TECHNICAL/LEGAL/HEALTH
YOUR QUESTIONS
OUR ANSWERS

Q&A

MEET THE EXPERTS

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When choosing mudguards, you generally want ones about 10mm wider than your bike's tyres

TECHNICAL

MUDGUARD SIZE

Q I'm buying SKS Chromoplastic Road Mudguards but am unsure of the correct size. I think I need size 700×28-37. The specification given on the tyre walls is: 32-622 and 28×1¼×1¾
STEVE COWAN

A Yup, that's the size. The bike trade, unfortunately, keeps its customers confused by describing tyres in a great many different ways, so I made a page to explain it: search for 'tyre sizes' at **ctc.org.uk**.

Mudguards are often sold without any tyre size guidance, just the width of the guard. In that case, you generally want a guard about 10mm wider than the tyre section. Too wide and the guard adds unnecessary wind resistance, too narrow and it's hard to keep it from rubbing one side or other of the tyre, especially on rough roads where the guard tends to flap about. So a 35mm guard is good for tyres up to 25mm, or 28mm at a pinch – literally! The product you're looking at is most likely a 45mm guard.

If a mudguard is too close to a tyre (especially one with a prominent tread) it can catch onto it, get carried around by the wheel, and jam into the frame. So it's important to have enough clearance. And stay-release fittings are required for safety on a front guard, to let it break free if and when that starts to happen, because a front wheel jam invariably sends the rider over the handlebars!
CHRIS JUDEN

TECHNICAL

WHICH NEW STEEL?

Q I'm in the process of buying a new audax frame and have been looking at Spa Cycles Audax in Reynolds 725 tubing and Ribble Cycles in Reynolds 525. How do these tubes compare with 531 DB or 531 Competition? And which is better, 725 or 525?
TONY LYNCH

A The short answer to your question is that Reynolds 725 is 'better' than 525. They are chemically the same steel (0.3% carbon, alloyed with chrome and molybdenum), but 725 is heat-treated, boosting its strength by about 50%. Thus a tube of 725 can be made with thinner walls, saving weight without loss of strength – provided that will not make the frame too flexible. (The stiffness of steel is an unchangeable property.)

To make a tube lighter whilst preserving not only strength but also stiffness (in bending and torsion), one must not only make it from a stronger metal but also increase external diameter simultaneously with reducing wall thickness. A fatter, thinner-walled tube is more vulnerable to denting, and making it from stronger steel only slightly improves its resistance to such damage. With a diameter-to-wall-thickness ratio in excess of the engineer's 50:1 rule of thumb, lightweight steel bike frames are

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, 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.

TECHNICAL

CHAFING GEAR CABLES

Q Recently, you said something about your bar bag damaging the cables that sprout from STI levers. How can I avoid this?
DAVE ROWELL

A My cable that failed was from a bar-end control that didn't emerge from under the bar tape until some way around the first curve, so it bent upwards a bit before curling back. That caused the cables to rub gently on the bottom of a bar bag. I thought nothing of this, as it didn't seem to be hurting the Ortlieb fabric, until the front mech wouldn't shift up…

A flat spot had worn on the hard plastic that covers the lengthways wires that give indexed gear cable casing its resistance to compression. This plastic coating binds those wires together. When this plastic case is critically weakened, the wires can buckle under compressive force (that's equal and opposite to the rise in cable tension when you shift) and burst apart.

Having jury-rigged my front mech in middle ring, I wound insulating tape around the other casing, which I now noticed was also worn to the wires!

Letter OF THE MONTH

STI cables rubbing on the sides of a bag will surely suffer the same fate – and maybe sooner. A good precaution is to apply the binding of PVC tape before any wear occurs at all, as it will become tatty before the casing wears. Preferably route gear cables where they cannot rub.

For STIs with ingrowing 'washing line' cables, consider Nokon casings (distributed by **windwave.co.uk** and pictured below). Their jointed metal outer sections are resistant to chafing and allow tighter curves, which should enable you to keep these casings clear of the bag. This you will need to do, or else they'll surely chafe the bag instead!
CHRIS JUDEN

already dicing with dents!

So whilst the answer is simple, the question is much more complicated. What do you mean by better? If you mean lighter, the answer is probably not. Reynolds' catalogue shows that for every 725 frame tube (in the main triangle at least), there's a 525 tube of identical diameter and wall thickness or 'gauge' (usually 0.8/0.5/0.8mm). And as neither is available in a great variety of sizes, there's little opportunity of making a lighter and equally stiff frame from 725 versus 525, except for a few grams here and there. (There is much more choice of tube diameter and gauge in some other new steels, such as 631 and 853.)

The Reynolds 725 steel tubing that the Spa Audax is made from is better than Reynolds 525, since it is heat treated and thus stronger

If by better you mean stronger, then yes, the 725 frame should be less likely to break – unless the builder makes some very strange tubing choices indeed! If a better frame for you would be just as strong but lighter and more flexible, then that is possible with 725, but only if the designer of the 525 frame has chosen to build with unusually fat tubes.

How do these compare with 531? Reynolds 525 is about the same strength, whilst the much stronger 725 is comparable to 753 (but far easier to weld). How they differ is that whereas a 531 down-tube, for example, was almost always 28.6mm diameter, but came in various wall thicknesses, modern ❯

tubes come in a variety of diameters, most of them fatter and all much the same wall thickness. Comparisons are more about dimensions than materials. A simple 531 double-butted decal gives no clue about wall thickness – apart from thicker at the ends than the middle!

In the 1980s, Reynolds sorted their tubes into sets, and '531 Competition' meant a 28.6mm down-tube with 0.91/0.61/0.91mm walls. A '531 Professional' down-tube was 0.71/0.55/0.71mm (–17% in weight and stiffness), and a 'Super Tourist' 1.02/0.71/1.02mm (+14%).

The lightest 525 or 725 tube that could possibly be used as a down-tube is also 28.6mm and 0.7/0.4/0.7mm. But at 28% lighter and more flexible, I doubt that's stiff enough for a down-tube and think it's intended as a top-tube. It's 18% lighter and 3% stiffer than the 1in 531C top-tube. The usual 0.8/0.5/0.8mm walls of 525 or 725 result in a down-tube that's still 14% lighter and floppier than 531C, but (as suggested above) modern steel frames are usually stiffened by a fatter top-tube. Many have a fatter down-tube too, 31.75mm diameter, which comes out 5% lighter and 17% stiffer than 531C – but more easily dented.

For a bit more resistance to accidental damage of all sorts, I'd choose 725. Otherwise, there's not much in it. You can generally reckon on the modern frame being a bit lighter and stiffer than your old one.

CHRIS JUDEN

HEALTH

LIVING WITH A HERNIA

Q I have the beginnings of a hernia. I'm told that provided I manage it properly it should not get any worse. Is there nothing that can be done to improve matters?
TONY JONES

A An inguinal hernia occurs when abdominal contents (including the lining of abdomen and sometimes bowel) protrude through a weakness in the abdominal wall. It can present as a lump or discomfort in the groin. The lump may appear when lifting or standing and disappear when you lie down. If there is doubt, an ultrasound can be performed.

Inguinal hernias occur mainly in older men though I'm not aware that it is any more common in cyclists than non-cyclists. Risk factors include obesity, constipation, chronic cough, and heavy lifting as they increase the pressure in the abdomen.

Irreducible hernias cannot be pushed back in. Strangulation is a medical emergency where the contents of the hernia become twisted or trapped by the narrow opening, cutting off the blood supply and obstructing the bowel. Inguinal hernias can be repaired surgically, often as a day case, by pushing the hernia back into place and using a mesh to strengthen the weak point in the abdominal wall. A truss may be used when surgery is not possible.

I've heard it said that a recumbent bike is helpful as it encourages use of the thigh muscles rather than the abdominal ones, so won't exacerbate the hernia. Once it has started, I don't think there are any specific exercises that can improve the hernia. It's more a case of avoiding things that may exacerbate it such as heavy lifting. Saddle adjustment may help the pain but surgical repair is considered to be the definitive treatment.

DR MATT BROOKS

Photo: courtesy of Matt Hodges

A recumbent is less likely to exacerbate a hernia than an upright, as it engages the abdominal muscles less

LEGAL

EXPENSIVE JUSTICE?

Q I understand that a successful defendant now has to meet his or her own legal costs, even after a not guilty verdict. This is because of changes to the Defendants' Costs Orders regime, which came into effect on 1 October 2012 as part of the Legal Aid Sentencing and Punishment of Offenders Act 2012. What does this mean for cyclists?
PAUL BROADGATE

A There have been important changes to both civil and criminal costs, which will impact on access to justice in England & Wales. (There is a different legal system in Scotland.)

The erosion of access to public funding in criminal cases has been widely reported, but recent changes in the law will affect those who can afford to mount their own defence in the Criminal Courts. Section 16(6) of the Prosecution of Offenders Act 1985 allowed the court to award acquitted, privately-paying defendants an amount from public funds to compensate them for their properly incurred legal costs. In 2010, the Law Society successfully challenged the previous Government's attempt to cap, at legal aid rates, the costs recoverable by successful defendants.

This Government has, however, recently enacted, without further consultation on costs in criminal cases, the Legal Aid, Sentencing and Punishment of Offenders Act 2012 and the Costs in Criminal Cases (General) (Amendment) Regulations 2012. The principle of compensation set out in the 1985 act has been amended. The new legislation provides that defendants in the magistrates' court will be entitled to recover their costs under a Defendant's Costs Order if they are acquitted, but the amount will be limited to legal aid rates – which are

An acquitted defendant can now end up out of pocket, which doesn't seem very just

very low indeed.

Defendants appearing in the Crown Court, in respect of proceedings commenced on or after the 1 October 2012 (except in an appeals from a magistrates' court), will not be entitled to recover their legal costs expended in successfully defending those proceedings if they chose to be represented privately. The rationale for this is that all defendants in the Crown Court will be entitled to legal aid whatever their means, but subject to a contribution. Defendants who obtain legal aid will be entitled on acquittal to have the entirety of their contributions repaid to them. This is in contrast to those who chose to pay privately for their defence, who will not be entitled to recover their costs.

Whilst it is undesirable in my view for an acquitted defendant to be out of pocket, the main issue for cyclists and other vulnerable road users is that bad driving is all too often not dealt with by the courts. The current legal framework unfortunately fails to ensure the proper administration of road crime, particularly for vulnerable road users such as cyclists and pedestrians. (This is why CTC has launched the Road Justice Campaign, supported by Slater & Gordon Lawyers – see **roadjustice.org.uk**).

In civil proceedings, there have been changes as to how personal injury cases are funded. Cases were funded under Conditional Fee Agreements, known as 'No win no fee agreements'. In the event of a win, the successful claimant's legal costs were recovered from the defendant's insurance company. In addition, the claimant's solicitor would also recover a success fee (in road traffic collision cases, normally 12.5% of the fees), which would also have been paid by the defendant's insurers.

From 1 April 2013, success fees are no longer recoverable from defendants, and for all cases below £25,000 in value only very limited fixed legal costs are recoverable against a defendant. In most cases, a successful claimant will thus not recover all their legal costs. In practice, most successful claimants will pay up to 25% of their damages to their lawyer.

Notwithstanding the changes to the civil costs landscape, CTC's legal services scheme is unchanged. Cases are still funded under a no win, no fee arrangement, and successful CTC claimants will recover all their damages without any deductions for legal costs.

PAUL KITSON

Successful claimants in civil cases may pay up to 25% of their damages to their lawyer