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**WORKING PAPER**

**LEGAL COMMITTEE – 39TH SESSION**

(Montréal, 25 – 28 June 2024)

**Agenda Item 6 : Any other business**

**THREAT REPRESENTED BY THE IMPROPER USE OF LASER RAYS TO AIR NAVIGATION  
AND ITS NEGATIVE IMPACT ON THE OPERATIONAL SAFETY OF CIVIL AVIATION**

(Presented by the Dominican Republic)

**1. SUMMARY**

1.1 In view of the growing risk to flight safety posed by the more widespread use of laser emitters around airports, ICAO formed a study group in 1999 to evaluate the laser risk and consider whether new Standards or Recommended Practices (SARPs) were necessary. Assisted by the study group, the ICAO Secretariat Aviation Medicine Section prepared the laser SARPs currently contained in Annex 11, Air Traffic Services, and Annex 14, Aerodromes, to the Convention. The SARPs do not, however, provide the practical guidance needed for implementation of relevant regulations in States. In 2003, the ICAO Secretariat therefore published Document 9815, Manual on Laser Emitters and Flight Safety, which focuses on the medical, physiological and psychological effects on flight crews of exposure to laser emissions.

1.2 According to the Manual, most civil aircraft laser beam strikes will be inadvertent, but powerful laser emitters that can be accurately targeted are now available at relatively low cost, so the possibility of malicious use of such devices in the future cannot be ignore.

1.3 While there is in general little real awareness of the damage that can result from the use and handling of laser beams by individuals in the vicinity of airports, the practice is starting to pose a serious threat to air navigation and the operational safety of civil aviation. In some cases, a laser beam directed at the cabin of an aircraft can cause an air disaster, with loss of life and/or damage to and loss of the aircraft and third parties on the ground. As this harmful practice becomes more widespread, the international community is called on to implement uniform and effective measures aimed at mitigating its effects; States therefore have a growing need for uniform criteria when punishing or penalizing such behaviour.

1.4 Our research has revealed that some countries have implemented relevant actions and penalties. However, there is no general guidance for States, under the leadership of ICAO, on the criteria to apply when formulating their domestic legislation to penalize and/or punish such behaviour.

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<sup>1</sup> Spanish version was provided by the Dominican Republic.

## 2. DECISION BY THE LEGAL COMMITTEE

2.1 The ICAO Legal Committee is requested to discuss the matter in greater depth and to consider the need to formulate criteria that help States develop domestic legislation to penalize this practice, which may constitute an offence or a crime against air navigation.

*Strategic objectives:* Support for the Programme – Legal Services

*Financial implications:* N/A

*References:* The Work Programme of ICAO in the legal field

## 3. BACKGROUND

3.1 In view of the increasing risk to flight safety posed by the more widespread use of laser emitters around airports, ICAO formed a study group in 1999 to evaluate the laser risk and consider whether new Standards or Recommended Practices (SARPs) were necessary. Assisted by the study group, the ICAO Secretariat Aviation Medicine Section prepared the laser SARPs currently contained in Annex 11, Air Traffic Services, and Annex 14, Aerodromes, to the Convention. The SARPs do not, however, provide the practical guidance needed for implementation of relevant regulations in States. In 2003, the ICAO Secretariat therefore published Document 9815, Manual on Laser Emitters and Flight Safety, which focuses on the medical, physiological and psychological effects on flight crews of exposure to laser emissions.

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## 4. ANALYSIS

### 4.1 Events involving the improper use of laser rays against air navigation: Cases reported in the Dominican Republic and in Mexico.

4.1.1 When an aircraft cabin is hit by a ray of light at a critical point during the flight, the ray can be reflected and multiplied; it can reduce or eliminate pilot visibility, causing a risk to the flight's operational safety.

4.1.2 In the Dominican Republic, the Dominican Institute of Civil Aviation (IDAC), the national aeronautical authority, has identified, based on data collected by its Operational Safety Department, the laser targeting of aircraft on final approach as an emerging risk that must be monitored. For example, on 2 October 2023 a flight from Miami, in the United States of America, was struck by a laser beam on its descent to Santo Domingo's José Francisco Peña Gómez (Las Américas) International Airport.

4.1.3 According to data extracted from the Internet, Mexico has recorded incidents involving the use of high-power laser pointers, but like the Dominican Republic, it does not have legislation that punishes or penalizes the improper use of laser rays.

4.1.4 As this harmful practice, which represents a serious risk to air navigation and civil aviation safety, becomes more widespread, some States have adopted legislation containing dissuasive or punitive measures to combat it. There is therefore a growing need for States to have uniform criteria for the prosecution, punishment or penalization of such behaviour.

#### 4.2 **Legislation implemented by some countries to punish the improper use of laser rays against air navigation**

4.2.1 An investigation into countries with legislation setting out actions and penalties in relation to this practice has revealed the following.

4.2.2 **Puerto Rico.** In Law No. 118 of 30 July 2014, the Commonwealth of Puerto Rico criminalizes the use of laser devices to target aircraft or law enforcement agents for the purpose of preventing them from discharging their duties, or to prevent the operation of a vehicle, putting its safety and that of other citizens at risk. Article 3 of the Law punishes such use with a fine of no more than USD 5,000, imprisonment for a term of no more than six months, or both, at the discretion of the court.

4.2.3 The **United States of America** deems targeting an aircraft with a laser beam a federal crime that can result in substantial fines and imprisonment. The Federal Aviation Administration (FAA) has implemented a system for tracking and reporting laser incidents, and works in collaboration with law enforcement to prosecute violators. FAA fines can be up to USD 250,000 per violation, and prison terms up to five years.

4.2.4 In the **United Kingdom**, the Air Navigation Order prohibits the projection onto aircraft of any light beam that may distract or dazzle the pilot. Penalties include fines and, in serious cases, prison sentences. The British Airline Pilots' Association (BALPA) has called for laser rays to be banned across the country.

4.2.5 **Canada.** Under Canadian regulations, it is illegal to use a laser beam to interfere with the crew of an aircraft, with fines of up to CDN 5,000. Such use may also result in criminal charges or imprisonment for up to five years. Transport Canada, which oversees the regulation of all modes of transportation (air, sea, rail or road) in the country, has launched campaigns to raise awareness of the dangers posed by laser pointers.

4.2.6 In addition, the Canada Consumer Product Safety Act regulates the import, sale and advertising of laser pointers. It is illegal to sell or import laser pointers that exceed a maximum power of 5 milliwatts. It is also illegal to advertise or sell laser pointers to anyone under the age of 18.

4.2.7 **Europe.** The European Union standard for laser safety, EN 60825-1/A2:2002, contains information on the classification of lasers in terms of safety, useful safety-related calculations, risk prevention and the main things that those responsible for laser safety and the company must know.

5. **CONCLUSION**

5.1 Owing to the increase in events associated with the improper use of laser rays and their negative impact on the safety of air navigation, we consider it pertinent for the ICAO Legal Committee to discuss the issue in greater depth and to consider the need to formulate criteria that help States develop domestic legislation to punish such use, which may constitute a crime or an offence against air navigation.

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