

PRIVATE PILOT GROUND SCHOOL

MODULE 3-5 — AIRSPACE: ACS TASK E IN FULL

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FACTS TO REMEMBER

KNOW THESE COLD

- Class A runs from 18,000 feet MSL up to and including FL600.
Source: AIM 3-2-2*
- Class A operations must be IFR under an ATC clearance — there is no VFR in Class A.
*Source: 91.135 eCFR**
- Class A requires transponder with Mode C and ADS-B Out.
*Source: 91.135(c), 91.215, 91.225 eCFR**
- Class B: surface to about 10,000 feet MSL around the busiest airports, individually tailored in layered shelves.
Source: AIM 3-2-3*
- Class B entry requires an ATC clearance before entering.
*Source: 91.131(a)(1) eCFR**
- Two-way radio contact alone is not a Class B clearance — you need the words "cleared into Class Bravo."
Source: 91.131(a)(1); AIM 3-2-3*
- Class B equipment: two-way radio, transponder with Mode C, and ADS-B Out.
*Source: 91.131(c), (d) eCFR**
- To take off or land in Class B, the PIC must hold at least a private certificate — or a student/recreational/sport pilot with the 61.94/61.95 training and endorsement.
*Source: 91.131(b) eCFR**
- The Mode C veil: within 30 NM of a Class B primary airport, surface to 10,000 feet, transponder with Mode C and ADS-B Out are required.
*Source: 91.215(b)(2), 91.225(d)(2) eCFR**
- Flying beneath a Class B shelf requires no clearance, but the veil's equipment rules still apply.
*Source: 91.131, 91.215(b)(2) eCFR**
- Class C: airports with a tower and radar approach control — usually a 5 NM core from the surface to 4,000 feet above the airport, and a 10 NM shelf from 1,200 to 4,000 feet above it.
Source: AIM 3-2-4*
- Class C equipment: two-way radio, transponder with Mode C, and ADS-B Out.
*Source: 91.130(d), 91.215, 91.225 eCFR**
- No specific pilot certification is required for Class C or D.
Source: AIM 3-2-4, 3-2-5*
- Class D: airports with an operating control tower — surface to about 2,500 feet above the airport, individually tailored.
Source: AIM 3-2-5*
- Class D requires only a two-way radio — no transponder or ADS-B from the class itself.
*Source: 91.129 eCFR**
- Class E is all controlled airspace that is not A, B, C, or D.

Source: AIM* 3-2-6

- A magenta vignette means Class E begins at 700 feet AGL; a blue vignette means 1,200 feet AGL.

Source: AIM* 3-2-5/3-2-6

- A dashed magenta line is a Class E surface area — controlled airspace to the ground for an airport.

Source: AIM* 3-2-6

- Class E ends at, but does not include, 18,000 feet MSL.

Source: AIM* 3-2-6

- VFR flight in Class E has no entry or communication requirement — the control is for IFR separation.

Source: AIM* 3-2-6

- Federal airways (Victor airways) are Class E corridors from 1,200 feet AGL up to but not including 18,000 feet; width is commonly taught as 4 NM each side of the centerline.

Source: AIM* 3-2-6 (vertical extent); IPH* ch. 2 (width)

- Class G is uncontrolled airspace — everything not designated A through E.

Source: AIM* 3-2-1

- ATC exercises no control over VFR aircraft in Class G; the VFR minimums and right-of-way rules are the whole rulebook there.

Source: AIM*, 91.155 eCFR*

- Class G above 1,200 AGL and below 10,000 MSL, day: 1 statute mile; 500/1,000/2,000.

Source: 91.155(a) eCFR*

- Class G above 1,200 AGL and below 10,000 MSL, night: 3 statute miles; 500/1,000/2,000.

Source: 91.155(a) eCFR*

- Class G above 1,200 AGL and at or above 10,000 MSL: 5 statute miles; 1,000/1,000/1 statute mile.

Source: 91.155(a) eCFR*

- Under a surface-designated controlled airspace ceiling below 1,000 feet, VFR flight beneath the ceiling is prohibited.

Source: 91.155(c) eCFR*

- To take off, land, or enter the pattern under VFR in a B/C/D/E surface area, ground visibility must be at least 3 statute miles (flight visibility if none is reported).

Source: 91.155(d) eCFR*

- Special VFR lets you operate below basic VFR minimums inside the lateral bounds of a surface area, below 10,000 feet MSL.

Source: 91.157(a) eCFR*

- Special VFR requires an ATC clearance — and the pilot must ask; ATC never offers it.

Source: 91.157(b)(1) eCFR*, AIM* 4-4-6

- Special VFR minimums: 1 statute mile flight visibility, clear of clouds.

Source: 91.157(b)(2),(3) eCFR*

- Special VFR takeoff or landing needs ground visibility of at least 1 statute mile — or flight visibility of 1 mile if ground visibility is not reported.

Source: 91.157(c) eCFR*

- Special VFR between sunset and sunrise requires an instrument-rated pilot and an IFR-equipped aircraft.

Source: 91.157(b)(4) eCFR*

- Prohibited areas (P-numbers) ban flight entirely for security reasons.

Source: AIM* 3-4-2

- Restricted areas (R-numbers) contain invisible hazards — artillery, gunnery, guided missiles; entry when active requires the controlling agency's authorization.

Source: AIM* 3-4-3

- Warning areas (W-numbers) carry restricted-area hazards over international waters, from 3 NM offshore outward.

Source: AIM* 3-4-4

- MOAs separate military training from IFR traffic; VFR flight may enter, but check activity and use extreme caution.

Source: AIM* 3-4-5

- Alert areas mark high volumes of training or unusual activity; no clearance needed, and every pilot shares collision-avoidance responsibility equally.

Source: AIM* 3-4-6

- Controlled firing areas suspend their activity when spotters see an aircraft coming — which is why they are not charted.

Source: AIM* 3-4-7

- SUA times, altitudes, and controlling agencies print on the chart margin; live status comes from FSS, the controlling agency, or the FAA SUA site.

Source: AIM* 3-4-9

- TFRs are issued by NOTAM — they never appear on the printed chart.

Source: 91.137(a) eCFR*

- 91.137 TFRs protect three things: people and property near a surface hazard, disaster relief aircraft, and the airspace over events that draw sightseers.

Source: 91.137(a)(1)-(3) eCFR*

- Large sporting events carry a standing security TFR (commonly 3 NM and 3,000 feet AGL over major stadium events); the exact terms live in the current FDC NOTAM, so check it — the figures are not in a regulation.

Source: standing FDC NOTAM (check current NOTAM at briefing); 99.7 eCFR*

- Presidential and VIP TFRs move with the person; violating one gets an armed escort.

Source: 91.141 eCFR*

- Checking TFRs is part of every preflight: briefing output plus tfr.faa.gov; EFB overlays help but can lag.

Source: 91.103; 91.137 eCFR*

- Entering an ADIZ requires a filed and activated flight plan — DVFR for a VFR flight.

Source: 99.11 eCFR*

- ADIZ operations require a functioning two-way radio with a continuous listening watch.

Source: 99.9(a) eCFR*

- ADIZ operations require an operating transponder with altitude reporting.

Source: 99.13 eCFR*

- Flying VFR within 60 NM of the Washington DC VOR requires the FAA's DC SFRA special awareness training.

Source: AIM* 3-5-8; 91.161 eCFR*

- Special flight rules areas (DC, Grand Canyon, and others) carry their own part 93 rules — read them before going near.

Source: AIM* 3-5-7; 14 CFR 93

- A TRSA offers voluntary radar services to VFR aircraft — it is not a regulatory airspace class.

Source: AIM* 3-5-6

- Transponder with Mode C is required at and above 10,000 feet MSL (except at and below 2,500 AGL),

everywhere in the 48 states.

*Source: 91.215(b)(5)(i) eCFR**

– The airspace boundary is where the airplane is, not where the pilot thinks it is — fix position against the chart before the line, every time.

Source: NA; PA.I.E.R1

– The riskiest airspace is the kind you did not know was there: preflight the whole route's airspace, including what a diversion would enter.

Source: NA; PA.I.E.R1

GOING DEEPER

– At the dozen busiest Class B primary airports (appendix D §4: ATL, ORD, LAX, SFO, DCA, and others), only a private certificate or better may take off or land — no student endorsement works there.

Source: 91.131(b)(2) eCFR; AIM* 3-2-3*

– VFR aircraft inside Class B receive ATC separation services.

Source: AIM 3-2-3*

– Aircraft certificated without an engine-driven electrical system (and balloons and gliders) may operate inside the veil, but only outside B/C and below the Class B ceiling or 10,000 feet.

*Source: 91.215(b)(3) eCFR**

– Class C and D altitudes are charted in MSL but defined by height above the airport.

Source: AIM 3-2-4, 3-2-5*

– If the controller answers with your callsign — even just "(callsign), standby" — communications are established and you may enter Class C; a reply without your callsign establishes nothing.

Source: AIM 3-2-4 (positive case verbatim; converse is the note's plain implication)*

– The Class C outer area (normally 20 NM) offers the same services, but participation there is voluntary.

Source: AIM 3-2-4*

– Above the ceiling of a Class B or C area, up to 10,000 feet, Mode C and ADS-B Out are still required.

*Source: 91.215(b)(4), 91.225(d)(3) eCFR**

– When part-time Class D reverts to Class G, Class G runs up to but not including the overlying controlled airspace.

Source: AIM 3-2-5*

– Departing a satellite airport without a tower inside Class C or D: establish communications with ATC as soon as practicable after takeoff.

*Source: 91.129(c)(2)(ii), 91.130(c)(2)(ii) eCFR**

– Where nothing lower is designated, Class E starts at 14,500 feet MSL.

Source: AIM 3-2-6*

– The 10,000-foot rows (5 SM, 111) apply only above 1,200 AGL — over high terrain, the low-altitude Class G rows can reach above 10,000 MSL.

*Source: 91.155(a) eCFR**

– The 5-SM rows exist because aircraft above 10,000 feet may exceed 250 knots — more speed needs more seeing distance.

*Source: 91.117(a) eCFR**

– Night exception: an airplane in Class G at night, in the pattern within 1/2 mile of the runway, may operate with 1 statute mile and clear of clouds.

*Source: 91.155(b)(2) eCFR**

– The 91.155 night rows switch on at evening civil twilight — the 1.1 definition of night, not sunset.

*Source: 91.155, 1.1 eCFR**

- An aircraft sitting exactly at the base of a Class E shelf is legally in the airspace below it.

*Source: 91.155(e) eCFR**

- Some busy Class B surface areas prohibit Special VFR for fixed-wing aircraft — charted "NO SVFR."

*Source: 91.157(a); part 91 App. D §3 eCFR**

- Special VFR does not rescue a student solo: the 61.89 visibility limits (3 SM day, 5 SM night) still bind the student pilot.

*Source: 61.89(a)(6), 91.157 eCFR**

- When a restricted area is inactive and released, ATC will allow flight through it — ask.

Source: AIM 3-4-3*

- National security areas request voluntary avoidance and can be made mandatory by NOTAM.

Source: AIM 3-4-8*

- Entry into a hazard-protection TFR is limited to aircraft participating in the relief effort under the on-scene official's direction.

*Source: 91.137(b) eCFR**

- A DVFR departure must launch within 5 minutes of the flight plan's estimated departure time.

*Source: 99.9(b)(2) eCFR**

- Military training routes: IR and VR routes; a 4-digit route number means no segment above 1,500 feet AGL.

Source: AIM 3-5-2*

- ADS-B Out mirrors the transponder map and adds Class E at/above 10,000 (except below 2,500 AGL) and the Gulf shelf at/above 3,000 MSL within 12 NM.

*Source: 91.225(d) eCFR**

- Class D, and Class E below 10,000 feet (outside any veil), require no transponder and no ADS-B.

*Source: 91.215(b), 91.225(d) eCFR**

- With a failed transponder in flight, ATC can authorize continuing to the destination or repair station; a completely unequipped aircraft must request its deviation at least one hour ahead.

*Source: 91.215(d)(2),(3) eCFR**