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THIRTEENTH AIR NAVIGATION CONFERENCE

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COMMITTEE B

- Agenda Item 8: Emerging safety issues**
8.1: Measures to proactively address emerging issues;

**A COMPREHENSIVE STRATEGY FOR AVIATION SAFETY: PRESENTING AN OVERVIEW
OF CANADA'S LASER ATTACK STRATEGY**

(Presented by Canada)

EXECUTIVE SUMMARY

This paper presents an overview of Canada's comprehensive "Laser Attack Strategy" to address a critical safety issue of hand-held laser attacks targeting aircraft. Hand-held lasers, when directed at aircraft, can cause flash blindness and distraction of pilots, potentially endangering the safety of crew members and passengers. The International Civil Aviation Organization (ICAO) has highlighted laser illumination as a safety concern and has urged its Member States to take appropriate actions, such as taking legislative measures and raising public awareness to address this issue.

1. INTRODUCTION

1.1 Hand-held lasers, when misused and directed at an aircraft, produce an intense, directional beam of optical radiation that can result in distraction, disruption, disorientation and flash blindness of the pilots, impacting their ability to safely monitor flight instruments and maintain control of the aircraft during critical stages of flight, such as take-off and landings. This can have a severe impact on the safe operation of an aircraft, endangering the safety of the flight crew, and passengers.

1.2 In 2014, ICAO, based on the increasing number of laser attacks globally, urged all civil aviation authorities to highlight this issue as a hazard to aviation safety and raise public awareness of the dangers posed by laser attacks against aircraft (ICAO State letter AS8/5-14/83 refers).

1.3 More recently, in 2018, ICAO requested that all Member States demonstrate progress and efforts to enforce legislation, penalties and outline any newly-developed and implemented legislative provisions to address laser attacks against aircraft. Canada responded to ICAO outlining its current legislation, penalties and progress to date, in addressing laser attacks. Canada also highlighted its intention to implement a comprehensive laser attacks strategy to significantly reduce laser attacks against aircraft (ICAO State letter AS8/5-18/17 refers).

1.4 *Current Canadian legislation:* The Canadian Aviation Regulations (CARs) currently prohibit the unauthorized projection of bright lights into airspace. The *Aeronautics Act*, further makes it an offence to engage in any behaviour that endangers the safety or security of an aircraft in flight or of persons on board an aircraft in flight. The *Canada Consumer Product Safety Act*, administered by Health Canada, currently prohibits hand-held lasers with a power output greater than 5 milliwatts (mW) from being sold, imported and advertised in Canada.

1.5 *Laser attack numbers a concern:* In 2016, Canada launched a public awareness and educational campaign titled “Not a Bright Idea” to inform the public and raise awareness of the dangers of aiming a hand-held laser at an aircraft. In 2015, there were 590 attacks reported in Canada, in 2016, 527 attacks and in 2017, 379 laser attacks. Although the public awareness and education has led to an overall decrease in laser strikes from 2015 to 2017, laser attacks continue to occur across Canada and the numbers still remain a concern posing a serious risk to aviation safety.

1.6 *Ongoing challenges:* The current Canadian legislation is limited in its effectiveness in deterring individuals from misusing hand-held lasers. Many powerful prohibited lasers are in circulation and are often mislabelled when they are sold and imported into Canada. Furthermore, it has proven to be extremely difficult to locate and catch offenders in the act of aiming a laser at an aircraft. For instance, aiming a laser at an aircraft takes only a few seconds compared to the time it takes law enforcement to respond. As a result, it has been challenging to significantly reduce the number of laser attacks across Canada.

1.7 Technological advances and online retail shopping have led to increasingly powerful and accessible hand-held battery-powered lasers despite Canadian legislation prohibiting the sale, manufacturing and importation of battery-powered hand-held lasers with a power output greater than 5mW. High-powered lasers are strong enough to cause permanent eye and skin damage.

2. DISCUSSION

2.1 *Comprehensive Laser Attack Strategy:* To mitigate this risk to aviation safety, Canada has put forth a proactive and comprehensive *Laser Attack Strategy* to prevent a potential aviation accident caused by a laser attack. The three main components of the *Laser Attack Strategy* include: 1) prohibiting hand-held lasers; 2) strengthening enforcement; and 3) increasing education and awareness. An overview of the proposed Laser Attack Strategy is provided below.

2.2 *Prohibiting hand-held lasers:* As a first measure, on 28 June 2018, Transport Canada prohibited the possession of hand held lasers through the issuance of an Interim Order, signed by the Minister of Transport, to immediately take action to deal with the dangers posed by hand-held lasers. The Interim Order prohibits Canadians from possessing a battery operated hand-held laser over 1 mW in all public places within a 10-kilometre radius of any nationally certified airport and heliport or within the municipal boundaries of the greater Montréal, Toronto, and Vancouver regions. Exemptions include legitimate purposes, such as for work, school or educational needs. Furthermore, the Interim Order will allow delegated law enforcement officials and Transport Canada inspectors to issue immediate fines to anyone found to be in contravention of the Interim Order. Fines are up to \$5 000 for an individual and \$25 000 for a corporation. As part of Canada’s long-term strategy to reduce the number of laser attacks, it will explore options to prohibit the possession of hand-held lasers more permanently and will examine potential changes to the *Aeronautics Act* and the CARs.

2.3 *Strengthening Enforcement:* The second piece of the *Laser Attack Strategy* is to strengthen enforcement efforts. Transport Canada has amended the CARs to make laser offenses a

designated provision which allows law enforcement with delegated authority to issue monetary fines for regulatory offenses. Fines are up to \$5 000 for an individual and \$25 000 for a corporation. The objective is to create a stronger deterrent by issuing these fines immediately rather than relying solely upon criminal prosecution. Other measures that have been put into place to further strengthen enforcement include engaging with Canadian law enforcement, crown prosecutors and NAV CANADA to discuss strategies that will improve and enable the identification and prosecution of offenders in a timely manner. Efforts are also underway to strengthen Transport Canada's partnership with the Public Prosecution Service of Canada to provide information, expertise and the support required to successfully prosecute laser attack offenders.

2.4 *Increasing Education and Awareness:* The final key piece of the Strategy is increasing education and awareness. This is effectively building upon and learning from the previous campaigns. Canada is developing an education and awareness strategy and related tools for proactive engagement with the general public and law enforcement agencies to inform them of the dangers caused by laser attacks. Canada is also engaging with local community associations to better educate the general public and to target high risk populations (e.g., youth) by conducting outreach with local schools and in communities.

3. CONCLUSION

3.1 While Canada continues to maintain a strong aviation safety record, it is always striving to improve and promote domestic and international aviation safety. In consideration of the rate of laser attacks across Canada and the potential for an aviation accident, a *Comprehensive Laser Attack Strategy* was developed to implement stronger regulatory measures, increase education and awareness and enhanced enforcement measures to address this safety issue.

3.2 Canada invites all Member States to share information and best practices to further address laser attacks and to support ICAO's global initiative in reducing laser attacks against aircraft to promote aviation safety. Canada encourages all Member States to visit <http://www.tc.gc.ca/en/campaigns/not-bright-idea.html> to learn more about its new safety measures to protect Canadians from laser attacks on aircrafts.

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