

Cycling answers

Your technical, legal and health questions answered by CTC's experts

THE EXPERTS



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■ BRAKING POWER MODULATORS

Q What is the purpose of power modulators? They are fitted to my Airnimal Joey and the rear brake is almost impossible to operate: no hand is strong enough to brake sufficiently. Is there any solution apart from removing the wretched thing?

Jim Allen

A V-brakes were invented for mountain bikes: a sharper brake to overcome the problems of dirty, wet and slippery rims. But they can be too sharp in clean conditions, going from just kissing the rim to full-on, wheel-grabbing power, with only a small amount of finger movement and force. In the jargon, they lack 'modulation'.

So when bike manufacturers started fitting V-brakes also to road-going bikes there were a lot of accidents where riders used to normal (i.e. relatively ineffective) rim brakes went over the handlebars or skidded the back wheel and crashed. Power modulators were introduced to make the lever move further between kissing and grabbing the rim. This gives the rider a bit more finger movement, and time, to realise what's happening and ease off the brake.

A skilled rider may not need this. So remove the modulators, at the rear at least. The front one might still be good to keep.

But the power modulator is not the main cause of your problem: if it were the lever would pull back against the handgrip. Your description, of the lever being too stiff to pull at all, points to friction between cable and outer casing. Small wheeled, folding bikes often need long, tortuous cable runs and friction builds up around the



curves. So remove the cable, clean it and replace the outer casing, and your problem will be solved. (Edit: It turns out that it was a very old Joey. Jim took the advice and now it's as good as new!)

Chris Juden

■ GEARING WHAT TO DO WITH 10-SPEED?

Q About a year ago I bought a new bike and asked for touring gears to be put on it. The builder fitted a Shimano 105 triple groupset. I have tried and tried to get used to these gears but have decided that they are not low enough for touring and want to change them. I would like to have a bottom gear of about 20 inches and

a top gear about 90. What would be the easiest way to do this?

Tracy Short, Biggar

A I've edited out the brand name of your bike, since the notion that all a tourist needs is to put a triple on a racing bike seems to pervade the entire cycle trade! And the problems of reducing the gears on 10-speed so-called touring bikes have lately been filling my inbox. Trouble is that mountain bikes don't do 10-speed, so the usual touring mix of mountain gears with road controls isn't workable.

The least costly alteration is a smaller third ring than the usual 30T. Down to 24T will fit the crank's 74mm bcd, but you'll probably not be able to go that low without the chain fouling the bottom of the front mech cage. You can nevertheless ignore the stated 'capacity = 22T'. Actual capacity depends on frame angles and fitting of the mech. Make sure it clears the outer ring by only 1 or 2mm. Then shift to little ring and mid cassette, press lightly on the 3 o'clock pedal and see what's the biggest allen key you can poke in the cage, under the tensioned chain without touching

"Gadgets called Shift-Mate fit in the cables and will let 10-speed road controls work 9-speed mountain transmissions"



it. Halve the millimetres and that's how many teeth you can subtract from 30.

It's likely that 28T or maybe 26T (made by TA or Stronglight) can be fitted. But even the biggest Shimano-compatible 10-speed cassette (an 11-28 made by Sram) will only get you down to a 27 or maybe 25in gear – assuming

HEALTH TOE TROUBLE

Q During a 100km ride in July in France, I suffered excruciating pain in the ends of both feet, through the toes. It was very hot (>40 degrees), but I had fluids. I had to stop and massage my feet until the pain eased. None of my cycling mates recognise the symptoms. Any idea what it is and how to prevent it?



Tom Carter, London

A Painful feet can be due to numerous causes and I therefore recommend you see your GP. If necessary, he or she can arrange further investigations or refer you to a podiatrist (foot specialist). Take your cycling shoes to any appointments.

One possible cause would be metatarsalgia – literally pain in the metatarsals, the bones which connect each toe to the foot. It is usually felt around the ball of the foot. Overuse, structural foot problems (including arch abnormalities, hammer toe, and bunion), stress fracture, arthritis, gout, diabetes and Morton's neuroma (a condition affecting a nerve between the metatarsal bones) can all lead to metatarsalgia or forefoot pain.

Predisposing factors in cyclists include tight or badly-fitting shoes, poor cleat position and excessive climbing (putting more pressure on the ball of the foot). The heat and distance could contribute by causing the feet to swell therefore increasing pressure.

Adjusting your cleats might help. Try moving them very slightly backwards on the shoe. Their position should allow your foot to be at its 'natural' angle. Your feet and legs should feel comfortable when clipped in, usually with the ball of your foot over the pedal. Finding the best position may take time and readjustment. Different insoles or socks (thinner if your shoe is tight, thicker if it is loose), padding or even a change of shoes can sometimes help (wider forefoot, pictured, is generally best). A podiatrist can arrange custom orthotics if necessary. Other treatment will depend on the cause so do see your doctor first.

Matt Brooks

27in/700C wheels.

Tracy wants lower, and the easiest way is to replace the whole transmission with the 9-speed mountain bike kit this bike should've had in the first place! For example, a Deore XT chainset, cassette and front and rear mechs, operated by Tiagra (road 9-speed) bar-end shifters, leaving those STI controls to work the brakes only. Depending upon which chainset and sprockets are chosen, bottom gear could be from 17 to 21in. Top will exceed 99in whatever.

A 9-speed cassette will not fit all Shimano 10-speed hubs, but 105 is okay. The only problem may be interference between the more bulky front mech and a rear mudguard, since unduly short chainstays are part of the same design philosophy that puts 10-speed on touring bikes! In that case a Tiagra front mech may be needed, which dictates the larger 26/36/48T 'trekking' chainset. With an 11-34 cassette this will

provide a 21 to 118in range: crazy-high at the top, but low enough perhaps at the bottom?

That's easy but expensive and swaps the convenience of dual controls for distant bar-ends. To keep the shifting at your fingertips involves fitting gadgets called Shift-Mate in the cables that let 10-speed road controls work 9-speed mountain transmissions. See jtekengineering.com – you'll want Shiftmate #2 and #7S (straight). There was a UK importer but for now you must buy from the USA.

I can't suggest using a generally smaller chainset with the existing 10-speed front mech, as the news isn't good from people who've tried that. It seems like the cage has been so heavily sculpted to manage such a narrow chain and huge (13T) outer-middle difference – the unacknowledged key factor in triple mech



Road triples won't provide really low gears for laden touring. An MTB triple is required

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performance – that it fouls up any other outer/middle configuration.

All this is about Shimano.

Campag 10-speed has similar limitations, but offers a 13-29 cassette and the option of a smaller triple (30/40/50T), so the front mech can be positioned lower, so it's more likely you can swap the 30 for 24T, making a possible bottom gear of 22in. If that's not low enough however, the 'nuclear option' of converting to a 9-speed mountain-bike transmission will also take out the rear hub! But with a bit of luck and jiggery-pokery (see ctc.org.uk/shimergo), the Ergopower shifters might still be usable.

Chris Juden

COMPONENTS

CRANKS FOR SPECIAL NEEDS

Q I am wondering if there is a company that makes crank arms with one side smaller than the other, because my left leg is 4cm shorter than my right and it is causing problems with my right knee. I ride with Rochdale Special Needs Cycle Club and they haven't heard of any companies, so if there is one can you please let me know?

Andrew Whittaker, Rochdale

“You could fit a Highpath Swing Crank, by which the pedal might hang 4cm below the end of the right crank”

A I am surprised that a club purporting to cater for special cycling needs has not heard of the Thorn cranks sold by sjscycles.co.uk (01278 441500) in lengths from 140mm to 175mm (including crossover sets for tandems) and the devices of particular benefit to riders with a variety of leg impairments that are manufactured by Chris Bell at highpath.co.uk (01470 570035).

Four centimetres is a big difference, more than can be

OVER TO YOU

BRAKE APPRECIATION

A very big thank you CJ, for reviewing Tektro cantilever brakes in the August-September issue of Cycle.

I have a Thorn XTC, which was originally set up with straight bars, the reason being I have a background in mountain biking and so was accustomed to these. However after three years of joyous riding, and given that my MTB was in need of a new set of levers and brakes, I decided to convert the Thorn XTC to drop bars.

I fitted the XTC with Shimano R550 cantilevers (a lowish profile design), which compared to V-brakes was like trying to stop an out of control elephant by pulling on its ears! I exaggerate, but only slightly. I had been looking for alternative brakes but found nothing that I thought would make a



noticeable improvement until your review of the CR520. I purchased a pair of similar CR720 brakes immediately from dotbike.com and for £40 had a bike which once again is a sheer pleasure to ride.

I have the 'undulations' of the Yorkshire Dales on the doorstep, where these brakes have proved to be very responsive, progressive and effective, giving any braking requirement from a gentle slowdown to a controlled prompt halt when travelling downhill at speed.

Once again, many thanks.

Paul Metcalfe, Leeds



accommodated by building up the pedal and enough to reduce power output significantly if the left crank were simply to be made that much shorter. Another idea would be to fit a Highpath Swing Crank, by which the pedal might hang 4cm below the end of the right crank, avoiding the excessive bending of that knee, which is currently causing problems, whilst allowing both legs to extend and develop full power.

Chris Juden

means of transport, not merely a sport and fair-weather recreation! One example, the Belleli childseat waterproof cover, nevertheless does appear to be available on this bike-forsaken island and may be found in some shops, where it meets the local need of such enlightened localities as Cambridge and York. It's not the sort of thing that would usually sell mail-order and yet I have discovered one source: discountbicycles.co.uk, tel: 020 7733 7755.

Chris Juden

Dan Joyce adds: Edinburgh Bicycle Cooperative, who also do mail order, stock not one but two capes for childseats: www.edinburghbicycle.com, tel: 0845 257 0808.

CHILDSEAT RAIN-COVER

FAMILY CYCLING

Q Do you know of any waterproof covers suitable for rear/rack mounted child seats (Copilot Limo)? Rain-covers for the backpack child carrier/rucksack type thing I use for walking are widely available but I can't find anything like that for bike seats.

Cliff Webb, Builth Wells

A They do exist and are easy to find in countries where cycling is a common

CONTACTING THE EXPERTS

Each issue, Cycling Answers addresses a selection of questions that we receive. We regret that Cycle magazine cannot answer all unpublished queries. Please note, however, that general and technical enquiries can also be made via the CTC Information Office, tel: 0844 736 8450, cycling@ctc.org.uk. And don't forget that CTC operates a free-to-members advice line for personal injury claims, tel: 0844 736 8452.

Enquiries for possible publication should be sent to the Editor (see p80). Technical enquiries will get there quicker if they go direct to Technical Officer Chris Juden (same address as the Information Office).