

# Cycling answers

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

## THE EXPERTS



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### TECHNICAL JOINING LINKS

**Q** Can you advise on the compatibility of the various chain quick links. Obviously they have to be compatible with the chain type (8-, 9- or 10-speed etc) but I have found a KMC link impossible to use with a Shimano chain (the chain seemed too wide to allow link to close) although very easy to use on a KMC chain of the same nominal speed. I have recently seen links advertised as being specifically for Shimano and Sram, suggesting that there are some differences between makes.

*John Hinds, Ingatestone*

**A** To my knowledge, in general there is complete cross-compatibility between makes of chain, provided as you say, the number of speeds corresponds. At least that's how it is with 7-, 8- and 9-speed. So you should be able to use a Sram 'Powerlink', KMC 'Missinglink', or Connex 'Link' with a corresponding Shimano chain.

With 10-speed however, Campagnolo are different from the rest. But KMC do also make a joining link for Campag, in addition to that which fits their own 10-speed chain etc. I think the latter may be what you've seen advertised.

(After some further checks, John suggested that the Shimano 8-speed chain he'd been trying to join might have been damaged when it broke.)

*Chris Juden*



With 7-, 8- and 9-speed chains, joining links are interchangeable. Campag 10-speed is different, however



### TECHNICAL GEAR HANGER CAPACITY

**Q** I want to build my Airborne Carpe Diem touring bike with a compact Ultegra 6700 34/50 crank set and a 11-32 Dyna-Sys Deore XT 10-speed cassette. Is this possible using Ultegra 6700 front and rear (GS) derailleurs? All internet sources say a 28 tooth sprocket is the limit, but in practice I wonder if four more teeth are possible. I've purchased the Ultegra 6700 crank set and STI levers. I'm asking advice before I buy the derailleurs and sprocket. I'd rather build the bike with road gear if I can.

*Stephen Gallagher, Menston*

**A** The biggest sprocket a mech can handle is not only determined by the design of the rear mech, but also varies with the length of the frame's gear hanger. You'd think hangers would all be standardized by now, at least within the limits specified by Shimano (26 to 28mm between centres, axle to hanger bolt) but they're not! I've found that hangers on road frames can measure as little as 24mm, whereas MTBs are

typically 30mm and sometimes even more! Hanger and dropout thickness can also make a slight difference.

The radius of a sprocket grows by 2mm per tooth and a 27T mech on a 26mm hanger can handle 28T, from which I conclude that Shimano allows for hangers as short as 24mm when making their capacity claims. So it all depends upon how long a hanger Airborne put on that frame.

Touring bikes generally have similar rear dropouts to mountain bikes, so assuming it's as long as 30mm, that 28T-rated mech should handle 31T alright – but 32 might be pushing it. The worst that's likely however, if you exceed sprocket capacity by only one tooth, is an increase in noise where the chain runs onto the sprocket. So I'd push it and see – provided the hanger is that long.

I have seen an Ultegra rear mech working 11-32 on a Cannondale tandem. So we know it can work on some frames. Unfortunately I didn't have the opportunity to measure the hanger, but it looked plenty long and thick.

*Chris Juden*

## ■ TECHNICAL SCRATCHED BARS SAFETY

**Q** When I repositioned a bell on some Nitto aluminium handlebars, I discovered that in its previous location I had scratched the surface of the bar, probably when rotating the bell. I know aluminium has a tendency to propagate cracks. How worried should I be about surface scratches? Replacing the bars – which are new – is an expense I want to avoid.

*'Slightly Embarrassed', Cambridge*

**A** It depends on where exactly is the scratch? How deep? How sharp are its corners? How long is a piece of string!?

Bending stress increases towards

the middle of the bars and scratches close to (or under) the stem have occasionally led to one side of a handlebar snapping off. Scratches toward the ends of a handlebar however, around the brake levers for example, are unlikely to be a hazard unless very deep. As a fairly light rider, with neither the inclination nor the physique to wrestle handlebars strongly, I do not even worry very much about scratches near the stem. Your mileage may vary.

If the scratch is shallow you could file and polish it out. You should at least keep an eye on this scratch and discard the handlebar at any sign of a crack growing in or from it.

*Chris Juden*

## ■ LEGAL ROUGH ROADS

**Q** Over the last few months a number of the roads along my usual cycling routes have sprung 'Temporary Road Surface' signs, and yet no work has been done to them. These have appeared on the roads that have very poor surface quality and significant pot-holes.

If I were to damage my bike or myself on the potholes and poor surfaces of these roads, would the council have grounds to refuse or reduce any compensation I might claim because they have put up signs?

*Susan Hawkins, Falmouth*

**A** The council has a statutory duty to maintain the highway pursuant to section 41 Highways Act 1980 ('the Act'). In order bring a claim under the Act a claimant must overcome the following hurdles:-

- that the accident was caused by a defect in the road surface;
- that the defect was a hazard to ordinary road users;
- that the council (the highway authority) does not have a 'special defence' for damages for non repair under section 58 of the Act.

The council has a defence under section 58 if it can prove that it 'had taken such care as in all the circumstances was reasonably required to secure that the part of the highway to which the action relates was not dangerous for traffic'.

In considering section 58 the court will



weigh up:-

- the character of the highway;
- the standard of maintenance appropriate for a highway of that character;
- the state of repair which a reasonable person would expect;
- whether the highway authority knew or ought to have known that the condition of the road to which the action relates was a danger;
- where the highway authority could not reasonably have expected to repair that part of the highway before the cause of action arose, what warning notices of its condition had been displayed.

The courts ought to take a commonsense approach to the duties of a highway authority. If the council put up warning notices about the state of a section of the highway then this is helpful evidence that the council are aware it is in need of repair. Large potholes and other road defects ought to be repaired with 48 hours.

Don't forget that you can report them via [fillthathole.org.uk](http://fillthathole.org.uk).

*Paul Kitson*

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## HEALTH HIP REPLACEMENT

**Q** I am about to undergo total left hip replacement due to osteoarthritis. I'm 71 and cycle 6,000-plus miles each year on bikes with toe-clips. I am left-sided and mount my bike by standing on my right leg and swinging my left leg over the saddle. (A painful movement at present; riding is fine.)

I realise that every patient is different, but can you tell me:

1. How long after surgery will it be before I can expect to cycle?
2. Is there any recommended way of mounting a bike after hip replacement surgery?
3. Is there any general advice on the type and style of riding in the future?

*Martin Beardwell*

Cycling is a good form of exercise if you have an artificial hip, as it's low impact. Expect a few months off the bike after the op



**A** Total hip replacement surgery replaces the ball and socket of the hip joint with artificial components. The aim is to relieve pain and improve mobility of a severely worn or damaged hip joint. Many modern prosthetic hips can be expected to last for 15 years or more. You will not be able to do high-impact sports with a hip replacement, but cycling is a low-impact exercise, which is generally recommended.

Post-operatively, a physiotherapist should teach you exercises to help strengthen the hip, explain what you should and shouldn't do, and show you how to bend and sit to avoid damaging your new hip. You will usually have a check up with the surgeon at around six weeks and can discuss your progress as well as when and how to start cycling again. You probably shouldn't cycle for up to three months post-op. Although some patients do start earlier, only do this on the advice of your surgeon and/or physiotherapist.

Certain movements can increase the risk of dislocation in the initial period after surgery and should be avoided for at least six weeks, sometimes longer. These include bending the hip past 90 degrees, twisting the leg that was operated on, and crossing your legs. As you have already identified, one problem is getting on the bike without bending your hip past 90 degrees. Tilt the bike right over towards you so you don't have to lift your leg too high. When you start cycling again, try a fairly high saddle, an upright posture (the more you have to lean forward, the more your hip is flexed) and a flat route! Many people find they can get back to full cycle fitness again in the long term.

*Dr Matt Brooks*



This steel chain-stay bridge is fine, but the bike would be rideable if it had rusted away

## TECHNICAL RUSTY BRIDGE

**Q** The chain-stay bridge on my favourite bike – a 1930s BSA Super-eeze that I have owned since 1957 – is rusting away. The stays themselves are fine, as is the rest of the frame, which is built of light chrome molybdenum butted tubing brazed into lugs. In the long run it needs a new bridge brazing in, but am I okay to ride it meantime? I'm guessing that the bridge is not structural and that the chain-stays are braced by the rear axle, but I would hate to crack the frame by subjecting it to abnormal stress.

*Alistair Jones, Shrewsbury*

**A** You're right that bridge isn't structurally critical. It helps to stiffen the rear of the frame laterally, but not much. Some frames, not designed to take mudguards, don't even have one.

To preserve this means of attaching a mudguard to your frame, I suggest removing as much loose rust as you can and giving that bit of tube a generous coat of a proprietary rust-stabilising paint. When that dries squirt Frame-Saver (<http://www.framebuilding.com/framesaver.htm>), or a more readily available automotive wax-oil product) into the tube, tipping the frame this way and that to distribute.

While you're at it, spray Frame-Saver (or wax-oil) through any holes in the other tubes of the frame. For if it's rusting where you can see it, maybe there's more where you can't!

*Chris Juden*

## CONTACTING THE EXPERTS

Send health and legal questions to the Editor (details on p80). We regret that Cycle magazine cannot answer unpublished health and legal queries. Technical and general enquiries, however, are a CTC membership service. Contact the CTC Information Office, tel: **0844 736 8450**, [cycling@ctc.org.uk](mailto:cycling@ctc.org.uk) (general enquiries) or Chris Juden, [technical@ctc.org.uk](mailto:technical@ctc.org.uk) (technical enquiries). You can also write to: **CTC, Parklands, Railton Road, Guildford, GU2 9JX**. And don't forget that CTC operates a free-to-members advice line for personal injury claims, tel: **0844 736 8452**.