

with nil maintenance will need replacing after 500 miles. Regular cleaning and lubrication should extend this at least threefold, especially if the machine's assistance is used economically.

Richard Hallett

Technical

Trike pulling to one side

Q I have an e-cargo trike with a box and two wheels at the front. It has hydraulic disc brakes all round, with the front two operated by the same lever. When I brake, the trike wants to turn to the right, and this is more noticeable in the wet. I have looked at the brakes; they both seem to be working. Any ideas of the problem? *martinn, on the Cycling UK Forum*

A Assuming the machine is symmetrical and that both wheels use the same specification disc and calliper, braking should be evenly balanced between sides since they share the same hydraulic circuit. Check that both callipers use the same specification pads; different materials can vary significantly in performance, especially in the wet. The pads or disc on one side may be contaminated, reducing effectiveness, or be worn to a greater extent. Also check the steering bearing adjustment and that the tyres are equally inflated.

Richard Hallett

Technical

Gauge for truing stand

Q I have a truing stand and want to add gauges so I can see the accuracy to the millimetre. Is it possible to fit gauges? *Jim77, on the Cycling UK Forum*

A If you wish to measure wheel rim runout to within 1mm, you should be able to get away with using a metric steel rule. These are usually marked with 1mm and 0.5mm graduations. This



has the advantage of simplicity; there's no need to rig up some kind of mounting system for the rule, which can be rested against the stand as the end is offered up to the rim. An imperial rule with 1/64" graduations is even more precise.

Neither, however, gets close to the accuracy of a good-quality digital readout display (DRO), as used by many machinists. Available online for upwards of £30, these are accurate to as little as a few microns. To use such a display, you will have to devise a way to attach it to the stand. Similar results may be obtained with a manual or digital vernier calliper.

What form the attachment should take will depend on the stand and may require no little ingenuity, but it will need to be rigid and correctly positioned so that the appropriate part can touch the rim as required. Note that none of this is necessary when building wheels, since it is possible to true the rim to within 0.1mm axial and radial runout using visual assessment and the sound made by the indicator tips touching the rim, and to centre it between the hub locknuts to within 0.5mm using a dishing tool.

Richard Hallett

Legal

Duty of care to cyclists?

Q Do highway authorities have a duty of care or similar legal responsibility to cyclists in the management of highway infrastructure such as width restrictions? There is a width restriction near me that's been abandoned. Through FOIs and other correspondence, I have established that the council:

1. Did not consider cyclists' safety when it removed the width restriction on the right-hand side some years ago.
2. Could not provide evidence that the restriction had been inspected in recent years.
3. Did not consult nor consider cyclists' safety when it recently decided not to maintain the left-hand cycle bypass.

Nicko King

The right-hand width restriction has been removed



A The grass verge looks very narrow for a cycle path. Was it just a short stretch behind the wands? Do you have any images of this location prior to the changes to help better understand the layout?

To answer your question, however, local highway authorities have a statutory duty to improve road safety. You appear to be referring here to a local authority redesigning a traffic-calming measure to become a different type of traffic-calming measure. Local authorities should take account of all road users in considering changes, which includes vulnerable road users. There is a lot of useful reading on this point in Local Transport Note 1/07 (March 2007); section 6 specifically deals with narrowings and chicanes.

There may be signage and/or road markings at the entry to a traffic-calmed area, such as the give-way markings on your photograph. I am not aware of any general obligation to instal signs and/or use road markings. Without signs and markings on the road, road users need to negotiate dynamically about who will have priority and be prepared to give way.

The problem for the local authority comes if there are incidents at this location and the issue of road design is called into question. It is then that the local authority will need to consider and produce their documentation to support the decisions they took, the reasons for them and their justifications.

Nadia Kerr

Get in touch

EMAIL your technical, health or legal questions to editor@cyclinguk.org or write to Cyclopedia, Cycle, Cycling UK, Parklands, Railton Road, Guildford, GU2 9JX. Please include your membership number. Cycle cannot answer unpublished queries. Note: Cycling UK has an advice line for members' personal injury claims, **TEL: 0330 107 1789**.