

Role of the Civil Aviation Legal Adviser – Supporting Their Organization

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Threats from the Ground – Stopping Laser, Drone and Cyber Attacks

POINTING/ SHINING LASER AT AIRCRAFTS

- This is a dangerous practice as it can cause momentary blindness in pilots attempting to land or take-off, as well as potentially causing permanent damage to the pilots eyes. The detrimental effects of laser exposure to the eye that range from glare or flash blindness to permanent retinal injuries. (Can J Ophthalmol – Vol 50, No 6, December 2015)
- It impacts the pilot's 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 severe impact on the safe operation of an aircraft, endangering the safety of the flight, crew and passengers.

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Laser attacks in Canada			
2015	2016	2017	2018
590	527	379	211

- The highest number of laser attacks occur in the provinces of Ontario, Quebec and British Columbia containing the metropolitan areas of Toronto, Montreal and Vancouver as shown below:

Province	2015	2016	2017	2018
Ontario	235	166	139	64
Quebec	214	192	128	47
British Columbia	82	115	43	23

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- Laser attacks pose a serious risk to aviation safety in Canada and around the world.
- ICAO State Letters AS8/5-14/83 (4 December 2014) and AS8/5-18/17 (13 February 2018):

“States were encouraged to enforce applicable laws when laser attacks are perpetrated. Furthermore, States were urged to consider including legal provisions to address the issue of laser attacks against civil aircraft, and to penalize perpetrators in accordance with the applicable legislation”

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Stakeholder concerns:

- A coalition representing 9000 airline pilots in Canada appealed in June 2014 to the Ministers of Transport and Justice highlighting the seriousness of the issue and requesting:
 1. enactment of legislation to make the act of pointing a laser at an aircraft in flight a criminal offence;
 2. limit possession of handheld laser pointers to those of 5 milliwatts power or less; and
 3. mount a campaign to warn the public of using laser in an unlawful manner.

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Canadian Strategy – “Laser Attack Strategy” – June 2018:

- Prohibiting hand-held Lasers;
- Strengthening Enforcement; and
- Increasing Education and Awareness

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1. Prohibiting hand-held lasers
 - TC issued an Interim Order on June 28, 2018 as a deterrent to reduce number of laser attacks.
 - The Interim Order prohibits Canadians from possessing hand-held lasers over 1 milliwatt in all public places within
 - 10 KM radius of any certified airport or heliport*; and
 - Municipal boundaries of Montreal, Toronto and Vancouver
 - Exemptions are provided for legitimate reason
 - The Interim Order is valid for one year until June 2018

*The 10-km radius was developed by Transport Canada subject matter experts by calculating the visual effects a laser attack can have upon a pilot operating an aircraft during a critical phase of the flight (such as take-off or upon final approach to landing). The closer the laser attack takes place to an airport and the stronger the output of the laser the more severe the potential consequences.

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- **Other Legislative Mechanism – Canadian Aviation Regulations:**

- **Projection of Directed Bright Light Source at an Aircraft**

601.20 Subject to section 601.21, no person shall project or cause to be projected a directed bright light source into navigable airspace in such a manner as to create a hazard to aviation safety or cause damage to an aircraft or injury to persons onboard the aircraft.

Requirement for Notification

601.21 (1) Any person planning to project or cause to be projected a directed bright light source into navigable airspace shall, before the projection,

(a) submit a written request to the Minister for an authorization to project the directed bright light source into navigable airspace; and

(b) obtain a written authorization from the Minister to do so.

(2) On receipt of the request for authorization, the Minister shall issue a written authorization if the projection is not likely to create a hazard to aviation safety or to cause damage to an aircraft or injury to persons on board the aircraft.

(3) The Minister may specify in the authorization any conditions necessary to ensure that the projection is not likely to create a hazard to aviation safety or to cause damage to an aircraft or injury to persons on board the aircraft.

Note that 601.20 and 601.21 are designated provisions for the purpose of issuing Administrative Monetary Penalties.

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2. Strengthening Enforcement:

- Ten police forces across Canada are delegated authority by the Minister of Transport to issue Interim Order related fines.
- These include municipal and regional forces in Montreal, Toronto and Vancouver, as well as the Royal Canadian Mounted Police
- Transport Canada continues to work with law enforcement agencies across Canada to ensure that they are ready and equipped to issue fines
- Fines are up to \$5,000 for individual and \$25,000 for a corporation.

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3. Increasing Education and Awareness:

- Transport Canada launched communication products to promote awareness of laser attack, including:
 - Not A Bright Idea (website)*
 - Facebook and Twitter (social media campaigns)*
 - New Interactive (map)*
 - Weather Network (website)*
 - Lets Talk Lasers (online forum)*
- Consulted stakeholders continue to express interest in increasing awareness
- Transport Canada established a successful partnership with the Canadian Crime Stoppers Association to raise awareness and increase deterrence

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CYBER SECURITY

Example of legal issues to be considered :

- What would be the legal framework for an outside agency or a third State to provide air navigation services within your airspace or operating an air navigation facility in your State if the existing air navigation facility is shut down following a cyber attack? Would your legislation permit such provision of services? Would it be possible at all if the air navigation service provider is a “legislated monopoly”? Would an outsourcing arrangement be a solution? How can we equip our legal services to be ready to contribute solutions?

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DRONES

Examples of legal Issues to be considered:

Most states have developed or are in the process of developing national laws for the operation of drones within their airspace. However, international operation of drones are not too far away. How would your legal services address these issues?

- Cross border operation – licences and permits.
- Cabotage – can a drone be operated wholly within a foreign jurisdiction?
- Foreign ownership requirements for domestic operations.
- Commercial operation of drones included in bilateral air negotiations?
- Regulatory oversight and enforcement – drone registered in one state; operated in another state and physical control is located in a third state.