

February 20, 2018

The Honourable Marc Garneau
Minister of Transport
Transport Canada
330 Sparks Street
Tower C, Place de Ville
Ottawa, ON
K1A 0N5

Re: Safety Regulations For Unmanned Aircraft Systems

Dear Minister Garneau:

The Air Line Pilots Association, International (ALPA) is the largest airline pilot union in the world and represents over 59,000 pilots at 33 Canadian and U.S. airlines. The recently released Transportation Safety Board of Canada (TSB) report on the October 2017 inflight collision between a commercial passenger-carrying aircraft and a drone near Quebec Jean-Lesage International Airport <http://www.bst-tsb.gc.ca/eng/rapports-reports/aviation/2017/a17q0162/a17q0162.asp> highlights not only the continuing indiscriminate and dangerous operation of drones but also the critical need for effective regulatory control over this rapidly-expanding segment of aviation. Clearly, a comprehensive set of safety regulations is needed.

The details provided in the TSB report illustrate that while there are some interim measures in place that attempt to regulate Unmanned Aircraft Systems (UAS), more regulation is needed to prevent further collisions with commercial aircraft.

We believe the incident and TSB report signal a need for Transport Canada to re-evaluate their planned UAS regulatory framework to ensure it more adequately addresses the risks that currently exist in the airspace system. Based on our analysis of the draft regulations, the Transport Canada proposal falls short of the regulations needed to ensure safety.

ALPA submitted extensive comments on the proposed UAS regulations, including that all recreational users will essentially be self-regulated for the foreseeable future and yet

this segment is perhaps the largest in number and is causing the most problems. We also recommended that Transport Canada require equipment onboard UAS that can help identify and track ones that fly at the altitudes or in the airspace where airline aircraft are flying. The regulatory proposal published in Canada Gazette I addresses neither of these, nor many of our other recommendations. Thus, we are concerned that the pending final regulations may still fall short of adequately protecting the travelling public. A copy of ALPA's extensive comments is enclosed.

Inadequate regulations for UAS also exist in the U.S., as highlighted by a recent incident near Las Vegas in which a UAS recorded video of a commercial jet flown by ALPA pilots that was passing underneath it. This prompted ALPA along with Associations representing air traffic controllers and the largest Association representing the airlines to appeal to Congress for more effective measures <http://www.alpa.org/news-and-events/news-room/2018-02-13-joint-uas-letter-to-congress>.

As you finalize the UAS regulations, ALPA urges you to incorporate our recommendations. The regulations as most recently proposed by Transport Canada will simply not be adequate.

Yours truly,

A handwritten signature in black ink, appearing to read 'BS' followed by a stylized flourish.

Captain Brian Shury
ALPA Canada Vice President
Air Line Pilots Association, International

Encl.



AIR LINE PILOTS ASSOCIATION INTERNATIONAL

THE WORLD'S LARGEST PILOTS UNION • WWW.ALPA.ORG

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13 October 2017

CARAC Secretariat
Transport Canada
300 Sparks St
Ottawa, ON

Re: Vol. 151, No. 28—July 15, 2017 **Regulations Amending the Canadian Aviation Regulations (Unmanned Aircraft Systems)**

On behalf of more than 57,000 professional pilots at 33 airlines in Canada and the United States, this letter summarizes the Air Line Pilots Association, International's (ALPA) comments regarding the proposed regulations. We compared the proposal to the reports of the Working Groups, NPA 2015-012, and ALPA's comments on the NPA (letter 27 August 2015), as well as ALPA's four fundamental elements for safely integrating unmanned aircraft systems (UAS) into the national airspace system (NAS), which are:

- A. **Education:** Anyone who plans to fly UAS must understand the aircraft, the airspace, and the other aircraft that could be encountered while flying.

In the case of UAS that might be flown for compensation or hire in civil airspace, the pilot must hold a commercial pilot certificate to ensure he or she possesses the appropriate skill and experience to meet safety standards designed to protect the flying public.

Those flying UAS for recreational purposes must adhere to guidelines, including minimum age requirements, keeping the UAS within line of sight, and flying at heights under 400 feet above ground.

- B. **Registration:** Gathering basic information about the identity of the individual purchasing the UAS not only allows law enforcement authorities to identify the owner if the UAS were to encounter a problem, but it also helps make clear the serious nature of operating a UAS in the NAS and the responsibility to safeguard public safety.
- C. **Technology:** If UAS, either intentionally or unintentionally, are operated in airspace that airliners use, airline pilots need to be able to see them on cockpit displays, controllers need the ability to see them on their radar scopes, and the UAS must be equipped with active technologies to ensure that it is capable of avoiding collision with manned aircraft. In these types of operations, technology must enable the pilots to control and interact with the UAS in the same manner as if the pilot were on board.

If a UAS is restricted by regulations from operating in a particular geographic area and/or altitude, it must have technology that cannot be overridden to limit the geographic areas and altitude in which it can operate. This may include permanent locations such as the Parliament buildings and all public airports, as well as temporary restrictions such as for wildfires or natural disaster areas.

- D. **Penalties and enforcement:** UAS pilots must be properly trained and understand the consequences of possible malfunctions. Anyone flying a UAS that is a hazard to other aircraft in the airspace, especially those who choose to do so recklessly near airports, must be identified and appropriately prosecuted. We support the criminalizing of intentionally unsafe operation of UAS and penalties for unintentional unsafe UAS operations.

Keeping the above elements in mind, the following list comprises ALPA's top 10 issues.

1. **Complexity of the regulations:** The number of categories is too complex, especially since many who will be subject to the regulations are new to aviation. Education will be even more important with the relaxation of certain requirements from the Working Group recommendations and the NPA. As evidenced by the continuing high number of incidents well into Canadian airspace and near airports, we are not confident that the educational effort to date has been effective enough to now permit a more relaxed approach.
2. **No medical is required:** The Working Group recommended that medical requirements parallel the ultralight category, which requires at least a self-declaration in order to validate a pilot permit. The proposal simply requires a self-assessment of "fit to fly."
3. **No instructors (practical test) are required:** The Working Group recommended that appropriately qualified instructors, including knowledge of instructional technique, provide training and sign off of new UAS pilots. The proposal simply requires another UAS pilot to sign off a new UAS pilot.
4. **Registration for most categories (above 250 gm) is not required:** The Working Group Phase 1 report recommended that all small UAS be registered, and this was supported in the Phase 2 report. The proposal significantly relaxes this requirement. Marking UAS, which is proposed, plus registration at point of sale, coupled with criminalizing dangerous operation of UAS, as recommended by several Associations in our joint letter dated 21 December 2015, would be much more effective in deterring indiscriminant operation than is currently proposed.
5. **Night operations are permitted and where lights are not practical or possible, they are not required:** Although the Working Group report recommended night operations in certain circumstances, it was expected that in every case UAS would be required to carry navigation and anti-collision lights. Proposed 902.52(3) permits only sufficient illumination to maintain visual line of sight (VLOS). This could permit, for example, illumination from the ground only, which would not be acceptable for collision avoidance by pilots of manned aircraft.
6. **Operations beyond visual line of sight (BVLOS) are permitted with the use of an observer:** Notwithstanding the definitions for VLOS and visual observer, 900.14 can be interpreted as permitting BVLOS when an observer is used. There should be wording in the regulation to make it clear that a visual observer cannot be used to extend operations beyond VLOS.

7. **Operations can be as close as 1 nm from the centre of some aerodromes:** The Working Group spent several sessions on this issue. They chose 5 nm from the centre of an aerodrome for several reasons, including ease of reference and, most importantly, to clear the arrival and departure paths near aerodromes. Permitting operations at 3 nm and 1 nm for heliports would put manned aircraft on instrument approaches unacceptably close to these UAS.
8. **Complex operations require only an attestation of skill by another pilot:** ALPA's long-standing position is that pilots flying for non-recreational purposes obtain a commercial pilot licence. While we appreciate that small UAS in VLOS operations present relatively less risk to the flying public, pilots conducting complex operations should be required to demonstrate their skills to a higher authority than simply another UAS pilot. Furthermore, ALPA's position, as stated in our response to the NPA, is that all pilots of UAS who fly for reasons other than recreation must undergo formal training and testing prior to the issuance of any type of certificate by the safety regulator.
9. **No technology incorporated that limits the airspace in which a UAS can operate:** The proposal relaxes distances significantly, in particular aerodromes, such that maintaining separation from manned aircraft becomes even more important. Proposed distances and altitudes should not be permitted unless limiting technology is incorporated to, among other parameters, keep UAS away from the approach paths to aerodromes.
10. **Recreational operations are permitted through an exemption for the Model Aeronautics Association of Canada (MAAC):** The proposal, through a statement of intent to regulate recreational UAS, likely acknowledges that more control is necessary for this evolving activity; however, the short-term solution to simply exempt a volunteer-managed organization is inadequate. Furthermore, there has been no draft exemption or discussion with ALPA concerning what, if any, restrictions will be detailed in the exemption. While it may be true that there have been relatively few incidents while MAAC has been self-regulated, the evolving capabilities of recreational UAS (including BVLOS and even autonomous flight) combined with an anticipated significant increase in MAAC membership, flying locations, and events should require a higher level of management than the current volunteer structure. As a minimum, we would expect that an audit be done by Transport Canada to assess MAAC's capabilities and address any deficiencies, and that the exemption include certain limitations to address any deficiencies.

In addition to our top 10 issues, the following issues from our NPA response are not addressed in the current proposal:

- a. There should be a statement concerning meeting or exceeding international standards.
- b. Tethered UAS should not be exempt, and there should be a definition for tethered in respect of UAS.
- c. There should not be a lower limit for regulation of UAS until such time as technology is incorporated to limit their flight into the NAS.
- d. Young pilots operating a UAS weighing between 250 gm and 1 kg should have adult supervision.
- e. Night operations should not be permitted until further experience is gained with small UAS.

- f. Operations in Class C, D, and E airspace should not be permitted unless a Special Flight Operations Certificate (SFOC) is in place.

Included with this submission is a comparison table between the proposal and the FAA's Part 107 rule as well as our comments regarding which approach is preferred.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin Psutka". The signature is fluid and cursive, with the first name "Kevin" and last name "Psutka" clearly distinguishable.

Kevin Psutka
Safety and Security Representative
Air Line Pilots Association, International

Comparison: TC Proposal—FAA Part 107 Rule

Subject	Proposal	FAA 14 CFR Part 107	ALPA Comment
Category	Four operating categories: 1. Micro <250g 2. Very Small >250 to 1 Kg 3. Small Limited 1 Kg > 25Kg 4. Small Complex 1 Kg > 25Kg	1) 107.3 sUAS < 55 lbs	TC proposal is very complex. It should be simplified.
Marking	900.06 No person shall operate an unmanned aircraft system unless the name, address, and telephone number of the operator are clearly visible on the aircraft.	No requirement.	TC proposal is acceptable.
Registration	Small Complex only.	107.13 All must be registered >250 g via 91.203(a)(2).	All small UAS should be registered at point of sale.
Personnel Licensing and Training	Basic knowledge only, except Small Complex Knowledge/Pilot Permit.	107 Subpart C: 107.53-79 TSA vetting and Knowledge and Pilot certification.	All pilots should have knowledge and practical test plus certification to commercial pilot level.
Medical:	Fit to Fly.	107.17 “No person may manipulate the flight controls of a small unmanned aircraft system . . . if he or she knows or has reason to know that he or she has a physical or mental condition that would interfere with the safe operation of the small unmanned aircraft system.”	All pilots should have some formal level of medical certification.
Age	Small and Small Limited: 14 Complex: 16	107.61: Be at least 16 years of age.	ALPA supports minimum age 16.
Aircraft Design Standard	Small: N/A Small Limited: N/A Complex: Required	107.15 “Condition for safe operation”; i.e., no standard.	ALPA supports a design standard for all classes of small UAS.

Subject	Proposal	FAA 14 CFR Part 107	ALPA Comment
Operations in Urban Areas and Near People	Very Small: Persons 100 feet aerodrome 3 nm. Small Limited: Persons 250 feet aerodrome 3 nm built up area .5 nm. Small Complex: 100 ft.	107.39 & 107.41 Class G airspace. "Except person/humans Directly participating in the operation of the small unmanned aircraft; or (b) Located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small unmanned aircraft."	TC proposal has better defined parameters.
Night Operations	Small and small limited: Restricted. Complex: Permitted.	107.29 No night operations.	ALPA supports no night operations until more experience with small UAS is attained.
Airspace Restrictions	3 nm at aerodrome, 1 nm Heliport.	107.41 Class G airspace other airspace(s) by waiver or authorization.	Proximity to aerodromes should be 5 nm from centre of aerodrome.
Liability Insurance	\$100,000.	107 No insurance required.	TC proposal is acceptable.
Visual Line of Sight	VLOS and distance from pilot (Small: .25 nm; Limited: 0.5 nm).	107.31 Within VLOS.	
Operation of multiple small aircraft	900.34 No pilot shall operate more than one unmanned aircraft at a time.	107.35 A person may not operate or act as a remote pilot in command or visual observer in the operation of more than one unmanned aircraft at the same time.	TC proposal is acceptable.
Maximum Altitude	Small/Limited: 300 AGL. Complex: 400 feet AGL.	107.51 400 feet AGL or within 400 feet of a structure and 400 feet above the structure's immediate uppermost limit.	TC proposal is acceptable.
Minimum Visual Meteorological Conditions	902.19 Clear of clouds and not less than two statute miles of visibility.	107.51 500 feet below and 2,000 feet horizontally with 3 statute miles of visibility.	ALPA supports the FAA's requirements.
Lost Command and Control Link Procedure and Flyaway Contingency	902.23, 24, and 25.	Part 107: None.	TC proposal is acceptable.