Telegraph

How LED headlights became a blinding blight on British roads

Dazzling beams are being blamed for more and more collisions, but drivers will be facing them for years to come

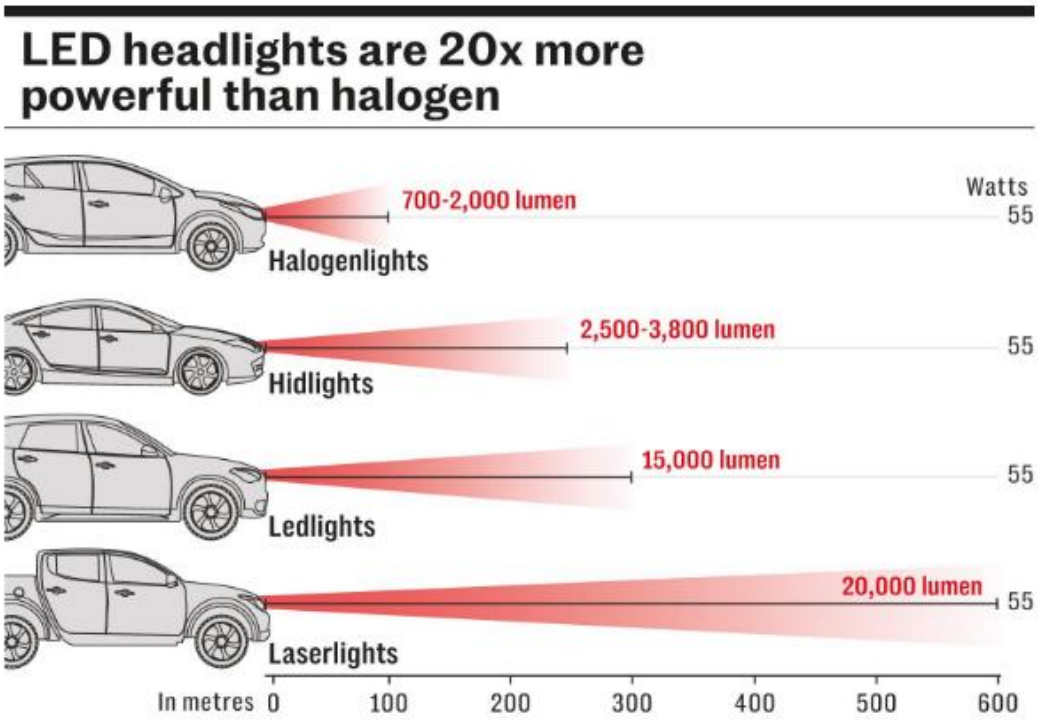
Ed Wiseman11 January 2024

We've all noticed it. The proliferation of excessively bright headlights is one of many slowly worsening situations on Britain's roads, joining increasingly distracted and speeding drivers and the soaring rates of drug driving in threatening drivers, pedestrians and cyclists alike.

It's not exactly a scintillating dinner party conversation, and it ranks fairly low in the wider list of existential headwinds currently affecting British households, but it's becoming a huge problem – nine out of 10 respondents to a recent RAC survey said that headlights are too bright, and about three quarters said they were regularly dazzled.

"Between 2013 and 2022, there was an average of six fatal collisions per year where bright or dazzling headlights were a contributory factor," says Rod Dennis, public affairs officer at the RAC. "On average, there are around 280 collisions of different severity each year attributed, at least partially, to dazzling headlights.

"I'm not even sure that tells the whole story. The Government is obviously relying on these relatively low numbers, claiming that they don't need to do any more work on it, but the data is two years out of date now and the strength of feeling among road users proves that this is a problem."



There are several factors fuelling this dangerous phenomenon. Firstly, headlights are indeed getting a lot brighter, thanks to several successive "improvements" to bulb technology. From the flickering acetylene lamps of the early automobile, to the once-futuristic xenons and HIDs of the not-so-distant past, to the high-intensity LEDs and high-power laser lights of today, car headlamps have increased in brightness consistently for decades.

But almost as important is the prevailing shape and stature of cars today. In the 1990s, even as advanced headlight technology was making them brighter and clearer, most cars were roughly the same height. You'd be in your estate car and a hatchback would come the other way, with headlights approximately corresponding with each other. Nowadays, every other car is effectively a truck, with headlights at or above waist height.

Thirdly, nobody really knows what they're doing with their cars anymore. British motorists may want the fastest, biggest, most imposing cars, but would baulk at the prospect of doing any actual work to them. As such, your common or garden BMW driver probably has no idea how or why he would adjust his headlights to prevent them blinding oncoming traffic.

"LED headlights are here to stay," says Rod. "That's not about to change. But technology moves, and regulation is supposed to move with it. As a driver, particularly in rural areas, you're going to get a better view of the road and be safer if your headlights are bright and illuminate more of the road ahead.
"But the people benefiting from this technology might be causing safety problems for other people, which is why we need more research not just into brightness but also alignment and the other factors that cause people to be dazzled. Some people say we should ban LEDs, others say it's about alignment. We need more data and more research."
There's another issue which I've noted in my role as a road tester. Automatically dimming headlights, which first appeared on high-end models almost a decade ago but which are now relatively prevalent across all market sectors, simply do not work. They didn't to begin with, and while they might have improved a tad, they still don't function correctly now. That is to say, they fail to adequately anticipate oncoming cars, and wait until another vehicle's lights are in view before dimming – by which point the other driver has already been dazzled.
That's if they work at all. In cars I've been testing, automatically dimming headlight systems have routinely ignored oncoming vehicles, and have no way to detect pedestrians or poorly lit cyclists. Adoption of this new technology has comfortably outpaced its performance.
"I've driven cars with this system and it's far from perfect," says Rod. "It varies by manufacturer. It's vital that drivers know how to manually adjust their main beam.
"As cars do more for us now, there's an extent to which we become reliant on that technology, and when it doesn't behave as we expect it to sometimes we think that doing these small tasks, like engaging and disengaging the main beam, maybe doesn't feel like our job anymore."

Automatically dimming headlight systems varies by manufacturer and are 'far from perfect'.

Car manufacturers are commercially compelled to keep up with the Joneses. Omitting new technology from their product puts them at a competitive disadvantage, even if that new technology is functionally useless to the majority of their customers. Most Land Rover owners will never need a 3.5tonne towing capacity or a 90cm wading depth; few Bentley Continental owners will ever approach its 208mph top speed.

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Similarly, the ability of a new BMW to illuminate half a mile of Bavarian wilderness is largely irrelevant to owners who live within the M25, but that hasn't stopped BMW from installing high-power laser lights which it claims will do precisely that.
"I've noticed it from around 2009 onwards," says Daniel Hardiman McCartney, a practicing optometrist and clinical advisor to the Royal College of Optometrists. "But significantly over the past three years or so.
"I work in Suffolk, where the roads are long and straight and where a lot of people drive 4x4s," explains Daniel. "I get people in-clinic who are increasingly worried about headlights and driving at night.
"It's affecting people's independence. We're seeing people who aren't particularly old – 60 or 70 – who just don't drive after 6pm."
The timeframe Daniel describes broadly corresponds with my own experience, as well as the anecdotal reports of other motorists and – crucially – the popularisation of high-intensity headlight technology. The Royal College of Optometrists knows that this is an issue, has published articles in its journal and commissions academics to research into what is quite a complicated issue, but Daniel says there's a paucity of data and that experts need to learn more before regulations can catch up. Crucially, though, there's a behavioural aspect that probably can't be explained using watts and lumens alone.
"This morning I did the school run and I was flabbergasted at how many people still had frost on their windscreens," says Daniel. "How can you possibly see clearly when you haven't taken the time to clear ice from your car?"
Proposed changes to the way headlights are designed could filter through onto our roads by 2027, subject to ongoing deliberations by policy experts at the United Nations. Changing people's inconsiderate or unsafe behaviour may not be as straightforward. It's clear that this dangerous, unpleasant phenomenon will be a feature of our roads for a number of years to come; for now, car manufacturers are locked in a headlight brightness arms race, and regulators are turning a blind eye.