



Ottawa, June 22 2020

CARAC (via email)

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Subject : NPA 2020-012 RPAS BVLOS

Note : in this text the use of the word aircraft specifically means an aircraft with a human pilot at the controls.

COPA has reviewed the subject document in detail and assessed all aspects of this NPA from the perspective of its impact on aviation, most particularly on General Aviation. COPA considers this NPA will introduce a very significant threat to all aspects of Aviation Flight Safety in the whole of Canadian Airspace. As we are profoundly for the development and growth of RPAS and safe integration within our airspace, COPA is strongly opposed to this NPA.

Canada has one of the best Flight Safety Records in the world. This high level of Flight Safety is the direct result of years of work developing all aspects of the relevant regulation, putting in place means and tools to enforce and continuously improve the safety of the flying environment from the perspectives of training, knowledge, and culture to name the most critical ones.

The NPA effectively bases its approach in a structure that is very similar to that instituted by TCCA over the years for aviation as we know to this day: pilot, aircraft, and airspace. This well proven approach has resulted in the efficient and safe flying environment we enjoy today. The NPA calls this structure the 3P's: Pilot, Product, and Procedures. Sadly enough, the similarity between the aviation structure and the RPAS structure ends here. Where the aviation environment is very well defined, highly regulated, and constantly monitored by TCCA, at the expense of the user, the RPAS environment imposes very little in these regards.

COPA believes that the RPAS technology has reached a level where it can and should be deployed toward greater efficiency and enjoyment of our overall lives, in a similar fashion as the aircraft has achieved such until now. But deploying the RPAS technology to achieve this worthy goal does not justify doing so without due regard to Flight Safety and due consideration to our current level of in this regard.

Other organizations, UPAC for instance, have assessed and critiqued the NPA on a highly detailed, point by point basis. COPA respects this approach and believes that submitting a

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similar evaluation would simply be replicating the work of these organizations and in doing so would dilute the value of their perspective. COPA would rather comment on the NPA from the perspective of its overall approach and regulatory framework: the 3P's. COPA has also reached out to the Recreational Aircraft Association (RAA), which represents the Amateur-Built movement in Canada, and their comments are incorporated in this paper.

The Pilot

In the typical aviation environment, the requirements for licenses and qualifications, at all levels, and most of their associated ratings are exhaustively defined, supported by long established and invigilated written examinations and thorough flight tests administered by TCCA or a TCCA delegate.

In this NPA, the wording related to pilot licensing and qualifications appears to be adequate in that it mentions appropriate issues but only provides a generic discussion stating that these will be looked at. The NPA does not provide any firm indication of what will be required of the pilot in order to operate the RPAS, particularly as the pilot moves up to the larger ones.

The Product

TCCA has developed and deployed a highly efficient approach to ensuring that all aircraft are airworthy by design, manufacture, and maintenance. This approach is regulated and closely monitored throughout the life of any aircraft. This airworthiness concept certainly adds to the cost of owning and operating an aircraft but it remains nonetheless a critical cornerstone of Flight Safety. COPA believes that RPAS should be required to meet airworthiness requirements similar to those of aircraft.

That the same TCCA would even consider implementing an RPAS airworthiness approach based solely on a manufacturer's declaration of compliance is woefully inadequate. Further, this approach provides for two distinct levels of airworthiness, and this would be applicable to all RPAS operating in the same airspace as aircraft. This is further compounded by having the airworthiness of RPAS up to 650kg address in such a haphazard way, considering that a 650kg RPAS is essentially equivalent to a C-150 when it comes to mass, but potentially having a significantly higher kinetic energy when operating speed is considered.

TCCA recognizes that JARUS SORA relies heavily on kinetic energy for assessing the risk of an operation, yet chooses to maintain an approach based on the weight (actually, the mass) of the RPA, acknowledging that this approach would make it easier for the manufacturers and industry to achieve compliance. It would appear as though TCCA is more focused on being nice to the RPAS manufacturers and industry than on ensuring our level of Flight Safety is maintained. The additional argument that using the mass of the RPAS instead of kinetic energy will provide alignment with the framework in place in the CARs for aircraft with a pilot on board might be accurate but is of dubious value. The major difference in this equation is that the aircraft has a pilot on board who quite likely understands the consequences of his/her actions on the preservation of one's own life, while the RPAS pilot will typically be kilometers away, blind to the actual air traffic environment, totally lacking Situational Awareness, yet safely on the ground, and will always have the prerogative of being sorry and then flying again, after the accident. Not really supportive of Flight Safety.

To be clear, the use of mass threshold is a valid starting point, but it remains that kinetic energy is the critical factor in any accident. For this reason, COPA believes that TCCA should base their approach on kinetic energy.

COPA recognizes that TCCA is considering some form of Detect And Avoid (DAA) systems, but this appears to be in theory only at this time. While this type of technology could definitely enhance the Flight Safety perspective, will it be able to detect sail planes, hang gliders, balloons, or Basic Ultra-Light Aircraft? COPA takes this opportunity to express doubts with respect to a TCCA commitment to implementing DAA, considering that this technology will undoubtedly increase the empty mass of the RPAS with an accompanying decrease in payload, while increasing the cost of ownership and operation of the RPAS. This does not support TCCA apparent commitment to make things easier for the manufacturers and the industry, as COPA perceived above.

COPA further notes TCCA's consideration of Remote Identification (ID) technology. At this point, COPA's comment are similar to those related to the DAA above. COPA notes particularly that TCCA is considering the introduction of this requirement over a delayed coming into force. COPA believes that the technology exists now, can be made light and sufficiently low cost to be mandated now, as the industry is in the early stages of what will become a massive industry, significantly opposed to additional safety related requirements that might be imposed in the future.

COPA acknowledges that any additional system requirement imposed on the RPAS, regardless of mass, size, and capabilities, will incur cost and payload penalties to the vehicle. In similar fashion to the aircraft, this is a reality of the laws of physics if one wishes to ensure of Flight Safety.

The Procedures

COPA considers that the procedures as proposed in the NPA are tantamount to giving total and near unrestricted airspace access to the RPAS, without the necessity for the operator to assume responsibility for his/her actions. This approach will lead to a mix of aircraft and RPAS in the same airspace, with the aircraft pilot being the sole person responsible to maintain and enforce Flight Safety, and this for an obvious reason: self-preservation. The use of population density is a major flaw in it being chosen as the major if not sole criteria for the "air risk" analysis. It would seem to indicate that TCCA does not understand that aircraft essentially fly all over the country, their flight not necessarily related to the population density. This major flaw is actually of abysmal proportions and totally incomprehensible to COPA. This perspective is further supported by TCCA's stated intention to eliminate the need for an SFOC. Additionally, TCCA proposes to not differentiate between recreational and commercial RPAS operation under some circumstances, COPA notes that the UPAC feedback provides a detailed analysis of the Procedures component of the NPA's regulatory framework and COPA agrees with their perspective.

ICAO Position

In its 2018 report on UAS – ATM Integration Operational Concept, EUROCONTROL uses the term Unmanned Airborne System (UAS) to include both drones and RPAS. ATM is the Air Traffic Management. This EUROCONTROL report refers to the 2017 ICAO RPAS CONOPS as follows:

“ICAO has specified four main requirements for UAS-ATM integration:

- The integration of UAS shall not imply a significant impact on current users of the airspace;*
- UAS shall comply with the existing and future regulations and procedures laid out for manned aviation;*
- UAS integration shall not compromise existing aviation safety levels nor increase risk more than an equivalent increase in manned aviation would.*
- UAS operations shall be conducted in the same way as those of manned aircraft and shall be seen as equivalent by ATC and other airspace users.”*

COPA does not intend to pursue an in-depth analysis of this EUROCONTROL report at this time, or of the relevant ICAO RPAS CONOPS, as it would far exceed the boundaries of this letter. COPA simply intends to point out that this RPAS NPA2020 - 012 is in blatant contradiction to the relevant ICAO RPAS CONOPS requirements.

Conclusion

We look forward to providing more feedback and contributing to developing the proper path towards a gradual and safe integration of RPAS into our skies.



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