# Advisory Circular

**Subject:** General Safety Practices – Model Aircraft and Unmanned Air Vehicle Systems

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1.0 INTRODUCTION

1.1 Purpose

(1) An Advisory Circular provides information and guidance with regards to a specific issue or law. In this case, it provides general guidance and safety practices for operators of model aircraft and unmanned air vehicle (UAV) systems.

1.2 Terminology

(1) While media and manufacturers may use different terms when describing a remotely controlled aircraft, the aviation industry and its regulations use the term UAV system.

1.3 Applicability

This document applies to members of the public who own and operate a model aircraft for recreational purposes or a UAV system for any purpose. Refer to section 3 to determine the type of aircraft you are operating.

1.4 Description of Changes

Not applicable.

2.0 REFERENCES AND LEGAL REQUIREMENTS

2.1 References

(1) This Advisory Circular should be used in conjunction with the Advisory Circular on Guidance Material for Operating an Unmanned Air Vehicle System Under an Exemption http://www.tc.gc.ca/eng/civilaviation/opssys/managementServices-referencecentre-acs-600-menu-495.htm and the Staff Instruction on the Review and Processing of an Application for the Operation of an Unmanned Air Vehicle System.

2.2 Legal Requirements

(1) The aviation laws that govern the use of model aircraft and UAV systems operated in Canadian airspace are the:
   
   (a) Aeronautics Act; and
   
   (b) Canadian Aviation Regulations.

(2) In addition, it is your responsibility, as an operator, to comply with all other Canadian laws that might apply such as the:

   (a) Canadian Transportation Accident Investigation and Safety Board Act;
   
   (b) Charter of Rights and Freedoms;
   
   (c) Criminal Code of Canada;
   
   (d) Customs Act;
   
   (e) Environmental Protection Act;
2.3 Cancelled Documents


2.4 Definitions

The following definitions are used in this document:

(a) **Model Aircraft** – means an aircraft with a total weight not exceeding 35 kg (77 lbs) that is mechanically driven or launched into flight for recreational purposes and that is not designed to carry persons or other living creatures.

(b) **Maximum Take-off Weight** – means the weight of the aircraft at the time of the operation, including the weight of any payload (e.g. a camera) and fuel.

(c) **Unmanned Air Vehicle** – means a power-driven aircraft, other than a model aircraft, that is designed to fly without a human operator onboard.

3.0 BACKGROUND

(1) Greater numbers of people in Canada are flying aircraft that, by design, are flown without a pilot on board and controlled through devices such as a remote control, tablet, smart phone, etc.

(2) For everyone’s safety, aviation is governed by strict rules similar to when operating a car or a boat.

(3) While UAV systems are legitimate airspace users, they must integrate into Canada’s national airspace in a safe manner. This will ensure the safety of other airspace users and people and property on the ground.

(4) To determine what type of aircraft you are operating, and if the guidance that applies to you, use the definitions above and the information below:

(i) A model aircraft has no pilot onboard and is used by hobbyists for recreational purposes. If your aircraft and planned operation meets this category refer to section 4.0 for more details, or

(ii) A UAV system is used for non-recreational and commercial purposes and is controlled remotely, either directly or through onboard computers. If your aircraft and operation meets this category, refer to section 5.0 for more information.
4.0  MODEL AIRCRAFT

4.1.  General

(1) Model aircraft are excluded from the vast majority of Canadian Aviation Regulations (CARs) that are applied to other aircraft. However, for a large model aircraft with a maximum take-off weight of over 35 kg (77 lbs), you require a special flight operations certificate (SFOC) to operate as described in section 5.0 below.

(2) If your aircraft has a maximum take-off weight of less than 35 kg (77 lbs) and is used for purposes other than recreation, it is not considered a model aircraft. It is a UAV system and again is subject to section 5.0 and requires an SFOC.

(3) You should use your model aircraft for recreational purposes only (e.g. hobby and personal enjoyment). If you are using it for other purposes (i.e. flight training, inspection or academia purposes, etc), section 5.0 below is applicable as is the requirement for an SFOC.

(4) For model aircraft weighing less than 35 kg (77 lbs) and used for recreational purposes, the best practices in section 4.2 below provides guidance for the safe operation of your model aircraft.

(5) The Model Aeronautics Association of Canada (MAAC) represents 12,000 members and is the preeminent national body for model aviation in Canada. The MAAC supports and promotes recreational and competitive model flying, both locally and internationally and works with all levels of government.

(6) The regulations regarding model aircraft are clear:

   (a) No person shall fly a model aircraft or a kite or launch a model rocket or a rocket of a type used in a fireworks display into cloud or in a manner that is or is likely to be hazardous to aviation safety (Canadian Aviation Regulations, Section 602.45).

4.2  Safety Considerations for Model Aircraft

Before your Flight

(a) Inspect that your model aircraft is ready for flight.

   (i) This means that the aircraft, control station components (hardware, software and firmware) and control links are in a fit for flight condition.

(b) Seek permission from the property owner on which you intend to operate your model aircraft.

(c) Know the classification of the airspace you want to fly in. It would be inappropriate and unsafe for you to operate in airspace with heavy aircraft traffic, such as around airports.

(d) Confirm that there is no radio frequency interference (from a nearby radar site for example) that will interfere with the control of your aircraft.

(e) Have an emergency plan just in case.

   (i) This means know the people and equipment available that could help you respond to an incident, accident, medical emergency, you have a fly-away or if your model aircraft becomes uncontrollable.
During your Flight
(a) Operate the aircraft safely.
(b) Always be able to see the aircraft with your own eyes. This means that you should not use an on-board camera, first person view device or other similar devices.
(c) Always give way to manned aircraft (e.g. hot air balloons, gliders, ultra-light aeroplanes including powered parachutes, aeroplanes and helicopters).
(d) Fly only during daylight and in good weather (e.g. not in clouds or fog).
(e) Avoid restricted airspace (e.g. forest fire areas, prisons or military airspace)
(f) Remain at least 9 km (5 nautical miles) from any aerodromes and heliports.
(g) Maintain below a safe altitude (300 feet (90 metres)) and a safe horizontal distance (minimum 100 feet (30 metres)) from people, structures or buildings.
(h) Do not fly in populated areas or overfly assemblies of people (e.g. sporting events, concerts, etc).
(i) Do not fly where or when you could interfere with any first responders (fire department, police, etc) as they conduct their duties.
(j) Respect the privacy of others.
(k) Do not operate with any dangerous goods or lasers on the aircraft.

4.3 Penalties for Model Aircraft
(1) Violations of the model aircraft regulation are handled by the courts or judicial action. Endangering the safety of aircraft is a serious offence under the Aeronautics Act and is punishable by a fine.
(2) The Criminal Code of Canada describes several offences involving the dangerous operation of aircraft and endangering the safety of other aircraft. Committing such offences is punishable by monetary penalties and/or jail time including imprisonment for life.
(3) Other penalties may apply against other regulations outlined in section 2.0.

5.0 UNMANNED AIR VEHICLE (UAV) SYSTEMS

5.1 General
(1) There are different mechanisms to allow you to operate a UAV system.
(a) If your UAV has a maximum take-off weight not exceeding 2 kg (4.4 lbs), you may be eligible to operate under a regulatory exemption.
(b) If your UAV has a maximum take-off weight exceeding 2 kg (4.4 lbs), but not exceeding 25 kg (55 lbs), you may be eligible to operate under a separate regulatory exemption.
(c) Or If your proposed operation does not meet the conditions above and cannot be conducted under an exemption, you must apply for a special flight operations certificate.
5.2 Penalties Relating to the Use of UAV Systems

(1) Penalties may be assessed in the amount of $5,000 for an individual and $25,000 for a corporation for operating without a special flight operations certificate when one is required.

(2) Penalties may be assessed in the amount of $3,000 for an individual and $15,000 for a corporation for failure to comply with the conditions of a special flight operations certificate.

(3) The Criminal Code of Canada describes several offences involving the dangerous operation of aircraft and endangering the safety of other aircraft. Committing such offences is punishable by monetary penalties and/or jail time including imprisonment for life.

(4) Other penalties may apply against other regulations outlined in section 2.0.

5.3 Reporting

(1) The reporting requirements for UAV accidents or incidents will be included in the special flight operations certificate.

(2) The Civil Aviation Issues Reporting System provides you with a means to raise issues (concerns, complaints and suggestions for improvement) to Transport Canada. It is a tool to anonymously report any suspicious aviation activity, such as illegal or unsafe use of any aircraft.

(3) The more specific the details about a perceived contravention, the easier it is for Transport Canada’s enforcement officials to process the report.

(4) If you suspect someone has committed a criminal offence, please contact your local police department.

6.0 INFORMATION MANAGEMENT

Not applicable.

7.0 DOCUMENT HISTORY

Not applicable.

8.0 CONTACT OFFICE

Transport Canada Civil Aviation Communications Centre:

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(original signed by)

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