

Harley

I respectfully oppose the proposed expansion of the Automatic Dependent Surveillance-Broadcast (ADS-B) mandate to include Visual Flight Rules (VFR) aircraft, particularly paragliders and hang gliders. The unique operational, physical, and economic constraints of unpowered aircraft make compliance with this mandate impractical, unsafe, and detrimental to the freeflight community. I urge that paragliders and hang gliders be exempt from this requirement for the following reasons:

1. **Challenges for Unpowered Aircraft:** Paragliders and hang gliders lack onboard power sources, necessitating external batteries to operate ADS-B equipment. This introduces significant practical challenges, as there are limited options for securely stowing a power source and mounting an ADS-B device in most paraglider configurations. The additional weight alters harness geometry, impacting weight-shift capabilities critical for responsiveness during turns and recovery to level flight. Furthermore, the increased weight heightens the risk of injury during landing, as pilots must bear additional load on their legs.

2. **Aircraft Performance and Responsibility:** Compared to drones, paragliders and hang gliders are slow-moving and less responsive to pilot inputs. In mixed airspace, the responsibility for collision avoidance should primarily rest with drone operators, similar to the maritime principle where powered vessels yield to sail. This approach aligns with the operational limitations of unpowered aircraft and promotes safer airspace management.

3. **Spatial Constraints in Paraglider Cockpits:** The compact nature of paraglider cockpits, such as those in POD harnesses, offers limited space for mounting additional equipment (refer to the attached image). Most pilots already carry essential devices, such as GPS locators (e.g., Spot, InReach, or EPIRB) and mobile phones, leaving no practical space for an ADS-B unit and its power source. In open harness configurations, commonly used by pilots, fitting such devices is unfeasible.

4. **Safety and Health Concerns:** Devices like the Sky Echo pose a 4cm radiation hazard zone, which is impractical to maintain within the confines of a paraglider harness. Additionally, mounting an ADS-B unit or power source on a shoulder strap or riser introduces significant safety and snag hazards, compromising the safe operation of the wing.

5. **Cost-Prohibitive Nature for Recreational Pilots:** The acquisition, installation, and

maintenance of ADS-B equipment represent a significant financial burden for freeflight pilots, who typically operate on limited budgets. Unlike commercial aviation, recreational freeflight is a self-funded endeavor, and these costs could deter participation, particularly among newer or younger pilots, threatening the sustainability of the sport.

6. Minimal Collision Risk in Operating Environments: Paragliders and hang gliders primarily operate in remote, low-traffic airspace, such as mountainous or rural areas, where the risk of mid-air collisions with other aircraft, including drones, is minimal. The low speed and predictable flight paths of unpowered aircraft further reduce the need for ADS-B, suggesting that the mandate is an excessive measure for these operations.

7. Environmental and Operational Constraints: Unpowered aircraft are highly sensitive to environmental conditions, such as wind and thermals, which dictate flight patterns. Managing and monitoring ADS-B equipment during flight could divert pilots' attention from critical tasks, such as reading weather conditions or maintaining control, potentially compromising safety.

8. Lack of Infrastructure for Compliance: Unlike powered aircraft with established cockpits and electrical systems, paragliders and hang gliders lack standardized infrastructure to support ADS-B integration. Retrofitting such equipment would require custom solutions that are not widely available, increasing costs and complexity without guaranteed safety benefits.

9. Potential for Alternative Safety Measures: Rather than mandating ADS-B for unpowered aircraft, alternative safety protocols, such as enhanced airspace segregation, improved pilot education, or drone-specific collision avoidance technologies, could address safety concerns more effectively. These measures would avoid imposing impractical requirements on freeflight pilots.

10. Disproportionate Impact on the Freeflight Community: The freeflight community is small but plays a significant role in fostering aviation enthusiasm and skill development. Imposing the ADS-B mandate could disproportionately affect this niche group, potentially stifling grassroots aviation and reducing diversity in the aviation ecosystem.

11. Interference with Situational Awareness: The compact and exposed nature of paraglider and hang glider setups means that adding ADS-B equipment could obstruct pilots' fields of view or interfere with monitoring critical flight instruments. This could degrade situational awareness, counteracting the intended safety benefits of the mandate.

12. Impact on Recreational Aviation: Freeflight pilots engage in paragliding and hang gliding for the passion of unpowered flight. The ADS-B mandate introduces impracticalities and regulatory burdens that could deter participation, diminish the vitality of freeflight, and negatively affect recreational aviation as a whole.

In conclusion, the unique characteristics of paragliders and hang gliders—combined with the practical, safety, and economic challenges outlined above—warrant their exemption from the proposed ADS-B mandate. Imposing such requirements risks undermining the safety, accessibility, and sustainability of freeflight. I respectfully request that regulators consider tailored safety measures that account for the distinct nature of unpowered aircraft and preserve the vitality of this recreational community.

Thank you for your consideration of these concerns.