



File Ref. No: AAI/13-22/14-AVS -71

9th May, 2024

AVIATION SAFETY ADVISORY CIRCULAR 02 OF 2024

Sub: Reporting the act of unlawful Laser Interference to Civil Aviation

1. Introduction

The ICAO has highlighted the seriousness of laser beam interference in aviation safety, noting that it can cause discomfort, disorientation and distraction for pilots. This can lead to hazardous situations during critical flight phases. The main concerns are focused on laser and bright light effects on pilots, especially when they are in a critical phase of flight: take off, approach, landing, and emergency manoeuvres. The regulator DGCA has also mentioned it in NASP 2018-22 under the head Loss of Control in flight category and service providers were entrusted to report the data to DGCA.

There are four primary areas of concern. The first three are visual effects that temporarily distract or block pilots' vision. These effects are only of concern when the laser emit visible light.

- (a) **Distraction and startle:** An unexpected laser or bright light could distract the pilot during a night time landing or take off. A pilot might not know what was happening at first. They may be worried that a brighter light or other threat would be coming.
- (b) **Glare and disruption:** As the light brightness increases, it starts to interfere with vision. Veiling glare would make it difficult to see out of the windscreen. Night vision starts to deteriorate. Laser light is highly directional, so pilots may act to exclude the source from their direct field of vision.
- (c) **Temporary flash blindness:** There is no injury, but night vision is temporarily disrupted. There may be afterimages, like a bright camera flash leaving temporary spots.

The three visual effects above are the primary concern of civil aviation. This is because they could happen with lower-powered lasers that are commonly available. The fourth concern, eye damage, is much less likely; it would require specialized equipment not readily available to the general public.

- (d) **Eye damage.** Though it is unlikely, high power visible or invisible (infrared, ultraviolet) laser light could cause permanent eye injury. The injury could be relatively minor, such as spots only detectable by medical exam or on the periphery of vision. At higher power levels, the spots may be in the central vision, in the same area where the original light was viewed. Most unlikely of all is injury causing a complete and permanent loss of vision. To do this would require very specialized equipment and a desire to deliberately target aircraft.

Contd...2

2. PURPOSE

This Advisory Circular (AC) provides information to the aviation community, particularly to Airport operation authorities managing the airports owned and operated by the Airports Authority of India. In addition, this AC provides guidance to Airport operators and reflects current guidance for Air Traffic Control (ATC) on the formal reporting of laser illumination incidents. Reporting of laser incidents assists law enforcement and provides support for recommended mitigation actions to be taken by them to ensure continued safe and orderly flight operations.

This AC is issued in serious response to the significant increase in cases of unauthorized laser illumination of aircraft incidents, as well as the proliferation and increased sophistication of laser devices available to the general public and other parties. AAI and other governmental studies show the exposure of aircrews to laser illumination may cause hazardous effects (e.g., distraction, glare, afterimage, flash blindness, and, in extreme circumstances, persistent or permanent visual impairment), which could compromise safety by adversely interfering with the ability of aircrews to carry out their responsibilities. ATC regards a laser illumination incident as an in-flight emergency, and will treat them as such, until the aircrew states otherwise.

3. CANCELLATION

Nil

4. SCOPE AND RESPONSIBILITY

This Circular is applicable to all AAI officials working at Airports (including civil enclaves) and ATS locations.

5. AUTHORITY

The Directorate of Aviation Safety AAI is mandated to implement the Safety Management System in AAI domain of aviation operation and issue directives for enhancement of safety and control with the help of service provider directorates within AAI and State Authorities.

6. NOTIFICATIONS AND REPORTING

All authorities engaged in Airport operation and Air Traffic Service (ATS) provision to immediately report unauthorized laser illumination incidents through the reporting process established by Airports Authority of India through its Airport Information Management System (AIMS) portal available at each operational station engaged in the provision of ATS or Airport operation.

Contd...3

: 3 :

The ATC report updated by the airport operator shall include event date and time in universal coordinated time (UTC), operator, flight number, type of aircraft, nearest major city, state, altitude, location of event (e.g., latitude/longitude and/or fixed radial distance (FRD)), a brief description of the event, name and telephone number of the law enforcement entity contacted, and any other information needed to support the action.

This information should also be immediately forwarded to local administrative/municipal authorities for taking appropriate action at their level as per rules and regulation. These governmental entities are entrusted to safeguard the safety and security of aviation operations affected by the acts of the people, organisations within the vicinity of the airport and not directly under the purview of Airports Authority of India. The matter of Laser interference should also be taken up in AEMC meetings with concerned authorities.

If the laser event occurs in the vicinity of an ATC terminal facility, ATC will act as per the prescribed format available on *AIMS and communicate to Aerodrome operator as per available SOP.*

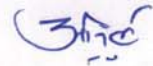
To minimize risk to pilots and crew, it is emphasised that every laser incidents is reported as soon as possible.

7. CLARIFICATION

Clarification to this circular may be requested from the Executive Director (Aviation Safety) by sending an E-mail to edas@aai.acro or by post to the following address.

The Executive Director
Directorate of Aviation Safety
Airports Authority of India
Room No 222 Block 'A',
Rajiv Gandhi Bhawan
Safdarjung Airport New Delhi 110003

Validity: - This Aviation Safety Advisory Circular 02 of 2024 will remain in force until further notice.



अनिल कुमार मीना /A.K. Meena

कार्यपालक निदेशक (विमानन संरक्षा) / Executive Director (Aviation Safety)

Distribution: - As per standard list.