



OPERATING IN CONTROLLED AND RESTRICTED AIRSPACE

TOOLBOX TALK: Operating in Controlled and Restricted Airspace

RATTLIR Safety Series – "Strike Before It Bites"

Purpose

Operating sUAS in controlled or restricted airspace requires a thorough understanding of FAA airspace classes, authorization requirements, special use airspace limitations, and the additional complexities near critical energy-sector facilities. This toolbox talk combines FAA requirements, airspace classification fundamentals, special use considerations, and mission planning techniques to ensure safe and compliant operations.

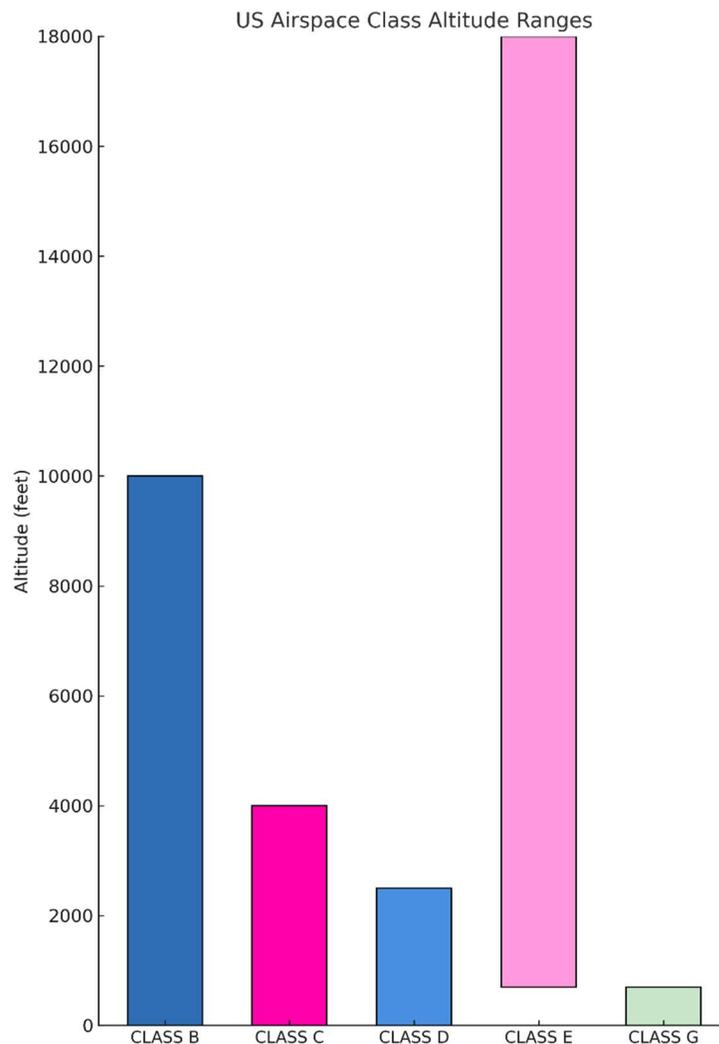


Figure 1 – Simplified Controlled Airspace Structure



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Airspace Classification Overview

Understanding airspace classification is essential for determining authorization requirements and operational limitations:

- Class A: 18,000 ft MSL to FL600 – Not applicable to sUAS under Part 107.
- Class B: Surrounds major airports – Surface to ~10,000 ft MSL; LAANC or FAA authorization required.
- Class C: Medium airports – Surface to 4,000 ft AGL; LAANC required.
- Class D: Towered airports – Surface to 2,500 ft AGL; LAANC required.
- Class E: Controlled airspace beginning at 700 ft or 1,200 ft AGL; authorization required only if surface-based E.
- Class G: Uncontrolled airspace – sUAS typically operate here (<400 ft AGL) without ATC authorization.

Special Use and Restricted Airspace

Certain airspace areas contain additional restrictions or hazards that require special attention during planning:

- Restricted Areas (R): Contains artillery, missiles, or military hazards; entry requires controlling agency approval.
- Prohibited Areas (P): No sUAS operations permitted.
- Military Operations Areas (MOAs): Drone operations allowed, but extreme caution required due to fast-moving aircraft.
- Temporary Flight Restrictions (TFRs): Wildfires, disaster response, VIP movement; operations prohibited unless authorized.
- National Security UAS Restrictions (14 CFR 99.7): Permanent no-fly zones including sensitive infrastructure.

Energy Sector Airspace Considerations

Critical energy infrastructure introduces unique airspace and ground coordination requirements:

- Power plants and substations may be located within or near controlled or restricted airspace.
- Transmission corridors may cross multiple airspace classifications.
- Some energy facilities have additional NSA UAS restrictions beyond normal FAA airspace rules.



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- Flight operations must respect utility owner requirements, right-of-way permissions, and local security protocols.

Authorization and Waiver Requirements

Most controlled airspace requires prior FAA approval before flight:

- LAANC authorization is required for Class B, C, D, and some Class E surface areas.
- If LAANC is not available, operators must request FAA manual authorization.
- BVLOS operations in controlled airspace require a separate FAA waiver.
- Operations near critical infrastructure may require utility-owner approval in addition to FAA authorization.

Mission Planning for Controlled and Restricted Airspace

A thorough planning process ensures safe and compliant operations near controlled or restricted airspace:

- Check sectional charts, UAS Facility Maps, and NOTAMs for airspace limits.
- Verify current TFRs and NSA restrictions before flight.
- Plan safe launch and recovery zones outside restricted boundaries.
- Develop contingency paths for loss of GPS, signal interference, or emergencies.

Crew Resource Management (CRM) for Airspace Operations

Effective airspace operations require enhanced crew communication and situational awareness:

- Review airspace boundaries during pre-flight crew briefing.
- Assign VO responsibilities to monitor nearby aircraft and hazard developments.
- Confirm communication protocols in case controlled-airspace limits are approached.
- Use three-way communication when entering or exiting controlled areas.

Discussion Questions

- Do you understand the authorization requirements for operating in controlled airspace?
- Are you aware of special use or restricted areas near today's flight location?
- Do you have a clear airspace-based Go/No-Go decision plan for this mission?



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RATTLIR Takeaway

Airspace awareness is one of the most critical responsibilities of the RPIC. Controlled and restricted airspace introduce additional requirements that must be respected to maintain legal and safe operations. By understanding airspace structure, obtaining proper authorization, and coordinating closely with all crew members, RATTLIR pilots strike before it bites – ensuring safe, compliant, and professional sUAS operations near critical infrastructure.