

# ANY QUESTION ANSWERED

If we don't know the answer, we'll find the person who does

## Q Have I blown my rad?

My 18-month-old Triumph Tiger 800 has done 32,000 miles. Looking at its radiator, I can see that a fender extender is a good idea, but do I need a new rad?  
**Pete Mitchell, #ride5000miles**

**A** Answered by Gary Hurd, Grumpy 1260 Spares/The Motorcycle Works

As untidy as it looks, there's no need to worry about the radiator unless it is leaking. What has happened here is that the thin fins that dissipate heat between the radiator cores have become bent through relentless pounding from rain and road dirt. They are delicate, but the cores themselves are more robust. The real downside here is that if the fins become too clogged or too damaged, then they can't dissipate heat as effectively as they should.



Pete's rad isn't pretty, but should be OK



Muck and stones can play havoc with radiators

## KIT CHOOSER

### Q What are the options for back protector inserts?

My new jacket has a back protector pocket. Which ones should I consider?  
**Lyn Wood, Croydon**

**A** Answered by Ian Patterson, Infinity Motorcycles

Back protector inserts are graded by their impact absorption capabilities. You will find both CE Level 1 and the higher CE Level 2 in multiple shapes and sizes to suit various pockets. Many of the clothing manufacturers supply suitable protectors

for their own jackets, too. For instance, Alpinestars have the Nucleon KR-2i Back Insert (£37.99) as an option; Dainese the Wave G1/G2 Back Protector (£54.95); RST have the Contour Plus Level 2 (£16.99); and Oxford have their RB-Pi2 (£29.99). If your manufacturer does not offer an insert, the very highly-rated Forcefield Prolite KL2 range (£49.99) is a great option as it comes in loads of different sizes.



### Q Am I being ripped off for tyre fitting?

I recently bought some tyres online and took them to my local dealer for fitting. To say I was met with a cool reception would be an understatement. The dealer then charged me £30 to fit the tyres to loose wheels and balance them. This brought the price close to what I would have paid to have the dealer both supply and fit them. Am I right to feel a little ripped off?  
**Arnie Brown, email**

**A** Answered by Pete O'Dell, The Motorcycle Works

Consider the position of the dealer. He has the overheads of equipment, premises and staff. Also, his work has to be warrantied and that means paying public liability insurance. He cannot guarantee the quality of tyres not bought from him, or even how long they have sat on a shelf. I had a debate with a customer and it transpired that by buying tyres online then having them fitted, he had saved a £1.98.



You can't expect something for nothing

### Q Are Yamaha ducking their responsibility?

My Yamaha Tracer 900 has started leaking from the oil cooler, just under a year since it was changed under warranty. Are Yamaha going to admit there's a problem? Last time they suggested that I cleaned the bike more often and didn't get it wet!  
**Paul Andrews, #ride5000miles**

**A** Answered by Alan Seeley, technical editor, Practical Sportsbikes magazine

I've talked to a Yamaha dealer about this and he said that while a handful were replaced under warranty, the issue is not necessarily with the cooler itself but with its position on the bike. If it isn't cleaned regularly then it can corrode, especially in UK weather. To be fair, this isn't just a Yamaha or even a Tracer issue specifically. So, the advice on cleaning stands up – although avoiding getting it wet is plainly ridiculous and hardly necessary.



Regular cleaning can avoid problems

## MCN LAW

Your legal questions

### Q What if I get hit by a driverless car?

I have read a few horror stories about driverless cars causing fatalities and this got me thinking. If I were to be knocked off my bike by a driverless car and get injured, who would compensate me? Surely, the owner would have a get out as the vehicle wasn't under their control?  
**Mark Glover, by email**

**A** As far as I know, no laws are yet in place in England and Wales dealing with liability for accidents involving driverless or automated vehicles specifically. Until such time, we must rely on the current laws.

Section 104 of The Road Vehicles (Construction and Use) Regulations 1986 deals with 'driver's control'. It states 'No person shall drive, or cause or permit any other person to drive, a motor vehicle on a road

### “There are so many questions around liability and responsibility”

if he is in such a position that he cannot have proper control of the vehicle or have a full view of the road and traffic ahead.'

This would seem to suggest that irrespective of the fact the vehicle is driverless there must be a person in control, i.e. in the driver's seat and ready to take over manual control.

There are so many questions surrounding responsibility and liability with driverless vehicles and I can foresee many legal complications. Will insurance premiums be sky high and thus unaffordable to most considering the recent high profile fatalities?

I wonder if they will ever become a mainstream reality. In the meantime, it appears that the driver must be in control – somewhat defeating the point!

**Andrew Campbell**

Solicitor and author of the MCN Law column for the last ten years

**Andrew Campbell, Bikelawyer.** Visit [www.bikelawyer.co.uk](http://www.bikelawyer.co.uk) or email [andrew@bikelawyer.co.uk](mailto:andrew@bikelawyer.co.uk) or call 01446 794169



Motorcycle Accident Solicitors

# EXPERT'S GUIDE TO... HEADLIGHTS

Seeing and being seen is an elaborate art, involving complex maths and thermal dynamics



**THE EXPERT**

**Frederic Pfeuffer**  
BMW Motorrad's Developing Engineer for Light Technology designed the 2018 F850GS' new headlight – a job that took five years!

Creating a motorcycle headlight has many challenges – packaging, weight, money, styling and of course how it projects its light.

With LED technology we have much more freedom when it comes to styling, so this factor is increasing in importance. Function and design are equally important when creating a new headlight.

You have to take into account how the bike moves and pitches from side to side, as well as up and down. We try and make it as homogeneous as possible, with no shadows, so that it is easy for the eye to adapt to.

We do this through the use of 'stray light,' which softens the cut-off points where the main light ends and also gives some remaining light when the bike pitches.

Cars will always have better lights than bikes as they are lower to the road, run more powerful electrical systems and have the ability and space to carry more weight so we can add features such as adaptive technology.



Who knew there was so much to headlight design?

## 6 THINGS YOU NEED TO KNOW

### 1 What's in a headlight?

When it comes to premium bikes, manufacturers now use LEDs. LEDs will last the lifespan of a motorcycle and as they never need changing, most headlights are now sealed units.

### 2 LED circuit boards

LEDs provide the light source and are grouped on a circuit board in arrays. As they produce so much light, these arrays can be very small. On the F850GS the low beam uses two arrays of four LEDs each, while the main beam has a single array with six. The main beam requires fewer LEDs as the light is more focused.

### 3 Reflector

The LEDs are arranged at 90° to the horizon (both up and down), so their light is directed out by the shape of the unit's reflective backing. This surface is a very complex shape and has to be perfectly clean as it controls how the light is projected. Getting this correct takes years of testing and development.



The complexity of the light's internal design takes years

### 4 Heatsink

While LEDs run cooler than filament bulbs, they still produce heat (roughly 90° compared to 700°) and an aluminium heat sink helps dissipate this.



These aluminium heat sinks absorb the heat of the LEDs

### 5 DRL

Daylight Running Lights are LEDs that are projected through a clear tube to create an individual shape,



Daytime Running Lights are actually a very fast strobe

which helps distinguish the bike. There are certain legal requirements for DRLs, such as the area of light produced, spacing and the fact they need to turn off at night – but they are actually brighter than a low beam light and cover a larger area.

### 6 Screen

Headlight screens are now made from toughened plastic instead of glass. This has only been made possible as LEDs run at far lower

temperatures, meaning the plastic doesn't overheat and turn opaque.

### 6 ECU control

Unlike filament bulbs, whose light output can be altered via a voltage change, LEDs rely on either a change or break in current to alter their light emission. That requires an ECU to control the headlight's functions. The brightness of DRLs is varied by strobing the light; the length of the gap between being on and off alters its brightness. A European-spec DRL is on for 10 milliseconds, off for 30 milliseconds, on for 10 milliseconds, off for 30 milliseconds. As this change is so fast the human eye can't detect the strobe pattern.