

# Blinding Lights blamed for soaring crash rate

## A gimmick too far?

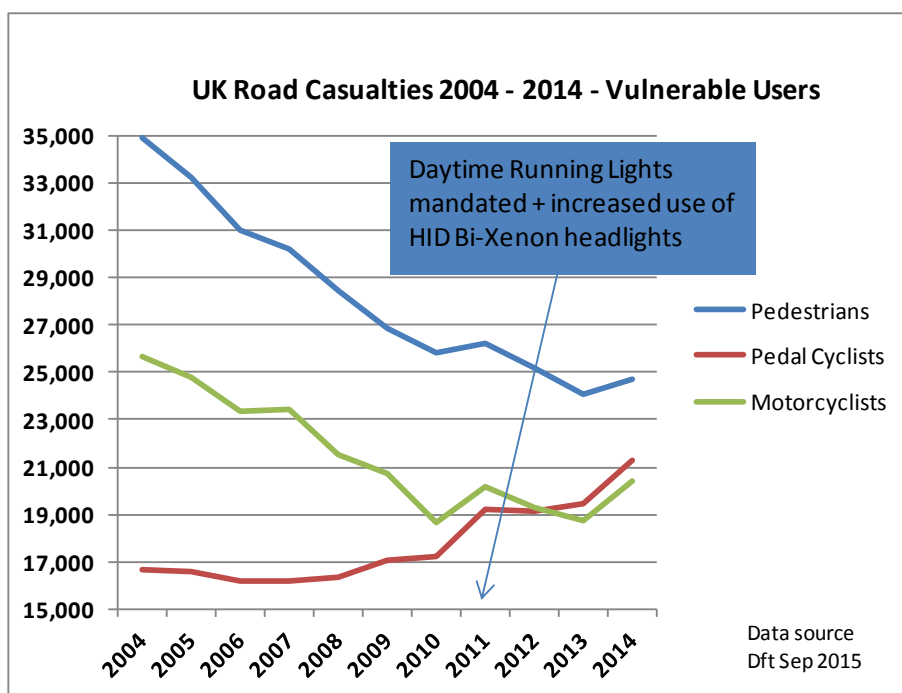
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The VW diesel NO<sub>x</sub> testing crisis is nothing compared to what the automakers have deliberately inflicted upon us with blinding headlights and daytime lights.

Indirectly some deaths may be attributable to Nitrous Oxides (NO<sub>x</sub>) from VW's but these will be very difficult to pin directly upon VW, overall global NO<sub>x</sub> must be compared to emissions from power stations, industry, diesel ships, trains, buses and trucks.

However the auto industry could be held directly responsible for deaths from blinding lights, the steady year on year decline in casualties has been halted and is now increasing in proportion to the use of blinding light.



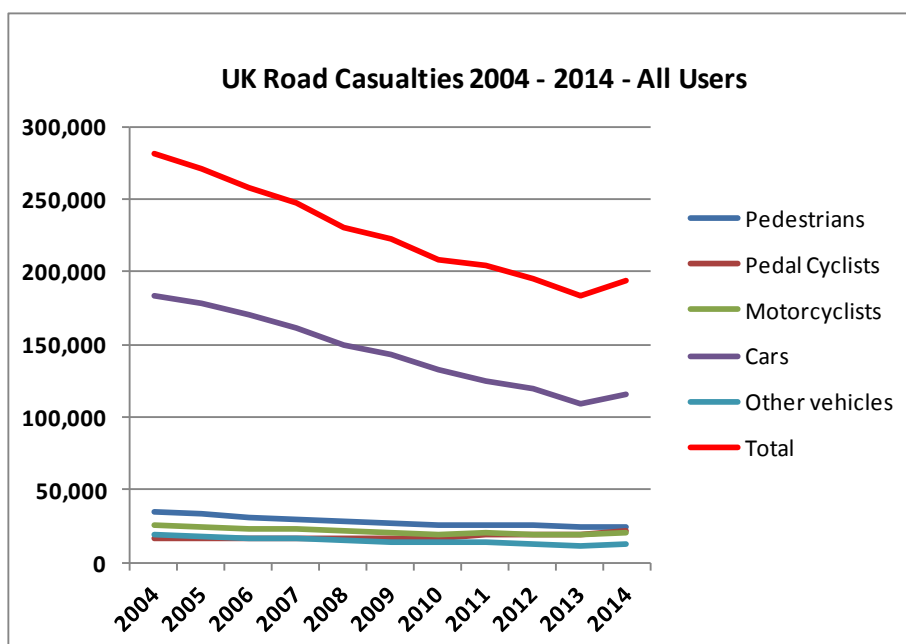
Some press reports suggest that the increase in casualties is attributable to in-car gadgets, this may be partly true, a driver trying to peer at a smeary touch screen on a sunny day could easily be distracted. However this is speculation.

Notice the jump in 2010 and increases since 2013?

In-car gadgets did not suddenly appear in 2010.

Whilst cyclist distance travelled has increased by 10%, there has been a 30% increase in cyclist casualties.

Pedestrians and motorcyclist accidents have also increased.



What did happen was that the EU mandated from February 2011 that all cars should have blinding Daytime Running Lights (DRL).

Simultaneously automakers started introducing blinding Bi-Xenon High Intensity Discharge (HID) headlights.

The UK DfT and EU road safety experts (SWOV Netherlands) predicted a 6% reduction in accidents from daytime lights.

Lightmare warned them accidents would increase due to reduced perception of hazards caused by light distraction.

Thousands of people have complained about the detrimental effect of these lights.

Lightmare and associated international organisations comprising scientists and experienced drivers have campaigned since 1999 but the authorities seem not to listen believing the brighter the better.

The EU's road safety experts only did laboratory tests (a bit like diesel) and they didn't consult with ophthalmologists about detrimental effects of glare on the eye.

Instead, as with the VW crisis, the automakers club "ACEA" ruled the roost dominating the EU and UNECE rulemaking committees.



All of the EU has been affected: **European Transport Safety Council: "2014 was a bad year for road safety"** *Progress on reducing road deaths in the EU slowed to just -0.6% last year, the worst annual reduction since the first common EU target was set in 2001, according to new analysis published today by the European Transport Safety Council. EU member states now need to cut deaths by almost 8% each year until 2020 to meet the target set in 2010 to halve deaths within a decade.*

The EU/UNECE initially proposed an intensity of 400 candelas (cd) for DRL but at the behest of automakers they finally mandated blinding 1200cd DRL. Dipped headlights were 800cd using less dazzling tungsten lamps but now many are 2500cd using dazzling blue HID Bi-Xenon and with LED and laser headlights now being introduced.

1200cd DRL may be needed in brilliant sunlight but at all other times they blind you.

This gimmick gave the automakers something to market as "safety sells" - many car adverts make a feature of bright lights.

A spin off is that boy racers think its OK drive around with foglights on in good conditions (it's illegal but the police seem powerless).

Only the Japanese conducted real world tests, in 2003 they recommended 200cd for DRL - the intensity of bright parking lights.



**LEAN VS MEAN.**



When it was just Swedish cars, people tended to put up with the annoying distraction from oncoming vehicles or in your mirror as an irritating quirk.

As most cars now have blinding lights, any safety benefit is negated.

(Sweden introduced continuous headlights initially dimmed because they changed to driving on the right in 1967 and they suffer a more extreme climate than most of Europe).

Blinding lights may save a few fender benders for drivers cocooned in an airbag cushioned safety cage; however the national accident figures for vulnerable road users continue to rise.

Technology is outpacing regulation, automakers are introducing brighter and brighter lights, most DRL are Light Emitting Diodes (LED).

LED headlights are becoming common and some BMW and Audi's now use a laser beam bounced off a reflector so headlights blast out even more blinding light.



Cree Inc. are a major manufacturer of LED and state:-

**"Regardless of LED color, Cree advises users to not look directly at any operating LED component"**

So why do automakers install increasingly fancy arrays of unshielded LED beamed directly into a driver's eyes?

Extract from Hella DRL data sheet:



According to Peter Heilig Professor of Ophthalmology at the University of Vienna (Europe's leading eye institute) moving light stimuli, inevitably distract. In his publication Impaired Perception in Driving and Sport he states:

*"When exceeding critical numbers and intensities, blinding light causes cognitive and perceptual disturbances.*

*The capacity of our cognitive processing has a natural limit. Newer research suggests that activities requiring 'knee-jerk' reactions may trigger adequate reactions at retinal circuit levels already, before more time consuming and complex cognitive processing can take place in higher visual pathways and centres. Once reaction of this sort takes place, a second one concurrently - a third one may be, but there is a natural limit. Blinding light causes damaging phototoxic effects on the retina via temporal summation. Any stimulus above a threshold (even low light intensity) will be processed in neuronal CNS-circuits. Overstimulation (number plus intensity of stimuli) may cause cognitive deficits e.g.*

*Inattentional Blindness, Visual Short Term Memory Loss and Capacitive Dysfunction all affecting a driver's perception of hazards.*

*DRL increase only the conspicuity of motorised 'stronger' traffic participants, causing eye-catching effects" at the expense of all others, especially "weaker" more vulnerable road users e.g. children (!), pedestrians and cyclists."*

Immediately DRL should be reduced in intensity to 200cd (as determined by the Japanese in practical tests) and dipped (or low beam) headlights should be redesigned so the light source and reflector are not visible to other road users (or limited to the original UK limit of 800cd) and a chromacity nearer the safe yellow end of the spectrum.

It's a Lightmare out there - how many more lives have to be sacrificed due to an automakers marketing gimmick?

## References:-

### UK Dft Accident statistics 2014 - Summary reports:-

[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/438040/reported-road-casualties-in-great-britain-main-results-2014-release.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/438040/reported-road-casualties-in-great-britain-main-results-2014-release.pdf)

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/437436/rrcgb-main-results-2014-infographic.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437436/rrcgb-main-results-2014-infographic.pdf)

### UK Dft Accident statistics 2014 RAS3004 data

[www.gov.uk/government/publications/reported-road-casualties-in-great-britain-main-results-2014](http://www.gov.uk/government/publications/reported-road-casualties-in-great-britain-main-results-2014)

### EU/UNECE Working Party on Lighting and Light-Signalling (GRE WP29):-

Regulation No. 48 Uniform provisions concerning the approval of vehicle with regard to the installation of lighting and light-signalling devices E/ECE/324 E/ECE/TRANS/505

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42011X1206%2803%29&from=EN>

Regulation No. 87 Uniform provisions concerning the approval of daytime running lamps for power-driven vehicles E/ECE/324 E/ECE/TRANS/505 <http://www.unece.org/fileadmin/DAM/trans/main/wp29/wp29regs/r087r2e.pdf>

**SWOV Factsheet: Daytime Running Lights** [http://www.swov.nl/rapport/Factsheets/UK/FS\\_DRL.pdf](http://www.swov.nl/rapport/Factsheets/UK/FS_DRL.pdf)

**Dft Letter 07 Feb 2012 to Ken Perham Lightmare claiming 6% reduction in accidents from lights**

<http://www.lightmare.org/docs/Dft%20Fran%20Simpson%20to%20Ken%20Perham%2007Feb2012.pdf>

**Cree Inc. Eye Safety With LED Component CLD-AP34 rev 14**

[http://www.cree.com/-/media/Files/Cree/LED%20Components%20and%20Modules/XLamp/XLamp%20Application%20Notes/XLamp\\_EyeSafety.pdf](http://www.cree.com/-/media/Files/Cree/LED%20Components%20and%20Modules/XLamp/XLamp%20Application%20Notes/XLamp_EyeSafety.pdf)

**European Automobile Manufacturers Association (ACEA)** [www.acea.be](http://www.acea.be)

**European Transport Safety Council** <http://etsc.eu/eu-road-safety-targets-at-risk-as-deaths-increase-in-france-germany-and-uk/>

**Impaired Perception in Driving and Sport - Professor P Heilig**

[http://www.lightmare.org/docs/Impaired\\_Perception-Driving\\_and\\_Sport\\_P.Heilig\\_Aug\\_2010en.pdf](http://www.lightmare.org/docs/Impaired_Perception-Driving_and_Sport_P.Heilig_Aug_2010en.pdf)

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