

Q & A

Your technical, legal and health questions answered.

This issue: camera evidence in an incident; easy clipless pedals; drop-bar levers for discs; dynamo hubs; and cysts in the last place you'd want them...

QUESTION OF THE MONTH



● If you have an incident when cycling, camera footage (like witness statements) is useful supporting evidence

LEGAL

CAUGHT ON CAMERA

Q The battery on the camera I use when I'm commuting (SunnyCam glasses, pictured) sometimes runs flat. When it does so, the time and date are lost and need to be reset manually. I seldom bother, so the camera's date and time is usually wrong. If I were to use this footage as evidence, would this fact make the evidence void?

NICK HUDD

A Helmet camera footage is increasingly used as evidence in both the criminal and civil courts. In the criminal courts, the Crown Prosecution Service (CPS) must prove their case beyond all reasonable doubt. This is a high burden of proof, and in part explains why the CPS is often reluctant to prosecute motorists for careless or dangerous driving. This



problem has been highlighted in CTC's Road Justice campaign, supported by Slater & Gordon Lawyers.

In the civil courts, there is a lower burden of proof: on the balance of probabilities. But an injured cyclist, like all other road users pursuing a civil claim, is responsible for proving his or her case. This differs from most other European jurisdictions, which have either presumed or strict liability systems in place.

Obtaining evidence for the criminal and civil courts is often problematic. Even if the incident was witnessed, people are often reluctant to come forward. There is a perception that they would have to give up much of their time to appear in court. In the case of a severely injured cyclist, this can present significant difficulties because the cyclist may not be

in a position to give evidence about what happened – for example, if they were knocked unconscious in the collision.

Helmet camera footage can therefore greatly assist by plugging any evidential gaps. Whether or not the footage is of any assistance depends on the quality of the film. If a cyclist is struck by a motor vehicle crossing his path, then the footage can be very helpful. However, if a cyclist is hit from behind then the footage may not have much evidential value.

If the date and time setting was inaccurate, this would have to be explained in evidence should this be disputed by the other party. The fact that the time and date setting was inaccurate does not in itself render the film as inadmissible in evidence.

In several civil claims we have pursued for CTC members, we have disclosed helmet camera footage to insurance companies, and the footage has resulted in admissions of liability where previously they might have maintained a denial.

PAUL KITSON

MEET THE EXPERTS



CHRIS JUDEN
Qualified engineer



DR MATT BROOKS
Cycling GP



PAUL KITSON
Partner from Slater & Gordon (UK) LLP



● Shimano PD-T700 Click'R pedals release with less force than other pedals, especially when used with multi-release cleats (which are included)

TECHNICAL

NOT FALLING FOR CLIPLESS

Q At your suggestion (in 2011), I bought Shimano MT60 shoes and A530 pedals. I had problems releasing the shoes from the cleats even at the lightest setting. After several crashes onto my side, I gave up and went back to flat pedals. I am now considering trying cleats again. One of my ankles has an old skiing injury and does not much like twisting. Is there a similar but easier-to-release cleat system?

DAVID SOUTH

A I should've suggested fitting the alternative multi-release cleat, SM-SH56, to your shoes. Some Shimano pedals, those models especially aimed at beginners, come with that cleat, which releases with either an outward or inward twist – and with less force – or even with just a hard upward pull. In combination with an SPD pedal on minimum tension, this cleat releases more easily and with a smaller twist than any other system that I've tried.

Unfortunately, I haven't tried Shimano's Click'R pedals. They were new last year and reviewed in Aug/Sep Cycle, but the report got a few things wrong. The model name should be PD-T700 and the picture was of an altogether different pedal!

Since I didn't review them, I can only repeat Shimano's information that the springs are 60% weaker and that a Click'R pedal adjusted to half tension should be about the same as a standard SPD on minimum. And all Click'R pedals naturally come with multi-release cleats. Our reviewer, who also found it difficult to get out of normal SPDs, liked them a lot.

So if you're not sure the multi-release cleat alone will be enough improvement, do try a pair of PD-T700 Click'R pedals.

(David subsequently wrote back to say: 'I have now fitted the PD-T700 pedals and SM-SH56 cleats, and they certainly seem to be the answer for me – many thanks!')

CHRIS JUDEN

TECHNICAL

FLATS TO DROPS WITH DISCS

Q I have cable disc brakes. If I change from straight handlebars to drops, do I need to change the calipers?

TONY GIBSON

A Not necessarily. If you fit bar-end shifters, you can have drop-bar brake levers, specifically Tekro RL520 brake levers, that pull enough cable to operate V-brakes, and also the specification of cable disc brake used on flat handlebar bikes. Do that and your brakes will be just as great as they already are.

These brakes are more efficient than any road bike brake purely on account of that extra cable travel, which reduces the cable tension, hence less friction and cable stretch. And what little stretch remains becomes an even smaller proportion of the increased travel, so the brake can be designed with even more leverage. A win-win-win situation!

Fit road STI controls and you must also fit road-type cable disc calipers. They're okay, but prepare to be disappointed by the drop in performance compared to your existing flat bar set-up. If you're sold on 'brifters' but want to keep your brakes as they are, consider Gevenalle (formerly Retroshift) CX-V controls, which integrate bar-end shifters with RL520 levers.

CHRIS JUDEN

TECHNICAL

COGGING

Q I've just had a wheel built with a Shimano DH-3N80. It has hardly any free spin at all and feels like an over-tightened bearing! Holding the



● Gevenalle (formerly Retroshift) integrate bar-end shifters with standard, linear pull, or hydraulic drop-bar levers

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● All hub dynamo wheels feel a bit notchy when you spin the wheel by hand. Don't panic!

» spindle and flicking the spokes with a thumb results in about 2-3 notchy revolutions before coming to a halt.
MARTIN VINSON

A All hub dynamos feel like that. It's called 'cogging' and occurs because the magnets attract corresponding segments of the armature. So when you turn it, you must at first drag those corresponding poles out of synch, then feel them push forwards into synch again. But you feel the effort of pulling apart much more than you appreciate the forward push. The energy taken and returned will nevertheless be almost equal, minus a small loss from eddy currents. Better-made generators have smaller eddy currents and a smaller air-gap between armature and magnets. Both improve efficiency, but the latter may paradoxically strengthen the cogging effect. So this feeling of square bearings tells you nothing at all about the dynamic drag from a hub generator.

When the axle is clamped in a fork and the wheel is spinning, it acts as a flywheel, repeatedly giving and receiving energy as the magnetic poles are pulled apart then pull themselves together. And even if the hub has the same net drag as a regular hub, it will be stopped from spinning sooner, just as soon as the wheel is spinning so slowly that it no longer has enough kinetic energy to pull the poles apart. So counting turns to standstill is no good. Counting turns between two given speeds would be good, but is much harder to do.

Holding the axle in your fingers is even worse, because the pull-push energy exchange now involves the lossy materials of the human hand and arm, which sap rotational energy from the spinning wheel

and quickly stall it. You can't tell a darned thing from that!

So don't worry: this wheel will actually spin a lot better than it feels!

And besides, the notion that hub friction might be a significant factor in one bike riding better than another is mostly a cyclist's fairytale of the 'Princess and the Pea' variety. A hub has to have absolutely *horrible* bearings before it has any noticeable effect. Anyone who thinks they can feel the difference between two more or less okay-running hubs has to be a True Princess!

CHRIS JUDEN

HEALTH UNDERCARRIAGE CYSTS

Q Last spring, I was diagnosed as having six benign epididymal cysts, causing a swelling of the left side of my scrotum. Whilst the cysts themselves do not trouble me, I cannot sit symmetrically on the saddle and this leads to strain in the lower back and soreness in the groin. My GP warns that surgery runs the risk of scarring and permanent pain, as well as the possibility of the return of the cysts. What are your thoughts?

NAME & ADDRESS SUPPLIED

A An epididymal cyst is a benign fluid-filled sac which forms in the epididymis (tubing which connects the testicle to the vas deferens/spermatic cord) behind each testicle. It is therefore separate from the testicle itself. Affected men may have one or several cysts on either or both testicles. Small cysts are fairly common but rarely troublesome, so do not usually need any treatment. Larger ones can be several centimetres across and are more likely to cause discomfort. If necessary, these can be surgically removed.

The operation is a fairly simple one and recovery is usually uneventful. However, as your GP indicated, there are potential complications to be considered with any surgery. Although the risks are generally small, these include infection, bleeding, chronic pain and accidental damage to the epididymis or testicles. There is always the possibility of further cysts recurring after surgery.

While you should always go into any operation knowing the pros and cons, including chance of success and risk of

complications, only you can really make the final decision whether to proceed. If the cysts really are having a significant detrimental impact, you should ask to see a urologist to decide whether surgery would be advisable.

MATT BROOKS

TECHNICAL SHORT CHAINED?

Q I'm looking for a replacement chain to go with a 10-speed 10S triple system. The blurb I've read for Shimano's 10-speed road chains says they are recommended with a double. I'm confused.

ROY BRENNENDORFER

A Shimano offer 10-speed road chains with 114 links or 116 links. I guess the first option may be too short for some triples, so they call it a doubles-only chain. But that depends on the actual size of cassette and chainstay length too, so 114 will actually be enough for most 'racing' triples, whereas 116 will be too short for some touring bikes with long chainstays. Some of my bikes need 118. I wouldn't buy a Shimano chain anyway. Sram or KMC are my preference, because they come with a convenient and reliable re-joining link.

The standard length of an off-the-shelf derailleur chain used to be 120 links, but the bean counters got wise to that and nowadays only Sram offer a 10-speed chain that long, as a special for 29er MTBs. MTB 10-speed chain works just as well on road bikes.

What length do you need? Count the old one. If that's in the bin, you can work it. Multiply the chainstay length in inches by four; then add the sum of the teeth on the biggest ring and biggest sprocket, divided by two; then add three; then round it up to an even number. For example: if the bike has 425mm (i.e. 16³/₄in) chainstays and 50/32 big-and-big, then it's 16.75×4 + (50+32)÷2 + 3, which is 67+41+3 = 111. Rounding up gets 112 links.

CHRIS JUDEN



● The 120-link version of Sram's PC1071 should suit tourers too

Contact the experts Email your technical, health and legal questions to editor@ctc.org.uk or write to CTC Q&A, PO Box 313, Scarborough, YO12 6WZ.

We regret that Cycle magazine cannot answer unpublished queries. But don't forget that CTC operates a free-to-members advice line for personal injury claims, tel: 0844 736 8452.