

Clause (2) : To read as formerly, subject, however, to possible revision by the Council in connection with the provision of "passlights," referred to at the end of this report :—

"Every motor-vehicle other than a motor-cycle shall be equipped with two, and not more than two, driving-lights attached thereto, which shall be—

"(a) Of approximately equal candle-power :

"(b) Placed one towards each side of the vehicle, and in such a manner that they may direct a beam of light ahead of the vehicle :

"(c) Of sufficient power to enable substantial objects and the nature of the road surface to be clearly visible under normal driving and atmospheric conditions by a driver of normal vision at a distance of at least 150 ft. directly in front of the vehicle."

Clause (3) : Amended to read as follows :—

"Every driving-light attached to a motor-vehicle shall be so focussed and adjusted that under all operating conditions when the vehicle is standing on a horizontal surface *the main beam of light will be projected downwards so that its centre will meet the road surface at a distance of not more than 200 ft. ahead of the vehicle.*"

The Committee is convinced that a descending beam setting is desirable in order that the glare factor may be reduced. This is particularly so in the case of the light type of English car where, with a beam set horizontally, under certain conditions of loading the main rays may be directed at an upward angle, thus causing disconcerting glare to other traffic.

Experiments were carried out with different settings and various types of cars, and it was found that a headlight beam whose centre strikes the road surface at a distance of 150 ft. ahead of the vehicle reduces the glare factor under all loading conditions to a minimum, consistent with adequate driving visibility.

However, it is impracticable to require a setting of the lamps to ensure the centre of the beam striking the roadway at an exact distance such as 150 ft. for the following reasons :—

- (i) Even with an exact setting, the distance is variable with many types of car according to the loading conditions :
- (ii) Owing to the varying height of the lamps from the ground in different types and models of vehicles, with a consequent variable setting-angle, it would not be a very simple matter for motorists generally to have their lights set precisely as required ; and
- (iii) Such a regulation would be difficult to enforce.

It is thought that the condition demanding that the beam must be descending under all operating conditions will meet all requirements and ensure that the present glare problem will be greatly reduced.

In conjunction with this vertical setting of the beam, tests were made with various lateral settings. It was considered that the best driving conditions, with a minimum of glare, were obtained with the left-hand or "on" driving-light directed straight ahead of the vehicle, but with the right-hand or "off" light deflected towards the left so that the centre of its main beam met that of the left-hand light at a distance of 150 ft. in front of the vehicle.

These conditions of vertical and lateral settings of the beams are illustrated by the diagrams submitted herewith.

While much impressed with the results obtained from this lateral setting, the Committee feels that any recommendation as to deflecting the "off" beam in this manner should be left to the discretion of the Council.

Clause (4) : Amended to read as follows :—

"Every motor-vehicle, including any trailer, shall be equipped with a tail-light which shows a red light visible at least 300 ft. to the rearward and which is attached at the rear of the vehicle not farther to the left than its centre-line."

The present regulations require the tail-lamp to be placed not farther to the left than the extreme centre-line of the vehicle. The word "extreme" appears unnecessary and is difficult to interpret, and is therefore omitted.

The tail-lamp is also required to be placed as near as practicable to the level of the chassis-frame. On many vehicles it is not practicable to place the lamp at this level, nor does there appear to be any vital reason for fixing it there. This is, moreover, often rather a vulnerable position, especially in the case of a lorry backing into a dock. Consequently the Committee recommends the deletion of this provision.

Clause (5) : Amended to read as follows :—

"The registration plate carried on the rear of every motor-vehicle shall be so illuminated as to render the figures and letters thereon clearly visible *at a distance of 60 ft.* by a white light the beams of which are not visible from the rearward."

Two technical officers of the Committee made a series of tests regarding the illumination of number-plates, and their conclusions, which were endorsed by the Committee are as follows :—

"The standard of illumination of number-plates is very low due to the following factors :—

"(a) Insufficient candle-power.

"(b) Badly placed light with respect to the number-plate.

"(c) Angle or spread of the beam of light insufficient to give full illumination of the number-plate.

"Under reasonably good conditions the better colour combinations are legible at distances approximately 120 ft., although from observations made only a relatively small percentage of cars have their number-plates legible at distance of 30 ft., due to the reasons set out above.