

# Instrument panel illumination, vehicle lighting and driver errors

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Dan Basacik, Amy Dale, Nick Reed, & Tim Horberry  
Transport Research Laboratory  
Wokingham, UK

## Abstract

When driving in conditions of low visibility, it is a legal requirement that vehicle position lamps are activated. Although instrument panels in most vehicles are still only illuminated upon activation of position lamps, some vehicles now have continuously illuminated instrument panels. Given the possible cue that an unlit instrument panel may provide to help remind a driver to activate their position lamps in darkness, it is conceivable that drivers may make more position lamp activation errors in darkness with vehicles equipped with continuously illuminated instrument panels than they would with vehicles equipped with 'conventional' instrument panels. In order to investigate this issue, a trial was conducted on a test track in which participants were required to start up and drive a vehicle in low ambient light conditions. 391 participants took part in the trials and two test vehicles were used. Test vehicles were closely matched, but differed in terms of instrument panel lighting. The results showed a significantly higher rate of position lamp activation errors in the vehicle with a continuously illuminated instrument panel, when compared with a vehicle with a conventional instrument panel (the control). Nevertheless, one in seven drivers failed to switch on their position lamps before driving off in the control vehicle. The implications of this research on the design of vehicle instrument panel illumination are discussed.

## Introduction

The UK Regulations require the position lamps of vehicles in use on the road to remain activated during hours of darkness or in conditions of low visibility. Other countries also have similar rules on the use of vehicle lighting, and in countries where Daytime Running Lights are obligatory, by regulation, all motor vehicles' low beam head lights should automatically be on whenever the ignition is on. The UK Regulations define hours of darkness as being, "*the time between half an hour after sunset and half an hour before sunrise*" (DfT, 2007). During these times, vehicle lighting serves the dual purpose of allowing the driver to see the road environment, and allowing other road users to see their vehicle.

In D. de Waard, A. Axelsson, M. Berglund, B. Peters, and C. Weikert (Eds.) (2010). *Human Factors: A system view of human, technology and organisation* (pp. 217 - 230). Maastricht, the Netherlands: Shaker Publishing.