



SMALL UAV
COALITION
*A Partnership for
Safety & Innovation*

Small UAV Coalition Comments on Draft FAA Advisory Circular No. 90-WLCLR

The Small UAV Coalition¹ appreciates the opportunity to provide comments on the FAA’s draft Advisory Circular (AC), “Well Clear Definition for Small Unmanned Aircraft Systems Operating Beyond Visual Line of Sight.”

1. While the well clear requirement is part of the right of way rules under Parts 91 (§91.113) and 107 (§107.37), there is no definition of “well clear” in the Federal Aviation Regulations. Providing guidance in an advisory circular helps UAS operators better understand how they can achieve compliance with §91.113 or §107.37 through technological means (e.g. on and off board detect and avoid systems). The Coalition also appreciates the clarity in FAA’s position that a small UAS (sUAS) is well clear of a manned aircraft if it is *either* 250 feet away vertically or 2,000 feet horizontally as defined in the Well Clear “Hockey Puck” Volume of Airspace in Figure 1.

2. The well clear volume outlined in section 7 does not sufficiently account for proximity to terrain and such low altitude operations that are typical of drone operations under Part 107 below 400 feet AGL. When considering operations below 400 feet AGL, a 250 feet vertical separation becomes problematic as it takes up much of the navigable airspace between the manned aircraft and the ground and the 2,000 feet horizontal distance can displace many UA over a congested area. Many models and types of UA presently on the market and in use today have the ability to safely make use of the otherwise non-navigable airspace to manned aircraft in close proximity to obstacles and structures.

To illustrate: a helicopter flying at 300 feet AGL over buildings leaves little to no room for the UA to continue without violating the “well clear” boundary. Meanwhile, the helicopter would tend to not fly, without specific purpose, in quite close proximity to terrain or obstacles. It stands to reason that the clearance between a UA and a manned aircraft should account for UA’s proximity to terrain and obstacles that the manned aircraft would otherwise (without the UA present) want to avoid. While UA size, performance, visibility, and other characteristics might be considered with study, a simplified approach could be employed in the interim. That is, to describe another well clear method, for use only below 400ft AGL, that accounts for the UA’s distance from terrain and obstacles.

¹ A list of the members of the Small UAV Coalition can be found at www.smalluavcoalition.com.

For instance, the UA could remain “well clear” of a manned aircraft by half the distance from the manned aircraft to the obstacles or terrain that the UA near. In this manner, the UA remains capable of continuing its safe flight and not creating an unnecessary hazard to persons or property on the ground that both the UA and the manned aircraft seek to avoid.

We suggest including this approach in section 7 or limiting the applicability of this AC to “Operations between 1,200 feet AGL and 400 feet AGL” in section 6.1.

3. The draft states that the audience for this AC includes operators seeking an exemption or waiver to conduct BVLOS operations “through the use of an sUAS DAA [Detect and Avoid] system.” The draft AC, section 6.2, provides that the well clear definition does not apply to sUAS operations using visual observers to comply with the right of way rules. The Coalition seeks confirmation that DAA/separation assurance may still be achieved through operational mitigations (such as the use of a visual observer), even if this is not addressed in this AC

4. The draft AC applies only to sUAS as defined in 14 CFR §1.1, meaning it does not apply to UAS over 55 pounds. We believe this guidance would also be useful for UAS operations of UAS over 55 pounds that were authorized under section 333 and that have been and will be authorized under section 347 of the FAA Reauthorization Act of 2018, codified as 49 U.S.C. 44807 (although it sunsets in 2023). The exemption process also remains available for BVLOS operations authorized under section 2210 of Public Law 114-190, relating to critical infrastructure.

5. The draft AC (section 6.1) applies only to sUAS with a cruise speed of 60 knots or less and a maximum airspeed of 100 knots or less. We do not understand why the draft differentiates between cruise speed and maximum speed and uses both speeds. The 100 knot maximum appears reasonable as it captures the maximum 87 knots “groundspeed” limit in Part 107 and would allow Part 91 operations faster than the Part 107 limit.

We suggest that the first bullet in draft section 6.1 be divided into two bullets: the first addressing the section 1.1 definition (55 lbs.) and the second bullet addressing the maximum speed.

6. The Coalition seeks clarification of the statement in section 6.1 that the well clear definition applies to “operations in Class G and E airspace, except on or in the vicinity of an airport.” The well clear concept should not be so limited. ATO and AVS signed a Memorandum of Agreement (MOA) in November 2018 establishing means for risk assessments that would enable operations (not distinguishing between VLOS and BVLOS) in airspace defined by UAS Facility Maps, which includes controlled airspace volumes. The AC should not preclude that airspace. Also, there is no explanation of what is meant by the term “in the vicinity of an airport.” This term should be clearly defined.

7. The Coalition seeks an explanation of the 1,200 feet AGL limit for the applicability of the well clear definition, per section 6.1. While the limit of Class G is 1,200 feet AGL, the draft guidance applies to controlled airspace (per the reference above to Class E airspace) as the Coalition agrees that it should.