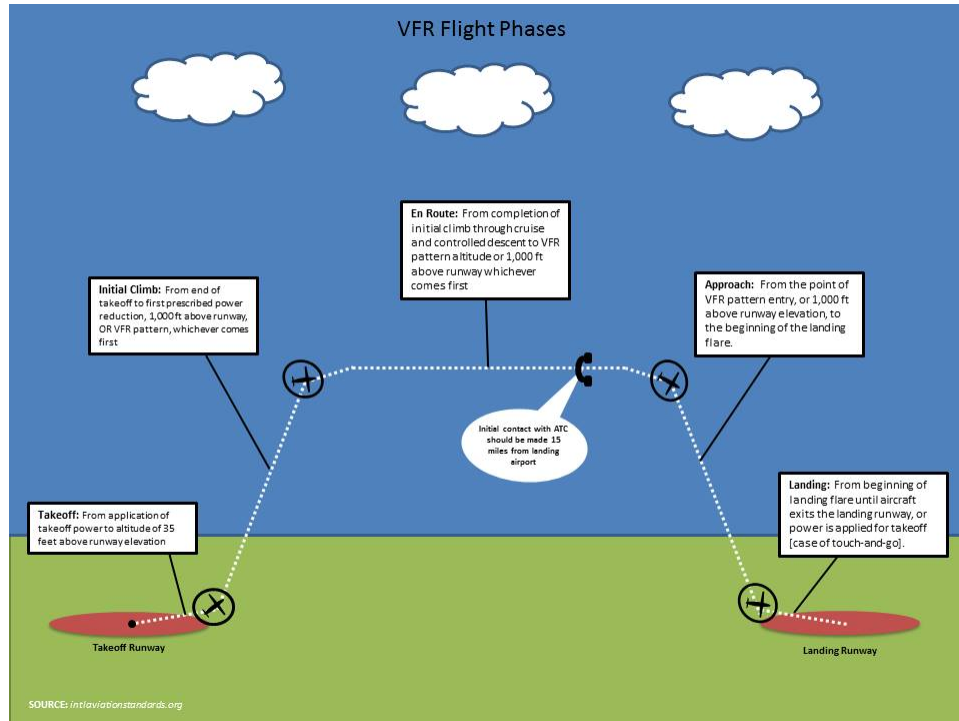


1 Jessica Glass - Week 2 Update

1.1 Airspace Classes and Defining Terminal Procedures

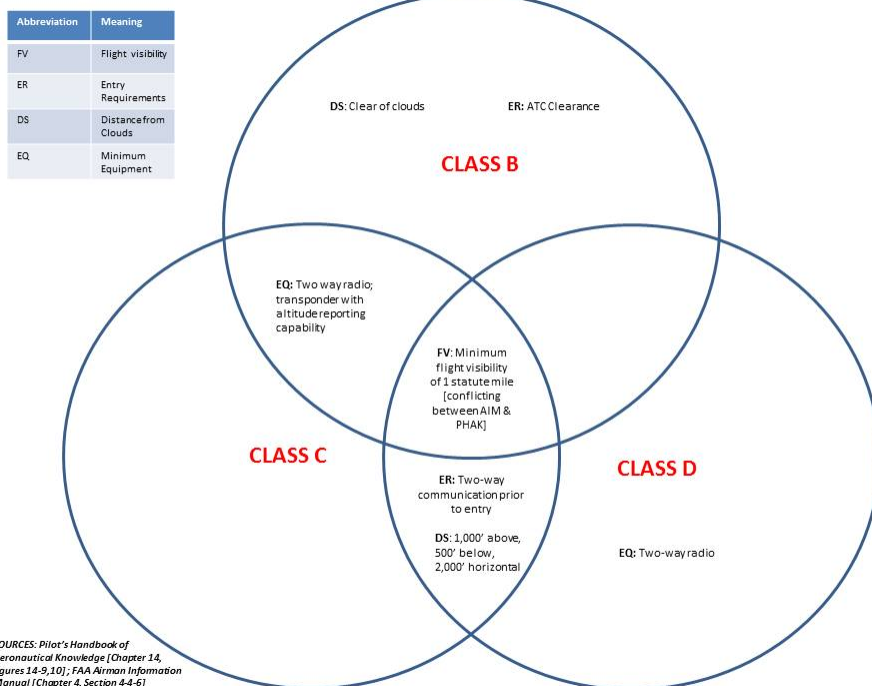
Flight Modes in VFR



Airspace Classes

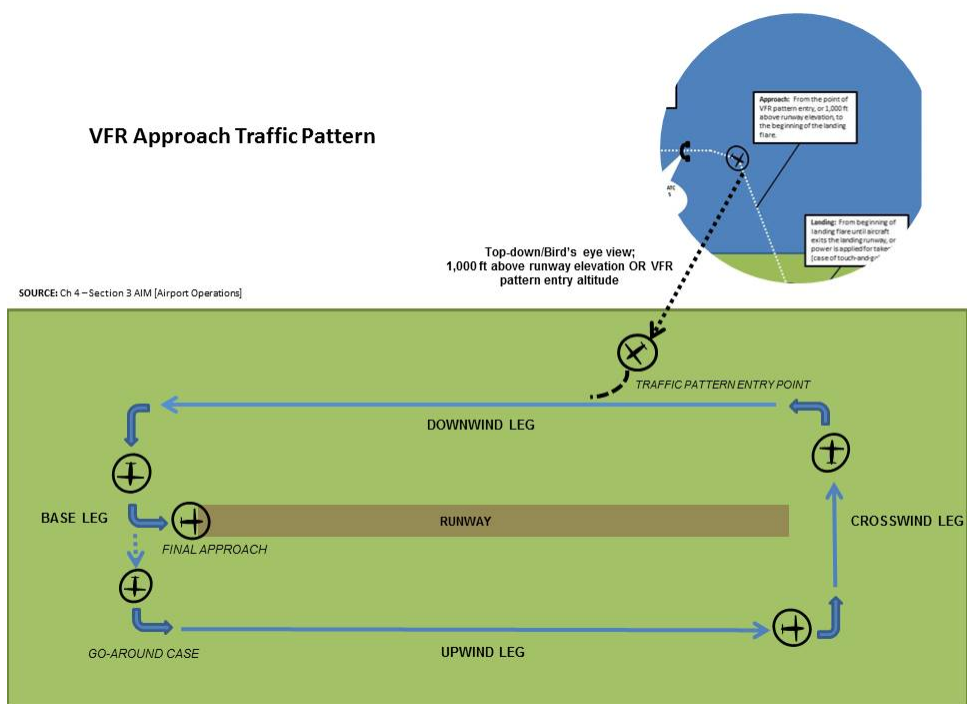
- **Class A** extends from 18,000' to 60,000' MSL
- **Class B** [In general, 10,000' surrounding nation's busiest airports] The MSL ceiling and floor altitudes of each sector are shown with last two zeros emitted on TAC
- **Class C** Generally from surface to 4,000 feet above airport elevation surrounding airports that have an operational control tower, serviced by radar approach control, and have certain number of IFR operations/passenger enplanements. surface area of 5 NM, an outer circle with a 10 NM radius that extends 1200 ft to 4000 ft above airport elevation
- **Class D** Generally from surface to 2,500 ft above airport with operating control tower
- **Class E** Everything in between [below class A, space in between airports]

VFR Entry and Weather Requirements in Terminal Airspace Classes (B,C,D)



1.2 Traffic Patterns

Airport Traffic Patterns [General Case]



- All turns made left, unless specified to the right by visual lighting patterns
- Standard, rectangular traffic pattern is typically executed at an altitude of 1,000 ft above airport elevation
- Operate at a speed of no more than 200 knots
- When approaching airport, traffic pattern should be entered at a 45 degree angle to the downwind leg

Traffic Patterns [Downwind leg]

- Landing gear extended
- Altitude maintained until abeam end of the approach runway
- Once reaching abeam runway, power should be reduced and descent begins
- Downwind leg continues to a point approximately 45 degrees from approach end of runway

Traffic Patterns [Base leg]

- Perpendicular to centerline of landing runway
- Established as a sufficient distance from approach end of runway to permit gradual descent

Traffic Patterns [Final Approach]

- When two or more aircraft approach, aircraft with lower altitude have right-of-way

Traffic Patterns [Upwind Leg]

- Transitional part of traffic pattern when on final approach, a go-around is initiated and climb altitude established
- When safe altitude is attained, pilot commences shallow bank to crosswind side

Traffic Patterns [Departure Leg]

- Straight course leading from take-off runway
- Begins at point from airplane leaving the ground to entrance into traffic pattern
- When departing, ATC will give aircraft one of the following instructions:
 - Continue straight
 - 45 degree left hand turn (in the case of left turn traffic pattern), vice versa for right hand turn traffic patterns
 - Turn 90 degrees into traffic pattern crosswind leg

1.3 Approaches and Landings

Base Leg Normal Approach

- Landing gear should already be extended
- After turning onto base leg, pilot should descend with reduced power and airspeed of $1.4V_{SO}$
- Ensure turn to final approach is gradual and not too steep causing high stall conditions
- Ensure plane is angled such that the crosswind won't cause it to drift too far from landing runway

Final Approach

- Align with centerline of runway
- Flaps put into landing position and pitch attitude adjusted for desired rate of descent

1.4 ATC Clearances and Aircraft Separation

General

- Clearance limit - ATC will authorize airport of intending landing prior to departure
- Departure procedure - headings to fly and altitude restrictions may be issued to separate a departure from other traffic
- If no holding instructions have been issued, pilot should ask ATC for holding instructions
- When aircraft is 3 minutes or less from clearance limit and clearance beyond fix not received, pilot is expected to start speed reduction
- Pilot should report when reaching clearance limit

VFR Clearances

- ATC clearance prior to entry
- Clear of clouds
- 1 mile visibility
- 1 statute mile ground visibility for taking off and landing
- May require flying at or below specific altitude
- VFR prohibited at night
- Read back altitudes, altitude restrictions and vectors in the same sequence received

1.5 Decision Chain outline

To be turned into a diagram for better visual aid. General outline of sequence of events when finishing en route phase of flight and entering into approach (FOR VFR, NORMAL LANDING)

- 15 miles from landing airport?
- Contact ATC - gain clearance for entering airspace
- Visibility and weather check
- Enter airspace traffic pattern at 45 degree angle of downwind leg
- Left turn to base leg
- Left turn to final approach
- Land
- Exit Runway
- Taxi to final destination

1.6 Questions and Comments

- This past week also involved working through plexil workshops and better understanding how the plexil plans are executed and simulated
- I think that I am at a point where I understand the terminal procedures very well at a high level and am ready to begin purely working in plexil on week 3.
- Terminal procedures rely heavily on dialogue between pilot and ATC, a capability which isn't currently supported for AOS plexil. Is there a way to simulate/go around this for the time being? If so, what is the best way to go about this