

LASERS AND AVIATION

Under certain conditions, laser light or other bright lights (spotlights, searchlights) directed at aircraft can be a hazard. The most likely scenario is when a bright visible laser light causes distraction or temporary flash blindness to a pilot, during a critical phase of flight such as landing or take-off.

Lasers and bright lights

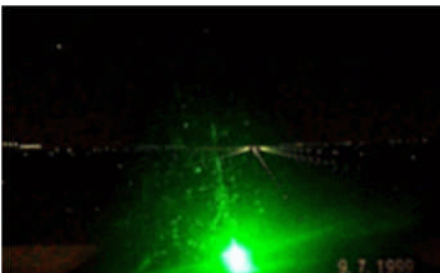
In addition to lasers, other bright directional lights such as searchlights and spotlights can have the same dazzling, distracting, and flash blinding effects. Searchlight and spotlight operators should take the same basic precautions as laser users. Similarly, pilots and safety officials should keep in mind that a reported "laser" incident may be caused by a non-laser bright light.

Primary hazards of lasers and bright lights

The main concerns focus on laser and bright light effects on pilots, especially when they are in a critical phase of flight: takeoff, approach, landing, and emergency maneuvers.

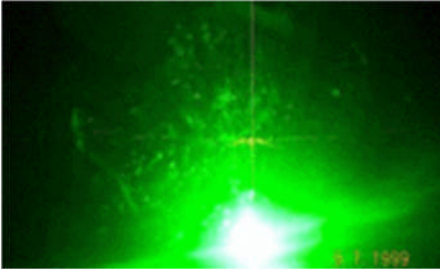
There are three primary "visual effects" that temporarily distract or block pilots' vision.

Distraction and startle. An unexpected laser or bright light could distract the pilot during a nighttime landing or takeoff. A pilot might not know what was happening at first. They may be worried that a brighter light or other threat would be coming. Pilots are trained to understand the relatively minor impact of laser flashes caused by laser pointers and not to over react.



Flight simulation demonstrating **distraction** where the light does not obscure vision but can distract the pilot. This could be caused by a legal laser pointer at 3,700 feet (1,100m).

Glare and disruption. As the light brightness increases, it starts to interfere with vision. Veiling glare would make it difficult to see out the windscreen and the pilot's night vision will start to deteriorate. However, laser light is highly directional and so pilots are trained to exclude the source from their direct field of vision.



Flight simulation demonstrating veiling **glare** where it is hard to see through the light to the background scene. This could be caused by a legal laser pointer at 1,200 feet (370m).

Temporary flash blindness. This works exactly like a bright camera flash: there is no injury, but the pilot's night vision is temporarily knocked out. There may be after images, exactly like a bright camera flash leaving temporary spots.

Gibraltar Legislation

Gibraltar Legislation addresses the issue of lasers in Regulation 89A of the Civil Aviation (Air Navigation) Regulations 2009. In summary the legislation states that **the pointing of a laser at:**

- **The pilot of any aircraft in flight; or**
- **Persons within any installation situated on Gibraltar Airport, e.g. Air Traffic Control, Fire Service Headquarters, the Air Terminal etc; or**
- **The driver of any vehicle that is being used on Gibraltar Airport,**

is a criminal offence punishable by a prison sentence of up to 5 years and / or a fine of £10,000.

Given the proximity of the Airport to the urban area of Gibraltar, anybody who uses a laser in Gibraltar needs to take extreme caution to ensure that they do not point the device towards the airport or aircraft when using them outdoors.