AltaX
UAV TECHNOLOGIES

Interpretation and Comments to Canada Gazette I

Regulations Amending the CARs (UAS)

October 2017

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Campaign Results Overview

Participants' Region

Province	# of Entries
Ontario	79
Alberta	10
British Columbia	5
Manitoba	2
Quebec	2
Yukon	2
Newfoundland and Labrador	1
Nunavut	1
Grand Total	**102**

Currently Operating a UAS

Currently Operating UAS	# of Entries
Yes	82
No	20
Grand Total	**102**

Interest in Canadian UAS Industry

Currently Operating UAS	# of Entries
Commercial Operator	42
Commercial Operator, Academic	12
Commercial Operator, Recreational/Hobby/MAAC	17
Recreational/Hobby/MAAC	11
Academic	8
Academic, Recreational/Hobby/MAAC	3
Commercial Operator, Academic	1
Commercial Operator, Academic, Recreational/Hobby/MAAC	1
Commercial Operator, Retailer, Recreational/Hobby/MAAC	2
Recreational/Hobby/MAAC, Environmental Research	1
Commercial Operator, Recreational/Hobby/MAAC, Other (Technology writing, UAS reviews and news)	1
Film Industry Rental Company	1
Manufacture	1
UAV Insurance Provider	1

Interest in UAS Operations

UAS Applications	# of Entries
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.)	43
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics	13
Infrastructure Inspection (Insurance, Industrial, etc.)	9
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics, First Responder (Police, Fire, Emergency)	8
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics	4
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.)	3
Aerial Survey and Geomatics	5
N/A	3
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Aerial Survey and Geomatics	2
Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics, Agriculture	2
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics, Agriculture, Beyond Visual Line-of-Sight (Delivery, R&D)	1
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics, First Responder (Police, Fire, Emergency), Agriculture	1
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Agriculture	1
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.), Infrastructure Inspection (Insurance, Industrial, etc.), Beyond Visual Line-of-Sight (Delivery, R&D)	1
Aerial Survey and Geomatics, non commercial photography, including beyond line of sight	1
Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics	1
Infrastructure Inspection (Insurance, Industrial, etc.), Aerial Survey and Geomatics, Agriculture, Beyond Visual Line-of-Sight (Delivery, R&D)	1
Aerial Filming / Photography (TV, Media, Real Estate, Marketing etc.) Agriculture	1
Casual Photography and Learning to Operate a UAS	1
General recreational testing of UAS features and performance for website	1
Grand Total	**102**

UAS Operating Environment

UAS Operating Environment	# of Entries
Rural	15
City Center; Urban; Rural	13
Urban, Rural	11
City Center; Urban; Rural; On Water (All Canadian Waters)	10
City Center; Urban	7
City Center; Urban; Rural; On Water (All Canadian Waters); Over Assemblies of People (Events, Concerts, etc.)	7
Urban; Rural; On Water (All Canadian Waters)	5
City Center, Urban, Rural	4
Urban	4
Urban; Rural; On Water (All Canadian Waters); Over Assemblies of People (Events, Concerts, etc.)	3
City Center *Urban* *Rural* *On Water (All Canadian Waters)*	3
Rural, On Water (All Canadian Waters)	3
City Center; Urban; Rural; On Water (All Canadian Waters)	2
City Center, Urban	2
N/A	2
Urban, Rural, On water (All Canadian Waters)	2
City Center; Urban; Over Assemblies of People (Events, Concerts, etc.)	1
City Center; Urban; Rural; On Water (All Canadian Waters); Over Assemblies of People (Events, Concerts, etc.); Wildlife and Natural Environments	1
Rural; On Water (All Canadian Waters)	1
City Center	1
City Center; Urban; Rural; On Water (All Canadian Waters); Over Assemblies of People (Events, Concerts, etc.)"	1
City Center; Urban; Rural; Over Assemblies of People (Events, Concerts, etc.)	1
Rural, Over Assemblies of People (Event, Concerts, etc.)	1
Urban, Public Lands	1
Urban, Rural, Construction Sites - especially low-rise residential	1
Grand Total	**102**

Make of UAS Used

Currently Operating UAS	# of Entries
DJI	84
N/A	7
DJI; Freefly	3
Aeryon, DJI, Dragonfly, Freefly	1
DJI, Sensefly	1
DJI; Asctec Falcon 8 Trinity	1
Do not own a drone currently.	1
Draganfly	1
Sensefly	1
UAS Manufacture	1
Yuneec	1
Grand Total	**102**

UAS Weight Category

Currently Operating UAS	# of Entries
1kg to 25kg	50
250g - 1kg; 1kg to 25kg	32
250g - 1kg	10
Less than 250g	3
Less than 250g, 250g - 1kg	3
1kg to 25kg; More than 25kg	1
Less than 250g.	1
Less than 250g; 250g - 1kg; 1kg to 25kg	1
N/A	1
Grand Total	**102**

UAS Operating Stages

Currently Operating UAS	# of Entries
No experience with SFOC	43
Valid Standing SFOC	33
Site Specific SFOC	15
SFOC summitted	8
N/A	3
Grand Total	**102**

Legal Term – UAV to UAS

Comments

Applicable UAS Category – All Small Unmanned Aircrafts

Canada Gazette I changed the legal term to Unmanned Aircraft System (UAS) from the previous term, Unmanned Air Vehicle (UAV). The new proposed legal term, Unmanned Aircraft System (UAS), is also consistent with American terminology.

Question to TC:

Can Transport Canada provide insight into the new term, UAS? What is the significance of an Unmanned Aircraft System, as opposed to a Vehicle?

Related CARs

101.01(1)

Agree with the Above Comments

Agree	# of Entries
Yes	98
No	4
Grand Total	**102**

Additional Comments

Comment
This will help people who want to fly in the U.S. and need to apply for their 107... Having consistent terminology in any industry is important.
I don't see any issue with the terminology change as it brings the term in Canada in line with other jurisdictions and situates the aircraft class more within the aviation realm.
I encourage Transport Canada's decision to go forward with the term "UAS" as this is more consistent with other countries such as the USA.
The proposed regulations need to encompass self piloting drones -- i.e vehicles that follow a pre-programmed flight path after launch, or use AI to select a flight path after launch. An AI enabled drone might be programmed to use AI seek out a group of animals and then herd those animals in a particular direction and drones that are piloted much like a radio controlled aircraft is piloted by a ground based operator.
I agree with this change in the legal term and don't require explanation.

UAS Categories

Comments

Applicable UAS Category – All Small Unmanned Aircrafts

Canada Gazette I proposed the following UAS categories. The corresponding operational limitations for each category are listed below.

CATEGORY	MICRO	VERY SMALL	SMALL - LIMITED	SMALL - COMPLEX	LARGE / BVLOS
WEIGHT	Less than 250g	250g to 1kg	1kg to 25kg	1kg to 25kg	More than 25kg or BVLOS
DISTANCE FROM AERODROME	No Limit	3NM or 1NM (Heliport) Glass G Only	3NM or 1NM (Heliport)	No Limit	As per SFOC
DISTANCE TO GENERAL PUBLIC	No Limit	100 Feet	250 Feet	100 Feet	As per SFOC
BUILT-UP AREA	No Limit	No Limit	0.5NM Minimum Distance	No Limit	As per SFOC

The categories help to define risk levels for various UAS types and their operational conditions. However, the condition related to “Built-up area” requires further clarification, in terms of how to determine the built-up area and furthermore, how to determine the distance from the UAS to the built-up area.

Without clear definition and measurement, the regulation will lack effective enforcement.

Related CARs

101.01(1)

Agree with the Above Comments

Agree	# of Entries
Yes	100
No	2
Grand Total	**102**

Additional Comments

UAS Categories Comments
I agree "built up area" is a little vague. I do like to "no Limit" limit for Small-Complex
Built up area has always been something larger then a farmstead. Not well defined but gives a pretty good idea. Better defined wouldn't hurt.
Small Limited doesn't seem to be a professional/commercial class of operation. Asking for clarification of what is a built up area may be helpful for recreational users but not relevant to complex operations that commercial operators are allowed to do.
What is the technical difference between "small-limited" and "small-complex"?
What is the difference between Small-Limited and Small-Complex?
What is the definition of "General Public"? How will the regulation be enforced? Are distances measured as straight lines and how is this policed?
The term Aerodrome needs further breaking down. There are many small and inactive aerodromes listed in the Canadian Flight Supplement (CFS) that should not be inhibiting flights of UAS. I purpose Aerodrome be termed as; Active (at least >2 aircraft take-off/landing cycles per day, or Inactive (>2 aircraft take-off/Landing cycles per day, fly UAS with extra caution). Contact number for aerodromes in CFS must be available to UAS user to advise/confirm planned activities. Former aircraft owner and COPA member
Small-Limited Distance to General Public 250 feet is too far. 100 feet as per other categories seems more reasonable.

Additional Comments Cont'd

UAS Categories Comments
How do they propose to differentiate between Small-Limited and Small-Complex? That could be open to wide and arbitrary interpretation. The definition "built up area" and "distance to general public" are both very vague. What constitutes a built-up area? And if a Very Small UAS is flying 150 feet above the general public, does that meet the requirement, or are they measuring the distance on the ground, regardless of altitude above the public?
The 1kg to 25kg is a very large, too large weight span. There should be at least two or three more divisions, for example: *UAS between 1kg and 3kg* *UAS between 3kg and 10kg* *UAS between 10kg and 25kg* *It is absolutely unreasonable to bulk together a 1.1kg drone with 24kg drone. It is way out of proportion.*
small complex operation, it is important to have unlimited distances and the business nature requires close distance for engineers in particular
1 to 25 kg is too broad a class of drone. *Suggest that the weight delimiter be up to 5kg, 5 to 25 kg, then 25 to say 100 kg, then above 100 kg.* *At some point variants of vehicles like the US Predator drone will become available for civilian use and these regulations should forsee this.*
It would be useful if TC were to identify on easily accessible database the areas it considers "built up" in a map format. Otherwise one is left to guess, because the language specifying what constitutes a built-up area is arguably vague.
Build UP Area. For 1kg to 25kg should be ,25NM Minimum Distance

Controlled Airspace – ATC Notification

Comments

Applicable UAS Category – Small Unmanned Aircraft - Complex

Canada Gazette I requires a UAS pilot to notify air traffic control **7 days** prior to a proposed operation in controlled airspace. The amount of time between a flight request and the actual operation can vary by industry, but the nature of UAS operations generally requires flights to be conducted within a timeframe much shorter than 7 days.

In addition, small UAS operations are largely weather-dependent. The weather forecast is not reliable from more than 7 days out, making it difficult to ensure conditions will be fair enough to carry out an operation. This will result in an unnecessary amount of rescheduling, or in UAS operators being forced to submit a much larger operating time window to account for any weather changes.

Impact

The proposed 7-day notification will substantially hinder the Canadian UAS industry. In addition, the unpredictability of weather conditions 7 days in advance of an operation will substantially increase workload for Air Traffic Services and UAS operators alike.

Proposal

CARs 601.08 and 601.09 already require a UAS pilot to acquire authorization from the air traffic control unit before entering controlled airspace. Therefore, an additional 7-day notification requirement should not be imposed on UAS pilots.

Question to TC

Currently, operators with standing SFOC can operate in controlled airspace within 48 hours of notification. In fact, NOTAM cannot be issued more than 48 hours prior to the start of a UAS operation. Canada Gazette I presents a significant setback for UAS operators. What is the research data and reasoning behind the 7-day notification requirement? What is NAV CANADA's position on their ability to process and grant UAS requests to enter controlled airspace?

Related CARs

902.58 – Small Unmanned Aircraft – Complex

Agree with the Above Comments

Agree	# of Entries
Yes	101
No	1
Grand Total	**102**

Additional Comments

ATC Notification Comments
I agree. For us 7 days notification is not workable. The current 48 hours works for us. Also weather as noted is very difficult to determine 7 days out.
There are many jobs that require a client to be on site. This change would make coordination with different stake holders in the project very difficult…
Seven days notification is totally impractical in the commercial class of Small Complex operations. Our current 48 hour notice for NOTAMS has proven to be a practical and dynamic method of communication between UAS operators and NAV CAN / ATC.
In my industry (real estate) a 7 day delay in being able to fly for a specific project would have economical impact as once a property is listed the owner and listing agent need all the information about the property, including visual media, as soon as possible. The 7 day time delay would do nothing other than force UAS operators in this industry to fly illegally, as people are not going to stop demanding aerial photos for their listings -- if anything the demand for these photos for listings is increasing.
I do not have a problem with a two or seven day notification for sophisticated devices capable of affecting aircraft safety. However most of the devices as I know them are not a threat to aircraft and furthermore often these devices are being used for rescue operations where there is no time to report the intent to use. I think the little ones with one or two hundred feet of capability should not require advance notice.

Controlled Airspace – Very Small UAS

Comments

Applicable UAS Category – Very Small Unmanned Aircraft

Canada Gazette I prohibits a very small unmanned aircraft from entering controlled airspace, from flying within 3 nautical miles of the center of an aerodrome (other than a heliport), or from flying within 1 nautical mile of the center of a heliport.

It is common for a UAS pilot operating a small UAS Complex category to include a very small UAS as part of their operations. For example, film crews often use a smaller UAS for rehearsal and scouting purposes. These operations will not be possible under Canada Gazette I.

Impact

With more restrictions on the use of very small unmanned aircrafts, UAS pilots may be forced to use a heavier UAS, which increases potential risks and requires greater operational time and effort. UAS pilots may also resort to applying for an SFOC — thereby defeating the intended purpose and efficiency of Canada Gazette I.

Proposal

We ask Transport Canada to allow UAS pilots that meet Small Unmanned Aircraft - Complex requirements to operate very small unmanned aircraft in controlled airspace and within the proposed distance from aerodromes.

Related CARs

901.04; 901.09 – Very Small Unmanned Aircraft

Agree with the Above Comments

Agree	# of Entries
Yes	100
No	2
Grand Total	**102**

Additional Comments

Very Small UAS Comments

Operators and Pilots should choose the right UAS for the operation at hand in compliance with CARs and Best Practices. Where risk is mitigated by operator proficiency and system redundancy than smaller is better.

I'm a Real Estate Photographer and also use drones. Most Drone Real Estate Photography takes place at less than 150-200 feet of altitude and within 500 feet around the permitter of the property. Drones used most often belong to a very small category. 3NM airport radius where we are effectively prohibited to take off simply stops us from offering drone photography services for the Real Estate industry in most parts GTA. Obtaining SFOC for every case takes weeks, in some cases houses are sold long before we get the permit. My suggestion would be to allow insured commercial operators to fly drones under 2kg at altitudes less than 200 feet anywhere where they simply can not interfere with commercial air traffic (like in the middle of the city of Toronto for example). Or at least develop the system where SFOC would be obtained automatically, where UAS pilot would indicate flight path on the map and the system would list the restrictions which the flight must abide by

Very Small UAS would pose less risk to aircraft operations than a larger UAS, and could perform simple tasks quicker and more efficiently.

Take-off and Landing Site – Small UAS Complex

Comments

Applicable UAS Category – Small Unmanned Aircraft - Complex

Canada Gazette I requires a small UAS to establish a site for take-off and landing that has a minimum 20-meter diameter free from obstacles within a built-up area. The proposed 20 meters is wider than a typical city street or a typical house. It is very difficult to find a 20-meter diameter site clear of obstacles, thus effectively grounding UAS operations in built-up areas.

Impact

UAS pilots will need to find parks or other similar open spaces near the area of operation for take-off and landing, then fly the UAS to its intended area of operation. This will increase the overall risk of UAS operations, in comparison to taking off within the intended area of operation.

Proposal

Similar to the diameter requirements for the size of heliports, we ask Transport Canada to allow UAS pilots to establish take-off, launch, landing or recovery sites according to the size of the UAS, i.e., the obstacle-free diameter of the site must be at least twice the length of the UAS.

Related CARs

902.55 – Small Unmanned Aircraft – Complex

Agree with the Above Comments

Agree	# of Entries
Yes	101
No	1
Grand Total	**102**

Additional Comments

Take-off and Landing Site Comments
For us 20 meters is not possible most of the time. While we do fly safely we are working in confined spaces as it is.
The site diameter should probably be at least 4 times the length of the UAS.
Twenty Meters diameter is about right for a Jet Ranger or Twin Star helicopter landing area (a little tight). This is impractical for UAV operations in any setting and clearly demonstrates failure of the Regulators to appreciate the unique capabilities of UAS/UAV.
Absolutely agree! We shoot Real Estate with DJI spark (300g drones, 20cm in length). Why does it need 20m diameter landing pad (it can take off and land from the palm of operators' hand)? *For insured pilots using small drones for commercial purposes, there should be no such restrictions. We do not pose the risk to the general public more than birds do.*
Who will measure and approve the take-off area? Will the area have to be identified with each flight plan?
What evidence-based data led Transport Canada to arrive at the 20-meter figure? What supports this as opposed to a smaller diameter?

Personnel – Small Unmanned Aircraft – Complex

Comments

Applicable UAS Category – Small Unmanned Aircraft – Complex

Canada Gazette I establishes a pilot permit for small UA pilots operating within VLOS. The pilot permit application includes:

- Attestation of piloting skills by another UA pilot, and
- Successful completion of a comprehensive knowledge exam.

In addition, the holder of a small UAS pilot permit also needs to complete a recurrent training program in accordance with the personnel licensing standards.

Impact

Currently UAS pilots are required to operate under a Special Flight Operations Certificate, which requires a minimum 20 business days of processing time for a single application. A minimum of 10 applications are required for site-specific operations before the pilot is granted a standing certificate. By implementing a pilot permit, the UAS pilot can begin UAS operation within a reasonable timeframe. Thus Canada Gazette I substantially improves UAS operations in Canada.

Related CARs

902.51 – Small Unmanned Aircraft – Complex

Agree with the Above Comments

Agree	# of Entries
Yes	98
No	4
Grand Total	**102**

Additional Comments

Personnel Comments
Piloting a UAS/UAV is not the whole issue - Operations and planning are a greater part of the responsibility. The SFOC process does need to be speeded up but the planning and submission process is and remains a "good thing". Perhaps we need graduated Pilot licenses if the PIC is designated/remains the as the key to the operation. Much of piloting is automated we need the Planning to be thoughtful.
Will the Ground School and ROC-A exams passed be honored? It involved a significant effort and investment. Additional training should be required only when switching from a lighter to a heavier UAS. Flying the same UAS shouldn't require a frequent retraining program, most specially with evidence of a number of completed projects.
10 applications at 20 business days (I have never had one approved in 20 business days)
Clarification would be needed as to what constitutes "another UA pilot" for the attestation of skills. Just a random pilot or one with a certain amount of experience to then be deemed a competent judge.
I agree with the PILOT PERMIT application criteria. And no need for the SFOC application. It just like a driver licensing requirements.

Additional Comments Cont'd

Personnel Comments
In addition to above, holders of current pilots licenses or pilots permit (ultralight) should only require to display to examiner knowledge of UAS operations, as knowledge of the CARS is already known. Current licensees can have their current documents ammemded to show said training.
I dunt feel there is a need for this level of regulation. Modern UAVs are very reliable. The current statistics regarding drones and commercial aircraft collisions do not demand this level of interference from government regulators.
I previously held a commercial pilot license. Will sucht knowledge and experience be considered in the licensing process?
Small UAVs have reached the stage of being an off-the-shelf commodity that almost fly themselves -- you can buy them ready to fly almost anywhere. *And you expect the 10 year old kid who gets one for Christmas to undertake pilot training. Surely Transport Canada is joking?*
*The FAA's Part 107 has demonstrated, beyond any doubt, that a knowledge-based examination along with a set of clearly defined rules is effective. The only flaw in Part 107 is that the pilot does not have to prove that he/she can actually pilot a UAS. Having another pilot vouch for abilities is a solid move that should make this even stronger than Part 107. However, I would strongly urge Transport Canada to look and creating a *simple* set of clearly-understood rules under which those with a permit can operate. There is no need to make things overly complex. With more than 60,000 US Part 107 operators, the system has been working smoothly south of the border.*

Distance and Altitude – Small UAS – Complex

Comments

Applicable UAS Category – Small Unmanned Aircraft - Complex

Canada Gazette I requires a small UAS to maintain a minimum lateral distance of 100 feet from the general public, unless the UAS is operated at above 100 feet AGL and a ground speed of less than 18.5 km/h.

Impact

Currently, UAS pilots are required to operate with a minimum lateral distance of 100 feet, regardless of the UAS's operating altitude or speed. UAS pilots need to acquire permission from any general public within 100 feet lateral distance of their operational area, which increases operational cost. Canada Gazette I will effectively remedy this and improve the efficiency of UAS operations, reduce cost and aid industry growth.

Related CARs

902.56 – Small Unmanned Aircraft – Complex

Agree with the Above Comments

Agree	# of Entries
Yes	101
No	1
Grand Total	**102**

Additional Comments

Distance and Altitude Comments
Don't understand the relevance of "ground speed of less than 18.5 km/h"? Is it only because you don't want the UAS hovering at 100' over public?
I expect a UAS/UAV that flies overhead of the public or other people's property to have redundant systems. I think Transport Canada must demand/insist on it. I would. I would also expect my Aviation Insurer will as well.
How will altitude and speed be regulated? Will MOT have inspectors equiped with radar guns and altimeters. Do not encourage regulations which are unenforceable!
Will this be a problem at take off ? Can an operator take off and be less than 100ft from the general public? This needs to be specified, that we can land and take off in less than 100 ft from general public.
As already mentioned UAVs have reached the stage of being affordable, albeit expensive, toys. The proposed regulatory environment needs to recognise this fact of life.

Build-up and Open-Air Assemblies - Small UAS - Complex

Comments

Applicable UAS Category – Small Unmanned Aircraft - Complex

Canada Gazette I classifies CARs 902.54 as "Overflight of Built-up Areas or Open-air Assemblies of Persons". However, the text of 902.54 states "No person shall operate a small UA over or ***within a built-up area*** or an open-air assembly of persons unless the aircraft is operated at greater than 300 feet AGL altitude."

Impact

A UAS that is taking off or landing operates at lower than 300 feet AGL altitude, thus it cannot operate within a built-up area while abiding by CARs 902.54.

Proposal

We ask that Transport Canada amend CARs 902.54 to allow UAS to operate below 300 feet AGL altitude during take-off or landing.

Related CARs

902.54 – Small Unmanned Aircraft – Complex

Agree with the Above Comments

Agree	# of Entries
Yes	100
No	2
Grand Total	**102**

Additional Comments

Build-up and Open-Air Assemblies Comments

Why above 300'? Could it be less? Maybe 200'? I had a request to shoot my wife's school (students, teachers and parents) in the school yard. If I had to be 300' above you would not be able to get the photo they would want. OR Could a modification to the statement be the distance and height of the UAS must be more than 300'? Example: 200H + 105D = 305" ???

Regarding "Overflight of ... Open-air Assemblies of Persons", I have heard that in public TC consultations this statement has been amended to say UAV must be able to glide. This would eliminate all rotary UAS in favour of a wing based system. A wing system is inappropriate in a built-up area in many cases as it needs a substantial "runway" to take off/land. Additionally a wing system can not hover which is a very desirable mission feature. While technology is changing this current impact will all but cancel all practical UAS "Overflight of Built-up Areas or Open-air Assemblies of Persons" operations.

TOL must have been an oversight in this section. Close reading such as you have done will this help. On second reading how does the 100' lateral to 100' AGL on the previous page work with this. Here 300'AGL is very high - my SFOC want my UAS to stay below that height. UAS with out redundant systems have only that much further to fall on people and property below.

Dear regulators: Please picture flying DJI Phantom Spark drone (300gms) used for Real Estate Photography or filming a concert. Why is it necessary for us to fly at 300feet safely? How will we be able to effectively take photos/ film from such altitude? Operator would not be able to see the drone from that heigh... how does that improve the safety of operation? Please don't just prohibit eveything, consult with the public ...

The distance should be simply reduced to 100ft or 150ft, for greater flexibility. 300ft is way to large and could squeeze out flight completely.

The comment with which I disagree is written from the perspective of a commercial operator. Transport Canada needs to recognise that the cat is well and truly out of the bag. Small (1 to 25kg) UAVs are comparable in cost to a set of down hill ski equipment -- skis, boots, poles, helmet and goggles. If anything, buying a UAV is less much expensive than the ski gear and can be used year round. The proposed regulations need to be written in a way that allows people to people to launch and fly their UAVs from their front or back yards.

Markings – Small UAS – All

Comments

Applicable UAS Category – Small Unmanned Aircraft - All

Canada Gazette I requires the name, address and telephone number of the operator to be clearly visible on the aircraft.

Impact

The address and telephone number of an operator is private personal information. By marking this on the UAS, personal information may be too easily accessible and/or used inappropriately by others.

In addition, the address and telephone number may change, for example, when operators move, or if the ownership of a UAS is transferred to another operator. This will require frequent updates of the markings on a UAS.

Proposal

We ask Transport Canada to issue UAS call signs similar to those on manned aircrafts, which would be required to be clearly marked on unmanned aircrafts.

Related CARs

900.06 – Small Unmanned Aircraft – All

Agree with the Above Comments

Agree	# of Entries
Yes	99
No	3
Grand Total	**102**

Additional Comments

Markings Comments
Take address off the requirements. Have phone and or email and name.
There are many marking systems available that do not infringe on privacy and personal information. An auto license plate is globally ubiquitous. Any database that tracks these ID's must be properly protected to prevent identity theft.
There is not privacy anymore. If you are a professional or commercial flyer your name, address and phone number are a matter of public record. Call Letters will be opaque to the layperson (on looker/finder of crashed UAS) and bureaucratic in administration.
I agree somewhat but our markings are mostly the sticker type that can be changed easy enough, A number I.D. would keep personal info from the public but would be available due to a loss or an incident
I agree with the PILOT PERMIT application criteria. And no need for the SFOC application. It just like a driver licensing requirements.

UAS Equipment – Small Unmanned Aircraft – Complex

Comments

Applicable UAS Category – Small Unmanned Aircraft - Complex

Canada Gazette I requires the UAS intended for Small UAS - Complex operation to hold a statement of conformity issued by the manufacturer.

Transport Canada's current list of compliant UAS only represents less than 20% of the unmanned aircrafts actually being operated in Canada and less than 5% of UAS being operated internationally. Meanwhile, the Small UAS - Complex category represents more than 90% of commercial UAS operations.

Impact

Based on Transport Canada's current list of compliant unmanned aircraft systems, more than 70% of commercial UAS operations will be grounded due to the UAS not holding a manufacturer statement of conformity.

Proposal

We strongly ask Transport Canada to re-evaluate the proposed CARs sections related to UAS Statement of Conformity. There is no doubt that industry standards and airworthiness specifications need to be enforced on small unmanned aircrafts to effectively manage risks and operating limitations. However, such standards and specifications must first be established and communicated to industry stakeholders, including UAS manufacturers, well before they are proposed to be enforced.

Related CARs

902.51 (c); 902.72; 902.73, 902.74 – Small Unmanned Aircraft - Complex

Agree with the Above Comments

Agree	# of Entries
Yes	101
No	1
Grand Total	**102**

Additional Comments

Compliant Equipment Comments

I HAVE SPENT TENS OF THOUSANDS OF DOLLARS TO PURCHASE A UAS THAT HAS MULTIPLE SAFETY REDUNDANCY FEATURES. THIS AIRCRAFT IS NOT ON THE COMPLIANT LIST. THE UAS INDUSTRY IN CANADA HAS SPENT MILLIONS OF DOLLARS ON EQUIPMENT. AS LONG AS THE EQUIPMENT IS PROPERLY MAINTAINED IT SHOULD BE 'GRANDFATHERED' IN.
GAZETTE: Transport Canada would alleviate the requirement for a pilot/operator to have a UAS that meets the design standards for operation in a complex operating area if that pilot/operator has bought a UAS prior to the coming-into-force date of the new regulations; 3) Despite paragraph (1)(c), no person shall conduct the operations set out in paragraphs (2)(a), (b), (d), (g) and (i) in respect of any system that the operator purchased on or before December 15, 2017 unless the system is designed and constructed in accordance with a standard set out in section 902.72

In the impact documents the accounting is incorrect. To switch to a compliant UAS is a significant expense upfront as well as on going. There is no evidence to show that the few compliant UAS are in fact safer than the vast numbers of UAS sold to the consumer market.

The proposal put forward by the task force during the roadshows (I attended in Kelowna) is to limit the use of 'non-compliant' grandfathered UAVs by imposing 5 conditions on their use. One of these is to not fly in a built up area, another is to increase safe distances to 250 feet. I believe this essentially prohibits all non-compliant UAVs from operating within the small-complex category, making the grandfather clause redundant anyway.

The UAS systems on the compliant list are missing the educational and entertainment applications of UAS and their use in capturing our changes environments, wilderness and city centre urban. There are many fine UAS systems that must be added to their rather utilitarian list.

Under the SFOC system, products manufactured by DJI were routinely approved for flight (and are used daily by Part 107 operators without incident). Under the proposals, DJI products – which arguably have the greatest depth of engineering of any mass-produced UAS – would be grounded, and many operators effectively put out of business. I ask Transport Canada to reconsider its position on conformity, and endorse the statement above.

Closure

The UAS industry is a rapidly-developing one, with many exciting technologies that improve traditional workflow. The future success of our industry demands a supportive regulatory environment that enables new technology, as well as addresses risks.

We ask Transport Canada to value the feedback provided by industry operators and stakeholders. The level of regulation should take into consideration of the stage of UAS development. We applaud the vision set forth by Transport Canada in the proposed regulations. However, the vision also needs to be supported by a feasible execution plan in order to succeed.

We look forward to receiving feedback from Transport Canada and further updates on Canadian UAS regulations.

Sincerely,

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