifth ahead of Henry Kiens (5:39:53) NETHERLANDS, Mike Pigg (5:41:18) USA, Ray Browning (5:43:48) USA, Pauli Kiuru (5:44:54) FINLAND and Nick Croft (5:45:49) QLD.

The top two women finishers were both from the USA - Julie Moss (6:19:55) and Paula Newby-Frazer (6:24:51) - while Australia's big hope for our first Tour de France Feminin win, Elizabeth Hepple (6:32:04) of Queensland came in third.



**Top: World Cup Winner Mark Allen. Bottom:
Runner up Dave Scott. Photography Nigel Barber.**

Brett Marshall was the lead competitor out of the water in a ridiculously fast 20 minutes 5 secs (9 km/h average speed) closely followed by fellow Kiwi Rick Wells. All competitors swam the leg in rapid time aided by a fast flowing tidal current swollen by flood water run off.

Nick Croft who was first out of the transition was quickly overtaken and outpaced by Mike Pigg, Scott, Tinley and Allen. Many of the Australians wore them selves out in the cycle leg and left themselves very little in reserve to be eventually run down by the better paced Americans.

First out of the cycle leg was Dave Scott but it was his fellow countryman Dave Allen who rode the most impressive cycle race. In spite of having to repair a flat tyre Allen still managed to catch the top Americans and go third into the run leg. It was an amazing bike ride and he finished in 3:24 only one minute behind the fastest time!

But it was in the run leg that Allen really exerted his dominance of the race. No one could match his stamina and endurance completing the run in 1 hour 41 minutes.

The bike leg once again emphasised

the high tech nature of the sport with many of the competitors using disk wheels and carbon composite frames. Most useful Gadget of the Year seemed to be the pulse rate meters and these were used by many of the top athletes.

One notable gear failure was experienced by many users of the Grip Shift gear shifting device. This component works like the hand throttle on a motor bike - twisting the grip pulls the gear cable and changes gears. Ray Browning, one of the pre race favourites, jammed his rear derailleur control at the start of the leg and had to finish it with only his front changer operating.

Numbers in the womens field were dissappointingly low in spite of the equal \$20,000 prize money. During the race, however, all that was forgotten as interest centered on a duel between Julie Moss and Paula Newby-Fraser. Many thought Newby-Fraser had the race sewn up as she lead well into the final run leg but she was overtaken by Moss who eventually came home five minutes ahead of the athlete from Zimbabwe.

Moss and Allen are to marry in September so their combined winnings should provide the happy couple with a wonderful wedding present.

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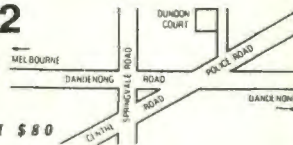
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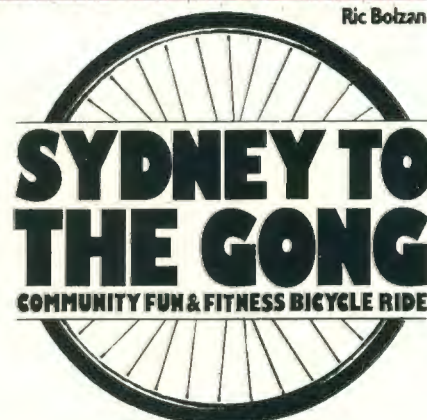
A preview of this year's big bicycle event

BY WARREN SALOMON

ON SUNDAY NOVEMBER 26 this year the 8th annual Sydney to the Gong Community Fun and Fitness Ride will take place along a spectacularly scenic route between Belmore Park in Sydney and Flagstaff Point in Wollongong. A big

turnout is expected – even bigger than last year's estimated crowd of between five and six thousand riders.

A number of new features will be added to this year's event to encourage all types of riders to participate. For sports and fitness riders an individual



time trial option will be introduced starting ahead of the main part of the ride at 6:30 am through to 8:30 am. The main ride will start at 8:30 am.

Time trial riders will start from a timed starting ramp and will use a 100 km route similar to the touring route except that it will substitute a longer sealed section for the beautiful but unsealed Lady Carrington Drive in Royal National Park. Time trialists will be timed and will have to comply with a strict set of rules governing the event.

To undertake an event of this magnitude we will need up to 500 voluntary base and route marshalls to ensure a safe day for all. If you or your friends are interested in helping the organisers with this important community work please contact the Ride Administration office (02) 264 8544 during business hours or send your name address and day contact phone number to the Sydney to the Gong Ride Operations Manager, PO Box K157 Haymarket NSW

68 Freewheeling



The emphasis this year will be on safe riding behaviour and the theme of the event will be: the rules of the road are the rules of the ride. We expect the co-operation of the Police and other community organisations but we also expect riders to act responsibly when they take to the roads for cycling's big event.

The ride will once again support the efforts of the Multiple Sclerosis Society and riders will be encouraged to seek per kilometer sponsorships from family and friends to enable our target of \$100,000 to be raised from the event. Last year in a credible first time effort for the ride individual riders and teams raised \$50,000 for MS. Prizes will be awarded for this year to the top fundraisers in both team and individual categories.

Prizes will also be awarded for the best dressed teams of five or more riders in schools, corporate, amateur and open categories. Great fun for all.

If you do not cycle regularly you should do some training for the event. On the day you have 9 hours to complete the journey and our sag wagons will come to your rescue if your health and lack of fitness lets you down. St Johns Ambulance will staff the four major stopover points if you need assistance in the event of injury.

The Sydney to the Gong ride is a great day out for all the family and friends – even the ones who don't ride bikes. This year our carnival at the Wollongong end of the ride is growing and we want you to invite your friends and family to motor down to meet you at the end of the day.

If you are travelling up from the Gong to start the ride we are providing truck transport to carry your bikes leaving from the station around 6:30 am. In the afternoon Sydney riders will be able to load their bikes onto the trucks at Flagstaff Point for transport back to Belmore Park. A security area will be operating back at the Park so you can stay and enjoy the carnival atmosphere at the Gong before you board your train to Sydney.

A free shuttle bus service will operate between the Flagstaff Point carnival and the station throughout the afternoon. If your friends want to train it down to the Gong to meet you tell them that the shuttle bus from the station to the Point is for their use too.

Entry forms will be available during September from bicycle retail outlets in the Sydney, Wollongong and Newcastle areas and you will be able to enter at selected stores from the beginning of October onwards. The official entry form and full details will be published in the September/October edition of *Freewheeling* out September.



Photography by Robert Bolger





BUYING A LIGHTWEIGHT BICYCLE

A strategic approach

BY WARREN SALOMON

IN THESE DAYS OF HIGH interest rates and rising prices it is most important to choose wisely when purchasing a lightweight bicycle. After all, this type of bike even though it may run better and lasts longer usually costs more than the old ten-speed clunker of yesteryear.

This guide to buying a lightweight is designed to provide you with a strategy to help you cut through the salesman's hype. You may need to do a little more research if you want to seek out the absolute best bargain so the best place to start is to talk to your cycling friends and ask them what they think. You may get twenty different answers so a little additional knowledge can be very handy to help you reach the best decision. Such knowledge will also convert to real sav-

ings when you finally have to part with your hard earned dollars.

What brand is best?

The short answer to that oh-so-common query is: all of them. Well, as long as that only includes bikes sold by specialist bicycle dealers. Supermarkets, sports stores and chain stores don't sell lightweight bikes.

Perhaps a more pertinent question should be: which bicycle dealer should I buy from? Specialist dealers generally sell at least one or two of the major brands. Some, if they belong to a buying group or have a special arrangement with one brand name wholesaler, will often concentrate on selling only that one brand. Others prefer to carry the lot provided they are big enough to afford

the stock and have the space to display them.

The number of brands on offer is unimportant provided that the dealer has the right bike to suit your needs. But more on needs a little later.

It is important to be comfortable and confident about the dealer who sells you the bike because they can be of immense help to you throughout the life of the bike.

One of the most common complaints I receive about the bike retail trade concerns what is often referred to as negative selling. This is where one dealer will heap damnation on a model of bicycle usually not stocked by them but sold by some other dealer somewhere else in town. This almost always produces confusion in the minds of potential customers and a huge loss of confidence in the professionalism of the industry.

If a dealer can't sell on the merits and positive features of their own stock and has to resort to condemnation of another trader in the same industry you best leave them to wallow in their own negativity. It's always best seek out someone who will give you the facts on what they have to sell.

A buyers strategy

Before you set off with your fistful of dollars or plastic ask yourself two simple questions. You will probably be asked the same or similar questions by bicycle dealers in your travels so it can shorten the search if you know the answers before the questions are put to you.

What type of riding do you want the bike for? And — how much money are you prepared to spend?

Both questions will drastically affect the choice of machine. Take the first one for instance. If you want a bike to ride in triathlons or to ride flat out on fast training sessions over sealed roads then a twelve or fourteen speed racing bike is the type of machine for you. If you want to also ride to work then a similar bike may also do but you may need slightly wider rims or tyres to enable you to cope with city streets.

Should you want your bike primarily as a recreational vehicle with the possibility of some holiday touring included then a lightweight touring bike is the type for you. A mountain bike is the ideal machine for city and suburban riding on all kinds of road.

Telling the retailer your price limit is not a bad thing as that way the retailer can then offer you all they have to show you in that range. If you are concerned about being sold up (offered a dearer bike above your budget) then do as I always do when I go into delicatessens: I ask for 200 grams of expensive ham when I really want 250.

So there you are in the store wanting to buy a sleek road racing machine or fast mountain bike to ride to victory in the Nationals and the dealer shows you three bikes around your target price. How does one evaluate a bicycle? Lets divide the bike up into four major sections: the frame; the wheels; the gear and brake components; and the extras. What you have to do here is weigh up each of these four areas with each bike and the result of your mental equation should indicate the best deal.

You could of course trust the retailer. The majority of our bicycle dealers are ethical traders and as they all buy from the same sources it's unlikely that prices will vary greatly from shop to shop. The most important thing is that you end up with a bike that you are completely happy with and that it suits your physical and budgetary needs.

The frame

The most expensive single item of a bicycle. It is usually made of chrome molybdenum tubing. Chrome moly is the most common of the steel alloys.

It comes in various grades – the lighter (thinner) the grade the higher the cost. The old adage – the more one pays the less one gets – most certainly applies to bicycle frames.

There are other types of tubing like the manganese molybdenum Reynolds 531 – the most widely used racing tubing in the world. This type of tubing, however, is seldom seen on a factory built frame and is only available on special order through a frame builder.

It is always wise to check if all tubes are made of the same material. Often as a cost cutting measure only the three main tubes are chrome moly while the

rear triangle and forks are often high tensile steel.

As the frame is the skeleton upon which the 'flesh' of the componentry is fastened your bicycle must have a frame that fits your body otherwise you will not be able to ride it comfortably and efficiently. The correct height is only one consideration the length of the top tube is also important – see box "Fitting your Frame").

Check the frame for brazed-on fittings water bottle mounts, rack mounts, brazed on lever mounts; these are all considered standard for a good quality bike though cheaper frames often dispense with them to reduce manufacturing costs.

Wheels

The wheels are your second biggest cost. Quick release hubs cost more than bolt-ons. Though racing type bikes are seldom sold with anything other than Q/R hubs it is common to find mountain bikes with high quality bolt type hubs.

Sealed bearings were popular a few years ago but are not so these days because they are difficult to replace when worn and are not easily adjustable and user serviceable (you need specialised tools to take them apart). Even mountain bike competitors are shying away from them nowadays so don't think that if a bike has them fitted that it is necessarily an advantage.

The quality of the rim is important. Heat treated alloy rims are considered the lightest and most durable and these are made by the leading rim makers often with a grey or brown surface colour. The colour of the rim is only surface deep but the brand name is important; names like Mavic, Araya, Ukai and Weinmann are some of the leading names.

Lower quality tyres are often fitted to high quality rims because the manufacturer knows that most buyers are more concerned with the hardware – frame, rims, gears – rather than the rubber. Good quality tyres cost lots so don't overlook this important item.

Gearing and brake systems

Almost all the top range lightweights sold these days are equipped with indexed gear shifting systems. "Click" gears as they are known offer advantages to the competitor over short-distance courses requiring a lot of gear changing. They also are much more forgiving of unpractised riders and allow the competitor to concentrate on other factors than hitting or missing the right gear.

SunTour or Shimano are the names to look for.

The same applies to all the other componentry on the transmission and braking systems. Each manufacturer has a hierarchy of component groupings and

often the fitting of one group instead of another will affect the overall price and quality of the bike. To help you fathom the differences between the groups here are both manufacturer's ranges starting from the top: Shimano for road bikes – Dura Ace, Sante, 600 Ultegra, 105, Sport LX, Exage Sport/Action/Motion; Shimano for mountain bikes – Deore XT II, Deore II, Mountain LX, Exage Mountain/Trail/Country; SunTour for road bikes – Superbe Pro, Sprint 9000, GPX, Ole, Edge 4050, Blaze 3040; SunTour for mountain bikes – XC 9000, XCD 6000, XCE 4050, XCM 3040.

Extras

Most bikes come ready for the road with only basic equipment so you should always be on the look out for extras that add value to a bike. However if these extras are of no use to you then why have the bike at all. Important extras are: toe clips and straps (useless if you plan to fit a pair of clipless pedals later on); water bottle cages; gel saddle; and perhaps an alloy rack.

After sales service

Most dealers these days offer a free tune-up service at the end of a thirty day period so that your bike is correctly run-in for the road. This may be offered free by some shops but if you have to pay for it elsewhere it may be worth your while



▶ to consider this with your ultimate purchase decision. Your dealer is important if you want to keep your bike in top working order throughout its life. So it pays to think about the after sales service which each dealer could provide along with your other considerations.

Fitting your frame

Fitting your frame to your body has been covered in two excellent articles in *Freewheeling* back issues. For our two issue fitting set send \$6.00 to Freewheeling Back Issue Sales PO Box K26 Haymarket NSW 2000 and we will post you back copies of issues 41 and 46.

THE DECISION

BY B J RYAN

They live on a mountain – a very small one, but a mountain nevertheless – so a mountain bike seemed to suggest itself. Gravel roads, fire trails and tracks lead in many inviting directions.

Not exactly terrain for his old ten-speed “racer”.

He used to run. The usual kind of thing. Thirty minutes before breakfast. Sometimes a lunchtime run with mates at work; fun runs. A bit of orienteering, a couple of marathons – back trouble put paid to all that, but not to the food

and beverages that had fuelled it all. Good grief! Even putting his shoes on was getting hard.

So, it was to be a mountain bike. Enjoy the bush and trim the waistline. Hang on! She liked the bush, and walking, and a bit of orienteering at least as much as he did. And she hasn't been running recently either. She wondered whether anyone had noticed her waistline recently.

So the order became two mountain bikes.

Their first move, as usual: talk to those who have been down that path. One work mate obliged with brochures, prices and a calm appraisal of the features of his bike: chrome moly, Biopace, Tange frame, cantilever brakes...

Another colleague just happened to have the same make and model. Powerfully persuasive!

“My bike's right here. Have a ride”.

Around the grounds, over the speed humps, (bumps on mountain trails?), around the car parks, through the screenings of the new driveway; it's low geared and slow by comparison with what he's been used to, but it all feels good. Back to its owner.

“I find”, he said, “I need to use the palm of my hand to change gears, and the gear I am in is a matter of judgment. We bought a beautiful bike for my wife. It's just made for a woman: thumb pres-

sure and click stops, to take the guesswork out of gear changing”.

“Surely remarks like that are inappropriate, if not outright illegal, in these times of equal opportunity?”

The reply included something about the real world. “The tax refund is still intact. We really can afford bikes”. Suddenly, avid interest. Coloured brochures take on real meaning. She finds it all a foreign language. “SIS, Biopace, chrome moly, Tange tubes, eighteen gears! Eighteen gears? Does that mean that I have to make eighteen gear changes to get this thing rolling?”

Two gear levers, you say! How on earth can I cope with all that? Do I have to wear one of those helmets?”

He couldn't help laughing; it was dangerously close to being patronising.

“Are you laughing at me?”

“No. It's de ja vu. I had this very conversation at work today.”

They talked about it. “No, you don't have to use all gears. Click stops let you know exactly where your gear changes are.” Welcome to the real world!

The next hour was a lot of fun. Try it! Get brochures for two or three brands of bikes, and compare the way they pitch their spiel at men and “ladies”. And the “ladies” in the pictures don't need exercise!

Welcome to the real world! (They hope to keep you posted). ●



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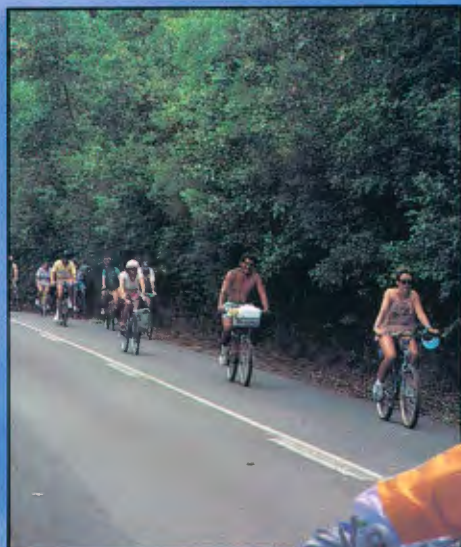
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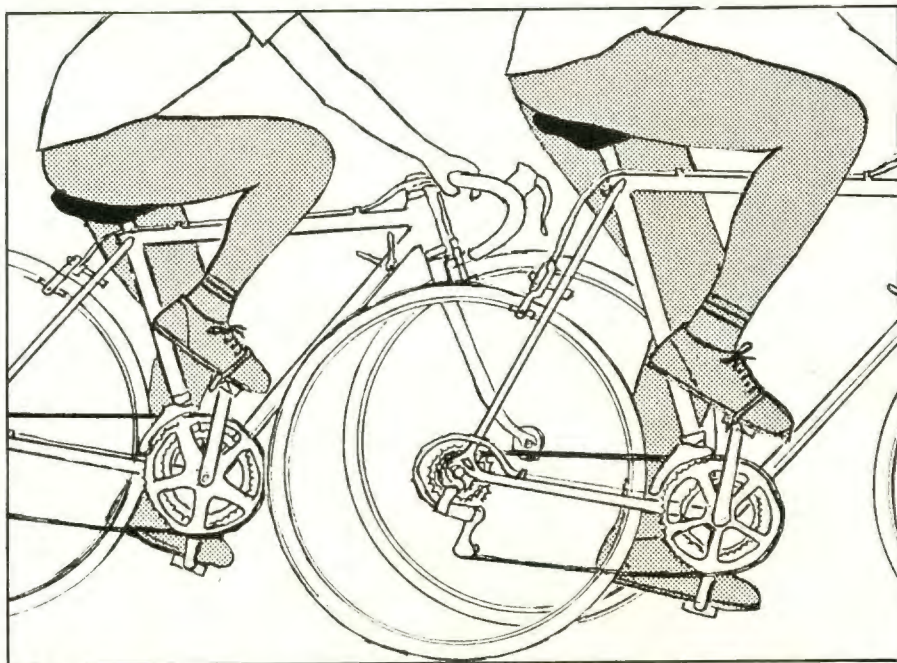
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WOMEN NEED SHORTER CRANKS

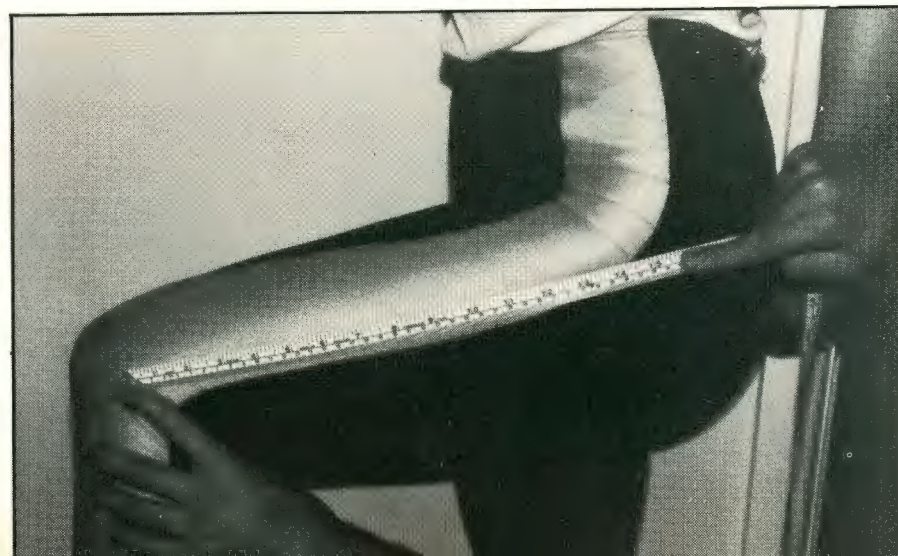
A look at how to improve female pedalling comfort

BY RON SHEPHERD

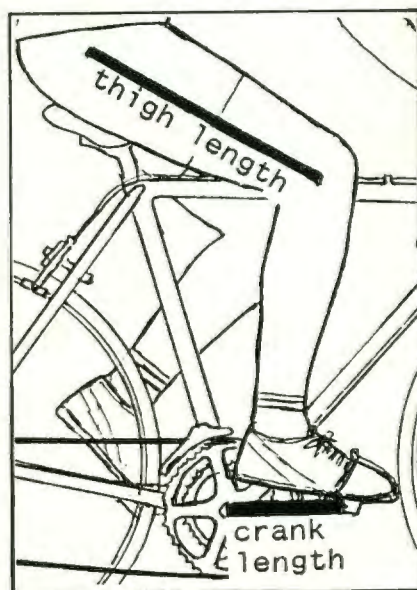
WHAT'S THE THEORY behind the length of a bicycle's cranks? Ideally, you should have cranks the right size to suit your legs. It doesn't make you go any faster, but it does make pedalling much more comfortable.

How long are the cranks on your bike? If you don't know, it's likely that they are 170 millimetres long. Nearly all bikes have cranks that length. That's

What thighs are you? This rider has thighs 15 1/2 inches long. So her ideal crank length is $15.5 \times 10 = 155$ millimetres.



With standard cranks, a short rider has to bend her knees much more than a tall rider.



The length of the cranks on your bike should be related to the length of your thighs.

convenient for bike shops because they only have to keep one size in stock. But it means that short riders have to bend their knees much more when they pedal than tall riders do.

Suppose you swap the 170 mm cranks on your bike for some longer ones, say 180 mm. What difference will that make? The longer cranks will give you more leverage, and you may be able to ride one gear higher than usual. But the longer cranks will also slow down your pedalling rate. For example, where you might have pedalled at 70 revs per minute before, you will now do only 66 revs per minute.

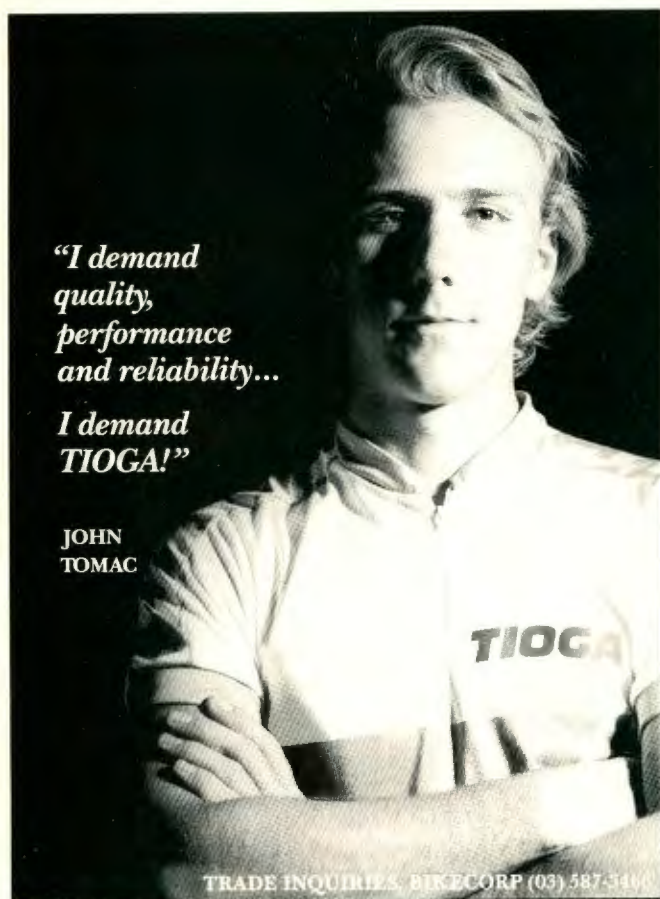
The opposite is true for shorter cranks; you will use slightly lower gears with them, but you will be able to turn the pedals a little faster. Overall, neither longer nor shorter cranks will affect your performance noticeably. This has been shown by laboratory studies, both in Australia and overseas.

Well if changing your crank length isn't going to let you ride faster, why does it matter?

You need cranks the right length for comfort. Cranks that are too short feel awkward, and so do too long cranks. The ideal length seems to be when your knees swing through an angle of about 90 degrees. To get that angle right, your crank length needs to be matched to your thigh length.

The cranks on your bike should be in proportion to your thigh length.

There's an easy way to find out your ideal crank length. With a pen, put a cross on the side of your knee where it pivots. Put another cross on your hip joint. Now measure the distance between the two crosses. You can measure



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► the distance between the two crosses. You can do it yourself, but a friend will probably be able to measure your thigh more accurately (see photo).

If your tape measure has inches marked on it, just multiply by 10 to get your ideal crank length. For example, if your thigh is 15 inches long, your crank length should be $15 \times 10 = 150$ millimetres.

If your tape measure only has centimetres on it, measure your thigh and multiply by 4. For example if your thigh is 42 cm, then $42 \times 4 = 168$, and your ideal crank length will be 168 mm.

Following this rule, the average adult male can use standard 170 mm cranks. Other men will need crank lengths between 155 mm and 185 mm, if they can find them. But it is female riders who are most disadvantaged by the lack of suitable crank lengths. The usual 170 mm cranks suit only the tallest women.

Most women are better suited by shorter cranks, down to 140 mm (see diagram).

Bikes with smaller frames are now available for short riders, but unfortunately these bikes still have standard cranks. It is both difficult and expensive to get any other crank length fitted. This is a worldwide problem because the bicycle industry is more interested in selling bikes to the 'middle majority' than in catering for large or small people.

Acknowledgments: Thanks to Caroline and Andrew McDowall, John Harland, and to Roger Durham of Bullseye Industries for their assistance. Anthropometric data from *Humanscale 1, 2, 3* published by MIT Press for Henry Dreyfuss and Associates, 1974.

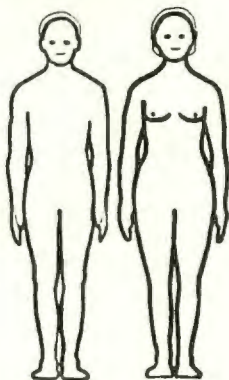
What size cranks suit you best? At the top is a 200 mm crank specially made to suit John Harland's long legs; in the middle is standard 170 mm crank; at the bottom is a 150 mm TA crank imported from France.



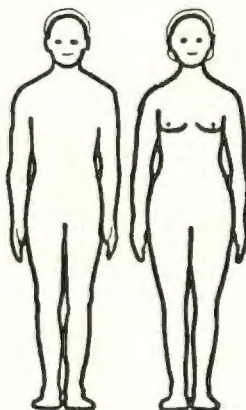
Ideal crank lengths



Short female
140mm



Short male Average female
155 mm



Average male tall female
170 mm



Tall male
185 mm

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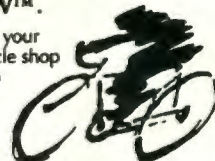


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BOTTOM BRACKET MAINTENANCE

The Freewheeling Maintenance Program – Part 3

BY WARREN SALOMON

ONE OF THE MOST DIFFICULT of bicycle maintenance tasks is really the easiest. And the secret behind easy bottom bracket maintenance and repair is to use the right specialist tools. Bottom bracket bearings usually need to be cleaned and overhauled at least once a year or every six months if you ride your bike daily.

To do this you need a crank remover tool (if you have alloy cotterless type cranks) or a hammer and block of wood if you have cotted cranks. In addition you will also need a set of specialised bottom bracket spanners of a type and brand that will fit your bottom bracket cups.

Either Sugino or Shimano spanner sets should fit your bicycle and these are sold by most specialist bike shops. Such spanners are often costly and as you will only use them once or twice a year it is best to share the cost with a friend who has need of similar equipment. Take your bike to your local bikeshop if you can not identify the type of spanner you require. Some types of European bottom brackets are compatible with the two Japanese spanner sets mentioned and your bike dealer will help track down other more esoteric brands if the need arises.

Before getting down to business it is best to set up your working space so that you can perform your tasks with ease. If you do not own a workshop stand you can try to suspend the bike from the beams of your garage or upend the bike on the ground. If you choose to upend the bike you should support the handlebars on a block of timber so that the brake cables are not squashed at the levers.

Make sure the ground is clean and smooth so that you can easily find any vital small parts which may accidentally fall off the bike during the maintenance session.

To begin disassembly you will first

of standardisation. You are about to encounter this if you have cotterless cranks and do not have an extractor tool to match your type. The dominance of the Japanese manufacturing firms has produced some conformity with the ISO standard requiring basically two types of tool: one for bolt type axles using a 14 mm bolt head; and the other for nut type axles using a 14 mm nut.

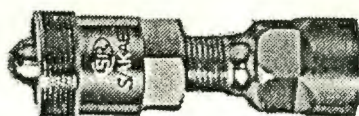
If your bike does not have Japanese cranks you might need a different type of extractor tool. Your bike dealer should be able to sell you the correct tool and you should take your machine with you to ensure a positive identification.

As the cotterless crank is wedged tightly onto the axle you first have to remove the axle bolt or nut with a socket spanner or the part of the extractor designed for that purpose.

Once this has been done screw the extractor's puller shaft right back and screw the tool into the crank. You should be able to screw the tool into the crank for the full length of the thread without the puller shaft bottoming out on the axle. If you can not screw it in far enough wind back the puller shaft.

If you attempt to pull a crank from an axle when the tool is only wound one or two turns into the crank you are likely to strip the threads from the crank making it very difficult to remove.

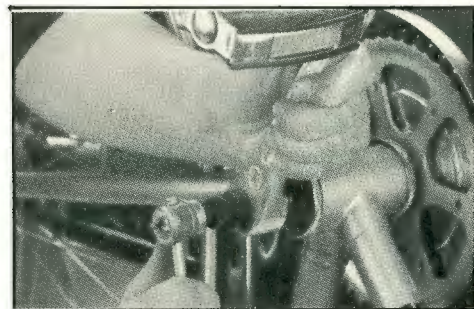
The types of extractor tool.



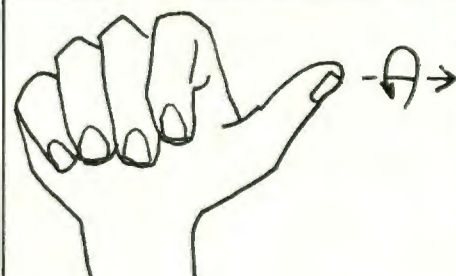
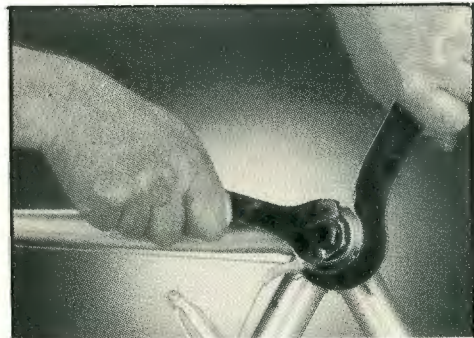
14mm Hexagon Socket



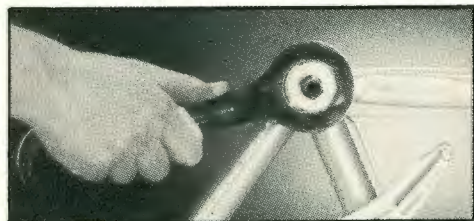
15mm Hexagon Socket

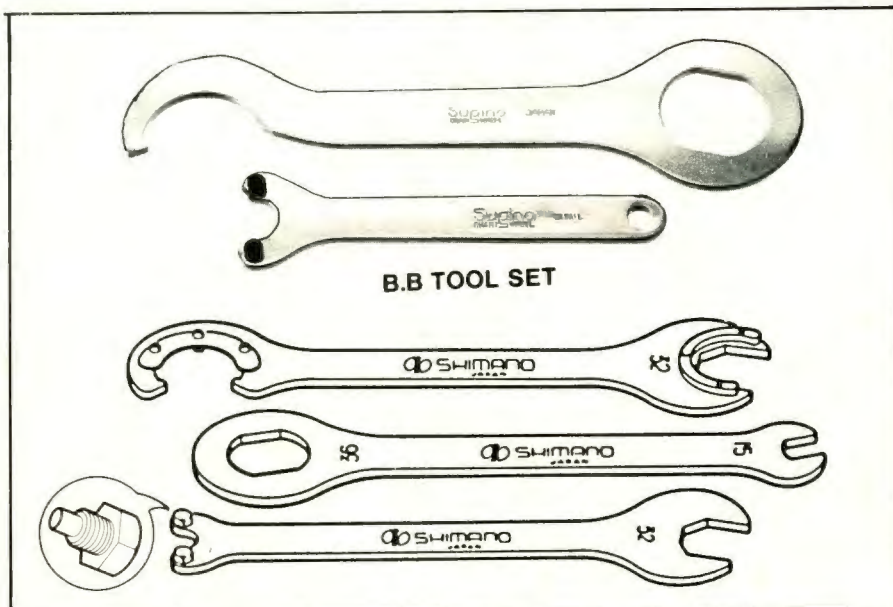


Top: Using a cotterless crank extractor to remove a crank from a nut type axle. Bottom: Tightening the adjustable (RH) bottom bracket cup using specialised spanners. Two of the many excellent photographs used in the book *Cycle Repair Step By Step*.



The right hand thumb rule for right handed threads (use the left hand for left handed threads): The thumb points in the direction you want to move the nut or bolt and the fingers indicate the direction you will have to turn the spanner to achieve this.





B.B. TOOL SET

Sugino (top) and Shimano bottom bracket spanner sets.

Once both cranks are off the right and left bottom bracket cups can be easily removed. Begin by removing the adjustable (left hand) cup first. To do this you will need to use the hooked part of your bottom bracket tool to remove the lock ring. The left hand cup has a right hand thread so to check the direction you must pull to loosen the ring use the right hand rule as shown in the diagram.

need to remove both cranks. For bikes with cottered cranks you will need to undo the nut on the wedged cotter and then support the crank with a solid block of wood seated on the floor while you tap out the cotter pin with a hammer. Once a cotter pin has been removed in this way it is not reusable so you will need to have bought new cotter pins before you commenced the session.

Because bicycle parts are made all over the world there is an appalling lack

Once you have removed the locking ring use the pin head spanner to remove the cup proper. As you remove the cup from the bottom bracket shell you should aim to catch the loose ball bearings as they fall – that is if your bottom bracket does not use caged bearings.

Once the cup has been removed you can gently pull out the axle collect the bearings and begin the cleaning operation which must remove all traces of the old grease and grit particles clinging to the components.

Inspect the bearing surfaces on the axle and the cups for signs of irregular wear and pitting. When ball bearings self destruct through metal fatigue they tend to tear chunks out of the normally smooth bearing surfaces. Replacing the ball bearings is a good idea even if there are no signs of wear but if both the cups and the axle are badly worn they should be replaced as well.

If you do your own bike maintenance it is always good to keep a set of spares handy to avoid a trip to the local bikeshop for replacements in the middle of your maintenance session. Axles come in a bewildering range of sizes and types. The chart only shows the more common Japanese types and bike shops may have to order yours in specially if your bike has uncommon parts fitted.

You should always use cups and axles made by the same manufacturer as the

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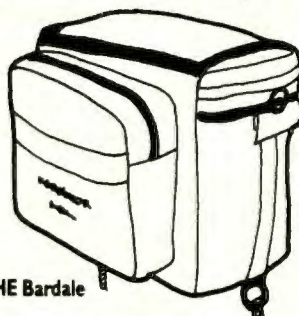
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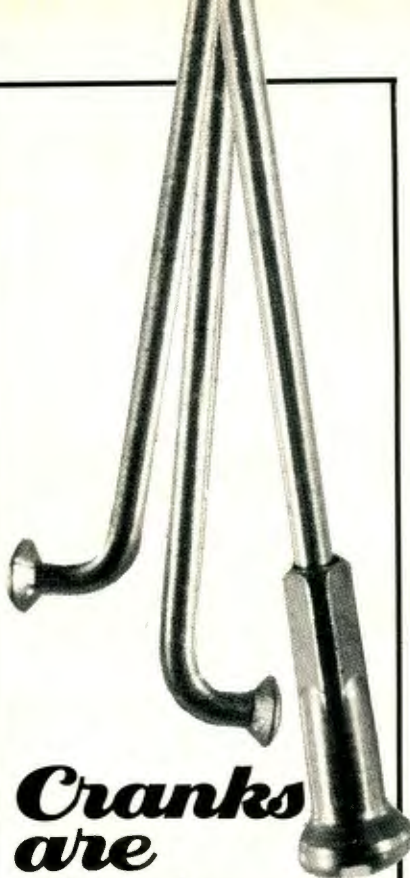
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▶ bearing surfaces differ and will seldom match between brands. If you have to wait weeks for a replacement axle and cups you may consider instead purchasing a complete B/B bearing/axle set (with axle length and taper profile to match your cranks and frame) made by a different manufacturer. Your bike shop has the technical knowledge to advise you on interchangeability of parts between bike brands so check with them first.

Before commencing reassembly you can also remove the fixed (right side) cup or choose to leave it and clean it in position. In any case you should make sure that the cup is screwed in tight when you commence reassembly. A loose fixed cup is more than often the

source of that irritating complaint: the clicking bottom bracket. The fixed (right side) cup has a left hand thread so use your left hand to determine the correct direction to move your spanner. The spanner to use is the one with the special end to match the flat sides of the cup.

Begin reassembly by first seating the right hand bearings into the cup with grease. If you use caged bearings grease the bearing assemblies well and slide them onto the axle and facing in the correct direction. The balls should poke through the cage towards the cup and the flanged edge of the cage should face the axle bearing surface.

Slide the axle through the bottom bracket until it holds the right hand bearings in place then hold the tip from the



CYCLE REPAIR STEP BY STEP

By Rob van der Plas RRP \$19.95 Springfield Books UK. Paperback. Distributed by Capricorn Link Pty Ltd.

BOOK REVIEW BY WARREN SALOMON

ONE OF THE wonderful things about the bicycle is its simplicity of design. You hop on, push on the pedals and it goes. And even when it doesn't go it is still possible to do most of your own maintenance – that is if you have the time and some manual skill. Bicycles are loved by tinkerers the world over and there is a rumour in the bike trade that many bicycle dealers get into the business just so they can tinker with these amazing machines all day long.

I must confess to a certain pleasure that comes from fixing a broken part and restoring the machine to its former state of well being.

But to do that you need knowledge and even the simple bicycle has its complexities.

So where does one start? Most amateur bike mechanics look to books for the answers and in the past decade there have been a number of manuals which have in some way covered the mechanical side of cycling. *Richard's Bicycle Book* has been a favourite for many years but I have always found it an excellent general cycling book rather than a good maintenance and repair manual.

At last someone has got it right. Rob van der Plas in his new book *Cycle Repair Step by Step* has got together with an excellent design team and a photographer and has produced a wonderful 112 page colour manual on basic bicycle repair. I should stress the basic nature of the book and with this in mind I would have no hesitation in recommending it as an ideal first manual for anyone starting out in bicycle maintenance.

The book has an excellent set up chapter with recommendations on tools and home workshop techniques and succeeding chapters dealing with the major parts of the machine. The format of the book – clear well written text with bright colour photographs to illustrate the different steps – is the book's biggest asset. The colour pictures are sharp and provide much better definition and clarity than any of the black and white photographs in all the other manuals.

Of course there is more to the bicycle than the simple machine of my introduction. With many manufacturing nations working to different technical standards there is a enormous amount of information to be absorbed if one is to become and expert. However the strength of this book is that it avoids the more specialised areas of bicycle repair and devotes its self wholly to the basics.

There are many other books which specialise in the various aspects of bicycle mechanics but if I were to own only one maintenance book to help me with my tinkering I think it would have to be this one. □

outside of the cup while you wind in the left hand cup with your fingers. If you are using loose ball bearings you should seat the balls into grease smeared liberally on the bearing surface of the cup.

The main reason that caged bearings are almost always used in bottom bracket bearings can often become painfully obvious during reassembly when the loose balls try to escape from the grease.

If the bottom bracket shell threads are tight you may have to use the pin head tool to tighten the adjustable cup the last few turns. Aim to tighten the cup so that the axle rotates smoothly with resistance only from the grease.

Screw on the locking ring and with the pin spanner holding the adjustable cup and the hooked spanner turning the locking tighten the ring against the bottom bracket shell.

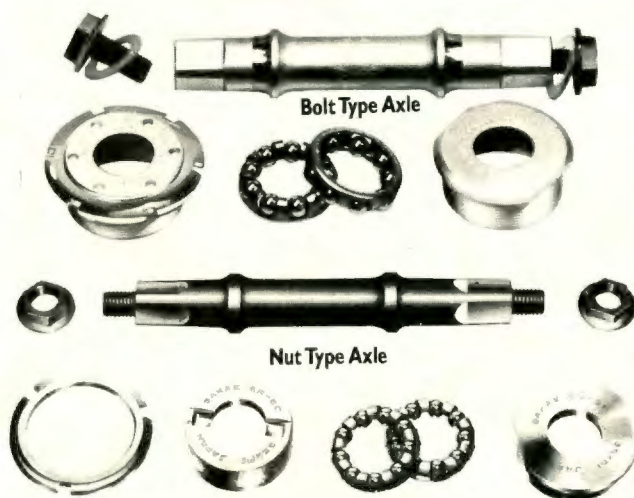
Check that the bearing adjustment is still correct. If it has tightened or loosened you may have to loosen off and repeat the procedure with a slightly different setting of the adjustable cup.

It is worthwhile noting that too much grease will often inhibit smooth running of the bearings at first giving you a false adjustment which may have to be corrected some days after your bike is back on the road.

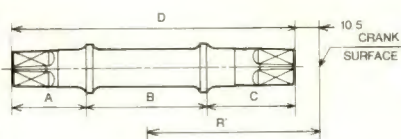
Cups which are difficult to adjust may not be the cause of the problem. You may find that the outside face of your bottom bracket shell is out of true so that the cups do not seat properly are not exactly aligned to each other or the axle. You can often detect this if the wear pattern on the inside of the bearing cup is off centre. If this is the case your bike shop has the tools and expertise to reface the bottom bracket shell with great precision.

Complete the maintenance task by refitting your cranks. Cotterless cranks should be bolted up tight to force the crank onto the tapered axle. A long handled spanner should be used with the extractor tool to ensure that you have enough leverage to make sure the cranks are wedged on tight. ●

Japanese Bottom Bracket Axle Types and Lengths

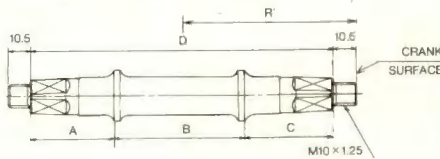


BOLT TYPE



B.B. WIDTH	CON- STRUCTION	MARK- ING	A	B	C	D	R
68mm	SINGLE	3N-B	32	52	36	120	72.5
		3S-B	32	52	37.5	121.5	74
	DOUBLE	3T-B	32	52	39	123	75.5
		3U-B	32	52	40.5	124.5	77
	TRIPLE	3R-B	32	52	42	126	78.5
		3TM-B	37.5	52	39	128.5	75.5
		3TR-B	42	52	39	133	75.5
		3RR-B	42	52	42	136	78.5
70mm	SINGLE	5N-B	32	55	35	122	73
	DOUBLE	5S-B	32	55	37.5	124.5	75.5
71mm	TRIPLE	5U-B	32	55	40.5	127.5	78.5

NUT TYPE



B.B. WIDTH	CON- STRUCTION	MARK- ING	A	B	C	D	R
68mm	SINGLE	3P	32	52	35	119	71.5
		3N	32	52	36	120	72.5
	DOUBLE	3SS	32	52	37.5	121.5	74
		3S	35	52	37.5	124.5	74
	TRIPLE	3T	35	52	39	126	75.5
		3U	35	52	40.5	127.5	77
	TRIPLE	3R	35	52	42	129	78.5
		5N	32	55	35	122	73
70mm	SINGLE	5SS	32	55	37.5	124.5	75.5
	DOUBLE	5S	35	55	37.5	127.5	75.5
	DOUBLE	5T	35	55	39	129	77
	TRIPLE	5U	35	55	40.5	130.5	78.5
71mm		5R	35	55	42	132	80

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England Young 61 year old seeks companion for leisurely train and cycle tour in June and July. Contact Wal Liddle, 5 Wilma Place, French's Forest, NSW 2086. Phone (02) 452 1172.

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COMPETITIVE EVENTS

JULY

Sunday 16 1989 Nobbies Enduro A great day of racing events out at the Lower Hawkesbury organised by the North Shore Nobbies. Contact Steve Nesbitt (02) 411 5466.

Sunday 23 July Adelaide Winter Series Trials and enduro for all classes. Centennial Drive Picnic area Mt Crawford Forest Williamstown SA. Contact Andrew Field (08) 271 5152 (h) or John Hosking (08) 468 780 (h).

Sunday 30 July Pichi Richi MTB Classic Trials and Enduro for all classes. Pichi Richi Pass area north of Pt Augusta SA. For entry forms contact Zig Zag 92 Commercial Rd Port Augusta 5700 phone (086) 42 3277.

AUGUST

Sunday 13 Lynton Park Trials If you haven't tried observed trials riding for mountain bikes this event is the one for you. Come and join in or watch the experts strut their stuff. Organised by the North Shore Nobbies. Contact Steve Kidd (02) 981 5859 (H).

Sunday 13 National Biathlon Championship A 6 km run, 40 km cycle, 6 km run or a 3 km run, 20 km cycle, 3 km run through the Stromlo Forest in the ACT organised by the ACT Triathlon Association. Contact Rob Caune, PO Box 2384, Civic, ACT 2601, telephone (062) 475 360.

Sunday 20 August Paterson Classic Cross country racing in the Hunter Valley NSW region. Organised by the Hunter Valley Mountain Bike Association. Contact Bob Jones (049) 341 919 (w) (049) 385 193 or Bruce Richards (049) 327 820.

Sunday 20 August Adelaide Winter Series Trials and enduro for all classes. Devil Gully Picnic Area Mt Crawford Forest Kersbrook SA. Contact Andrew Field (08) 271 5152 (h) or John Hosking (08) 468 780 (h).

SEPTEMBER

Sunday 17 Watanan Cross Country Race A 40 km blast through the Watanan Ranges just north of the Hawkesbury. Organised by the North Shore Nobbies. Contact Steve Nesbitt (02) 411 5466 day. **Tuesday 26 (start) Simpson Desert Cycle Classic** A five day gruelling ride along the Rig Road from Alka Seltzer Bore to Birdsville. Contact Jack Mullins on (02) 588 5617 or Ian Hese on (08) 281 0966 or write to 38 Ocean Street, Kogarah, NSW 2217.

OCTOBER

Sunday 15 (start) Trans Australian Ultra Marathon A straight through race from Perth to Melbourne for teams of four cyclists. Contact Lisa Watkins (03) 456 0211 or John Turner (03) 456 0295.

NOVEMBER

Saturday and Sunday 18 & 19 AMBA National Mountain Bike Titles A weekend of cycling events to decide the top riders in uphill, downhill, trials and cross country enduro events. All classes. Camping available and good spectator facilities. Contact AMBA or your local mountain bike club for entry forms (02) 27 2977 or the promoter Active Australia (062) 95 9498 for details closer to the event.

NON COMPETITIVE EVENTS

JULY

Sunday 16 Barossa 100 Challenge Organised by the SA Touring Cyclists' Association. Starts 8 am at Tanunda. Contact Mick (08) 258 7376 or Geoff (08) 340 0229.

AUGUST

Sunday 13 Strathalbyn 150 Challenge. Organised by the SA Touring Cyclists' Association. Starts at 8 am in Strathalbyn. Contact Mick (08) 258 7376 or Geoff (08) 340 0229.

SEPTEMBER

Sunday 17 Green Valley Twin Century Join the fun in Australia's longest running endurance event, riding 50 to 200 km in the scenic Nepean valley south west of Sydney. Contact Russell Moore (02) 608 1125.

Saturday 30 to Sunday October 8 Bicycle SA 1989 Hawker to Adelaide Revisited. This week long ride roughly follows the same route as the first Bicycle SA ride held in 1986. Free bus from Adelaide to the start. Contact Brenda (08) 339 3613 or Evelyn (08) 213 0637 for details and entry forms.

OCTOBER

Sunday 15 Sydney Spring Cycle Celebrate spring with thousands of fellow cyclists in a 35 km ride from Sydney to Parramatta. Contact (02) 212 5628.

Sunday 15 Meadows 200 Challenge Organised by the SA Touring Cyclists' Association. Starts 8 am at Meadows. Contact Mick (08) 258 7376 or Geoff (08) 340 0229.

NOVEMBER

Saturday 11 EBTC's Hard Hundred Begins at 8:00 am in Bayswater, Melbourne and travels through Belgrave, Narre Warren, Berwick and Five Ways (turn around for metric century riders) to Hastings (for imperial century riders) before returning to Bayswater. Entry fee \$6.00. Contact Ian Pengelly (03) 728 3180. John Richards (03) 729 6405 or John Weller (03) 870 5894.



Sunday 26 Eighth annual Sydney to the Gong Bicycle Ride in aid of the Multiple Sclerosis Society. This year bigger and better than ever. A one day fun and fitness ride through Royal National Park. Some say its the London to Brighton Ride with scenery. This year a time trail option will be available for sports riders. It's a ride not a race. Don't miss it. Entry forms in the September issue of Freewheeling magazine.

DECEMBER

Saturday 2 to Sunday 10 Great Victorian Bike Ride A two week ride from Yarrowonga to Melbourne. Organisers take good care of you, from entertainment to a sag wagon for your luggage. Camping, meals and full medical and mechanical support provided. Organiser is Bicycle Victoria. Contact (03) 670 9911 for entry forms and prices.

RACING CLUB CONTACTS

The Australian Cycling Federation and the state cycling federations will direct you to a club in your area if you want to get involved in bicycle road or track racing. Phone numbers and contacts for each state are: **NSW** Margaret Balmer (02) 241 1870; **VIC** Ruth Birznies (03) 328 4391; **QLD** Mike Victor (07) 390 1489; **WA** Mike Poyner (09) 384 4130; **SA** Bruce Quinn (08) 381 2398; **TAS** Joy Bestwick (003) 31 2712; **NT** Shirley Davis (089) 208 798.

Riders wishing to take out a professional licence should contact the National Secretary of the Australian Professional Cycling Council, Reg Marriner, PO Box 329 Torquay VIC 3228 Phone (052) 61 4067.

MOUNTAIN BIKE CLUB CONTACTS

The Australian Mountain Bike Association is the sanctioning body for all mountain bike races on a state and national level. Local clubs can affiliate and offer their members the benefits of insurance coverage for their inter club events. Enthusiasts interested in contacting a local MTB club in an area not listed below should contact AMBA on (02) 27 2977 AH (02) 92 1922 as the list is growing all the time. All of these clubs offer both competitive and non competitive events and are a good source of information on what equipment to buy and the best places to ride.

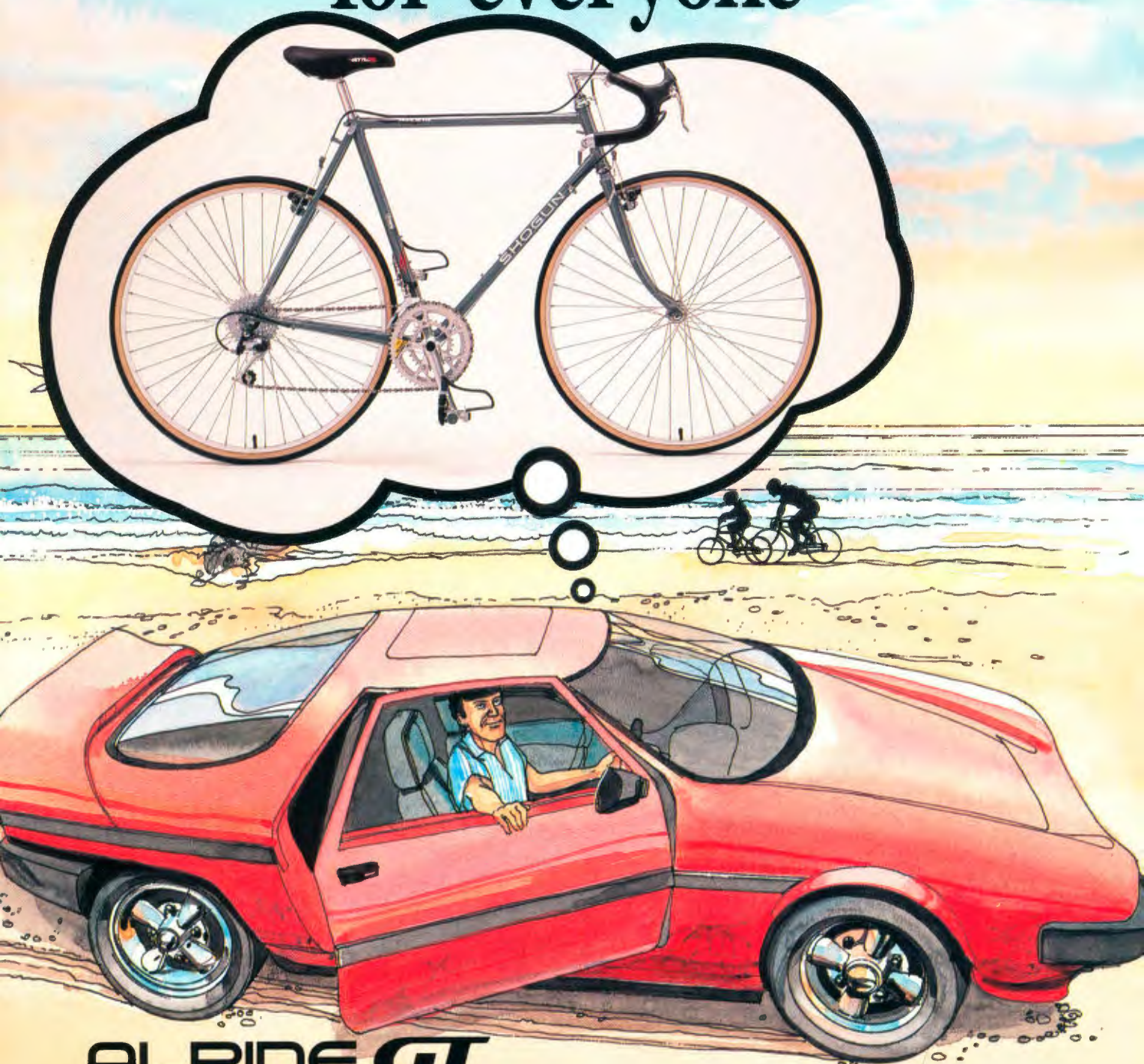
QUEENSLAND - Brisbane Mountain Bikers Paul Hargraves (07) 344 1907, Velo Club Brisbane Mike Roberts (07) 359 1244, Sunshine Bushbushers (Sunshine Coast) Pete Smith (071) 428 572; **NEW SOUTH WALES** - North Shore Nobbies (Sydney) Paul Barnes (02) 449 1978, East Side Ground Hogs (Sydney) Chuck Smeeton (02) 371 5278, Brookvale Fatheads (Sydney) Laurent Vignes (02) 982 2574, Western Suburbs MTB Club (Sydney) Jeff Blackman (02) 622 8196, Southern Cross Cycle Club (Sydney sth) Tony Marsh (02) 520 4600, Hunter Valley Mountain Bike Club Bruce Richards (049) 32 7820, Blue Mountains MTB Club Kerry Barlow (02) 264 2994 (W); **AUSTRALIAN CAPITAL TERRITORY** Canberra Mountain Bike Club Mark Vardy (062) 491 806 (w) or (062) 489 301 (h); **VICTORIA** - Fat Tyre Flyers (Melbourne) Mick Jamison (03) 817 2917; **TASMANIA** Northern Tassie MTB Club (Latrobe) Stephen Foster (004) 262 107 (H) (004) 265 263 (W); **SOUTH AUSTRALIA** Adelaide Mountain Bike Club Peter Heal (08) 263 3605; **WEST AUSTRALIA** Perth Mountain Bikers Jack Thornley (09) 453 1434, Cycle Touring Assn of WA (09) 330 3659.

TOURING CLUB CONTACTS

These clubs regularly run rides in their cities and welcome new comers. Some even publish touring calendars listing forthcoming rides. Contact them for details.

Armidale Community Cyclists (067) 72 8951. **Audax Australia** (03) 435 4437 (02) 608 1125. **Bathurst** Bicycle Touring Group (063) 31 9459. **Bicycle Australia** (046) 27 2186 (after 9 pm). **Brisbane** Bicycle Touring Association (07) 369 9326. **Canberra** Pedal Power ACT (062) 49 7167. **Darwin** Hufflers & Puffers (089) 81 2141. **Geelong** Bicycle Touring Club (052) 75 6661. **Illawarra** Touring Cyclists' Club (042) 83 6524. **Melbourne** Bicycle Touring Club (03) 818 4011. **Melbourne eastern suburbs** - Knox Bicycle Touring Club (03) 754 4069. **Eastern Bicycle Touring Club** (03) 543 5970. **Essendon** Mountain Bicycle Touring Club (03) 337 1379. **Victorian Pedal Clubs** provide fun and training in bike handling skills for children of bicycle riding age. Call for information on a club near you: (03) 337 6399. **Newcastle** Cycleways Movement (049) 46 8298. **Bicycle Institute of New South Wales** (02) 212 5628. **South Australian** Touring Cyclists Association (08) 272 6406 (08) 388 8331. **Sydney** region bicycling clubs can be contacted through the Bicycle Institute of NSW (02) 212 5628. **Tandem** Club of Australia (03) 241 4453. **Bicycle Victoria** (03) 670 9911. **Cycle Touring Association of West Australia** (09) 330 3659. **Wagga** Bicycle Touring Group (069) 21 6787. **Vintage Cycle clubs** Vintage Cycle Club of Victoria (03) 527 5759. **Southern Veterans** (Sydney Vintage Cycle Club) (02) 587 8017.

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