


**PART IX - A SUMMARY REFERENCE OF NEW UAV RULES (VER 2.0) with notes by D Cooke inskyphoto.com**

 These rules come into force in Canada 1JUN19 . . . . (see *INTERPRETATIONS* last page)

**DIV I GENERAL - SMALL REMOTELY PILOTED AIRCRAFT. ie: between 205grams and 25 kilos**

901.01 These rules apply to Small Remotely Piloted Aircraft Systems (RPAS-sRPAS)

**DIVISION II - REGISTRATION**

901.02 All small RPAS have to be registered and (you must have the certificate on you during ops 901.09)

901.03 Registration clearly visible on the a/c

901.04 (1) To register an a/c you must be Canadian Citizen, Permanent Resident or Fed, Prov or Muni gov't Agency

901.04 (2) Owner must be &gt;14 yrs

901.5 Registration data required (Long list look it up) reg certificate includes if MFG has made declaration (901.76)

901.06 Minister to maintain a database of owners and reg numbers

901.07 Owner must notify TC in writing (within 7 days) if

901.07 (1) Destroyed, stopped using it, missing &gt;60days or gave up looking, or transferred ownership

901.07 (2) If any of that happens your registration is cancelled

901.07 (3) Registration cancelled if: Registered Owner becomes unqualified, dies, Company dissolved, acquired or bankrupt

901.07 (4) By the way, if you have responsibility for the Ops &amp; Maint . . You are considered "the owner"

901.08 Notify Minister in writing with 7 days, if you change name or address of owner

901.09 You must have registration certificate accessible during operations

**DIVISION III - GENERAL OPERATING AND FLIGHT RULES**

901.11 PIC or OBS must have UAV visible at all times (VLOS) unassisted

901.12 no flying over or within Police Fire rescue Security perimeter (unless approved by the ops commander)

901.13 Can't leave Domestic Airspace

901.14 Can't fly in controlled airspace unless specifically authorized by ATC or person ID'd in Desig Airspace Handbook

901.15 notify ATC or airspace authority if you violate controlled airspace inadvertently or are likely to

901.16 Stop operations immediately if anyone likely to be in danger

901.17 always give way to all other manned aircraft, balloons, gliders . . . everyone

901.18 STOP if there is any risk of collision with nearby aircraft

901.19 No sick or tired or unfit crew allowed

901.19 (2) &gt;12hrs since Alcohol &amp; never influence of ANY impairing drug (prescribed or other)

901.20 (1) ANY/ALL Observers used must have clear communications with PIC at all times

901.20 (2) Observers MUST communicate hazards to PIC in a timely manner

901.20 (3) Observers only monitor 1 UAV at a time see 901.40(1) or get an SFOC

901.20 (4) Observers cannot observe while driving vessel vehicle of other aircraft (PIC 901.37)

901.21 Crews must obey the PIC instructions during flight

901.22 no living creatures on board UAVs . . (not even a cockroach)

901.23 These procedures mandated for all flights - be familiar with before take-off 901.24)

Preflight Take-off Launch Approach Landing Recovery

Controller failure, Equipment failure, A/c Failure, C2 Loss, Fly-away, Flt Termination

Refer to MFG procedures for establishing the above

901.23 (3) No take-off without reviewing checklist/procedures that is available to PIC

901.23 (4) No operating UAV unless IAW established procedures

901.24 Don't start without knowing info needed for the flight

901.25 Stay below 400ft AGL MAX - you can go 100 ft over bldgs/structures if &lt;200ft horiz

901.25(2) otherwise get an SFOC see (903.03)

901.26 Fly &gt;100ft away from anyone except crew or actors (no overflight AT ANY ALTITUDE)

901.27 Site Survey must be done, including

Type of Airspace (CLASS) - Define boundaries physical and electronic (GeoFence)

Evaluate Altitudes (AGL) Approach and Departing routes

Check distance from manned a/c, airports, heliports and other aerodromes

Locate and note height of obstacles towers ,bldgs, masts, wires, cell towers, wind turbines and obstacles etc

Check forecast weather conditions at planned time - (and do a local weather check before you fly)

Evaluate distance from any bystanders who are NOT crew or actors

901.28 ensure enough fuel or energy for the flight

PIC to ensure everyone knows their role and has been briefed including emergency equipment

what's max distance to travel without endangering aviation or others

901.29 PIC to ensure a/c is serviceable, &amp; maintained IAW MFG instructions and equip is installed properly &amp; serviceable

901.3 Manuals must be available to PIC on site (print or electronic form)

901.31 must fly IAW MFG instructions

901.32 no autonomous flight unless PIC can take control at any time

A/c - Aircraft (all kinds UAV or normal)  
 ACK - Acknowledge (like a clearance)  
 AGL - Above Ground Level  
 ATC - Air Traffic Control  
 BVLOS - Beyond Visual Line Of Sight  
 C2 - Command and Control  
 CFS - Canada Flight Supplement  
 ELT - Emergency Locator Transmitter  
 IAW - In Accordance With  
 MOD - Any modification of the "system"  
 MFG - Manufacturer's  
 NVG - Night Vision Goggles  
 PIC - Pilot In Command  
 RPIC - Remote PIC (I just threw that out there)  
 RPAS - Remotely Piloted Aircraft System  
 (includes UAV and CTRLR)  
 sRPAS - Small RPAS (between 0.25-25kg)  
 SAFE - Complies with Standard 922 (DRAFT)  
 SFOC - Special Flight Operations Certificate  
 SOP - Standard Operating Procedures  
 SI - Staff Instruction (see No. 623.001)  
 STD921 - RPAS Operator Review Standard (TC)  
 STD922 - RPAS Safety Assurance Std DRAFT (TC)  
 TP15263 - Small RPAS Knowledge Req's (TC)  
 TC - Transport Canada  
 UAV - Unmanned Aerial Vehicle (drone only)

- 901.33 No take-off launch approach or land unless site is safe and no likelihood of collision with anything
- 901.34 Weather condition at planned time must be IAW MFG instructions and ALWAYS VLOS
- 901.35 no flying in icing or potential ice without anti-ice, de-ice or ice detection equip  
No frost, snow or ice on any a/c surface
- 901.36 don't fly formation or in proximity with another aircraft unless pre-arranged between pilots
- 901.37 no fly while driving any other vehicle/vessel at the same time
- 901.38 no FPV unless observer provides detect & avoid VLOS and any can observe conflicting hazards
- 901.39 no Night FPV without nav lights ON and visible both with or without NVG
- 901.39 (2) Don't fly with NVG unless PIC or OBS have other means to detect visible light spectrum
- 901.4 no operating multiple a/c from one controller unless IAW MFG instructions
- 901.4 (2) no operating more than 5 UAVs except under SFOC
- 901.41 Need SFOC for "advertised outdoor event" - public gathering concert, sports event, market or festival etc
- 901.42 no HANDOVER of PIC unless prearranged & risk analysis and procedures followed to minimize CTRL loss
- 901.43 no ops carrying anything that creates a hazard or can injure people or animals or GET AN SFOC  
NO explosives, corrosives, flammables, biohazard, weapons, ammo or "war equipment" (look it up)
- 901.44 don't activate flight termination if it can cause a further hazard or endanger aviation safety or anyone
- 901.45 No ELT allows on UAVs
- 901.46 No flying in transponder space without transponder and pressure altitude equipment
- 901.46 (2) You CAN fly (in Transponder Space) if you request & ATC gives clearance (and you ACK) BEFORE entering
- 901.47 no fly if UAV may interfere with the established traffic pattern (Ref CFS or WAS water aerodrome supplement)
- 901.47 (2) STAY AWAY >3 nm from center of an airport >1nm from heliport center
- 901.47 (3) STAY AWAY >3 nm from Military aerodrome or get an SFOC issued under 903.03
- 901.48 (1) You have to keep Flight Records -names, dates and crews for each flight
- (b) Maintenance Records - names dates of actions taken, for MODS MFG name, model, part name installed  
Keep any instructions provided for the work done (NOTE: It's the Part's MFG instructions they want, not the UAV's MFG)
- 901.48 (2) Flight records must be kept for 12 months, maintenance records 24 months (from the day the record was created)
- 901.48 (3) If you sell your system you must transfer past 24 months of 901.48 1(b) maint records to new owner
- 901.49 STOP ops if any following happens until analysis of cause and corrective/mitigation action is taken to correct  
Unintended UAV contacts with any person, especially if injury requires medical attention  
Unanticipated damage to UAV - adverse control response or flight characteristic  
a/c exceeds geo-fence or planned distance or altitude (apparently you can intentionally CRASH one, no report)  
if UAV becomes uncontrolled - fly-away or is missing, or is at "RISK" of collision with another a/c  
Also, if there is a police report or Civil Aviation Occurrence Report filed by you or anyone else, you file
- 901.49 (2) Keep analysis of any 901.49 for 12 months after the date a report is filed (make them avail to Ministry)

**Document Set**

(Hard or Soft copy)

**REQUIRED** (on-site)

Small RPAS Certificate

PIC Flight Logs (recency)

Site Survey

Property Permission

Checklist (incl Emerg)

RPAS Operator's Manual

**OPTIONAL**

Company SOPs

Company Training Manual

Training Records

**EQUIPMENT**

Fire Extinguisher

**DIVISION IV - BASIC OPERATIONS**

- 901.53 The following is for OTHER THAN advanced ops per 901.62 (a) thru (d)
- 901.54 Must be >14 yrs old, hold a BASIC or ADVANCED Small RPAS VLOS (TP15263 based on STD921)  
under 14 PIC can fly if supervised by someone who has BASIC 901.55 or ADVANCED 901.64
- 901.55 Minister will issue certificate if you pass the appropriate exam
- 901.56 Every 24 months - either write/pass BASIC certificate or a Flt Review or any one of STD921.04 prior to flight
- 901.56 (2) you must keep 24 months of records showing you have met recency requirements
- 901.57 MUST have Small RPAS certificate with you when flying and can document recency requirements
- 901.58 Don't copy exam questions, help or accept help during exam or complete any question for someone else
- 901.59 24hrs before re-taking failed exam

**DIVISION V - ADV****SEE IMPORTANT INTERPRETATIONS Pg4**CANNOT overfly  
Crew or Actors  
<100ft without

- 901.62 Advanced Ops needs MFG Declaration 3 areas - Controlled airspace 901.71-72 - Ops <30m but > 5m 901.69(1)(a) - <5m (1)(c)  
<100ft(30m) but >16.4ft (5m) from people, except crews and actors (see 901.69 +MFG declaration)  
For <16.4ft (5m) your UAV MFG must declare it meets Standard 922 for any/all the 3 names operations 901.69 (a) (b) (c)  
Flight <3nm airports and <1nm heliports centers must be IAW 901.73 ( Any airport needs published procedures)
- 901.63 PIC must be >16yrs, hold SRPAS ADVANCED VLOS Certificate or under Flight Review or supervised by Advanced holder
- 901.64 Minister will award SRPAS ADV if >16yrs, has passed ADV Exam (80%) and Flight Review <12months from application
- 901.65 Recency req'mts for ADVANCED Certificate. Within 24 months prior to any flight you must:(with records)  
be issued sRPAS ADV Cert, pass that exam or pass a Flight Review or show recurrent training was done per 921.04
- 901.66 MUST have at least, SRPAS ADV (VLOS) Certificate, Flight Logs, and/or recency documentation on-site of flight (see doc set)
- 901.67 Don't cheat on exams - don't do anything in 901.58
- 901.68 Wait 24 hrs for retest after failed Flight Review
- 901.69 (1) Except (901.69(2)).You cannot fly without your UAV Reg Cert showing MFG Declaration of 901.69(a) (b) and (c);
- 901.69 (1) (a) Controlled airspace  
(b) <100ft (30m) Horiz from public but >16.4ft (5m) except own crew or actors,

(c) <16.4ft of anyone per (901.69(2)) - but not overhead AT ANY ALTITUDE

(2) Grandfathered a/c designated "compliant" prior to 1April19 treated as MFG declared (SI 623.001)

901.7 Can't fly any modified RPAS unless YOU can demonstrate compliance with Standard 922 RPAS Safety (But HOW?) and MODs Must be done IAW the part MFG instructions (ie: MFG of the MOD not the system MFG)

901.71 Flight in Controlled Airspace - You must request ATC with date, time and duration of ops plus the following:

UAV Category, Reg # and physical characteristics of a/c

Vert and Horiz boundaries of area of ops (GeoFence) + Flight Route to access the area

Proximity to manned flying ops approaches, departures and traffic pattern

Name contact #'s and RPAS certificate # for PIC

Means of 2 way COMM with ATC - Lost Link and fly-away procedures

Emergency Procedures incl process and time needed to terminate ops + **Anything else requested by ATC**

901.71(2) In controlled airspace, you CAN fly higher than 400ft AGL if ATC approves (*NOT LIKELY*)

901.72 You must acknowledge and follow ALL ATC instructions in controlled airspace

901.73 <3nm airports and <1nm heliports centers you must follow **THAT** aerodrome's RPAS published procedures

**HINT: Few if ANY Control Zones actually have any published RPAS procedures yet (as of March 2019)**

#### DIVISION VI - ADVANCED OPERATIONS - MANUFACTURERS

901.76 No advanced Ops without MFG declaration (except grandfathered under Compliant A/c)

901.76 (2) MFG MUST: declare MFG Name, Model, max. t/o weight, Category (fixed rotary lighter-than-air) and say it declares documentation req'ts of (901.78) and meets Standard 922 for 901.69(1) ops

Declaration is invalid if Ministry says it does not meet Standard 922 or if MFG notifies the Ministry

901.77 MFG must notify Ministry ASAP if it's a/c fails to meet Standard 922

901.78 MFG must give every owner (publish)

Servicing and Maintenance instructions and inspections program/procedures

A manual with range or weight and balance limits for safe ops and any mandatory actions needed

Modes of operation for each phase of flight, safe operating limits and emergency conditions

Weather effects and impact on performance

Design features to prevent injury to anyone

Warning information against unsafe operations

Standard Operating Procedures (SOPs) for normal and emergency ops

Assembly and adjustment procedures

901.79 A declaring MFG shall keep records of all mandatory actions and how they verified meeting STD 922 for 2 years from date of manufacture of that model or for the life of any component

#### DIVISION VII - REQUIREMENTS RELATED TO FLIGHT REVIEW

901.82 Flight Reviewer must hold ADVANCED cert endorsed for Reviewer under 901.83 and be affiliated with a training provider (921.05 Standard 921)

901.83 Minister will issue Reviewer Certificate if:

>18 yrs old holds ADVANCED Cert per (901.64) and meets recency (901.65) for at least 6 months before application

Passed Reviewer's exam >80%

901.84 Reviewers should not cheat on exams per 901.58

901.85 Reviewer candidates wait 24 hrs. for retest

901.86 Schools must submit Reviewer names to Ministry, ensure they adhere to 901.87 and changes within 7 days

901.87 All reviews done IAW AGE 901.56(1)(b)(ii) Review in past 12 month 901.64(c) and 901.65 (1)(b)(ii) to Standard 921

#### Subpart 3 - SPECIAL FLIGHT OPERATIONS

903.01 Operations need SFOC (903.03) for any of the following

>25kg BVLOS, Foreign Operator, >400ftAGL, >5 UAV from 1 controller, Any special aviation or advertised event

Hazardous payloads (901.43(1)), less than 3nm from Military installations (901.47(3))

Anything else the ministry wants to cover

903.02 Application for SFOC includes

legal name, trade name, addr and contact #'s of applicant

PIC Contact means during OPS

Operations description and purpose with dates/times plus alternates

Manufacturer, model, description with photo or 3 view drawings of a/c, + performance, Ops limits, & equipment

Safety plan for proposed area with emergency contingency plan

Mission plan describing the operation

PIC Name, cert#, License #, permits and qualifications of crew members including maintainers

Weather minimum for ops and ATC traffic coordination is needed

Collision avoidance methods, normal SOPs and emergency procedures

Anything else the Minister wants

903.03 Minister will issue SFOC with above info - if the ops won't adversely effect aviation safety or other people

**IMPORTANT INTERPRETATION NOTES**

**DECLARATIONS** Not just 1 but 3 separate advanced ops - MFG's USE CASE declaration is required to be specifically listed on EACH UAV Reg.(a)(b)( c)  
 If your UAV Reg only lists only "control zones" (a) then you still can't operate <30m or <5m overhead (b) ( c)  
 AC 922.001 Sect 7.0 says All MODs must be done IAW MFG recommendations, so few if any 3rd party MODS will ever qualify  
 Otherwise you are limited to BASIC ops without each USE CASE being listed on your UAV Registration Cert

**MODIFICATIONS** Declaration of 922 by MFG or MOD is a simple 1 min on-line form but an onerous commitment to it's 82 pages of requirements  
 Declaration of 922 is simple but comes with huge liabilities such that few if any MOD builder will do it see 922 Sect 4.0  
 If you do the MOD yourself you accept "the same obligations of the MFG" 922 Sec 7.0 (3) (Serious liability implications)  
 Does a 3rd Party "Payload" count as a MOD?

**OVERFLIGHT**

Where the PART IX talks about No getting closer "AT ANY ALTITUDE" it should be interpreted that you cannot fly overhead  
 any closer than the horizontal standoff specified, so consider standoff as a "Vertical Cylinder" as high as the radius  
 This means the 901.62 (b) MFG Declaration allows NEAR people but you need 901.62( c) on your UAV Reg for OVER people

**ACCIDENT**

If anything odd or unexpected happens like contact any thing or anyone ops must STOP and not resume until investigated  
 And resolved and not resumed until corrective action is implemented  
 However, if you claim it was intentional then ops can continue and no report is required unless there is injury or report filed  
 by Police, Fire rescue or anyone files an Air Incident Report