

Remotely Piloted Aircraft (RPA) Notice of Proposed Amendment Summary

ON MAY 28, 2015, TRANSPORT CANADA ISSUED ITS NOTICE OF PROPOSED AMENDMENT (NPA) ON UNMANNED AIR VEHICLES.

A Notice of Proposed Amendment is used for input from the aviation community before a set of rules and regulations are put into place. The following has been proposed and Transport Canada (TC) is looking for feedback from industry partners.

The original document is over 30 pages in length and it has been reduced here in this summary document. To read the original document in its entirety, visit www.SkyHunter406.com and visit the documents tab.

Pointer Avionics Ltd. Has been in the aviation industry operating out of their maintenance and manufacturing facility in Ontario Canada for over 37 years. We work with Unmanned Aerial Vehicle (UAV) / Remotely Piloted Aircraft (RPA) systems for a diverse set of clientele operating in such areas as Search and Rescue (SAR), Agriculture, Security, Real Estate, Thermal inspections and more.

Pointer Avionics Ltd. Offers **Unmanned Systems training and guidance with regulatory requirements.**

Pointer Avionics Ltd. / SkyHunter 406 are also a leading manufacturer of Emergency Locator Transmitters and have been doing so since 1978. We are the only Canadian manufacturer of ELT's and are a world first at combining modern microprocessor technology with integrated remote web based testing and diagnosis.

We supply all of the major aircraft OEM's and have distributors and service centers all over the world.

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NPA BRIEF SUMMARY

1. Under the current framework, Transport Canada makes the distinction between recreational and non-recreational operations. Any flight that is used for commercial purposes (services exchanged for currency, or any other benefit to the receiver) can be said to be for a commercial purpose
2. The current process to obtain permission from TC to fly your UAV is with the SFOC. This document gives non-recreational pilots permission to fly and spells out when, where, and how.
3. The growth of the UAV industry has resulted in growing numbers of SFOC applications to Transport Canada. In 2014, the department issued 1,672 SFOCs for UAVs, whereas it issued 945 SFOCs in 2013 and 345 SFOCs in 2012; this represents an overall increase of 485% over two years
4. Currently, two organizations represent the UAV industry and model aircraft community:
 - a. Unmanned Systems Canada (USC) is a not-for-profit association that has about 500 members, working to facilitate the growth and integration of UAVs in the Canadian economy.
 - b. The Model Aeronautics Association of Canada (MAAC) is the governing body of model aircraft in Canada with established guidelines for its 13,000 members. The rule proposes to address UAVs used for any and all purposes and intends to provide a “carve-out” for modelers operating within an aeromodeling organization. As such, the NPA is to only better define what constitutes a model aircraft.
5. This proposed NPA rule will **NOT apply** to the following activities:
 - UAVs greater than 25kgs, UAVs operated beyond visual line-of-sight, etc);
 - Indoor or underground UAV operations;
 - Kites, rockets or unmanned free balloons
6. The international community is no longer using the term unmanned air vehicle or the acronym, UAV. The International Civil Aviation Organization (ICAO) Standards and Recommended Practices will be used:

The new terms introduced by ICAO include:
UA (unmanned aircraft) / UAS (unmanned aircraft system) / RPA (remotely-piloted aircraft) / RPAS (remotely-piloted aircraft system).
7. Transport Canada is looking into having three categories or types of RPA systems as follows:
 - a) **Complex Operations with Small UAVs**

This category would be considered to be the most challenging as it would occur in and around urban or built-up areas and allow operations close to aerodromes. This category would have the most comprehensive set of regulatory requirements.
 - b) **Limited Operations with Small UAVs**

This category would have less regulatory requirements than complex operations due to their lower-risk profile although would be limited to remote areas. This would result in:

 - ☐ Specific geographic limitation (e.g. specific distances from aerodromes or built-up areas).
 - ☐ adding restrictions to reduce the risk of incident.
 - c) **Operations with Very Small UAVs**

Transport Canada has considered whether to establish a “lower threshold” or very small UAV category that would be regulated to a lesser extent.

SMALL UAV (COMPLEX OPERATIONS)

UAV operators meeting certain criteria would need to register with Transport Canada before conducting operations. **Transport Canada could require any of the following:**

- An adequate management organization;
- A method of control and supervision of flight operations;
- Pilot training programs;
- Security procedures;
- a maintenance control system;
- A company operations manual; and
- Standard operating procedures.

UAV operator responsibilities **could also have regulations** within the following areas:

- Flight Operations
- Documentation
- Flight Time and Flight Duty Time Limitations
- Emergency Equipment
- Maintenance Requirements
- Personnel Requirements
- Training Programs
- Operations Manual

AIRCRAFT MARKING AND REGISTRATION

- To **require** the aircraft to be marked and registered.
- To **require persons** wanting to register an aircraft to meet the qualifications to be a registered owner of a Canadian aircraft as outlined in section 202.15 of the *Canadian Aviation Regulations*.

PERSONNEL LICENSING AND TRAINING

Transport Canada proposes that UAV pilots be considered pilots as defined by the *Aeronautics Act* and the *Canadian Aviation Regulations*. Their responsibilities include **ensuring that they obtain proper training and experience** in order to safely operate their aircraft within Canadian airspace.

The following additional requirements are being proposed:

- **To require UAV pilots to be properly trained and licensed and hold a pilot permit.**
- **Age** – A minimum age requirement of 14 while under adult supervision / 16 without adult supervision.
- **Medical Fitness** - A Category 4 Medical Certificate would be required, based on a Self-declaration process. It would be valid for 60 months. This is consistent with other Canadian pilot permits.
- **Knowledge** - Pilots would be required to complete a course of instruction in specific aviation knowledge areas and **pass a Transport Canada written examination** that would be developed specifically for this category of UAV. Training could be provided by a flight training school, a UAV training provider, a third party or be self administered.
- **Experience** - Pilots would need to acquire practical training on the category of UAV, including UAV system-specific training. This training may be provided to the pilot by the manufacturer, operator or by a third party, providing the person providing such training held a UAV pilot permit.
- **Skill** - Pilots would be required to demonstrate competency in the ability to perform normal and emergency procedures appropriate to the particular type of UAV. Skill tests/proficiency checks would be conducted by qualified UAV operators, manufacturers or third parties.
- **Currency** – UAV pilots would be required to maintain currency and proficiency.
- **Privileges** – meeting these criteria and the issuance of a permit, would allow a person to be a pilot

KNOWLEDGE REQUIREMENTS

- Air law and procedures relevant to the permit (e.g. general provisions, general operating and flight rules, air traffic control services and procedures, aviation occurrence reporting);
- Airspace (e.g. structure, classification; reporting requirements);
- Flight instruments (e.g. altimetry, GPS, airspeed and heading indicators);
- Navigation (e.g. aeronautical charts, pre-flight preparation);
- Flight operations (e.g. wake turbulence causes, effects and avoidance; data and command links);
- Meteorology (e.g. required for visual line-of-sight operations);
- Human factors (e.g. aviation physiology, the operating environment, aviation psychology); and
- Theory of flight (e.g. basic principles).

Or, as an alternative to the knowledge subject areas above, TP15263E “Recommended Knowledge Requirements for Pilots of Small Unmanned Air Vehicle Systems, Restricted to Visual Line-of-Sight” could be used as the basis for the knowledge requirements for the pilot of a small UAV. (This document can be found at www.SkyHunter406.com under the documents tab)

SMALL UAV (LIMITED OPERATIONS)

UAV operators meeting certain criteria would need to register with Transport Canada before conducting operations. **Transport Canada could require any of the following:**

- An adequate management organization;
- A method of control and supervision of flight operations;
- Pilot training programs;
- Security procedures;
- A maintenance control system;
- A company operations manual; and
- Standard operating procedures.

UAV operator responsibilities **could also have** regulations within the following areas

- Flight Operations
- Documentation
- Flight Time and Flight Duty Time Limitations
- Emergency Equipment
- Maintenance Requirements
- Personnel Requirements
- Training Programs
- Operations Manual

AIRCRAFT MARKING AND REGISTRATION

- To **require** small UAVs for limited operations to be marked and registered.
- To **require** persons wanting to register a small UAV for limited operations to meet the qualifications to be a registered owner of a Canadian aircraft as outlined in section 202.15 of the *Canadian Aviation Regulations*.
- To **not require** this category of UAVs to have an aircraft identification plate.

PERSONNEL LICENSING AND TRAINING

Transport Canada proposes that UAV pilots be considered pilots as defined by the *Aeronautics Act* and the *Canadian Aviation Regulations*.

- To **not require** pilots of the Small UAV (limited operations) category to obtain a pilot permit or medical certificate.
- To **not set a minimum age requirement** for pilots of small UAVs (limited operations), provided they are operating with adult supervision. A minimum age of 16 years is proposed to allow operations without adult supervision. However, these pilots would be required to demonstrate aeronautical knowledge in specific subject areas, such as airspace classification and structure.

KNOWLEDGE REQUIREMENTS:

- Air law and procedures relevant to the permit (e.g. general provisions, general operating and flight rules, air traffic control services and procedures, aviation occurrence reporting);
- Airspace (e.g. structure, classification; reporting requirements);
- Flight instruments (e.g. altimetry, GPS, airspeed and heading indicators);
- Navigation (e.g. aeronautical charts, pre-flight preparation);
- Flight operations (e.g. wake turbulence causes, effects and avoidance; data and command links);
- Meteorology (e.g. required for visual line-of-sight operations);
- Human factors (e.g. aviation physiology, the operating environment, aviation psychology); and
- Theory of flight (e.g. basic principles).

Or, as an alternative to the knowledge subject areas above, TP15263E “Recommended Knowledge Requirements for Pilots of Small Unmanned Air Vehicle Systems, Restricted to Visual Line-of-Sight” could be the basis for the knowledge requirements for the pilot of a small UAV (limited operations). (This document can be found at www.SkyHunter406.com under the documents tab)

AIRWORTHINESS

Manufacturers of UAV systems for the Small UAV (limited operations) category may be required to declare that the UAV system meets a design standard.

For small UAVs (limited operations), it is **proposed** that the design standard would detail requirements for the following areas:

- Flight Performance
- Structure
- Design and Construction
- Propulsion System
- Systems and Equipment

AIRCRAFT MAINTENANCE REQUIREMENTS

Transport Canada is proposing that small UAVs (limited operations) be maintained by the owner/operator of the UAV system. General maintenance of these UAV systems would be performed by a person possessing the relevant experience and training on the maintenance of the specific UAV system and authorized by the owner/operator.

VERY SMALL UAV (LOWER THRESHOLD)

UAV operators meeting certain criteria would **need to register with Transport Canada** before conducting operations and **would not require an Operator Certificate**. Transport Canada could require any of the following:

- An adequate management organization;
- A method of control and supervision of flight operations;
- Pilot training programs;
- Security procedures;
- A maintenance control system;
- A company operations manual; and
- Standard operating procedures.

Such a proposal would include rules describing UAV operator responsibilities within the following areas:

- Flight Operations
- Documentation
- Flight Time and Flight Duty Time Limitations
- Emergency Equipment
- Maintenance Requirements
- Personnel Requirements
- Training Programs
- Operations Manual

AIRCRAFT MARKING AND REGISTRATION

Transport Canada proposes to **not require** the owner of a UAV falling under the proposed Very Small UAV (*lower threshold*) category **to register their aircraft** as would be the case with the small UAVs. They would instead **be required to have permanent marking for identification** (e.g. pilot name and contact information) on their UAV operating in this category.

PERSONNEL LICENSING AND TRAINING

Transport Canada proposes that UAV pilots be considered **pilots** as defined by the *Aeronautics Act* and the *Canadian Aviation Regulations*. UAV pilots in turn have responsibilities, including **ensuring that they obtain proper training and experience** in order to safely operate their aircraft within Canadian airspace.

- To **not require** pilots to obtain a pilot permit or medical certificate.
- To **not set a minimum age requirement** for pilots operating Very Small UAVs provided they are operating with adult supervision. A minimum age of 16 years is proposed to allow operations without adult supervision. However, these pilots would be required to demonstrate aeronautical knowledge in specific subject areas, such as airspace classification and structure.

KNOWLEDGE REQUIREMENTS

- Air law and procedures relevant to the permit (e.g. general provisions, general operating and flight rules, air traffic control services and procedures, aviation occurrence reporting);
- Airspace (e.g. structure, classification; reporting requirements);
- Flight instruments (e.g. altimetry, GPS, airspeed and heading indicators);
- Navigation (e.g. aeronautical charts, pre-flight preparation);
- Flight operations (e.g. wake turbulence causes, effects and avoidance; data and command links);
- Meteorology (e.g. required for visual line-of-sight operations);

AIRWORTHINESS

Transport Canada is proposing to **not require** UAVs that fall under the proposed Very Small UAV (*lower threshold*) to meet a design standard.

AIRCRAFT MAINTENANCE REQUIREMENTS

Transport Canada proposes that Very Small UAV systems that fall into the *lower threshold* category:

- Will **not be required** to meet any design standard or have any specific maintenance requirements.
- Will **be required** to follow any maintenance instructions provided by the manufacturer.
- Will **be required** to conduct a pre-flight check to ensure that the aircraft is in a fit and safe state for flight before take-off.