

Summary:

Glare effects of high beam on motorcycles in daylight

At collisions at intersections between cars and motorcycles the car drivers are usually at fault. A possible explanation for this is that the car drivers do not "see" motorcycles, either because the shape and colour of motorcycles make them blend with the background and hard to see or the car drivers have a strong set to just notice other cars making them overlook motorcycles even though they are clearly visible.

As a measure to improve the motorcycles' visibility it has been suggested that motorcycles may use the high beam during day time. An argument against this suggestion has been that the high beam may cause glare effects that may dangerously degrade the visual ability of other drivers. This study investigated the effects of a motorcycle headlight (light off, low beam on, high beam on) used in day light conditions on visual acuity and contrast sensitivity.

Seven persons participated as subjects (2 females and 5 males, 2 aged between 20 and 30 years, the rest between 40 and 60 years). The experiment took place on a parking ground in the shadow underneath a bridge. A motorcycle headlight and test figures were placed 30 metres in front of the subjects. The test figures were situated 1,5 metres to the right (seen from the subjects position) of the headlight. Both visual acuity and contrast sensitivity was measured for the headlight turned off, for the headlight on low beam and on high beam.

The results showed no difference between the headlight conditions on neither visual acuity nor contrast sensitivity. This indicates that motorcycles using the high beam in ordinary day light conditions do not degrade the visual abilities of oncoming drivers.

In low general illumination (heavy overcast weather, twilight) the use of the high beam may produce glare effects that negatively affect the visual abilities of other drivers. Motorcyclists using the high beam as a driving light should consider the light conditions carefully.

The high beam may reduce the visibility of the motorcycle and the motorcyclist due to the proximity to the headlight. This may render other measures to improve the visibility of motorcycles such as fluorescent colours on vehicle, helmet and dress less effective.