EXPERT ADVICE

Q & A

Your technical, legal and health questions answered. ***This issue:*** *the legality of bulls in fields; fitting a new freehub; cycling when obese; why bottom brackets are better with holes; folding tyres; and pump modifications*

QUESTION OF THE MONTH

The Wildlife & Countryside Act 1981 prohibits bulls being kept on land where there's a right of way. Exemptions exist...

Above right: iStockphoto.com

LEGAL

ANIMAL DANGERS

Q On the Trans-Pennine Trial, I was faced with a bull and a group of heifers grazing on the narrow strip of land on a raised riverbank. Not wanting to risk their passivity or jump in river, I retreated and trespassed on an alternative route. What is the law on land ownership, rights of way, riverbanks, NCN routes and large farm animals? What are the rights and duties of the land owner, farmer and the required grounds of negligence for personal injury or damage to cycles?
NAME & ADDRESS SUPPLIED

A Like walkers, cyclists often encounter animals when exploring the countryside. The legal duty imposed upon owners of animals is contained within the Animals Act 1971. This is a difficult and poorly drafted piece of legislation. Where the animal is a 'dangerous species' (i.e. a species that is not commonly domesticated in the UK and whose fully grown adults can cause severe damage), the keeper of the animal is liable for the damage.

Where the animal does not belong to a dangerous species – cattle would be classed as non-dangerous – the legislation essentially imposes strict liability on the owner of an animal *only* if the likelihood of damage was due to the characteristics of the animal, and that these were known to the person who had charge of the animal.

An illustration of the law in practice is the case of McKaskie v Cameron, which was heard in the Preston County Court in July 2009. In that case, the farmer had known that a public footpath crossed one of his fields containing cows with calves and that this was used by walkers. He was also aware: that if the cows attacked people on the footpath, then they could suffer serious injury; and that his cows would act aggressively if they became stressed. The farmer unfortunately failed to prevent or reduce the risk of injury to walkers by moving the cattle to another field or fencing off the footpath.

The trial judge found for the claimant, notwithstanding the fact that the claimant had deviated from the exact route of the footpath and taken a short-cut across a field, where she was trampled by the cows. The judge held that the farmer was in breach of his duty of care to the claimant under the Occupiers' Liability Act 1957. It was held that a protective cow/calf bond existed, giving rise to a propensity for cows to protect their calves, and it would therefore be unwise to put any cows with calves in a field crossed by a right of way unless certain precautions were taken.

This case was not argued under the Animals Act, but if it had been, liability would, in my opinion, have been established.

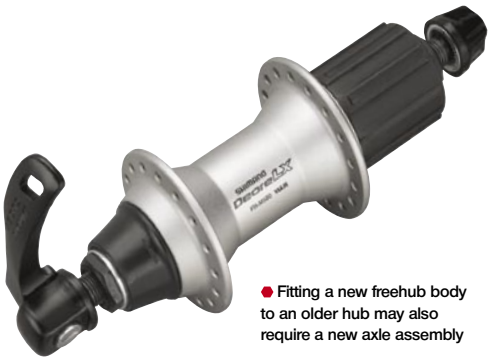
The Wildlife & Countryside Act 1981 places a prohibition on keeping bulls on land crossed by public rights of way, which is punishable on a summary

MEET THE EXPERTS

CHRIS JUDEN
CTC Technical Officer and qualified engineer

DR MATT BROOKS
Cycling GP

PAUL KITSON
Partner from Slater & Gordon (UK) LLP



Fitting a new freehub body to an older hub may also require a new axle assembly

conviction with a fine. However, this prohibition does not apply to bulls under ten months old or those which are recognised dairy breeds, when they are accompanied by cows or heifers. Recognised dairy breeds are Ayrshire, British Friesian, British Holstein, Dairy Shorthorn, Guernsey, Jersey and Kerry.

If any animal, known to be dangerous by the keeper, causes injury to a member of the public using a public right of way, including cycle routes, then they can be sued by the injured party for their injuries and financial losses.

PAUL KITSON

TECHNICAL

FREEHUB BODY REMOVAL

Q The freewheel body of my Deore LX 8-speed freehub (FH-M580) is coming to the end of its life. I do not want to buy a new rear wheel as the present one has just had a new rim put on it. I can find only two possible replacements for this freehub online, none of which have 'M580' or anything closer than 'M510-525' as part of their designation. Will any of these freehubs fit this hub?
MIKE GRIFFITHS

A Some speak of a Shimano freehub body interchangeability chart, found somewhere on t'internet, but as none can give a live link – or even a deceased one – and having never seen such a thing myself, I reckon it's with Bigfoot!

There is some good news. Provided the hub isn't very old or weird (exotic designs in the name of Dura-Ace and Saint, plus anything with a silent clutch or alloy outer body), any usual replacement body will go with any usual hub. You can even convert from 7-speed to 8/9/10-speed – provided you fit a longer axle. Problems arise with the many different shapes of right side cone.

I don't think anyone (except Shimano's gnome of freehub knowledge) can say how many or which hubs are the same as one another in this respect. But if the cone and in particular its seal are different, your old cone will either not even go near the new body, or will fit but without its seal, so dirt and water will flood through the gap and quickly destroy the bearing – including the cup surface in your brand new body!

So for safety, you need also to buy the spare axle and cone(s) assembly corresponding with your new freehub body. You need only the right-side cone, its seal and perhaps the locknut, but they are not sold separately (or not nowadays in the UK, where it's a small wonder that replacement bodies can even be had!). If you don't need the bike in a hurry, buy just a body, one that's as close as you can find in type, model year and level, to your hub – and hope for the best. But before you buy that M510-525 body, check that you can if necessary buy a corresponding axle assembly. And check that your cones aren't worn-out too.

CHRIS JUDEN

HEALTH

OVERWEIGHT CYCLIST

Q Does being obese (e.g. a BMI of 34) make it harder to balance on a bicycle? And if one was unlucky enough to fall off, and land on an arm (as opposed to a leg that was used to bearing the weight) would one be more likely to break something? What advice would you give to such a rider who had suffered a fall, but was thinking of returning to cycling?
PETER HALL

A This is an interesting question and not as straightforward as you might think. Obesity is described as a BMI (body mass index) more than 30. A BMI of between 25 and 30 is considered 'overweight'. In fact, being underweight (a BMI less than 18.5) is known to increase the risk of some fractures. However, it is a complex pattern, as highlighted by a study

Being overweight is no barrier to taking up cycling. Just take it easy to begin with

this year which looked at the relationship of weight, height, and BMI with fracture risk at different sites in post-menopausal women. There was some evidence that hip, spine and wrist fractures were more likely with lower BMI. For upper arm, shoulder and clavicle fractures, only height was significantly associated.

The authors concluded that the relationships between fracture and weight, BMI and height are site-specific. The different associations may be at least partly explained by effects on bone density, bone structure and geometry, and patterns of falling.

While I am no expert in mechanics, from basic principles it seems likely that obesity would make it more difficult to balance, particularly at low speeds.

My advice to any overweight rider considering a return to cycling would be to go for it. Cycling is an excellent low-impact activity which offers great benefits to health and these should far outweigh any risks. And it's a good way to lose weight. So get back on the bike but take it steadily to start with, until you build up confidence and improve fitness.

MATT BROOKS

TECHNICAL

BB: OPEN OR SEALED?

Q I have an audax bike that Cobra Cycles (Preston) built for me in 1994. It was a custom job done in 531C and has seen better days. I have asked Graeme Scott from Happy Trails to renovate this old bike for me.

Graeme is unsure about the bottom bracket. It's an open design. I think it's a Cinelli? What wisdom is there about open bottom brackets. Graeme was talking about lining it to seal it.

TIM LINFORD

A There is no point in sealing a bottom-bracket. A frame is less likely to rust if its bottom-bracket is able to drain any water that may get into it via breather holes, bottle boss threads etc. The bottom-bracket shell itself may be more rusty in the very open Cinelli style, due to the relatively free passage of dirty water in and out, but the bottom-bracket shell is comparatively thick and any rust can be seen and treated. As for the bearings, in modern units (except in rare and unusual designs) they are sealed from all sides and so it does not matter if the weather can get at them from all sides. In fact, a bottom-bracket that does not drain is more likely to subject the bearings to total immersion, which is more likely to defeat the seals.

So leave this bottom-bracket as is, but treat the inside of the bottom-bracket with rust-preventing paint and/or wax-oil. And choose bottom-bracket/crankset designs where the outermost parts inside the bottom-bracket are aluminium or rust-proofed steel, or paint them before fitting, and use a rust-preventing anti-seize compound on the threads.

CHRIS JUDEN

TECHNICAL

FOLDABLE TYRES

Q Why are some tyres foldable and others rigid? What are the pros and cons? I have ridden the Schwalbe Supreme tyres on my bike for 2500 miles without puncture or mishap. However, they have slight cracking between sidewall and tread, and an occasional fibre pulls out, so I think it's time to renew them.

ANTHONY BEGGS

● Folding tyres use a bead made of Kevlar rather than wire. This saves weight

A Foldable tyres cost more, weigh less, and sometimes have some other, less immediately obvious higher performance features than their rigid, steel-beaded counterparts, such as a finer weave casing. And obviously they fold, which makes it easier to pack a spare on tour – not that I'd necessarily advise that. As the bead is less rigid, stiffened by Kevlar rather than steel wire, it has to be a smaller diameter not to stretch too big when inflated, and this can make foldable tyres more difficult to fit in the first place. A Var-425 tyre lever is helpful.

Cracks don't really matter in the outer rubber of a modern tyre, since the threads are man-made fibres and do not rot. If a tyre isn't puncturing or distorting, there's no need to replace it yet. The more of that high hysteresis tread rubber wears off, the easier it rolls in fact. So apart from their increasing susceptibility to punctures, worn tyres are great! The one place to beware of exposed casing threads is at the edge of the rim, which can quickly chafe through an unprotected sidewall.

CHRIS JUDEN

● Topeak's Twin-head adaptor hose kit can be fitted to other pumps, or even a compressor

TECHNICAL

PUMP HOSE UPGRADE

Q I have an electrical compressor that I use for tyre inflation. It works fine for Schrader valves, but inflating Presta valves with a brass adaptor is always a problem. Is a specific Presta valve inflator for compressors available, or are there any other measures to make this easier?

KEN THOMPSON

You could possibly replace the compressor's hose (or cut it and replace the end part of it) with the Twin-head adapter hose kit from Topeak (wiggle.co.uk/topeak-twinhead-kit/). It comes with a selection of adaptors for common hose-fitting threads, plus an all-else-fails option for cutting and connecting to the orginal hose. The 'Twin-head' gives you the option of connecting to Schrader or Presta with equal facility. I have one of these on a floor pump. It's been reliable.

CHRIS JUDEN

Contact the 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, Email: 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 9JX.** And don't forget that CTC operates a free-to-members advice line for personal injury claims, **tel: 0844 736 8452.**