

**Critique of**

**“Daytime Running Lights Final Report”  
By TNO Human Factors October 2003**

**This report summarises the flawed and inconsistent methodology used by  
the EU Commission and its experts to justify dangerous daytime running  
lights on an unwitting population**

**By Roy Milnes** MIEE Minst E

**Drivers against Daytime Running Lights UK**

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**[www.dadrl.org.uk](http://www.dadrl.org.uk)**

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## 1 Introduction

This report summarises the flawed and inconsistent methodology used by the EU Commission and its experts to justify daytime running lights (DRL) on an unwitting population.

The fundamental objection to DRL is that they reduce a driver's ability to perceive hazards particularly vulnerable road users.

They put pedestrians, cyclists and motor cyclists unnecessarily at risk, there is no proven benefit to car drivers and the associated environmental pollution is untenable.

The researchers focussed upon one type of multi-party vehicle to vehicle accident and did not adequately consult with or consider the consequences of DRL upon the full spectrum of road users.

To combat the spread of DRL an alliance has been formed between UK and European drivers, motorcyclists and pedestrian organisations.

## 2 General observations

From Intermediate reports IR1 – IR4 through to the Final Document, the report writers show a bias towards DRL, and are therefore not objectively impartial. The general tone of the reports is to castigate those countries not using DRL, focusing upon penalties for not using DRL and making statements "well maybe they should implement DRL despite objections from the people as evidence shows complaints reduce afterwards".

This approach is akin to speed humps, where once they are built into the roadway there is little point in complaining further. But interestingly, the tide is turning against speed humps and they are now being dug up in preference for more benign schemes which enhance the general amenity. More recently, this same statement was made by David Begg when the vote for the Edinburgh congestion charge scheme received a resounding No!

The collective authors of this series of EU reports have not once considered the benefits of No DRL and using other methods such as advanced driver training or annual eyesight tests to reduce accidents, but yet they have been unable to quantify any significant overall reduction in number of accidents in those countries that have already adopted DRL.

Very conveniently, the researchers have ignored the impartial report by the USA's Highway Loss Data Institute (HILDI) which analyses 780,611 pre DRL and 659,816 post DRL insurance policies and finds a 3.7% increase in motor car and SUV injuries in the real world. Additional to this must be any negative effect upon pedestrians, cyclists and motorcyclists.

Whilst it is classed as a confidential document, the existence of this HILDI report is well known in DRL academic circles and the researchers could have obtained it under the freedom of information act. The HILDI report is based upon real data with no political agenda, therefore it is more authoritative than any of the theoretical studies conducted by Koornstra, Elvik, Commandeur et al and it makes the EU case for DRL by showing slides to 80 subjects in a laboratory look weak.

The HILDI report confirms the DaDRL view that the case for DRL is at best inconclusive and at worst dangerous.

## 3 Environmental damage

On the environmental front, it is irresponsible of the EU to propose burning twin 55 watt tungsten halogen lamps on every vehicle in good daylight; in the UK this will negate all the good work of the Carbon Trust. The use of headlights in good daylight will add about 1.85 million tonnes of CO<sup>2</sup> into the UK's atmosphere (annually the UK emits around 560 MtCO<sup>2</sup>).

The Carbon Trust UK has been running TV adverts aimed at reducing the impact of climate change. The Carbon Trust employ around 450 energy consultants to survey hospitals, schools, and industrial premises to provide a free service to help owners identify and implement energy savings.

If two 55 watt tungsten halogen lamps were found burning in good daylight in the EU Commissioners office, he would be rightly castigated. If the lights were essential, then low energy LED or compact fluorescent lamps would be recommended. Tom Delay Chief Executive stated that during 2003/2004 the Carbon Trust helped to save 0.9 to 1.8 million tonnes of CO<sup>2</sup>. The introduction of DRL into the UK will wipe out these savings.

The FFMC (Fédération Française des Motards en Colère) calculate that DRL in France will emit 1.3 million tonnes of CO<sup>2</sup> and in Germany it will be around 2.2 million tonnes of CO<sup>2</sup>.

These reports should have evaluated the full detrimental effect of the extra CO<sup>2</sup> pollution upon each member state's efforts to comply with the Kyoto protocol. The EU as part of its commitment to Kyoto, should be encouraging good efficient energy practice not just in the EU, but as an example of good practice across the World.

On 30 March 2005 Dr. Pieter Tans director of the US government's Climate Monitoring Diagnostics Laboratory, part of the National Oceanic and Atmospheric Administration (Noaa) at Mauna Loa Hawaii reported that World Carbon Dioxide levels had risen from 315 to 378 parts per million (ppm) a 20% increase since 1990.

The consequences of additional CO<sup>2</sup> pollution due to DRL across the world, particularly in developing countries such as India and China are untenable.

#### **4 The origins of daytime lights**

To assess the validity of DRL, it is necessary to review the origins of daytime lights. DRL in the form of bright 18 watt parking lights were adopted by the Swedish nation when they changed from driving on the left hand side of the road to the right in 1967.

This was a sensible measure but accidents continued to occur so in 1977 they found it necessary to use full power dipped (or passing beam) headlights to remind people to drive on the right hand side of the road.

As "safety sells" they thought this was a good marketing gimmick to enhance Sweden's reputation as making safe cars. So they started to convince other countries they exported to that DRL were a good thing for drivers. But they neglected to consider the negative effects on vulnerable road users, despite employing several academics to write favourable reports.

Therefore the EU Commission is trying to impose DRL on the world simply because Sweden changed from driving on the left hand side to the right hand side of the road.

#### **5 Lack of consultation with ophthalmic experts**

The reports present the status of DRL in other countries and complex analyses but the authors do not appear to have consulted ophthalmic experts in the most important human factor – eyesight and the damaging effects of continued glare on the perception of hazards.

As a person ages, the incidence of cataracts (in the eye's lens) increases. This causes increased sensitivity to glare. Unlike the theory behind proclaimed benefits to DRLs, the sensitivity of a person with cataracts to glare is a proven fact. Research shows a percentage of people who have had laser eye surgery will become more glare sensitive. As more and more middle-aged and elderly use laser eye surgery rather than glasses, this danger will grow.

There are many responses about this from DADRL members (some are physicians) on web pages "Eyesight Damage" & "What's coming" at [www.dadrl.org.uk](http://www.dadrl.org.uk)

## 6 Inaccurate implementation costs

Commandeur advises in IR4 2.3.2 that the cost of replacement headlamp bulbs would be €6 per car per year.

Normal headlamp bulbs last for approx 300 hours which equates to only 10,500 miles at an average speed of 35 mph. The average car in the UK travels approx 12,000 mile per year (source Dft data) so at least one set of headlamps bulbs will be required.

There are long life headlamp bulbs on the market but due to their technical design the light output has to be less. These make night time driving more dangerous for both the driver and cyclists or pedestrians and in the manufacturers own literature they are only suitable for drivers who drive in daylight, which is impractical in wintertime. Conversely the same manufacturers make lamps that are 30% or 50% brighter with 60% types from GE just becoming available. These do not add to glare; using precise manufacturing techniques they design lamps which project more dipped beam light on to the road.

Philips issue literature promoting Vision Plus lamps which provide 50% more light, and state:

“The coupling of up to 50% more light on the road with a 10 to 20 metre longer beam - at an average speed of 80 km/h - results in extra reaction time of up to a full second. **That second that can save lives.**”

Therefore dimmer LongerLife or Light@day lamps must be considered unsafe.

Auto Express did a very comprehensive survey of headlamp bulbs in October 2004 ([www.autoexpress.co.uk/product\\_test/39920bulbs\\_standard.html](http://www.autoexpress.co.uk/product_test/39920bulbs_standard.html)). The cost for a pair ranged from £6.72 (€9.68 @1.44 €/£ 26/03/05) to £27.68 (€39.86) with the average for a good quality Osram or Philips standard H4 pair of lamps being about £12.00 or €17.28. Fitting at Hanford's is £7.99 or €11.5 so the minimum cost is going to be £19.99 or €28.78 meaning Commandeur's cost/benefit estimates are inaccurate by a factor of 4.8 times.

Auto Express are a pan European publication, their research was conducted at the Philips N.V. test centre at Aachen Germany therefore the prices are valid for Europe.

## 7 Dangers to vulnerable road users and reduced perception of hazards

The reports inadequately consider the dangerous effects of DRL upon vulnerable road users such as pedestrians, cyclists and motor cyclists.

The fundamental objection to DRL is that they reduce a driver's ability to perceive hazards particularly vulnerable road users.

Motorists cocooned in airbag equipped padded metal boxes with integral safety cages and are considered by most to have adequate physical protection.

We accept that low intensity lights can help create an awareness of vehicles, but full power 55watt headlights are too glaring and disorienting.

Vulnerable road users are masked in a sea of glare, inhibiting the ability of all road users to discriminate between vehicles perception of distances.

If any of the report writers have taken an advanced driving test, they would appreciate that a driver's safety, that of his passengers and that other road users is ensured by anticipatory perception of hazards.

These can be as insignificant as a car door about to open, feet under a parked vehicle, a pedestrian about to cross the road, a person sat in a stationary car with the engine running, children playing, a wobbly cyclist or even stray animals.

Watching out for small things like these adjusting speeds and being prepared for the unexpected are fundamental to safe driving.

Local authorities do not help by erecting more and more road signs many simply to absolve legal liability all adding to unnecessary visual clutter made worse by DRL.

Police Grade 1 drivers are trained to the highest of driving standards as they set the driving standard for other motorists to attain and therefore have to be a safety conscious as possible. It is significant that Police forces throughout the UK disable the DRL function on their Volvo's.

DRL blot out rear vision, besides being irritating (we get reports of drivers having to turn mirrors out of alignment) all detail behind a driver is obscured and this puts overtaking motorcyclists particularly at risk.

A driver's attention should not be distracted from these life preserving observations by lights from other vehicles: if the driver cannot see something as large as a car or a bus, then he should not be allowed a driving licence.

DRL reduce a driver's ability to perceive these small but vital potential hazards.

## 8 Conclusions

To summarise, in their zeal to appease political paymasters at the EU Transport Commission, Commandeur et al have made several fundamental errors in the production of this series of reports:

In report IR1, Commandeur has neglected to research the avid anti DRL movement in the UK comprising Drivers Against Daytime Running Lights UK, British Motorcyclists Federation, Motorcycle Action Group or Living Streets the UK Pedestrians Association. This was despite formal representations to submit opinions being made to John Berry at the EU Transport Commission and details on our website. He also fails to mention active opposition in the USA via Drivers Against Daytime Running Lights USA [www.lightsout.org](http://www.lightsout.org) or the iniquitous way that the NHTSA has dropped petition 4124 despite thousands of complaints being openly recorded about DRL glare or the way that the HILDI 1997 report has been suppressed which showed that the occupants DRL equipped vehicles suffered 3.7% more injuries. Commandeur is not impartial; from the outset he assumes DRL are a good thing. He has not considered the alternative of banning DRL or the calamitous environmental effects of using DRL in the EU or even the World.

In report IR2, Elvik et al have used unscientific methodology, its findings are unreliable; and its cost-benefit calculation baseless. They have also misused and duplicated data to produce a favourable result. For detailed critiques by Hardy of the MAG and Prower of the BMF, please see [www.dadrl.org.uk](http://www.dadrl.org.uk) DRL Studies and Links

In report IR3, Brouwer et al attempt to justify the DRL by showing slides to 80 subjects in a laboratory. A static slide cannot produce the damaging glare direct from a headlamp reflector in a dynamic real traffic situation. Please see the critique by Milnes DADRL UK How laboratory tests cannot replicate real life situations at [www.dadrl.org.uk](http://www.dadrl.org.uk) DRL Studies and Links

In report IR4, Commandeur has grossly underestimated DRL costs by a factor of 4.8 times (see paragraph 5)

[We thus query the findings and the validity of this series of reports.](#)

Maybe there is a hidden agenda at play: by imposing DRL on the population, Transport Ministers and Commissioners could appear to earn kudos as DRL could be purported to be a visible sign of their powers.

## 9 Recommendations

To improve road safety and reduce environmental pollution we recommend that the EU Commission should immediately:

### 9.1 Ban full power daytime running lights

The EU should immediately ban full power headlight based DRL and make manufacturers recall headlight DRL equipped cars on safety and environmental grounds.

### 9.2 Fit non glaring LED daytime running lights

The EU should agree with manufacturers to design small clusters of non glaring Light Emitting Diodes totalling no more than 1 watt each that can be fitted to new cars and easily retrofitted to existing cars into any aperture at the front of the vehicle.

### 9.3 Automatic headlight switching

Install headlights that automatically switch on when visibility is insufficient below 75 lux.

### 9.4 Introduce eyesight tests

The EU should introduce annual drivers eyesight tests linked to issue of a vehicle licence.

### 9.5 Introduce advanced level driving tests

The EU should introduce compulsory advanced driver training programmes so that with 3 year drivers must have passed an advanced level driving test.

**Roy Milnes MIEE Minst E**

**The Association of Drivers against Daytime Running Lights UK**

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## Glossary

FFMC = Fédération Française des Motards en Colère [www.ffmc.asso.fr](http://www.ffmc.asso.fr)  
Federation of Angry French Bikers [http://www.ffmc.asso.fr/rubrique.php?id\\_rubrique=155](http://www.ffmc.asso.fr/rubrique.php?id_rubrique=155)  
Also see individual web <http://www.sang-neuf.fr/pilotage/edition/lanar/FFMC/Zyeucodejour.html>

TNO = Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek  
Netherlands Organisation for Applied Scientific Research

SUV = Sports utility vehicle

DRL = Daytime Running Lights

LED = Light Emitting Diode

NHTSA = National Highway Traffic Safety Administration

DaDRL UK The Association of Drivers against Daytime Running Lights [www.dadrl.org.uk](http://www.dadrl.org.uk)

DaDRL USA The Association of Drivers against Daytime Running Lights [www.lightsout.org](http://www.lightsout.org)