To: Lightmare
From: Prof. David Rees
Date: 12 May 2011

Dear Roy and Ken,

Congratulations on this campaign.

I could barely tolerate some over-paid person sponsored by the manufacturers of these new and dangerous lights being interviewed on prime-time TV a week or so back.

He claimed that the combination of the increased brightness, the improved "optics" and the perfect alignment of these new lights actually reduced the hazard to other road users.

He completely missed four key issues:

1. Standards for headlight design and alignment etc are set for FLAT roads.

(i) All lights (but particularly when on main beam) can and do cause severe dazzle on undulating and “bendy” roads, even when the lights are perfectly adjusted. This never seems to be taken into account in design – or in industry recommendations for alignment and use of headlights.

(ii) At MOT, some 60 - 75 % of car headlights need adjustment to bring them back to correct alignment (information provided by the MDs of two separate MOT garages).
50% of these are (or have been) severely dazzling oncoming drivers (obviously)!
The other 50% have simply not been doing the job properly for that car / driver.
This can be verified by taking a drive down any out-of-town road at night.

2. The above does not account for the inevitably very bad adjustment of the headlights of those 10% of cars that never get MOT'd (+ no tax, no insurance!).

In addition to the above:

3. There is a class of driver that deliberately re-adjusts headlights to quite deliberately increase the dazzle for oncoming drivers. Add it to the "intimidatory" use of headlights etc. mentioned elsewhere on your Web-Site. This tends to be found alongside the brainless use of badly adjusted fog lights – irrespective of the weather conditions – and by day or by night!

4. Continuous use of main beam by cars but particularly by foreign lorries on UK motorways (in particular) - irrespective of traffic density and oncoming traffic.

In certain countries, the design of the central crash barrier includes "shutters" to reduce glare from oncoming headlights. These are quite effective at reducing glare from main beam headlights on approaching traffic in the opposite carriageway. It does not, however, deal with dazzle from main beams of cars and lorries immediately behind your car!
Whenever your car is silhouetted against the road ahead by the headlights of the car behind – by definition – there is a “problem” – somewhere human factor or machine! Company No. 1237753 VAT No. 890965962 2

However:

The UK invented "cats eyes"!
Why on Earth should we follow some crazy "new" plan invented by foreigners?
The UK has never considered the “shuttering” of the central barrier seriously, and the dazzle issue by the new Xenon lamps will only make this situation worse.

I consider there should be two formal and legal steps taken:-

1. A proper scientific study should be made of the actual effects of these new headlights, real road conditions (not just on test tracks):
The effects on older drivers, and those wearing glasses, should be considered in particular, since both are affected by additional scattering over and above the effects on your "perfect" 20-year-old driver with 20/20 vision.

Clearly, according to the industry mouth-piece – all roads are flat, have no bends and all car lights are perfectly adjusted at all times.

A proper statistical study of real road conditions would easily show the high proportion of time that these new lights actually cause something between unnecessary annoyance and distraction - all the way up to quite illegal essentially industry-induced deliberate blinding of oncoming drivers.
As a related, but separate issue – for design reasons (economic probably) – these lamps are very significantly smaller diameter than older style headlamp units. This means that the increased intensity is focuses onto a smaller “spot” on the retina, again leading to perceived increases brightness and dazzle.
There is for example legislation in place with severe legal penalties for attempting to blind pilots by use of laser-beam pointers etc.
Clearly – the Industry mouth-piece simply does not drive at night.

2. There should be a Moratorium (total) on the new lights – until these effects have all been examined, and are properly and fully understood.
Manufacturers should replace all existing "new lights" with earlier standards until the results are fully assessed and recommendations are available for implementation.
This could be done simply and cheaply by an in-line "ballast" resistor - as used for example with "day-running" main beam by Volvo for many years).
However, the effect of the smaller emergent beam from the new Xenon Lights might be that the effective output would have to be reduced considerably below that of “standard” headlights – in order to present a comparable energy density / unit area on the retina.

The most likely outcome:

A. All lights should be forced to conform to the earlier standards (including diameter);

or

B. All lights to be upgraded through the entire fleet - but at Industry expense.

Otherwise - there will always be (in my view) a two-tier system that is dangerous for users of older cars and "low cost / economy" cars.

I am a little surprised that the Insurance Industry has not yet picked up on this as an issue: Consider the unfairness of increasing insurance premiums if you are:

(i) over 65
(ii) if you drive a car without these unnecessary and blinding headlights!

All strength to your campaign!

If you fail - I'll have to start looking around for headlight upgrades to my 26 year-old 500 SEL Mercedes!

Yours Sincerely,

Prof. David Rees Ph.D. FIoD, FRAS