



June 29, 2022

Ms. Laura E. Gomez
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Ms. Gomez,

The Experimental Aircraft Association (EAA) is the world leader in recreational aviation. With an international membership of over 250,000 people in over 100 nations, EAA brings together pilots, aircraft builders, owners, and aviation enthusiasts who are dedicated to sharing The Spirit of Aviation by promoting the continued growth of aviation, the preservation of its history, and a commitment to its future. We represent a wide array of airspace users that fly primarily at altitudes below 500 feet AGL.

EAA fervently opposes any measure to pass the recommendations of the BVLOS ARC as they are currently written into a final rule. We support the safe integration of drones into the U.S. National Airspace System (NAS) and recognize the potential that drones have in the future of air operations. However, we firmly believe that the top priority in any action to move towards integration must be the safety of crewed aircraft¹.

Background of EAA's Position on UAS

EAA remains committed to the philosophy that UAS must be *integrated* into the airspace, with no concessions given to UAS that would encumber or endanger crewed aircraft in any operation that is presently allowed. We firmly believe that three conditions must be met in order to successfully integrate drones into the NAS. First, the safety of crewed aircraft must take precedence in any discussions of UAS integration. Second, no new airspace restrictions should be placed on crewed operations because of drone flights, and third, crewed aircraft should not be required to install new equipment beyond that already required by FAA regulation. Unfortunately, the requirements in the current BVLOS ARC final report do not meet these conditions, and if the FAA were to move forward with the recommendations as written, the safety of crewed aircraft pilots would be at risk. While some of the commenters at the public meeting consider these recommendations to be an acceptable compromise between drones and

¹ For the purposes of these comments, references to crewed "aircraft" include ultralight vehicles operated under 14 CFR 103

crewed aircraft, we strongly disagree. We do not accept any rule that compromises the safety and the lives of crewed aircraft pilots.

Operations Below 500 Feet AGL

The ARC operates under the assumption that the recommendations do not significantly impact crewed operations because the number of general aviation aircraft operating under 500 feet is small. Specifically, the report calls out helicopters, weight shift control, and agricultural operations as the only crewed aircraft allowed to operate at these altitudes away from airports. The recommendations fail to recognize that there are in fact many types of aircraft that frequently and legally operate below 500 feet. We offer the following examples of EAA members operating below 500 feet away from charted airports:

Part 103 Ultralight Vehicles



Figure 1 Powered paragliders, like other ultralights, fly at low altitudes and can operate from small fields

Due to their light weight, slow speeds, and unique modes of operation, ultralight vehicles are permitted by 14 CFR 103 to operate at any altitude so long as they do not operate over congested airspace or within controlled airspace with ATC approval.

A good example of ultralight operators are powered paragliders (PPG). There has been a surge in PPG popularity in recent years, and they are usually flown under Part 103 as ultralight vehicles. They can be foot launched from areas as small as suburban backyards and safely operate below 500 feet. Few are equipped with advanced instrumentation and many do not carry radios.

In 1984, the FAA published Advisory Circular 103-7 as a companion to the recently-established rule on ultralights. It contained the following cautionary note to operators:

“You are Responsible for the Future Direction the Federal Government Takes With Respect to Ultralight Vehicles. The actions of the ultralight community will affect the direction Government takes in future regulations. The safety record of ultralight vehicles will be the foremost factor in determining the need for further regulations.”

We believe that over the past 35 years the ultralight community has kept its end of this bargain. They deserve the freedom to operate with no additional safety risk imposed upon them by any new activity.

Private Airports/Helipads

For many aviators, their version of the American Dream involves owning a small airstrip. Near EAA's home of Oshkosh, WI, there are many small runways on farms and other rural property, but private airports can be found in built-up areas – close to busy airspace – as well. We also cannot forget helicopters, which only require a few square feet to operate, not unlike UAS. Not all of these landing areas are registered and/or chartered, and many states do not require their owners do so. Therefore, UAS operators cannot assume that all airports and helipads are known through publicly-available sources.



Figure 2 Private airstrips can be close to residential areas, and not all are required to be chartered

Backcountry Flying



Figure 3 "Backcountry" flying may involve remote operating areas or off-airport locations closer to town

Backcountry aviation is becoming a very popular pursuit for pilots who find enjoyment and satisfaction in operating their aircraft out of small fields, beaches, and other off-runway areas. Some of this “backcountry” flying can be surprisingly close to civilization. To use another example from EAA's home state, southwestern Wisconsin and areas along the Wisconsin River are popular “backcountry” spots, not far from some major cities – one need not go to Alaska to find aircraft with big tires plying the bush.

Seaplanes

Seaplanes do not require chartered areas to takeoff and land, and subject to local jurisdiction can operate anywhere that there is suitable water. Note that simply avoiding water is not sufficient, as arrival/departure corridors could be over land.



Figure 4 Seaplanes use diverse bodies of water, and can fly low over shorelines when arriving/departing

Open Water and Sparsely-Populated Areas

Finally, while such operations are relatively rare it is important to note that 14 CFR 91.119 allows flight below 500 feet over open water and sparsely-populated areas. 500 feet is not quite the hard floor on all operations that the recommendations assume it to be.

All of these operations were not recognized in the ARC report's estimation of crewed operations below 500 feet AGL. By underestimating the number of aircraft and the variety of operations taking place at low altitudes, the report does not accurately assess the entirety of the risks to crewed aircraft that it presents.

Right-of-Way

Even if the number of operators below 500 feet were as small as the report authors assume, the risk to human life is still unacceptable. These recommendations set forth an aviation safety environment where crewed operators either equip with TABS or ADS-B or yield the right-of-way to drones. Not only does this go against all aviation right-of-way rules, where the less-maneuverable aircraft has the right-of-way over others, it would hand the right-of-way from humans to automation in a life-or-death scenario, a situation that raises serious ethical concerns. EAA appreciates the work that the ARC has done to keep equipment mandates out of the final report, however this is a mandate in all but name as it forces crewed aircraft to equip or forfeit their own safety.

In VFR GA operations, crewed aircraft meet separation requirements primarily by visually seeing and avoiding other crewed aircraft. According to these recommendations, unequipped crewed aircraft would be completely reliant on one-sided visual separation to avoid collisions with drones. If UAS are not held to an equivalent standard for a means of collision avoidance, crewed aircraft are again put at an unacceptable level of risk that is not currently present in operations where two crewed aircraft are looking for each other. Additionally, most small UAS systems are significantly smaller than crewed aircraft, and therefore more likely to be visually acquired only at close range. Even if the crewed aircraft pilot is able to spot an encroaching drone, by the time it is visible the less maneuverable crewed aircraft may not have the capability to perform an evasive maneuver with enough time to avoid a collision.

During spoken comments, several stakeholders from the UAS community stated that they felt the current recommendations “reflect a shared risk model in order to safely integrate fully autonomous aircraft” and that these recommendations are already a “significant compromise by the UAS community to the general aviation community.” This model is not one of shared risk. The risk to the drone is the loss of a drone. The risk to manned aircraft is a loss of life. We will not compromise on safety, and consideration of policies that could increase risk to human life is reckless.

ADS-B/TABS

The final report suggests that equipage rates may increase beyond the current 49% of general aircraft that are already ADS-B equipped as a result of these recommendations, increasing safety for all NAS users. However, this rationale fails to consider that ADS-B and TABS equipment is not reliable to the extent necessary to guarantee safety-critical deconfliction. ADS-B was never intended to be a tool for detect-and-avoid collision avoidance. It was developed for traffic management and situational awareness, but is not reliable enough to be the sole method for drone operators to avoid other aircraft, particularly at the lower altitudes addressed in this report. These recommendations once again put the safety of crewed aircraft at risk by relying on a system that is not built for this proposed purpose.

Furthermore, it is impossible to install ADS-B out in many lighter-than-air and light-sport aircraft due to a lack of an electrical system, inability to permanently mount, and/or altering weight and balance beyond operational limits. It is also impossible to install a system in any

ultralight under current international rules due to the lack of a registration number, denying a large number of aviators the ability to obtain right-of-way over unmanned aircraft even if they are willing to install these systems.

The report lists TABS as an alternative to ADS-B. TABS is a limited system that does not solve any of these existing issues with ADS-B equipage. Even if it were currently widely available, TSO-C199 is not usable for ultralights due to a registration number requirement, and it does not reduce any of the other barriers for lighter-than-air and light-sport aircraft to equip.

Conclusion

EAA supports drone integration into US airspace, but the current and proposed drone safety rules are not enough to keep pilots safe. If you have any questions regarding EAA's position on the current BVLOS ARC recommendations, please contact Lily Johnson at ljohnson@eaa.org or (920) 426 - 6103. Thank you for providing this opportunity to share our concerns.

Respectfully,



Sean Elliott
Vice President, Advocacy and Safety