

Cycling answers

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

THE EXPERTS



CHRIS JUDEN
CTC Technical Officer and qualified engineer



PAUL KITSON
Partner at CTC's solicitors, Russell, Jones & Walker



DR MATT BROOKS
Cycling GP

HEALTH HEART TO HEART

Q After 60 years of cycling, I went to my GP a couple of years ago with: shortness of breath; tingling of hands and lower legs; dizziness (sometimes while walking).

I've since had ECGs, ultrasound, a treadmill test (my HR went down to 30bpm) and finally an MRI scan. In October 2008 I was fitted with a dual chamber pacemaker, set to 60bpm. I felt great when I walked out of the hospital. I was told not to ride the bike for a month and then only steady.

These days I try to do 40-60 minute rides at 10-12mph. My legs are killing me with just a slight uphill gradient. I fight for breath and if I persist I get the feeling that somebody is tightening a band round my skull, and that drunk or dizzy feeling comes back. So I have to unclip and stop to recover.

What are your comments, good or bad? (List of medication provided.)

Robin Austin

A Firstly, if you haven't already, please go back to your doctor. There are numerous possible causes here, which they will need to try to confirm or exclude. Your GP can ask you further questions, check your pulse and blood pressure, and perform an examination of the heart and lungs. Several of your medications lower the blood pressure and so it is important to check that it is not too low. Blood tests (such as to exclude anaemia) and other investigations like an ECG or chest x-ray may also be required.

Side-effects from medication are fairly common and can range from minor ones (such as mild nausea) to those which are more significant (like shortness of breath or dizziness). Try to think whether

your problems started soon after commencing any medicines – this can help your GP in deciding whether the tablets might be to blame. However, don't stop any of the medicines without talking to your doctor first.

You may need to be referred back to the cardiologist, who can arrange any further tests and a pacemaker check to make sure it is working properly. Serious malfunctions of pacemakers are uncommon but need to be ruled out.

The fact that you initially felt better following the pacemaker fitting and have subsequently gone backwards suggests that the cause is unlikely to be solely the loss of fitness connected with the operation itself, especially as you have been cycling regularly since.

Pacemakers were mentioned briefly in the bradycardia (slow heart beat) question in the Dec 09/Jan10 issue.

Dr Matt Brooks

TECHNICAL LONG BRAKE BLOCKS

Q I am planning to replace my cycle brake blocks and have noticed that the new ones are not symmetrical around the fixing bolt, but instead have a longer length of rubber shoe in one direction. There are no

fitting instructions supplied so my question is: should the longer side be away from or towards the rim rotation and what is this design feature intended to achieve?

Robert Sebley

A The rim, as it rotates, should pass the longer end first. And most blocks have an arrow or something moulded or printed on them.

They fit that way so the reaction force on the brake arm and pivot, which acts outwards but also angled in the direction of rim rotation and starts from a point in the middle of the pad, which is now displaced toward the long end, points more or less at the middle of the brake arm. So the brake arm doesn't twist it much, so the brake pad remains aligned with the rim during braking, so the pressure between it and the rim is more constant from one end of it to the other, counteracting or at least reducing the usual tendency for the leading end of a brake block (the end each bit of rim meets first) to 'dig in', so the pad wear is more even.

'Upgrade' brake blocks comprising separate shoes with slip-in pads must always be mounted thus, or there's a risk the pad will slip out!

Chris Juden



(Right) Some brake blocks have direction arrows. If they don't, the shorter end should point forward



■ TECHNICAL & LEGAL
IS FIXED LEGAL?

Q I have a fixed gear bike which I built about 20-odd years ago and which I still ride. It's possibly my favourite due to simplicity and it's due to hit the road again this spring.

Is it still legal to run a fixed on the highway with a front brake only? Every new 'fixie' I see comes with front and rear calliper brakes. I suspect this is just the manufacturers being cautious about product liability etc. but I would appreciate your clarification on the law.

Arthur Findley

A The British Road Traffic Acts sensibly recognise that in the hands, or rather feet, of an experienced rider, a fixed wheel is an effective rear brake, so provided you do also have a front brake, your bike is perfectly legal and safe to ride. (There are some fixed-wheel fanatics, mainly in America, who reckon they're clever enough not to need any other brake at all. They delude themselves, since no amount of skill can overcome the physical fact that a bike with a decent front brake can be stopped in about half the distance!)

However, there's another, much more detailed British regulation that applies at the point of sale. You will see 'Conforms with BSEN14764' etc. on brand new bikes. This standard (and related ones for various sorts of bikes) includes limits for the amount of force a rider must apply with hands – or indeed feet – in order to bring the bike to a safe stop. Contrary to popular belief, a back-pedal or 'coaster' brake mechanism can conform to this standard, but the amount of force one must apply to a fixed wheel is way above the limit. So manufacturers also have to provide a 'proper' rear brake in order to sell a bike legally in Britain. The purchaser is nevertheless entitled to remove the rear brake if the bike has a fixed wheel, along with several other extras (sundry reflectors and a bell) that are specified by sales regulations but not required by the Pedal Cycles Construction & Use section of the Road Traffic Acts.

You can read more about it here on the CTC website: www.ctc.org.uk > Bikes & Bits > Facts & Figures > Regulations & Standards.

Chris Juden



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TECHNICAL BEND IT LIKE JUDEN

Q I tumbled off my Brompton this morning and bent the chainwheel. I could try to straighten it, but I'm not sure that aluminium is suitable for such bending. Should I buy a new one?

John Mason

A Bend it. You have nothing to lose! Some alloys are less ductile than others, but many can be bent just as easily as steel. The thing aluminium cannot withstand very well is fatigue. Bend it to and fro repeatedly and it'll crack pretty soon. But this will only be bend number two.

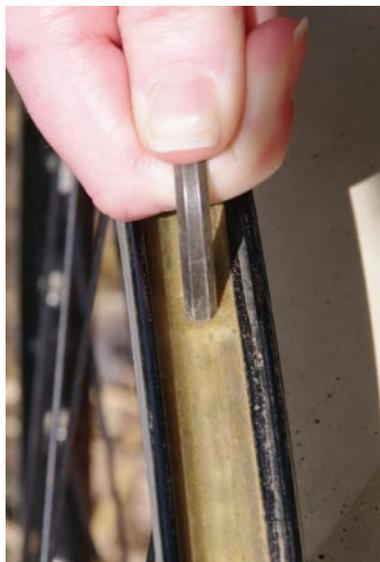
Chris Juden

TECHNICAL SLITTY PUNCTURES

Q I've had several punctures without any obvious cause in the tyre or rim. They appear as small splits in the tube, which I sometimes cannot patch. Replacements have proved to be just as liable. I believe the problem is poor quality innertubes, but the only ones I've been able to get locally are made either in China (Raleigh) or India (Trax). What can I do?

L Wiley, Birmingham

A All innertubes are nowadays made in Asia, but in any case I do not think this can be your problem, since nobody could remain in business for long



TECHNICAL & LEGAL POTHOLE PROBLEMS

Q What would be the legal position if I swerved to avoid a pothole and caused an accident, or was knocked off by an overtaking car?

Paul Hancock

A Where a cyclist is injured or killed in these circumstances there would be two potential defendants: the highway

authority, if it can be proved that they did not adequately maintain the highway; and/or the motorist, for failing to allow sufficient room (Highway Code Rule 163).

A highway authority is under a duty to maintain the highway to ensure that it is reasonably safe for ordinary users of the road, such as cyclists (Section 41 of the Highways Act 1980). Each highway authority will have its own guidelines for repairing potholes, typically arranging repair for potholes more than 40mm deep.

A highway authority may have a 'statutory defence' under Section 58 of the Highways Act if they can prove that they took such steps as were reasonable to maintain the highway. In practice this means that if they can demonstrate that they had in place a reasonable system of maintenance and inspection and that the pothole appeared after their last inspection then they can successfully defend a claim. What is regarded as a reasonable system of inspection depends on the volume of traffic. A busy trunk road will need to be inspected more frequently than a quiet rural lane.

This is why CTC's website www.fillthathole.org.uk is so useful. A report generated by Fillthathole gives the local authority knowledge of the defect as they are automatically notified of the pothole by email – so they may be unable to raise a statutory defence.

Paul Kitson



Photograph by Matt Hodges

making tubes that always fail. And two sources rules out one bad batch.

I would look more closely at the rims. I've often come across punctures like those you describe that were caused by the fitting of an inadequate rim tape to a double bottomed rim. In this sort of rim, which is commonplace on modern bikes, the spoke nipples sit in a hollow space, the upper surface of which is drilled with large holes to admit the nipples. These holes need to be covered with a stiff plastic or strong adhesive-backed cloth tape, so as to protect the inner tube from their sharp edges. I've seen many bikes where the tape is either too narrow, or badly fitted, or too weak. It may appear to be covering all of the holes, but sags under pressure, revealing the sharp edge of any hole that was near the edge of the tape, that then slits the tube. Some even fit the simple rubber rim tapes intended to cushion the exposed

nipple heads in a single bottomed rim, which is far too flexible to span these holes!

So go around your rims checking that the tape really does cover all of the holes – including under pressure. To test for that: give it a poke with a small blunt object (e.g. a 5mm allen key) over the top of any holes that come near the edge. A force of 25N (about 5lb) equates to 5 bar (70psi) pressure over a hole of this size.

Chris Juden

(Below left) If you're getting punctures on the inner side of the tube, check the rim tape

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 (general enquiries) or Chris Juden, technical@ctc.org.uk (technical enquiries). You can also write to: CTC, Parklands, Railton Road, Guildford, GU2 7JX. And don't forget that CTC operates a free-to-members advice line for personal injury claims, tel: 0844 736 8452.