

RECOMMENDATIONS FOR TECHNICAL DE-REGULATION

By Christopher Juden, CTC Senior Technical Officer 2012-11-30

In formulating these recommendations I have taken into account the diversity of views held by cyclists and also sought the opinion of the cycle trade and road safety interests.

My very long experience advising cyclists and solving their problems with cycling equipment gives me a unique insight into their needs and desires. I have latterly sought more specific insights into how the legal framework under which cycles are sold and used in this country might best be amended. To prompt feedback I have raised the relevant issues on internet forums and in my replies to members' questions in the CTC magazine. And as CTC is a stationary target for anyone with a grievance about cyclists, I also know very well what sort of equipment the general public wants to see on bikes!

Having once worked for Raleigh, then alongside the cycle trade and industry on British Standards during the last 27 years whilst also dealing with suppliers of equipment for review in the CTC magazine, I think I also have some idea of how technical regulations impinge upon the specification of equipment and upon cycle-related businesses in the UK. Thinking that the needs of cyclists might possibly coincide with those of the trade, I attended a couple of meetings with BAGB. Our needs did not exactly coincide, but it was useful to know that we all desire simpler and more flexible regulations that will not unduly discriminate against products that are esteemed by users.

Amend existing laws or new composite regulation

BAGB propose a new composite regulation to govern the construction, sale and use of pedal cycles. ACT and RoSPA were attracted to that idea and I daresay many of the cycling public would also like to have only one simple document to read, in order to discover what is and is not legal on a bike. The implementation of this idea, however, would not be at all simple.

Selling versus using

Selling a bicycle is a very different activity from that of riding a bicycle. I am not convinced that the two activities can be regulated within the same document without it becoming two separate documents sharing little more than a title page. In that case two documents will be simpler: one for retailers and trading standards officers, the other for riders and the police. The key intention of a single regulation is technical consistency and that can simply be achieved with a requirement that to be sold, the cycle shall be legal to use on the road (with exceptions I'll deal with later).

Lights

Combining lighting with the other construction and use requirements should be easier, especially if lights are required to be fitted to pedal cycles at all times. But they are not and nobody is proposing that they should be required in daylight. The existing Lighting Regulations contain all the clauses necessary to define when it is

dark and much more besides, such as forbidden colours of additional lights and the requirement not to dazzle other road users. The addition of all these necessary conditions to our single statute will render it far from simple. Meanwhile, the subtraction of pedal cycles from the Lighting Regulations leaves a conspicuous hole. All other vehicles are there, including horse-drawn vehicles and even handcarts. The absence of pedal cycles would create an inconsistency within the Road Traffic Acts.

Resource implications

The drafting of this new statute would obviously require a substantial administrative resource and also parliamentary time, of which, we were informed at our first DfT meeting, there isn't any. One of the clear messages of that meeting, as I recall it, was that we must achieve our aims through secondary rather than primary legislation, i.e. by amendment of existing regulations rather than new ones.

A further complication is that Northern Ireland has its own Road Traffic Acts, with at least one difference when it comes to pedal cycles: a bell is required. Would this composite regulation apply to the whole of UK, like the existing Pedal Bicycles Safety (i.e. sales) Regulation, or only GB like the Pedal Cycles Construction and Use Regulation?

Towards a Cycle Code

In conclusion, the idea of a single statute is not and cannot become any more than an idea. At the root of this idea there lies nevertheless, a vital need for clarity and consistency in the regulations, which must be at the forefront of our considerations of how they should be amended. In the circumstances, the desire for a single simple statute may be satisfied by a summary document, analogous to how the many tangled strands of the Road Traffic Acts are brought together in the Highway Code. I volunteer CTC to work with BAGB, ACT and DfT in writing such a document, once our work is done.

Pedal Bicycles Safety Regulation

RoSPA agrees with CTC that a Code of Practice, whilst a desirable addition, would be insufficient to replace this Regulation. Unlike some countries (e.g. Germany) no formal training or qualification is required to sell bicycles in UK, and CTC does not seek such a regime. British laissez-faire has its advantages, but also its limitations.

The cycle trade does not have a good record of informing customers what is legal to ride. A failure to remind customers that an approved front and rear lamp is required after dark and to keep such products in stock has deprived lamp manufacturers of the incentive to meet that requirement, leading over the past three decades, to the virtual disappearance of BS-approved lamps from the market. British retailers veil this deficiency with phrases such as: "Most lights sold by (us) are certified and labelled with a European CEN standard". That'll be the CE mark, which on a bike lamp means no more than the CE mark on a torch, for there is no EC directive or CEN standard specific to cycle lighting.

Neither have cycle manufacturers done all they could, to help cyclists ride legally. Pedal reflectors have been required at night since 1985 and it's been illegal to sell a bike without them since 1983. One might expect the prospect of volume sales of original equipment to guarantee that no design of pedal was without compatible reflectors. But no. The market has failed us. There is an apparent inverse correlation

between the quality of a pedal and the chance of finding a reflector to fit it. Rather than provide a commercial incentive for suppliers of up-market pedals to rectify this lack on the part of their products, manufacturers of high specification bicycles simply omit the pedals – on the pretext of consumer choice.

When the customer chooses a pair of pedals to go on this bike, does the retailer ask: “Will you be riding this bike in the dark?” and sell the compatible reflector? Apparently not. One manufacturer of pedals does produce reflectors for every model they make, but so small is the demand from UK retailers for these accessories that most cannot be bought here except by mail-order from the continent.

Ensuring that bicycles are safe and legal to use when they are sold, clearly cannot be left to a retailer’s interpretation of a voluntary code of practice. The Pedal Bicycles Safety Regulation is still needed to protect the consumer.

In order to ensure consistency between this regulation and the Road Traffic Acts, the starting point of this regulation should be that the bicycle, as sold, is legal to ride on the road as mentioned above. Whether that should include riding in the dark, I will consider below.

Handing of brakes

This regulation currently includes further requirements for the safety of the rider – and others. For example, the Road Traffic Acts require two braking systems on a bicycle but do not specify how they are operated. Neither should they. It is important for safety in an emergency stop that the front brake is operated by whichever hand the rider is accustomed to use for that purpose. Other countries’ practices differ, but in Britain it is customary to operate the front brake with the right hand. All parties (CTC, RoSPA, BAGB and ACT) agree that bicycles should continue to be supplied with any hand-operated brakes handed thus, by default. But there must also be a simple, clear and informed process by which someone may purchase a bike with its brake levers transposed, if that’s what they prefer. See **agreed exceptions** below.

It is of course, perfectly legal to use and to sell a bike with a foot-operated back-pedal or ‘coaster’ brake mechanism. So it is important that the handing requirement is not written in such a way as to forbid this. A fixed-wheel on the other hand, counts as a brake only at the point of use. To be sold the bike must presently also have an actual brake mechanism on that wheel. We think that requirement could safely be relaxed by leaving it that the cycle shall be legal to use.

Bells

A bell is currently required at the point of sale, but not at the point of use – in Great Britain at least. But a bell is required when a cycle is used in Northern Ireland and many other European countries. A bell is also specified for cycles by the International Convention on Road Transport, so it is needed whenever a cycle bought elsewhere is ridden in those countries, including Northern Ireland. As the Pedal Bicycles Safety Regulations apply to the whole UK, a bell is required in order to ensure that a cycle sold in any part of UK may be used in any part.

There are calls from pedestrians for bells to be required when a cycle is ridden in England, Wales and Scotland too. These calls should be resisted (and the Northern Irish requirement repealed), since a bell is useful only on paths shared with pedestrians, so it is unreasonable to require a cyclist to carry a bell if they ride

exclusively on the road – where something much louder would be required! And it seems unlikely that a cyclist who discards the bell provided, would have rung it if compelled to leave it fitted.

The provision of bells at the point of sale adds little or nothing to the price of a new bike, many of which came with bells before this was a sales requirement here, because other countries require them. And this provision largely satisfies the demands of pedestrian groups. CTC is sorry that BAGB and ACT would sacrifice the goodwill of pedestrians for such an insignificant cost saving and glad that RoSPA agrees with our view: that bells should remain part of the specification of a new bicycle.

Agreed exceptions

At present it is difficult to buy a bicycle that deviates from the specification of this regulation unless it is for use in competitive events. There are many reasons for wanting a differently specified bicycle that have nothing to do with competitions. The most obvious is someone who learnt to ride abroad, where brake levers are usually the other way around. It is pointless for a dealer to transpose the brake cables of an imported bicycle so that it may legally be sold here, then put them back to suit such a customer. The customer should be able to specify this deviation from the regulation and have the bicycle he wants without recourse to after-sales alteration.

Under the existing regulation it is possible for someone unwittingly to buy a competition bicycle that is actually illegal to ride on the road. The recent fixie fad has encouraged many people to buy 'track racing bikes', designed for the velodrome, with no brakes apart from their fixed wheel, and then ride them in the street, which is not only illegal but a clear hazard, since a bicycle with no front brake takes twice as far to stop.

Reputable retailers will be advising customers appropriately, but the present regulation offers no protection against the unscrupulous sale of competition bicycles, whilst impeding legitimate customer choice. I suggest that both matters may be taken better care of by deleting the competition exemption and replacing it with a simple and transparent means by which any customer may buy a bicycle that differs in some way from the regulation, on the basis of informed consent.

This picks up the BAGB/ACT idea of a Code of Practice and their Retailer/Customer checklist. To this would be added a form, one copy to be kept by the retailer, which the customer should sign to agree that he understands that the bicycle, for example, "has no front brake, which makes it illegal and unsafe to ride on a public road or path". The form should describe in such terms, not only the nature of the deviation from regulations but also its legal and safety consequences. The form has two purposes: it ensures that the customer is making a fully informed choice and also protects the retailer from accusations of mis-selling.

Each deviation should be described and signed for separately. The track-racing bike will not have a bell, or any reflectors. Neither will a road-racing bicycle, but those omissions do not make a bicycle illegal or unsafe to ride on the road (in daylight at least) and given this transparent process of informed choice it could legally be sold, thus avoiding the waste and unnecessary cost of supplying unwanted components.

This method of informed consent can also be made to work for mail-order and internet sales.

Expert cyclists will not mind signing up for what they want, but the general public may be put off by messages that make a bike seem slightly more risky. It follows that mass-market retailers will not want any form-filling to get in the way of a sale, which should ensure that most bicycles sold continue to conform to the regulation specification.

Toe overlap

Given this means of selling a non-conforming bicycle, it becomes practicable to tighten the specification in some respects where existing practices are weak.

It is obviously undesirable for a rider's feet to overlap the front wheel and thus interfere with the steering of a bicycle. Riders sometimes fall because of this when starting off or manoeuvring at low speed. Cycle safety standards recognise this risk and attempt to address it, but make inadequate allowance for shoe size. BSEN for racing-style bicycles is satisfied with only 90mm from centre of pedal to toe, which is typical for shoe size 38! At CTC we find some degree of toe to wheel or mudguard interference on an increasing number of bicycles, that nevertheless conform with the relevant standard.

There is an argument from racing cyclists that bikes are somehow better with a shorter wheelbase. And we would not wish to protect people from toe overlap if that is what they believe and really want, but this hazard should not be imposed upon naïve customers. I suggest a requirement be added, that the front wheel, or mudguard if fittings are present for such an addition, shall not touch a rider's shoe, when this is correctly placed on a horizontal pedal and the cranks and steering are turned.

Those who do not find this a hazard should be able to sign their acceptance that: "It is likely that a rider's shoes may touch the front tyre (or mudguard if fitted) of this bicycle, which increases the risk of a fall when steering acutely at low speed." Anyone who does not want to sign up for that will choose a different bicycle and everyone should be satisfied.

Included lights and reflectors

At present, most bicycles sold in Britain are not equipped for legal use on the road at night. They are sold with reflectors, more reflectors than they need in fact, but not the essential lights. Since reflectors are obviously of no use except at night, this partial provision gives tacit permission for unlit cycling.

Assuming the adoption of the means described above, of signing off individual departures from the standard specification, the way is open to include lights in that specification and require bicycles to be sold complete with all they need for legal use at any time. The list of exceptions that may need to be signed for will then have to include: "I understand that the following lights and/or reflectors must be added to this bicycle before it may legally or safely be ridden on a road or path in the dark (seller to delete any that are actually included): front light, rear light, rear reflector, pedal reflectors or additional flashing rear light."

At CTC we regularly receive letters complaining about lack of lights on bikes, sometimes making comparisons between UK and other European countries where most bikes are sold with integral lighting systems. This suggested augmentation of UK regulations encourages good practice, since fully equipped bicycles can be sold

without having the customer sign something that highlights possible illegalities. However it cannot be argued that this necessarily increases the price of a bicycle or burdens customers with lights they do not want, since all it needs to sell a bare bicycle, is that signed acceptance.

Bikes sold in kit form

The greatest improvement in the safety of newly sold bicycles would be secured by ensuring that the final assembly and adjustment is performed by a qualified person. That cannot be ensured in the case of a kit bicycle, but it can be greatly encouraged by a requirement that the vendor includes a voucher for that service to be performed free of additional charge, by a local agent.

I am pleased that BAGB and ACT support this idea, for the implementation of such a scheme relies heavily upon the cooperation of cycle traders. These bodies also suggest an electronic checklist for internet sales, to substitute the discussion of needs they suppose to occur in face-to-face purchases.

For the reasons already given, we cannot rely upon a voluntary Code of Practice and must retain a regulation that requires a fully equipped bicycle to be sold by default. An electronic checklist nevertheless provides the means by which a customer may order a bicycle that deviates from the default specification. Rather than simply ticking a box at the end of a list, it must be required that each deviation or missing item of equipment is individually checked off.

Lighting regulations

It is useful to think of conspicuity as a three-stage process:

1. Detection
2. Identification
3. Location

TRL will be aware of the work of GR Watts in the 1980s, who found a red rear light gave the most distant detection and pedal reflectors the soonest identification of a pedal cyclist to the driver of a motor car with dipped headlamps approaching from behind.

Since the 1980s there have been some additions to and deletions from the range of lighting products available to cyclists. Flashing LED lights are the most obvious addition and were approved by RVLRL in 2004. Since then it has been possible to ride legally with no other light than flashing ones, white front, red rear, emitting at least 4 candela, which is the same as the minimum central output of a motor vehicle front or rear position lamp, or a BS6102-3 cycle rear lamp.

The main deletion has been the almost total disappearance of BS-approved lamps from the market. Most shops do not now have any such lamps available for sale. And though the flashing lamps they sell may emit at least 4cd, they are not approved either, since they are also capable of emitting a steady light, in which case approval is denied unless they conform to BS6102-3 when switched to that mode. Some might, but their manufacturers do not trouble to make such a claim or have them tested. Thus it has become almost impossible for a British cyclist to ride legally at night. Apart from a few rare flashing-only lights, he may do so only by using German-approved dynamo lights, since that is the only other EC approval regime that can be assumed to provide a level of safety corresponding with BS6102-3.

Rear lamps

BAGB and ACT agree with CTC that BS6102-3 has become irrelevant. And RoSPA will be satisfied with a requirement that ensures the light performance is equivalent to existing regulations, i.e. at least 4 cd.

For rear lamps, all parties should be satisfied with a requirement for a flashing or steady red light of at least 4cd intensity. All references to approval should be deleted. Other requirements, regarding the mounting position and direction of visibility may remain the same.

Front lamps

BAGB and ACT propose the same minimal requirement for front lamps – but white of course.

CTC agrees that such a low-powered light may be sufficient where there is good street lighting, i.e. the lighting conditions specified in RVLRL under which motor vehicles may proceed with only position lamps. But more light is needed in unlit areas and on the other hand the use by cyclists of very bright flashing lights is causing problems for other road users (including other cyclists) from whom CTC receives an increasing number of complaints. The strongest complaints come from those who are affected by photosensitive epilepsy, and whilst we are not aware of

anyone suffering a seizure from viewing a flashing cycle lamp (apart from one person, looking closely at their own lamp to check it was working), there are many reports of headaches and nausea, especially where cyclists and pedestrians share the same path.

To deal with the second problem first, it would certainly help to put an upper limit on the intensity of flashing light that may be emitted from the front of lamp of a pedal cycle. According to ECE regulation 50, a motorcycle front position lamp may not exceed 100cd. A flashing light is useful only as a position lamp, not to see by, so it seems sensible to apply the same limit.

Headlamps

Lights to see by need to be steady and it is commonsense to use a proper headlamp when cycling in unlit places. BAGB and ACT want to leave it to commonsense, but CTC believes that a steady headlamp of at least 400cd output (the BS6102-3 requirement) should be required on unlit roads.

To answer RoSPA's reservations: this would not require any cyclist to have two front lamps and switch between them. The headlamp required in unlit areas emits more than 4cd and does not flash (hence it is not subject to the 100cd limitation) so it will be good for everywhere. People who ride only where there are streetlights at night (i.e. most people) may nevertheless fit just a cheaper, less bright, possibly flashing, front light.

Rear reflector

It is universally agreed that a rear reflector should be required.

BAGB and ACT would like to demand that it be of a wide-angle type. CTC does not, as this would create a problem for the supply of bikes with built-in dynamo lighting, where the reflector is integral with the rear lamp and is not the wide-angle type. Such bikes are not often sold at present in Britain but it would be counter-productive to create obstacles to their sale and use, since built-in lighting is more reliable, hence safer. The additional benefit of the wide-angle reflector over the flat variety is in any event small and much less than the benefit of reliable lights.

Retaining the basic requirement of a plain reflector does not prevent the fitting of a wide-angle reflector instead, where that is convenient.

Front and side reflectors

The front and side reflectors required at the point of sale since 1983 have never been required by lighting regulations and although many bikes nevertheless retain them after sale, they have not proven to be of any benefit. If the sales regulations are amended to require simply that a bicycle is legal to ride, these reflectors will probably not be fitted. They will not be missed, except perhaps by RoSPA, but they are not specific on this point.

Pedal reflectors

Although reflectors have been required on the pedals of all new bikes sold in Britain since 1983, designers of more high-tech pedals do not usually cater for the mounting of such devices (or only as a token reflector, that projects from the pedal and breaks off as soon as the bicycle is used). I have already described how original equipment

sales and lighting regulations have failed to encourage the manufacture or availability of these reflectors. It is not reasonable to require cyclists to use something that the market does not supply, even though pedal reflectors are proven most effective in the identification of a pedal cycle.

Since flashing red (and white) lamps are permitted only on pedal cycles and are ubiquitous upon these vehicles, it seems probable that if GR Watts' experiments were to be repeated, a flashing rear lamp would be just as good for detection as a steady one and simultaneously outperform pedal reflectors in providing the furthest identification of a pedal cycle. When it comes to stage 3 however, we know that it is harder to estimate the position and track the movement of a flashing light.

A rear lamp (flashing or steady) plus pedal reflectors, perfectly satisfy all three stages of the conspicuity process. Two rear lamps will also do that, if one flashes for identification and the other is steady for location. Accordingly CTC suggests that two rear lamps be required, one of each type, on a bicycle that lacks pedal reflectors.

No use has ever been demonstrated for front pedal reflectors, for when a bicycle is facing oncoming headlights it is usually stationary, rarely in the other vehicle's path and the unique motion effect is absent. The only clear purpose of a front reflector is to face rearwards when the other side of a pedal is engaged. So when a pedal has only one usable side, reflectors are needed on one face only.

The requirement for pedal reflectors should require them only on any face of any pedal that may face rearwards when the cycle is being pedalled.

Construction & Use Regulations

BAGB and ACT, in the simple requirement for two independent front and rear braking systems of their composite regulation, ignore diverse problems for constructors and users alike. Such an arrangement is good in principle, but the present practice in tricycles (one of the few types of cycle still manufactured in volume in Britain!) is to have both systems operating on the front wheel. Any change would incur substantial costs for that British firm, and also existing tricyclists.

In consideration of such matters, I think it would be best to leave the Construction & Use Regulations mostly as they are. They do not, as far as I know, cause a problem for anyone except those who have the use of only one hand. For although back-pedal brakes exist and provide a possible way out, they are not readily available in Britain, cannot be fitted to most existing cycles and do not satisfy some of these cyclists other needs.

So: I suggest that an exception is made for cyclists who have the use of only one hand: that for them the two braking systems do not need to be operated independently.

End