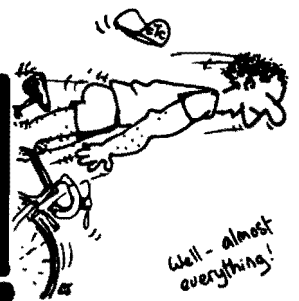
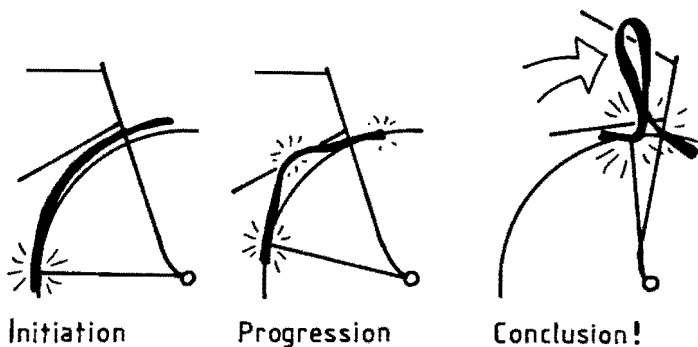


WHEN EVERYTHING STOPS!



FRONT WHEEL lock-up is without doubt an extremely dangerous occurrence when cycling, and not as funny as my little cartoon suggests! Correspondence following my allusion to front mudguards (April *Cycletouring*, page 144) suggests it's not uncommon either. This is perhaps a good time, therefore, to describe some of the causes, not all of which have to do with mudguards, and how to avoid them.

Mudguard collapse. As this started me off, I'll deal with it first. Mudguard collapse happens in three stages, best described by the series of diagrams below:



Initiation can be due to a stone etc, kicked up by the wheel, lodging between tyre and guard, or a stick caught in the spokes and snagging the mudguard stay, or anything else which brings mudguard and tyre into contact - even sudden vibration from an otherwise harmless bump in the road or the steering shimmy to which some cycles seem prone. If your toes can hit the guard when turning sharply this could also cause trouble, although you're less likely to be going fast enough to do serious damage, while turning.

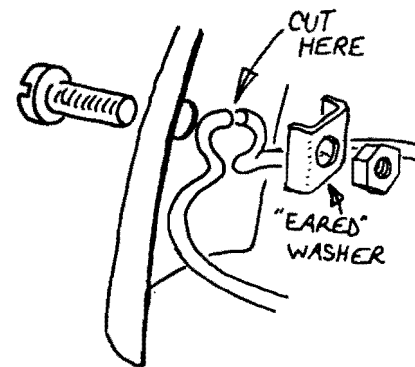
Obvious preventive measures include ensuring good clearance between guard and wheel (at least 6mm, but preferably more than 10mm) and avoiding guards which are twisted or easily waggle to touch on the tyre, the critical area being the mudguard's tail end and adjacent pair of stays. In particular, make sure that its shape and clearance don't make this part of the guard grab on the tyre when pushed sideways across it.

The above notwithstanding, guards often skate against tyres and little stones rattle round them quite harmlessly; progress towards a more serious conclusion is not inevitable provided friction between tyre and guard doesn't overcome the guard's ability to resist collapse.

A second pair of stays clearly makes a huge difference to this ability, by supporting the point where guards otherwise buckle. On the other hand, one pair of stays is usually considered safe enough if you have steel or small wheel mudguards; if not, do this simple test and draw your own conclusions:- Find a front mudguard fitted to a bike with two pairs of stays, and pull its tail edge upwards. Not much happens does it? Now undo the second pair and try again! Did you see how the tail edge of the guard twisted towards the tyre? Once that guard starts to go it digs in even deeper and your only chance of escape is if the stays come adrift before the whole lot jams between the forks. Now try yours and see which it most closely resembles.

Stay wrap-up. I've only seen the (spectacular) results of this once, but apparently it's not such an uncommon occurrence, which develops as follows:- The mudguard or its stay catches on the tyre as before, but guard and stays soon part company, the former playing no further part while the latter (now firmly embedded in the tyre) carries on, often passing between the forks and knocking the brake blocks out of its way. Successive revolutions of the wheel have the effect of wrapping the stays around the front spindle so that the section of wheel which the stays have "captured" is drawn irresistibly inwards towards the hub. The "bucking bronco" effect of an increasingly non-circular front wheel only lasts a few yards; soon there's no more stay to wind up and neither is the wheel in a fit shape to roll!

Initial reaction upon regaining consciousness is "my wheel's collapsed". True, but it wasn't the wheel's fault. The kind of mudguard stays where the pair are a single piece of wire, formed into a loop and secured inside the mudguard by a bolt, are usually to blame, separate stays being much more likely to part company with the mudguard and each other before doing serious damage. One piece stays can be made safe by cutting them in two and securing with an "eared" washer. At the very least you should trim down the securing bolt until it doesn't project beyond the nut, which must be kept tight.



Making a one-piece stay safer

Jammed mudguard. Should front mudguard clearance at the forks be inadequate, as is so often the case these days, do not suppose that increasing the distance between guard and tyre elsewhere will help matters. On the contrary, for as the tyre rotates it then meets a steadily decreasing clearance up to the forks, where any material carried by it may jam, hindering rotation and (rarely) stopping the wheel entirely. Although this is more often a nuisance than a danger, it's advisable to have increasing or constant clearance even if this means the guard must be very close all round. That way, anything entering the mudguard can also get out!

Silly frames. It is a short step from skimpy clearance forks to those with no mudguards at all. While I don't suppose anyone seriously tours on such machines, it is worth mentioning that extreme racing frames have been built where the clearance between front tyre and down tube is so minuscule that hard application of the front brake makes them (due to inherent resilience of the forks). One thing's for sure you'll make an emergency stop all right!

It takes three people to check your frame: you sit on the bike and hold the front brake hard on, a (very strong!) friend pushes forwards on the back of the saddle, and another watches to see whether tyre and frame touch, before the rear wheel lifts. If they do you just *might* be able to get away with a lower profile tyre, otherwise the frame is unfit for use on open roads.

Things on forks. As some manufacturers increasingly seem to regard lighting as an optional accessory rather than essential equipment (by omitting brazed-on lamp bosses for instance), cyclists are encouraged to rely on a variety of clamp-on brackets for securing lamps and dynamos to the front fork. I strongly advise you not to use these, with the possible exception of clamps having a fixed spigot (not a screw) which engages with a pre-drilled hole (not merely an indentation) in the fork. Our experience, and that of many reputable cycle dealers, indicates that the security of most clamp-on brackets, if used to attach a battery lamp or a dynamo to a tapered fork blade, cannot be guaranteed. (Another possible exception may apply to dynamos positioned forward of and clamped to a point very high on the fork, above the tapered section.)

Should one of these brackets loosen slightly (which seems to occur without apparent warning) it may suddenly drop down the fork and swing backwards into the spokes, often jamming the wheel. Serious injuries have resulted from such incidents and so it is worth keeping a careful check for movement of any front mounted accessories, even those fitted to brazed-on bosses and particularly rear facing dynamos.

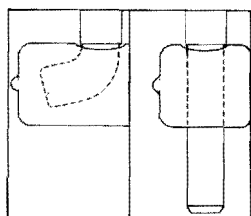
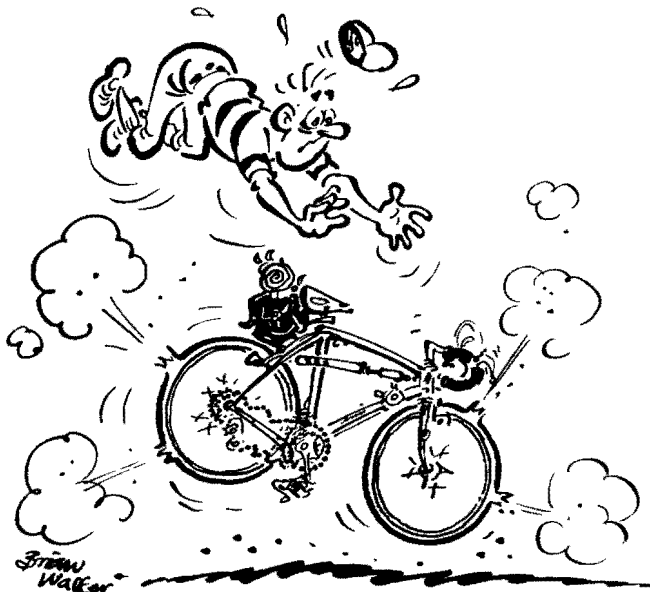
Luggage. We have all seen people riding with bags of shopping etc. suspended from the handlebars; by now you won't need an explanation of why this isn't such a good idea! By the same token you should be particularly careful that front bags, especially panniers, and their racks are securely attached and have no loose straps. Also check that any front rack is really rigid by pushing it sideways, to see whether vibration or sudden shocks might make it touch the wheel with dire results; such things *have* happened.

Front brake. While this is obviously *intended* to stop the front wheel going round, it is just as well if that doesn't occur too suddenly! To this end, dented and out of round rims should be straightened or replaced promptly.

That some people can let their bikes get into such a state amazes me, but apparently a common cause of jammed front wheels is preceded by the nut rattling loose and falling off the brake bolt. All it then takes is a light touch on the front brake, and I leave the rest to your imagination! For this reason most brake bolts are now fitted with stiff nuts.

While you're checking the brake make sure that the brake blocks are secure, as some are capable of swivelling in such a way as possibly to 'dig in their heels' and jam the rim.

Safe cycling: Chris Juden



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