

TECHNICAL/LEGAL/HEALTH  
YOUR QUESTIONS  
OUR ANSWERS

# Q&A

## MEET THE EXPERTS



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Plotting a route on a digital map and then importing it to a GPS device is ideal for directions but less accurate for altitude

### [TECHNICAL] Altitude 'noise'

**Q** I was interested in Steve Rock's use of a Naismith formula to predict his riding time when 'Touring with Technology' in the April-May issue. He'd allowed only half as much time for climbing as I would, so I wondered if that explained his late arrival some days. It turned out to be more complicated.

Steve planned his routes in Memory-Map, which generates climb and descent totals from contour maps. But roadbuilders use bridges and cuttings to ease the gradient. And except

on very large-scale maps, road widths, bends and junctions are exaggerated for clarity. So trackpoints placed onto the depiction of a road may be further up or down a slope than the road really is. All these discrepancies superimpose a random pattern of 'altitude noise' upon the route profile, which can greatly exaggerate climb and descent totals – sometimes overestimating the climb by a factor of two!

This explains why Steve allowed just half a minute per 10m rise, according to which a 1200m ascent would take one hour longer than a flat road, rather than

the two extra hours most cycle-tourists should allow for such a major climb. Memory-Map's 1200m was in fact only 600m.

Memory-Map isn't alone: it seems that all modern methods for computing route profiles are prone to altitude noise. A popular method is to plot your route on a website such as Google Maps or Bikehike etc. What these sites gain by more accurately following roads, they lose in sketchy contours. These usually come from a survey of the whole planet in 90m squares. Narrow features are missed by such a coarse grid, so that rivers in gorges seem to flow uphill as well as down and likewise the roads following them!

You might think that a recorded GPS track should be more accurate than anything taken off a map. Unfortunately GPS does not record altitude with the same precision as location. So GPS also produces altitude noise, as its height reading fidgets up and down by several metres. A GPS which uses a barometric altimeter will keep a better record, but will still add some altitude noise.

Some route-planning websites do attempt to filter out the altitude noise, and I find that [bikeroutetoaster.com](http://bikeroutetoaster.com) yields fairly realistic data, good enough to use with Naismith's rule. The calculation of riding time is never an exact science, but as one

CONTACT  
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EXPERTS

Send health and legal questions to the Editor (details on p3). 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.

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[HEALTH]

**Fitness after cancer**

**Q** I am 72 and was a regular cyclist. Starting in January last year, I had chemotherapy followed by radiotherapy to combat prostate cancer. It seems to have worked: my PSA count was 70 and is now 0.01. Whilst on chemo, I decided to get back into cycling. I was very weak and only managed a couple of miles. I could not even get out of the saddle to 'honk' up a small slope. I finished my treatment in January this year and am trying again. Any advice?  
**RAY STROUD**

**A** Chemotherapy uses drugs to kill cancerous cells while radiotherapy uses high energy radiation beams to target the tumour. It is important to remember

that cancer treatments, including chemotherapy and radiotherapy, also affect some normal cells. Consequently they often have considerable systemic side-effects, including fatigue. Chemotherapy can also sometimes cause anaemia (it suppresses the production of red blood cells in the bone marrow) which in itself results in tiredness and weakness and would exacerbate the symptoms.

As well as the treatment you have had, the lack of exercise during your treatment period will have led to generalised loss of fitness and muscle strength. So it is not surprising that you are still feeling weak and tired a few months after finishing treatment. Everybody is different in their response to treatment and their recovery afterwards. It is likely that you will be able to improve your fitness levels further over the coming months, even up to a year or more after finishing treatment. Strength and stamina need to be built up gradually. Initially, this may best be done through a combination of walking (or other gentle exercise), alongside shorter, less strenuous cycle rides. Slowly increase the intensity of your activity. Don't despair if it takes longer than you would like to regain fitness – it is important to allow your body time to recover.

It is encouraging that your PSA reading has fallen to 0.01 since a lower level is usually associated with a better prognosis.

**DR MATT BROOKS**

who typically tours at 20kmph on the flat, I add another hour per 600m up and subtract an hour per 2000m down. The formula is simple: time in hours = km/20 + UPm/600 – DOWNm/2000.

After loading Steve's tracks into Bikeroutetoaster to get more realistic totals, I found that 19km and 500m per hour yielded times which corresponded most closely to those he recorded. This lower flat-speed and climb rate are reasonable given his camping load. For an unladen day ride, I might suggest 21km and 700m. Your mileage may vary, as they say.  
**CHRIS JUDEN**

[TECHNICAL]

**Fraying disc brake cables**

**Q** I've just renewed my front brake cable – again! Both the Shimano disc brakes on this bike eat cables. They keep on fraying at the point where the cable is clamped to the actuating arm. As you can see, the cable lifts off the

This disc calliper has been incorrectly adjusted. The cable should be in contact with the cam



curved cam and bends sharply at the clamp, eventually failing.

**MIKE BENJAMIN**

**A** The arm needs to be re-positioned so the cable remains on the cam.

- Un-clamp the cable so the arm returns to its resting position – a lot further clockwise than it goes now – and screw in any 'barrel adjusters', >

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e.g. on the levers.

■ Slightly loosen the two bolts securing the calliper to its bracket (at right-angles to the similar bolts of which you can see one head in the photo) and slide the whole calliper inwards towards the disc, until the outboard brake pad (to which the arm is connected) clears it by less than half a millimetre. Re-tighten those bolts.

The other (fixed) pad will now have to be adjusted in toward the disc, by turning the screw behind it with an allen key poked between spokes, until that pad also clears by less than 0.5 mm. Re-secure the cable and all should be well.

Some cable discs (Avid BB7) have a means of adjusting the movable pad relative to the actuating arm. Most don't. Any large adjustment, greater than can be made on the levers, must NOT be made by clamping the cable shorter, but by shifting the whole calliper. Expect to do this when new pads are fitted and when they're part worn, so as to keep the cable on the cam throughout the operating stroke of the brake.

**CHRIS JUDEN**

#### [ TECHNICAL ]

##### **Wobbly tyres**

**Q** I've fitted 26x1.75in Schwalbe Road Cruisers to my mountain bike for road use. On both tyres, one section is seating lower on the rim than the rest of the tyre. This results in the tyres not running true. I can't seem to bed the tyre down evenly.

**JOHN SCULLY**

**A** I think those tyres must be slightly undersize. Tyres often are now, as an insurance against blow-offs. When you inflate the tyres, they should stretch enough for the beads to pop up onto the bead seats (those raised edges of the rim well). Sometimes they need help.

That it's the same problem section on both tyres could be due to the manufacturing process leaving a kink in the steel bead wire, or perhaps its rubber coating is a bit stickier in that place. Whatever, the first thing is to reduce friction between bead and bead seat. Ordinary talcum powder is usually effective. Apply plenty to the edges of the tyre and inside the rim, then



Photo: iStockphoto.com

inflate to maximum pressure.

If you don't have a pump with a gauge, you're probably running your tyres much softer than you think and simply inflating to maximum will probably seat the problem section with a satisfying pop! If it doesn't, over-inflate by as much as 50% until it does, then let out the excess.

If that doesn't work, use a more slippery lubricant. Deflate the tyre, ease the problem side back from the rim flange and squirt concentrated washing up liquid into the gap. Work it all around the bead and bead-seat with a finger. Then inflate again.

Once a tyre has popped into place, subsequent fittings should be easier. If these methods fail: reject the tyre. It won't be the rim.

**CHRIS JUDEN**

#### [ LEGAL ]

##### **Woof justice**

**Q** What would the legal position be if a cyclist crashed as a result of a dog running off its lead into the path of the cyclist? What redress would there be?

**GEORGE WAIMANN**

**A** This area of law is notoriously difficult. The Highway Code says (Rule 56): 'Do not let a dog out on the road on its own. Keep it on a short lead when walking on the pavement, road or path shared with cyclists or horse riders.'

Many of the rules in the Code are legal requirements. Others, like the example above, do not carry the same legal weight but can be relied upon in civil proceedings. At Slater & Gordon, we regularly pursue claims for CTC members who have suffered injuries as a result of being

(Above) Tyres are easier to seat on the rim with a lubricant such as chalk. Washing-up liquid also works

knocked off their bikes by a dog.

There is some case law on this. In *Tierney v Barbour* [2001] W.L. 825048, the question of liability arose after the claimant, a motorcyclist, collided with the defendant's dog ('Jess') on a B-road. As a result of a previous escape by Jess, the defendant had added wire netting enclosing the dog's run. On the day of the accident, Jess managed to escape again and as she was crossing the highway collided with the claimant's motorcycle. The court held that it was reasonably foreseeable that damage or injury was likely to result if the dog escaped, and where a dog was on the loose, it could be expected to act unpredictably. Therefore, the dog owner was negligent.

More recently, the Court of Appeal in *Whipsey v Jones* [2009] EWCA Civ 452 arrived at a different conclusion on a different set of facts. The respondent was running along a footpath in a park when the appellant's dog, a Great Dane, appeared from behind a bush and knocked the runner's shoulder causing him to fall and break his ankle. It was held on appeal that a reasonable man in the dog owner's position would not have anticipated that physical injury would have been caused to another park user by the Great Dane making physical contact.

Each case turns on its own facts. Although owners are responsible for keeping their dogs under control, this does not mean that they are obliged to keep them on short leads in public. Neither does it mean that they would be categorically liable for

accidents if their pet acted

out of character. The owner is likely to be found liable only if it can be shown that the dog should have been restrained and/or had a propensity to chase after individuals, cyclists or motor vehicles, and that the dog owner knew that their pet was likely to behave in that manner.

One of the difficulties with animal cases is lack of insurance. Not all pet owners have third party liability insurance.

**PAUL KITSON**



Photo: iStockphoto.com

You can make a civil claim against the owner if a dog knocks you off your bike