

CAR Part IX

Regulations for sRPAS Manufacturers

Presented by RPAS TF Eng to Industry, Jan. 24, 2019





Overview

- Regulatory responsibilities for sRPAS manufacturers;
 - CAR Standard 922
 - Grandfathering
- TCCA processes for information management;
- Means of Compliance: Industry Guidance material;
 - Development
 - Declarations
- Next Steps; and
- Questions.





Regulatory responsibilities for sRPAS manufacturers

- Defined under Div VI of Part IX;
- Related to sRPAS which will be used in 3 specific Advanced Operations at the discretion of the operator based on their needs; manufacturers may choose to identify models as capable of any combination of these operation types :
 - Operations in Controlled Airspace;
 - Operations Near People (>5m but <30m); and
 - Operations Over People (<5m).
- TCCA will not be providing an “approval” of a design or manufacturer, but rather will be collecting data on higher risk operations to inform continuous safety improvements.
 - The onus is on the pilot to ensure their RPAS is capable of the operations they need to perform, and the onus is on the manufacturer to ensure their product can perform the declared operation:
 - Information to consumers based on the declarations:
<http://www.tc.gc.ca/en/services/aviation/drone-safety/choosing-right-drone.html>





Regulatory responsibilities for sRPAS manufacturers ... cont'd

- An sRPAS manufacturer produces a “*Declaration of RPAS Safety Assurance*” defining the capabilities of their system:
 - Identifies the system meets CAR Standard 922 for the types of operations the systems is capable of performing;
 - Provides TCCA situational awareness on the industry activities; and
 - Links system capabilities to a Certificate of Registration.
- Manufacturers produce some documentation for their users:
 - Operating manual (with some minimum information);
 - Maintenance program; and
 - Mandatory actions.
- An sRPAS manufacturer has to retain their technical development documents:
 - Verification reports and data; and
 - Mandatory actions.
- An sRPAS manufacturer is responsible to notify the Minister of issues identified with a Declared product.





CAR Standard 922: RPAS Safety Assurance

- Different requirements within the standard which are focused on managing different outcomes;
- Controlled Airspace:
 - Assurance of accuracy of position data communicated to the pilot.
- Operations Near People:
 - Assurance that the design is robust/reliable enough to avoid serious injury or death (provided it is operated correctly).
- Operations Over People:
 - Assurance that there are no single-point failures which will cause serious injury (or death); and
 - Assurance that the design is robust/reliable enough to avoid serious injury or death (provided it is operated correctly).





Grandfathering

- Up until this year TCCA has engaged in a comprehensive review of sRPAS which have been submitted to be Compliant with SI 623-001 Issue 02;
 - The purpose of this program was to work with industry to evaluate best practices, built confidence in early entrants, and grant privileges to those working to ensure safety.
 - This program greatly informed and influenced the development of Part IX and the new CAR 922 standards.
- sRPAS which have been previously evaluated by TCCA to be in Compliance with SI 623-001 Rev1 Appendix C before April 2019 will be granted recognition for Operations in Controlled Airspace and Operations Near People (subject to the conditions which may have been included during their initial finding of compliance)
 - Recognizes the work done by the industry to show compliance to standards created for the Compliant SFOC process; and
 - Reduces industry burden to resubmit paperwork relating to previously evaluated systems.





TCCA Processes for Information Management

- Declaration Process:
 - A Declaration website has been created to support manufacturers/designers making declarations for their systems. When the form is complete and submitted it goes directly to TCCA for processing:

English: <https://www.tc.gc.ca/en/services/aviation/drone-safety/submit-drone-safety-assurance-declaration.html>

French: <https://www.tc.gc.ca/fr/services/aviation/centre-reference/circulaire-information/ci-900-001.html>





TCCA Processes for Information Management ... cont'd

- Manufacturer Notification Process:
 - When a manufacturer determines that there is an issue in their product which affects its ability to meet the declared capabilities they must notify TC;
 - A common e-mail address has been created to receive and process notifications:
RPASDeclaration-DeclarationSATP@tc.gc.ca
- Oversight Process:
 - Manufacturers must keep the verification reports and data associated with their Declaration for 2 years, or the expected lifetime of the aircraft;
 - TCCA will be conducting audits of declared systems in a risk based manner consistent with our existing risk based oversight process;
 - Data collection regarding usage, incidents, and practices will help continue to stream-line our systems and procedures.





Means of Compliance: Industry Guidance Material

- Draft AC 922-001 – Guidance on Safety Assurance
 - The goal of this guidance material is to collect best practices from industry and help clarify the language in the regulations & standards regarding the responsibilities of manufacturers.
- Development
 - The AC provides guidance to manufacturers on the design and development of sRPAS, and how they can comply with the technical requirements in CAR Std 922 and develop operators manuals.
- Declarations
 - The AC provides details on the declaration process (i.e. how to interpret the Declaration form, and where to send it) as well as outlines how to notify TC of deficiencies identified with a declared product.





Next Steps

- AC 922-001 industry review and comment;
 - Will be provided at the end of this meeting & through CARAC;
 - Follow-on industry discussion after the formal consultation;
- Initial publication of AC 922-001;
- Continuous improvement or processes through outreach, audits, WGs, and conferences;
 - Looking to identify internationally accepted standards and best practices.
- Continued work towards regulatory harmonization between TCCA and other Civil Aviation Authorities.





Questions?





Canada



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Regulatory responsibilities for sRPAS modifications

- Modification of a declared sRPAS:
 - A modification made to an sRPAS which has a Declaration must still comply with the Declaration;
 - If the modification causes the sRPAS to no longer perform as per its Declaration, the system is restricted to Basic operations; and
 - The pilot is responsible for being able to demonstrate the compliance to the Declaration.
- sRPAS with modifications which affect their Declaration may have another Declaration to identify capabilities for the modified sRPAS;
 - The intention is to identify responsibilities for modifiers who make changes without sufficient technical knowledge.
- Technical Records:
 - Owners must keep records of modifications made to their systems.





Industry Guidance Material

- Draft AC 922-001 – Guidance on Safety Assurance
 - Will be released for Public Review at the same time as the Regulations.
- Modifications
 - The AC provides details on the modification process and the expectations on how to evaluate a modification at a technical level, along with how to assess the impact on the Declaration.

