

Canada Moves from a Self-education Approach to No Drone Zones



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On March 16, Federal Minister of Transport **Marc Garneau** announced the “Interim Order Respecting the Use of Model Aircraft,” which applies certain restrictions on the flight of model aircraft and recreational drones weighing from 250 grams to 35 kg. The Interim Order requires users to mark their drones with contact information, and prohibits flying drones:

- Higher than 90 m;
- At night;
- Within 75 metres of buildings, vehicles or people; or
- Within 9 km of the centre of any airport, aerodrome or water aerodrome where aircraft take off and land.

This article reviews the prevalence of commercial and recreational drone use in Canada, and Transport Canada’s most recent effort to regulate drone operation in Canada.

Drones: 411

There are many names for unmanned aircraft: unmanned air vehicle (UAV), remotely piloted aircraft system, and more. Here, we use the terms “drone” and “UAV” interchangeably.

A drone consists of three main components: (1) an unmanned aircraft or air vehicle; (2) a control station; and (3) a data or communication link connecting the components (with the option of an additional onboard computer system).¹ Drones can utilize either wireless autonomous onboard computer systems or remote control mechanisms enabling commands to be sent to them from the ground. Once airborne, even the simplest drone can hover and manoeuvre with precision, moving smoothly through the air while providing a birds-eye view through video cameras or a variety of other miniaturized onboard technologies. They can be constructed to enable the attachment of small packages and the versatility of the devices has sparked interest among curious hobbyists and entrepreneurial minds alike.

In Canada, drones are deployed on Ontario farmlands and in the Alberta oilsands for real-time mapping and crop monitoring. Industrial and residential property inspections, construction progress, marketing imagery, event documentation (including a dramatic increase in wedding videography and photography), erosion monitoring, beer delivery, and remote observation are all successful applications for drones.

Drones: Commercial Operations

Special permission from Transport Canada is required if one seeks to use a UAV for work or research, or to fly a drone that weighs more than 35 kg.

The operation of a UAV falls under the Canadian Aviation Regulations (CARs), or the ‘rules of the road’ for all operations in Canadian airspace intended to generate safety measures for both people and property and specifically include provisions for unmanned air vehicles. Section 602.41 of the CARs states: “No person shall operate an unmanned air vehicle in flight except in accordance with a special flight operation certificate (SFOC) or an air operator certificate (AOC).”² It is Transport Canada’s policy that SFOCs, not AOCs, be issued to those wishing to operate civil UAVs. There are separate considerations with UAVs operating with passengers on board or UAVs operating inside buildings or underground. An SFOC is technically required in order to fly a UAV for each flight. It takes around 20 working days to obtain an SFOC.

Two exemptions allow non-recreational operators to conduct lower risk operation in more remote areas without the need to apply for an SFOC:

- For UAVs weighing one kg or less and operated within visual line-of-sight; and
- For UAVs above one kg up to and including 25 kg, with a maximum calibrated airspeed of 87 knots or less, operated within visual line-of-sight.³

Where it’s found that commercial drones are deployed without an SFOC, detailed information shall be passed on to the Regional Enforcement branch for action (e.g., Detection Notice). Section 602.41 of the CARs provides for a maximum individual penalty of \$5,000 and a corporate penalty of \$25,000. If an operator does not follow the SFOC requirements, Transport Canada can issue fines of up to \$3,000 for an individual, and \$15,000 for a corporation. Transport Canada has also introduced a standardized drone incident report form that can be accessed from the Transport Canada website and completed online.⁴

Drones: Recreational Use

The price of drones has dropped quickly in recent years. The technology is readily available, affordable, and is being sold to the general public by major retailers including Amazon, Future Shop and online specialty retailers (in kits) for under \$100 CAD. More sophisticated models retail for upwards of \$500 CAD.⁵

The most common use of recreational drones is to fly stabilized cameras with high-resolution video capability. These cameras use WIFI to beam images back to the operator. For some hobbyists this is an exciting 'toy,' yet an uncritical acceptance of the technology can lead to endangerment of others, or at the least a unique breach of privacy.

Legal Issues: Safety & Privacy

To date, most recreational and commercial drones aren't equipped with transponders or technology to prevent airborne or other collisions. Pre-programmed drone flights have no regard for objects, people, and animals; if they get in the line of flight, a collision will ensue.

Typical drone collisions range from hitting trees or buildings, or simply loss of lift resulting in the drone plummeting. These events often result in damage to the drone itself, and tend to be the result of a loss in connectivity or communication with a control station. Most recreational flight collisions are unremarkable, but when a drone threatens the safety of an aircraft, for example, the potential for disaster is significant.

In addition to issues of safety, it's widely recognized that the very nature of drones poses a threat to privacy. Canada's privacy laws do apply to UAVs deployed by public or private sector organizations to collect and/or use personal information about citizens, which ultimately leaves only recreational drone 'surveillance' unmonitored.

Air Highways and Collision Avoidance

Integration of UAVs into national airspace appears to be the ultimate goal of both Transport Canada and the Federal Aviation Administration. Recently, both Canada and the US have pinpointed the ability for unmanned aircraft to perform collision avoidance through "detect, sense-and-avoid systems" (DSA). However, this critical capability must be further developed to enable comprehensive integration of DSA into drone regulation.

Transport Canada currently seeks to create right of way rules for UAVs and if pilot interaction is required, transmission and decision time must also be included in the total time between initial detection of a potential collision and the point of minimum separation between drone and object.

The availability of reliable DSA technology is a future goal; until then, finding ways to safely integrate drone operation with the manned aircraft and other airborne or tall structures via air highways seems to be the most logical path forward.

Safety Guidelines (2014)

Publicly available drone air highways have not yet been developed. Instead, in October 2014, Transport Canada released Safety Guidelines, which were intended to develop a 'safety culture' around the recreational use of drones. The Guidelines sought to remedy what was seen to be the applicable regulations' failure to adequately integrate unmanned aircraft into civil airspace: most drones flown recreationally (not as part of a commercial activity), were first regulated in accordance with the category of "model aircraft" as defined by CARs.⁶

Drones: Restrictions (2017)

In 2017, Canada implemented more limiting regulations regarding the recreational use of drones. The Interim Order addresses many of the safety and privacy concerns discussed earlier. It marks a shift in Transport Canada's approach to the regulation of recreational drone operations since it is a more restrictive approach to recreational drone use, no longer relying on self-education. The Interim Order prohibits flying drones in the following circumstances

- Higher than 90 m above the ground;
- Closer than 75 m from buildings, vehicles, vessels, animals, people/crowds;
- Closer than 9 km from the centre of an aerodrome;
- Within controlled or restricted airspace;
- Within 9 km of a forest fire;
- Where it could interfere with police or first responders;
- At night or in clouds;
- If it can't be kept in sight at all times;
- If the operator is not within 500 m of the drone; or
- If the name, address, and phone number of the drone owner are not clearly marked on the drone.⁷

No Drone Zones

As well, Transport Canada has characterized the following areas as "no drone zones":

- Around airports and aerodromes;
- In busy, populated areas;
- In national parks; or
- Across the Canadian border.⁸

The Interim Order will remain in place for a period of one year until permanent regulations are put into place.⁹ The rules for operation of drones for commercial, academic or research purposes are unaffected by the new measures.

Conclusions

Compared to the US, Canada is still seen as being less restrictive for commercial drone deployment since the SFOC application process can be fairly easily mastered. Thus, foreign manufacturers complete many SFOC applications in Canada. However, the new restrictions on recreational drone use imposed by Transport Canada illustrates a shift

in tolerance from self-education and self-regulation to a complete bar on certain flights, with the implementation of specific no drone zones. Moving to a more formalized, restrictive approach is a harbinger of the future: while the development of DSA may prevent or reduce collisions, it won't alleviate the risk that drones can lose lift and crash down on people, animals or objects below.

However, we are optimistic that with the concept of drone air highways, the future regulations, such as the creation of air highways, may lead to a comprehensive regulatory model applicable across North America similar to the regime employed for licensing and driving automobiles. Consider that few people will ever fly a plane – therefore, modelling the use of a pink selfie drone on an aviation regime requires the average person to learn a new regime that is foreign to many. However, many North Americans drive. The regulatory model for surface transportation, which extends to regulate both commercial and recreational vehicle operations, can be modified to regulate commercial and recreational drone deployment. Such a regime could be swiftly implemented into fairly accessible regime, which would ensure safe operations of commercial and recreational drones, and could include all aspects from drone deployment to mandatory insurance regimes. In conclusion, we propose the future regime of regulating drone technology and

flights, both commercial and recreational, lies not in the skies, but mirroring those on the roads: accepting that the ease of access to this technology requires a different approach entirely. 

End Notes

- ¹ Jennifer Henry, "Commercial Use of Drones in a Holding Pattern" (2014) *Aviation Law* 48 [Henry] at 50.
- ² CARs, supra, note 2 at s 602.41. In order to fly a UAV under an AOC, the AOC would have to be amended to allow for specific UAV operations, otherwise an SFOC would suffice.
- ³ <https://www.tc.gc.ca/eng/civilaviation/opssvs/getting-permission-fly-drone.html>.
- ⁴ <https://www.tc.gc.ca/eng/civilaviation/opssvs/drone-incident-report-form.html>.
- ⁵ www.henrys.com/90830-3DR-sold-aerial-drone.aspx
- ⁶ SOR/96-433.
- ⁷ <https://www.tc.gc.ca/eng/civilaviation/opssvs/flying-drone-safely-legally.html>.
- ⁸ <https://www.tc.gc.ca/eng/civilaviation/opssvs/no-drone-zones.html>.
- ⁹ https://www.canada.ca/en/transport-canada/news/2017/03/new_safety_rulesforrecreationaldroneusetakeimmediateeffect.html.



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