



No. 28

CASAS ADVISORY PAMPHLET

Subject: Light Amplification by Stimulated Emission of Radiation (Laser) Operations and Reporting Illumination of Aircraft

Date: 13/1/2015

PURPOSE

The hazards posed by laser attacks against civil aircraft, specifically the deliberate targeting of flight crew with laser illumination to disrupt the safe operation of the aircraft, is a matter of increasing concern. Available data indicate that the frequency of laser attacks on civil aircraft has risen significantly worldwide.

Suriname has not been spared of such events. Quite recently the first written report was received from such a laser illumination event which concerned an aircraft on a taxiway at the JAP International Airport.

This Advisory Pamphlet is issued to alert the aviation community as well as the general public of the dangers that laser attacks against civil aircraft pose and to provide guidance in such events.

GENERAL

Lasers have many applications of which some are available for purchase to the general public. Of concern to users of our Airspace System are those laser events that may affect the operation of aircraft.

In accordance with ICAO guidance a Laser is defined as:

- 1) An acronym for light amplification by stimulated emission of radiation.
- 2) A device that produces an intense, coherent, directional beam of optical radiation by stimulating emission of photons by electronic or molecular transitions to lower energy levels.

Generally, the beams from these events appear as bright blue-green in color; however, they may be red, yellow, or white. Some laser systems produce light which is invisible to the human eye.

Aiming a laser at an aircraft is a serious safety risk. Many high-powered lasers can completely incapacitate pilots who are trying to fly safely to their destinations and may be carrying hundreds of passengers. Unfortunately, reported incidents of lasers aimed at aircraft are steadily increasing.

It is prohibited by aviation regulations for any person to endanger the safety of aircraft operations whether on the ground or in the air.

Pilots should be aware that illumination from these laser operations are able to create temporary vision impairment miles from the actual location the beam is being emitted from. In addition, these operations can produce permanent eye damage. Pilots should make themselves aware of where these activities are being conducted and avoid these areas if possible.

If a pilot is exposed to a bright light suspected to be a laser beam, the following steps are recommended to reduce the risk unless the specific action would compromise flight safety.

- Look away from the light source.
- Shield eyes from the light source.
- Declare visual condition to other pilot.
- Transfer control of the aircraft to other pilot.
- Switch over to instrument flight.
- Engage autopilot.
- Manoeuvre or position the aircraft such that the laser beam no longer illuminates the flight deck.
- Assess visual function, by reading instruments or approach charts.
- Avoid rubbing eyes.
- Notify air traffic services unit of a suspected inflight laser beam illumination.

Recent and increasing incidents of unauthorized illumination of aircraft by lasers, as well as the proliferation and increasing sophistication of laser devices available to the general public, dictates that the CASAS, in coordination with other government agencies, take action to safeguard flights from these unauthorized illuminations.

REPORTING

Pilots should report laser illumination activity to the controlling Air Traffic Services unit and the Aerodrome Operator as soon as possible. In addition, the pilot should also submit a written report to the CASAS as soon as possible but not later than 24 hours after the occurrence.

Each report should contain the following information:

1. UTC Date and Time of Event.
2. Call Sign or Aircraft Registration Number.
3. Type Aircraft.
4. Nearest Major City.
5. Altitude.
6. Location of Event (Latitude/Longitude and/or Fixed Radial Distance (FRD)).
7. Brief Description of the Event and any other Pertinent Information.

When a laser event is reported to an Air Traffic Services unit, this unit must warn aircraft operating to or in the vicinity of that aerodrome immediately following the report. In addition, the Aerodrome Operator should be notified immediately in order for them to direct their security services to the possible location of the laser emitting source and to take what ever measures deemed necessary to prevent any such further actions by the perpetrator.

The aerodrome operator should protect the airspace in the vicinity of the aerodrome in order to prevent visible laser beams from interfering with a pilot's vision.

The CASAS has the responsibility for the safety of our aviation system and therefor will utilize all measures available to her to prevent laser attacks against civil aircraft.

REFERENCES

For more information, please see the following references:

- ICAO Document 9815 Manual on Laser Emitters and Flight Safety
- Annex 14 Vol. 1 Aerodrome Design and Operation
- Annex 11 Air Traffic Services
- Civil Aviation Regulations Suriname
