

Regulatory Position on the Use of LED Light Sources in Historic Vehicles

The 1970s saw the emergence of lamps approved to European standards. There were two parallel sets of standards, normally technically identical but emanating from different organisations. These were ECE Regulations and EEC Directives, lamps approved to the former were identified by an approval number preceded by a capital 'E' whilst those approved to the latter bore a similar mark preceded by a lower case 'e'. These are commonly referred to as 'e/E marks'. The testing required to gain such an approval for a lamp was far more scientific than anything that had gone before and included measuring actual light output across a standard grid. Repetition of this performance can only be guaranteed by use of bulbs meeting precise standards and for this reason a similar approval regime exists for bulbs and e/E marked lamps on vehicles first used after 1st January 1986 are only permitted to be fitted with approved, and e/E marked, bulbs. Whilst today LEDs are tested and approved for use in specified lamp assemblies none bear the approval permitting them to be used in e/E marked lamps intended to employ incandescent bulbs.

Background

The use of LED light sources has been of interest to the historic vehicle community for as long as LEDs have been readily available and not surprisingly many articles have been written on the subject in both club magazines and in the specialist press. Unfortunately, not all of the information provided has been accurate and FBHVC felt it should research the subject to enable the provision of definitive guidance to its members.

In addition to research by the FBHVC Legislation Committee an opinion was also sought from Department for Transport and the Committee were gratified to find their conclusions confirmed. However, we should repeat a warning from the DfT reply – *"The guidance provided is based on the requirements of The Road Vehicle Lighting Regulations and all vehicles must comply when used on the road, ultimately interpretation of law is the sole prerogative of the courts."*

As the title implies this article relates solely to the regulations surrounding the use of LEDs but nevertheless a brief explanation of what we mean by LED and the reason why their use can be beneficial might not come amiss. LED is an abbreviation of light emitting diode and their advantage stems from the fact that they do not generate as much heat as a conventional incandescent bulb. Thus, for a given electrical power the light output is much higher, or conversely a given light output can be achieved from a lower electrical power. This latter characteristic is of great value in early vehicles with marginal generator output.

Unfortunately, the relevant regulations are quite complex and there is no simple overall yes or no answer to the question "is it legal to use LEDs in the existing lamps on my historic vehicle?" The situation is different for different lamps and also for different dates of first registration of the vehicle in question. This article will explain the background before summarising the conclusions at the end.

There is no regulation that specifically prohibits the use of LEDs in lamps first used prior to the e/E marking requirements, although there is a requirement for e/E marked lamps fitted to a vehicle first used on or after 1st April 1986 to be fitted with e/E marked bulbs. (see above)

The applicable date varies for different lamps but it should be noted that these dates are such that vehicles from the end of our period will be affected.

The regulations also include a requirement applicable to all lamps that they shall not cause undue dazzle or discomfort to other persons using the road. This should be borne in mind whenever a lamp is made to be brighter than it was originally designed to be. With particular reference to headlamps, a light source of a different type and in consequence of different physical size and shape is very unlikely to work correctly with the optical design of the lamp and the risk of causing undue dazzle or discomfort becomes a very real one.

Another complicating factor is that the regulations quote minimum wattages for certain lamps. For dip-beam headlamps these range from 10W for small motorcycles to 30W for four or more wheeled vehicles and similarly 15W to 30W for main beam headlamps. Stop lamps on vehicles first used after 1st January 1971 and all direction indicators require a minimum of 15W. These minimum wattage limits were undoubtedly included originally to ensure adequate brightness of the lamps in question but now they provide a barrier to the use of LEDs. This arises because of the greater efficiency of LEDs, i.e. more light from fewer watts, the result being that the LEDs are of too low a wattage to comply with the regulations even though the actual light output may be entirely adequate.

Conclusions

Lamps where the use of LEDs is legal subject to the conditions noted earlier:

- **Front Position Lamps.** (Side lamps). Vehicles first registered before 1st January 1972 LED light sources in the original lamps are compliant.
- **Rear Position Lamps.** (Tail lamps). Vehicles first registered before 1st January 1974 LED light sources in the original lamps are compliant.
- **Rear Registration Plate Lamps.** Vehicles first registered before 1st April 1986 LED light sources in the original lamps are compliant.
- **Stop lamps.** Vehicles first registered before 1st January 1971 LED light sources in the original lamps are compliant. ▶

Lamps where the use of LEDs is not legal:

- **Stop lamps.** Vehicles first registered after 1st January 1971 LED light sources in the original lamps are non-compliant. This is because LEDs will not meet the minimum wattages specified in the regulations.
- **Direction Indicators.** (flashing type). LED light sources in the original lamps are non-compliant. This is because

LEDs will not meet the minimum wattages specified in the regulations.

- **Headlamps.** LED light sources in the original lamps are generally non-compliant. This is because LEDs will not meet the minimum wattages specified in the regulations. However, in some particular cases it may be possible to locate LED light sources of compliant wattage.

The Road Vehicle Lighting Regulations, in addition to specifying which lamps are obligatory and the provisions they are required to meet, also permit the use of additional lamps, which are referred to as optional. These lamps are required to meet some but not all of the provisions specified for obligatory lamps with the result that there are no wattage requirements for optional headlamps, either dip or main beam.

DVLA

The lead time for the production of this Newsletter is quite long with the result that this edition is reporting on the summer season which, as is often the case has been fairly quiet, thus there is not a lot to report for this edition.

DVLA are conducting a trial of a revised version of the V11 reminder form. This is designated V11Z and is sent specifically to keepers of vehicles that attract a nil duty licence. It has revised wording to stress the importance of licensing even where there is no fee. The licensing procedure remains unchanged.

Many of you may be aware of the difficulties that can arise in obtaining a first registration in the UK for vehicles which have returned from foreign territories to which they were originally exported in CKD form. The major problem is normally that of establishing a date for the final assembly of the vehicle in the destination country. Generally, the local assembly company no longer exists and no records survive. However, from the feedback I receive, it seems that with persistence and the support of an appropriate club a satisfactory conclusion can normally be reached.

We now hear of an additional difficulty with vehicles returning from South Africa. This has only become apparent in the last few months and takes the form of a recently issued South African registration document which refers to the vehicle as 'built-up'. Rather confusingly this is not a reference to the vehicle having been originally imported in CKD form but is in fact a catch-all term that the South African authorities use when the history of a vehicle is unknown or unclear. In some cases, it arises for no other reason than the vehicle was not registered for a period and the original records were lost, but it is used in many different circumstances including for rebuilt insurance write-offs. DVLA are fully aware of this ambiguity and decline to register a vehicle so described without further information.

We discussed this issue with DVLA at our recent meeting and their advice to vehicle owners was to contact the

South African authorities for an explanation of the exact circumstances of the vehicle in question. Some doubts have been expressed regarding the likely response but DVLA assured us they have seen helpful replies from South Africa.

Readers may recall a somewhat cryptic reference under the heading 'Modifying vehicles' in Newsletter Issue 3, 2017. Whilst this is an ongoing issue, and is likely to remain so for some time, I can now provide a little more background. We were made aware from a member club of a coupé of 1970s construction which the owner had had professionally modified to a roadster (the manufacturer originally offered both versions). When this change was notified to DVLA the registration was withdrawn.

The DVLA rationale is that the modification is such that the car is required to be assessed under the 'radically altered' rules. These rules specifically preclude an altered monocoque bodyshell. Thus, the car cannot retain its original registration.

The Federation does not believe it can contest this conclusion but does nevertheless have two concerns. There is some evidence to suggest that DVLA may not have been entirely consistent in their handling of such conversions over the years, but there is a greater concern regarding information available to vehicle keepers.

The V5C quite rightly requires the keeper to notify DVLA of changes to the vehicle but gives no indication that this could lead to the withdrawal of the registration. Neither does it provide any reference to the relevant information, either the INF26 booklet or the gov.uk website.

The Federation has initiated discussion with DVLA on this matter and will obviously report the outcome. Meanwhile the advice has to continue to be that it is probably not wise to undertake any conversion of the body of a registered monocoque vehicle. This applies equally to conversions of coupé to convertible, saloon to convertible, saloon to pickup or any similar changes.