

# Cycling answers

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

## THE EXPERTS



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anything is wrong with it! Point 2 is correct. People have been injured and even killed in shimmy accidents. The strategies in 3 can work, but are not the best. The first thing is to understand the problem, which I explored in depth in 1988 (July p208) and have often revisited in subsequent Q&A replies. Briefly: when a bike shimmies the frame and fork twist so the front wheel goes out of track on alternate sides relative to the rear wheel, whilst the steering turns left and right to accommodate these excursions.

Shimmy is a resonant vibration, driven by the forward motion of the bike and damped by the inertia and friction of the wobbling wheel – that's tyre friction plus aerodynamic drag. Imagine a weight bouncing from the end of a spring – with someone wagging the top of the spring so the bounces get bigger.

Every bike has a natural shimmy frequency and speed and these are related. Exactly how is not easy to explain, but a bike that shimmies at a higher speed also shimmies more rapidly.

Actually, every bike has several shimmy speeds, depending on the weight and arrangement of loads on the bike, i.e. rider and luggage – the latter also varying with the stiffness of the luggage carriers. But as you've noticed, bikes without any luggage can shimmy too.

Torsional stiffness of the frame is a key factor, along with steering geometry. They work together like the stiffness and length of the spring in the 'bouncing mass' analogy. A stiffer frame and more trail increase shimmy speed and frequency, whereas applied loads reduce it. Hence touring frames have to be stiffer – and hence fat old men suffer worse shimmy problems on superlight racing bikes than the lean athletes such bikes were designed for!

## BIKE HANDLING SHIMMY DANGERS

Could you write an article on wheel shimmy? The increasing popularity of road bikes with the over-60s means inexperienced people are for the first time riding machines that are particularly susceptible to this problem. I have heard:

1. Wheel shimmy is caused by an unbalanced front wheel, e.g. by a large valve (a computer magnet should be placed opposite the valve to help balance the wheel).

Can it be caused by a badly designed bike, for example, made up of separately purchased components?

2. It can throw you off the bike.
3. The best strategy is to accelerate, steer a straight course. Braking makes matters much worse.

*John Silvertown, London*

That's a proper curate's egg of advice. Item 1 is mostly wrong: a catalogue of excuses from those who'd rather tinker with the bike than admit

(Above right) If your bike starts to shimmy, grip the top-tube between your thighs



Left: by Ted Prangnell

## LEGAL SPOT THE DOG

**Q** What is the legal situation regarding dog walkers on designated cycle paths? I regularly cycle on a designated cycle/pedestrian route through Cheltenham that dog walkers also like. Some owners allow their dogs to roam around uncontrolled, and they can be impossible to spot in the dark. Supposing I were to collide with one of these dogs, who would be held liable?

*Caburn Chamberlain, by email*

**A** It is not easy to give a definite answer to this question. Each case very much turns upon its own facts.

In the situation described a dog owner or keeper has a duty of care to other users of the cycle/pedestrian route. The question of whether or not there is a breach of that duty depends on the circumstances. There is a duty 'to take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour'. The key word in that statement is *likely*. In one case a judge held that the test is whether the person owing the duty of care 'had in contemplation that, unless further precautions were taken, such an unfortunate occurrence as that which in fact took place might well be expected.'

If a keeper of a dog lets the animal off the lead in the knowledge that the dog is playful and likely to run across the cycle path and collide with a cyclist then the keeper would almost certainly be held to be in breach of his/her duty of care to the cyclist. However, if the keeper of the dog was able to demonstrate that the dog was extremely docile and normally walked alongside the keeper without running off then they would probably be able to defend a claim if the dog unexpectedly and out of character ran off and collided with a cyclist.

In a recent case, *Jones v Whippet*, the Court of Appeal allowed an appeal by a dog owner who was originally held to be in breach of his duty of care to a runner who collided with a Great Dane dog by the name of Hector. Mr Jones collided with Hector and fell down the slope to a river, badly fracturing his ankle. The Court of Appeal held that the trial judge had not correctly stated the legal test. The Court of Appeal emphasised the need to approach these cases by considering what the dog handler could reasonably have anticipated if he allows the dog off a lead. The trial judge had found expressly that Hector had no tendency to jump up at other people; at the most he stopped and barked at people some 5 or 10 feet away. As such, the Court of Appeal held that 'there was no reason why Mr Whippet, as a reasonable dog handler in the park, should have anticipated that if Hector was let off the lead when some other adult was about, physical harm to that adult would result from Hector bounding up to him and contacting him'.

As I have indicated, each case turns on its own facts. As a solicitor specialising in cycle accidents, I regularly pursue claims against dog owners whose dogs have come into collision with cyclists. A common scenario is that a dog may escape from a property onto a road or alternatively a dog may run out from a park onto a road. In most of the cases that I have pursued, I have been able to establish on the facts that the owner was in breach of their duty of care to the cyclist. On occasions it is necessary to obtain expert evidence to prove that the dog owner knew or ought to have known that their particular breed of dog has a particular characteristic e.g. a propensity to chase cyclists or runners. This can commonly be the case if the dog is behaving territorially around the house or farm where it lives.

*Paul Kitson*

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Very stiff bikes with very stable steering (lots of trail) don't shimmy because their shimmy speed is faster than the bike has ever gone, or has a high enough vibration frequency for tyre and air friction easily to damp it. Aluminium frames seldom shimmy. But as frames in other materials are made ever thinner in an attempt to equal the weight of those, there's a growing problem of frames made so light and flexible they're a shimmy waiting to happen.

It's not a problem of amateur design from separately purchased components. Even professionals have but a scant understanding of the shimmy phenomenon, the full analysis of which is too complex for accurate prediction of the speed or frequency at which it will occur. Bicycling Science has a scarily mathematical chapter on the phenomenon, and it concludes in vague terms. But for sure: it's mostly about the frame and the fork.

Very floppy or unstable or overloaded bikes have such a slow shimmy speed and frequency that it manifests as a slow weave. Shimmies that occur up to 10mph are generally slow enough to counteract with the steering and are an annoyance more than a danger.

Dangerous shimmies are those that occur in the 20-30mph range and at a quicker frequency than human reactions, so that any attempt to fight it tends to make it even worse! A heavy touring wheel will damp such rapid oscillations, so riders of racing, audax and small-wheeled bikes are most vulnerable.

It can be possible to accelerate out of a shimmy – if you can go much faster – and it's also true that braking makes it worse – if that's all you do. The one sure-fire, 100% guaranteed way to come out of a shimmy is to apply more damping. Specifically, you need to rest a leg against the top tube. Better still: grip the frame between your thighs. Then you can apply the brakes. If you don't have a top-tube in the normal place, rising out of the saddle works. If you can, do both.

Apart from a particular speed, shimmy needs a smooth road to

## ■ HYDRATION HANDLEBAR BOTTLES

**Q** Are the handlebar bottle carriers of my youth still manufactured? Bottles on the frame are harder to re-engage in the cage and they can collect mud from country lanes.

*Ivor Aspley, Walsall*

**A** Although the attachment of water bottles to the handlebar has fallen out of racing fashion, they are still produced. A 'handlebar water bottle cage' is offered by the Parts and Accessories division of Raleigh Cycles, so it should be simple for any Raleigh Cyclelife dealer to supply what you want. The clamp fits tubing in the range 22 to 25mm, the usual size of flat/straight handlebars. Yours may be drops and fatter, but it appears possible to enlarge the (thick alloy) clamp with a half-round file, or a longer bolt may simply suffice.

If you have a frame-fitted bottle cage and wish to re-locate it, that is facilitated by the BBB 'Unifix accessory handlebar bracket' imported by Greyville Enterprises (supplied via local dealers only, not direct) in two sizes: to fit 22.0–25.4mm or 25.4–31.8mm handlebars.

*Chris Juden*



(Above) You can still carry water bottles on your handlebars on modern bikes

sustain it and a small disturbance to start it. That's where the out of true wheel, computer magnet, gust of wind, nervous twitch on the steering etc. comes in. None of those things play an ongoing part in the shimmy; they are merely triggers. And any one of them will do. Balance the wheel, remove the computer magnet etc. But once a rider has suffered a shimmy he'll never trust that bike like he did. He'll be less relaxed and more tense, especially at the same speed on the same hill, and one little twitch will set it going again!

So every rider needs to know the legs-against-top-tube, out-of-saddle shimmy damping trick.

*Chris Juden*

## ■ HEALTH TOO TIRED FOR TOURING?

**Q** I have been diagnosed with Gilbert's syndrome. Fatigue can apparently be a problem after heavy exertions, but where does that leave cycle touring?

*Mr CW Woods, Oxted, Surrey*

**A** People with Gilbert's syndrome generally lead normal healthy lives. Many are unaware they have it. It is often diagnosed by chance when routine blood tests done for other reasons show a raised level of bilirubin, a breakdown product of haemoglobin from red blood cells. The liver does not process bilirubin for excretion

as well as usual. At times this can lead to a raised level of bilirubin, occasionally high enough to cause jaundice: a yellowing of the skin and whites of the eyes.

Gilbert's syndrome is a common hereditary condition, often first diagnosed in the late teens or early twenties. Most people do not have any symptoms. If jaundice does occur, it tends to be temporary when you are ill with another problem such as an infection or repeated vomiting, or during times of exertion or stress.

Other symptoms are uncommon. Although tiredness, weakness, abdominal pains and nausea have been reported by some people, these are usually mild and it is not clear that they are actually caused by Gilbert's syndrome.

In summary: no treatment is needed. Cycling, including touring, is unlikely to be adversely affected by the condition.

*Dr Matt Brooks*

## CONTACTING THE EXPERTS

Send health and legal questions to the Editor (details on p78). We regret that Cycle magazine cannot answer unpublished health and legal queries. Technical and general enquiries 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 7JX. And don't forget that CTC operates a free-to-members advice line for personal injury claims, tel: 0844 736 8452.