

VFR Departure and Arrival Procedures

Boston Virtual ARTCC Ground School

January 7, 2019



SIMULATION USE ONLY

These materials are provided for discussion and use in online flight simulation on VATSIM. They are not suitable for real-world flight.

Objectives

The “VFR Traffic Pattern Operations” Ground School is designed to help pilots understand how a VFR traffic pattern is designed and how it is used in both controlled and uncontrolled airport environments. This will help pilots fly smarter and safer with and without ATC guidance.

Tonight's session will:

- Provide an overview of the VFR traffic pattern
- Simulate different traffic pattern entries and departures
- Help pilots fly safer and smarter, particularly at uncontrolled airports



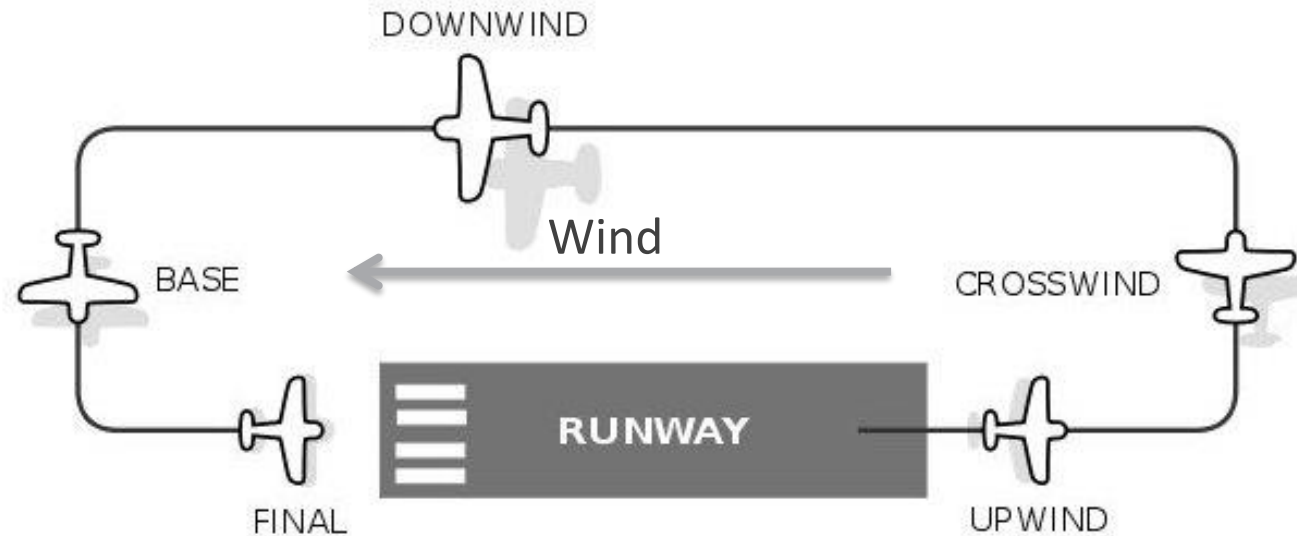
VFR Traffic Pattern

What is a VFR Traffic Pattern?

- Standard procedure used by VFR aircraft to operate in the vicinity of a controlled or uncontrolled airport

How does it work?

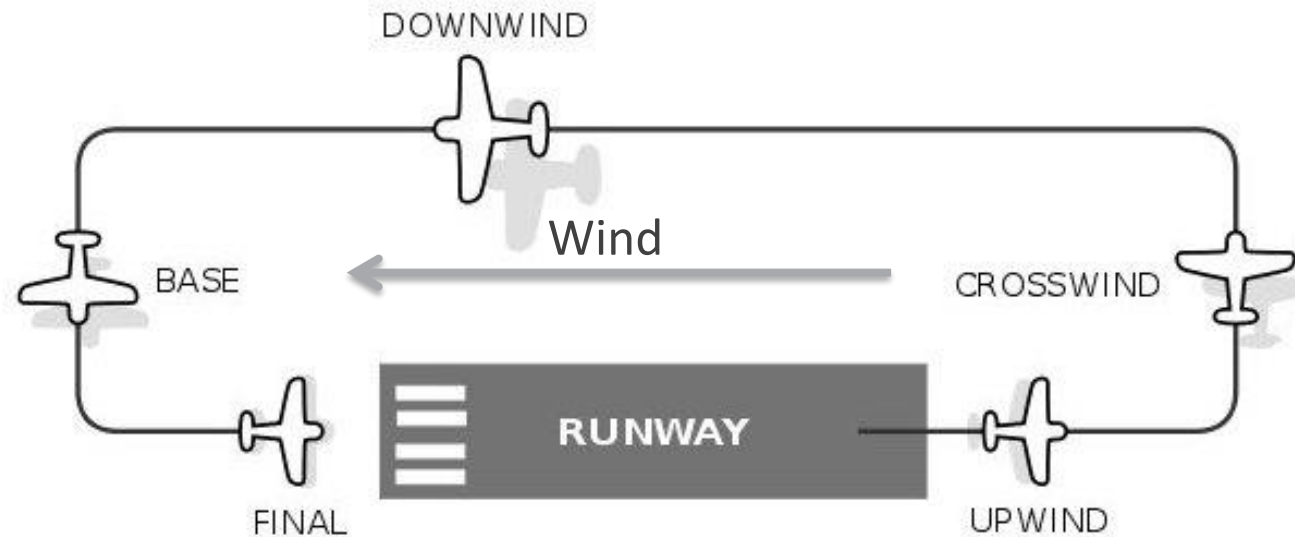
- Consists of 5 “legs”, each named based on direction of flight relative to the wind
- Begins at the departure end of the active runway, and ends at the arrival threshold



VFR Traffic Pattern

The FAA does not regulate traffic pattern entry, only traffic pattern flow:

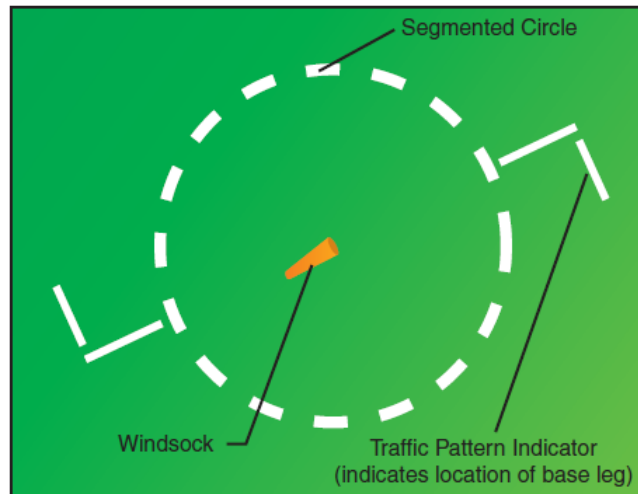
- An IFR arrival would follow the requirements of the cleared instrument approach
- A VFR arrival on a long, straight-in final never enters the pattern
- Traffic pattern entry information is advisory, provided by AC, the AIM, and the PHAK



VFR Traffic Pattern

What direction should I turn?

- Controlled Airport
 - ATC will specify direction of traffic pattern
- Uncontrolled Airport
 - All turns must be made to the left unless otherwise indicated (AIM 4-3-4)
 - Non-standard traffic patterns may be indicated by a segmented circle on the airport, in the Airport/Facilities Directory, or on a sectional chart



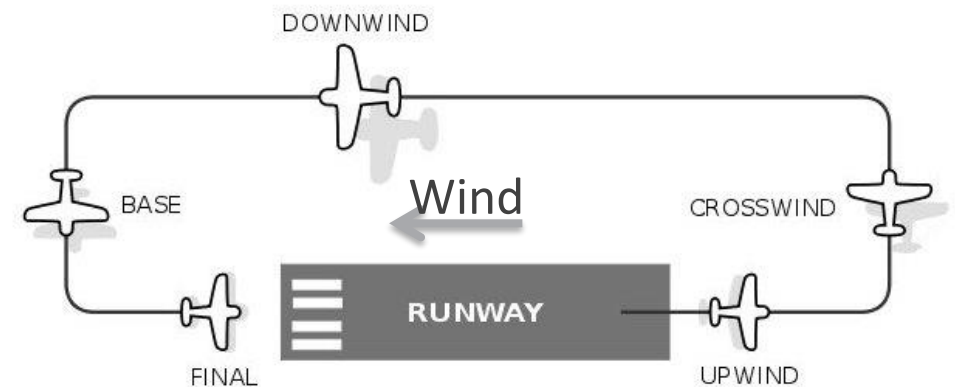
TXAEROSPORT AERODROME (X65)
855 S4 NOTAM FILE FTW
RWY 17-35: 3200X100 (TURF)
RWY 17: Tree.
RWY 35: Road. Rgt tfc



VFR Traffic Pattern

How do I fly it?

- Unless otherwise noted in the A/FD, traffic patterns are flown at 1000' AGL (Large or turbine-powered airplanes may enter at 1,500' AGL, Ultralights should operate no higher than 500' AGL)
- Depart the runway onto the upwind leg; maintain runway track (not heading)
- Turn crosswind within 300' of pattern altitude
- Turn downwind $\frac{1}{2}$ to 1 nautical mile from the runway. Maintain track parallel to the runway
- Maintain pattern altitude until abeam the approach end of the landing runway
- Turn base at pilot's discretion; turn final at least $\frac{1}{4}$ mile from the runway
- Maintain 200 knots or less in the pattern



Entering the Pattern

Pattern entry techniques vary depending on the type of airport and direction of arrival

Uncontrolled Airports:

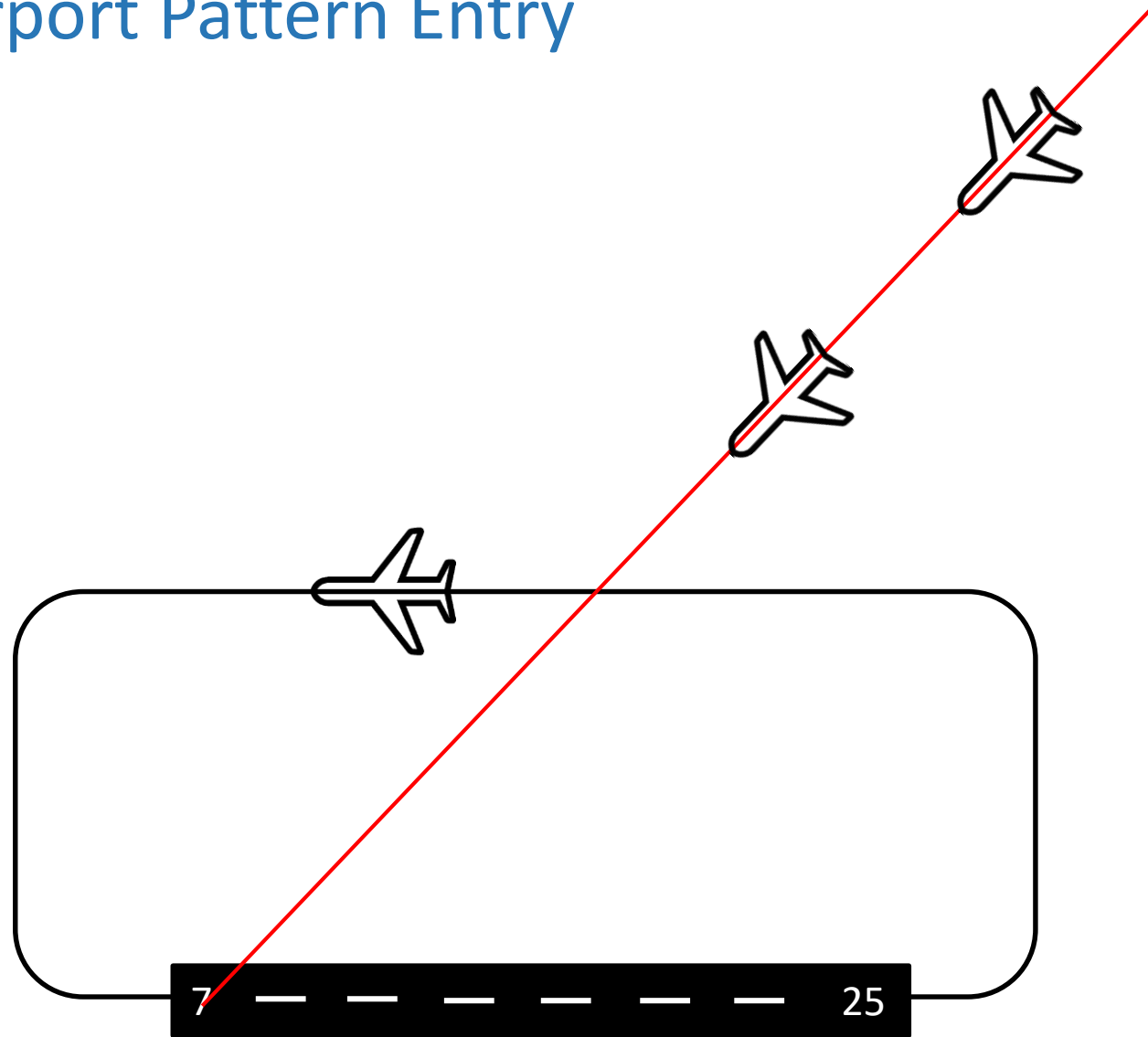
- Enter the pattern abeam the midpoint of the runway at pattern altitude
 - Midfield Crossover
 - Fly over the center of the runway at a 90 degree angle and enter the downwind leg
 - 45° Entry
 - Maneuver the aircraft to intercept the downwind leg at a 45 degree angle abeam the midpoint of the runway

Controlled Airports:

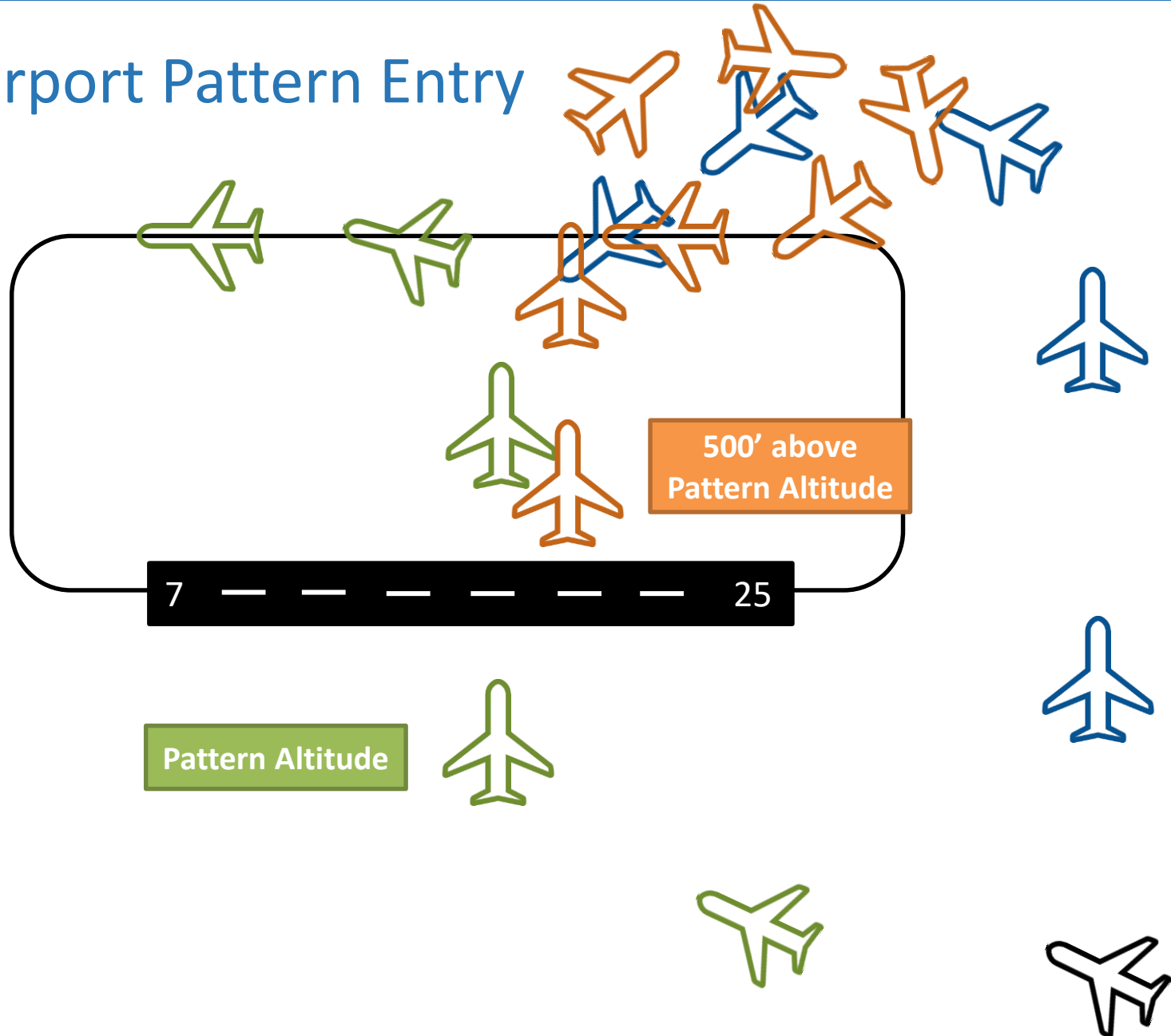
- Enter the pattern on the specified leg, usually downwind, base, or final



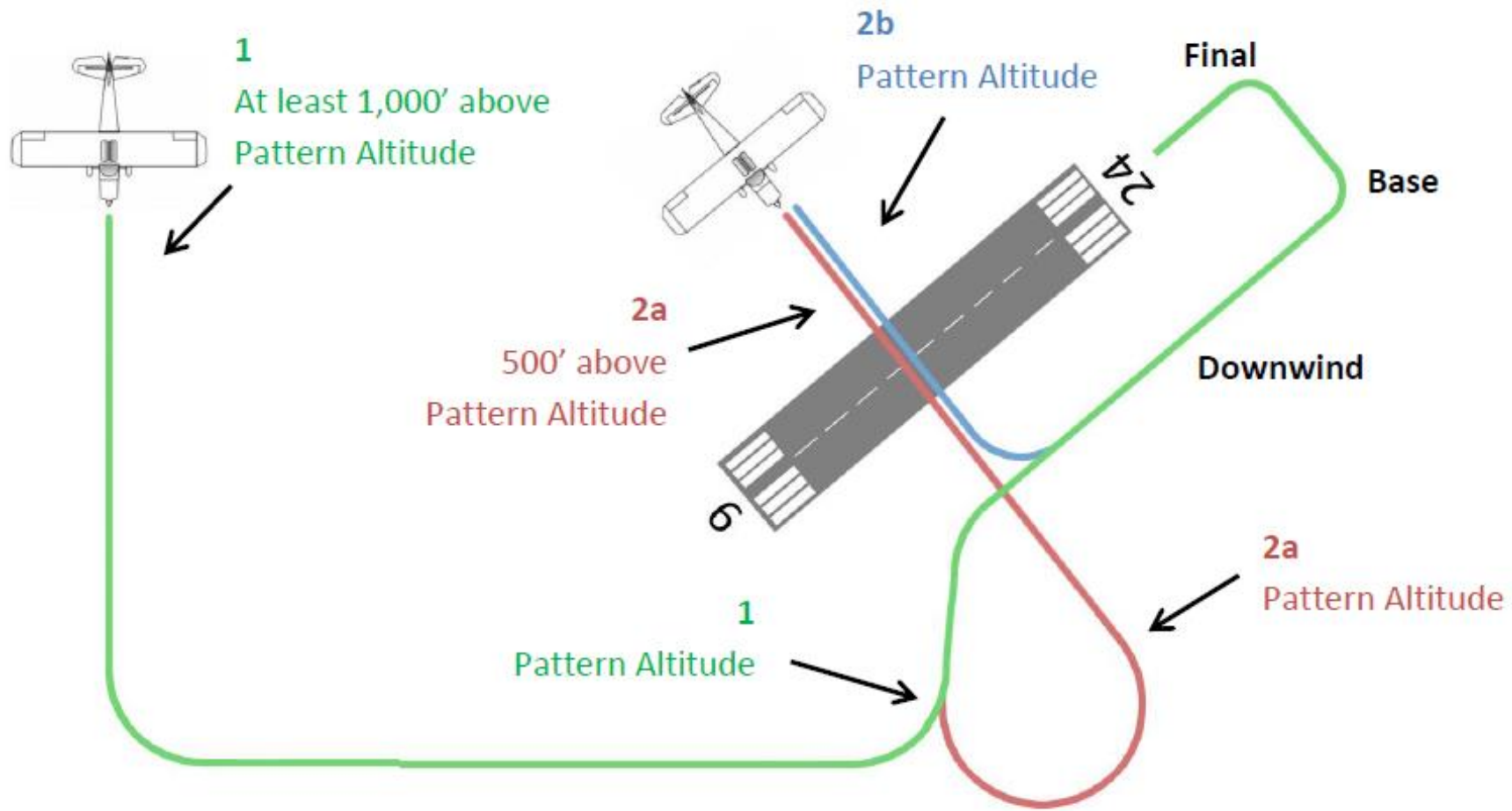
Uncontrolled Airport Pattern Entry



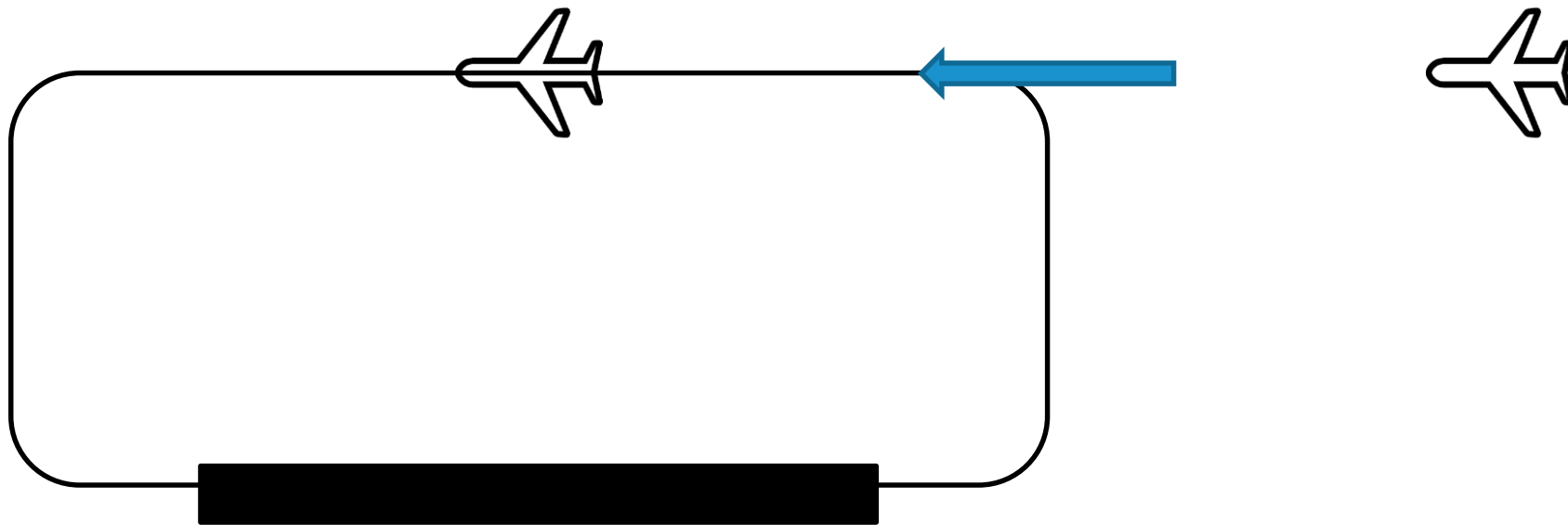
Uncontrolled Airport Pattern Entry



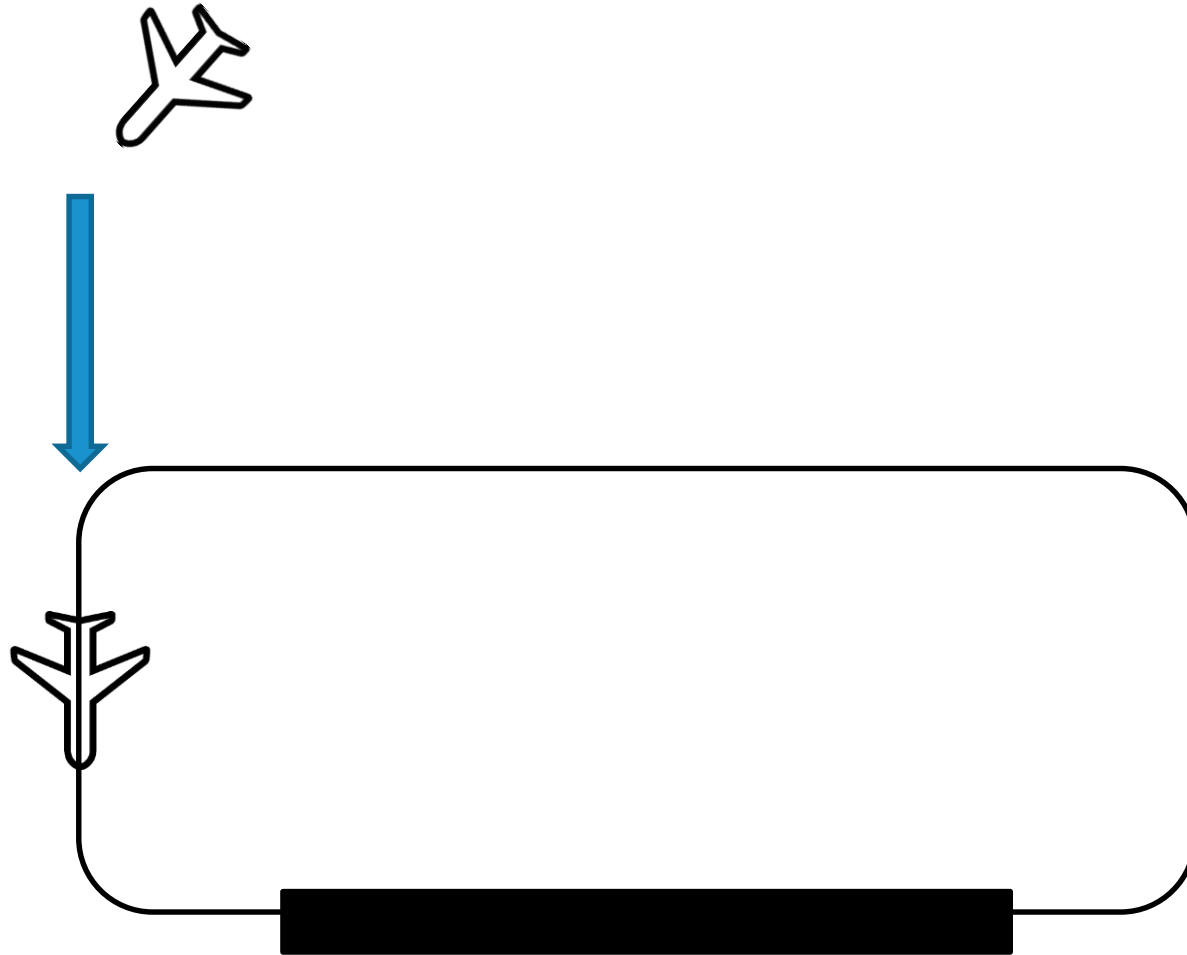
Uncontrolled Airport Pattern Entry



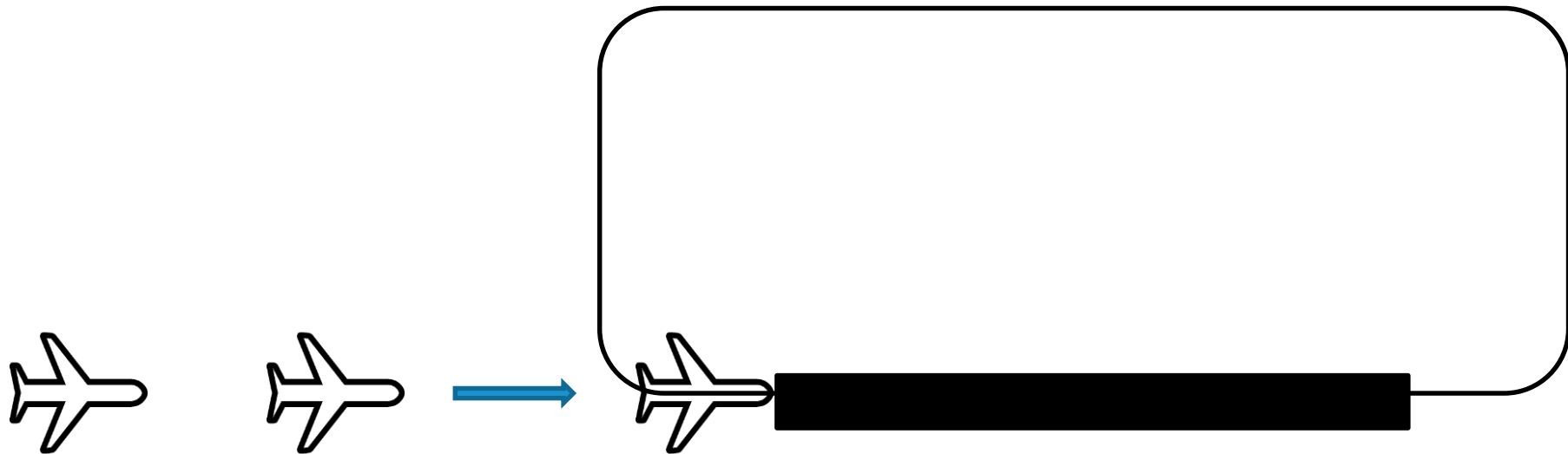
Controlled Airport: Downwind Entry



Controlled Airport: Base Entry



Controlled Airport: Straight-In Entry (Final)



Departing the Pattern

Pattern exit techniques also vary depending on the type or airport and direction of flight.

- **Uncontrolled Airport**
 - Continue straight out (extended upwind), or exit with a 45 degree turn in the direction of the traffic pattern after reaching pattern altitude
 - Proceed on course once clear of the traffic pattern vertically or laterally
- **Controlled Airport**
 - Depart the pattern by extending the specified leg, usually upwind, crosswind, or downwind



Uncontrolled Airport Departure



What about helicopters?

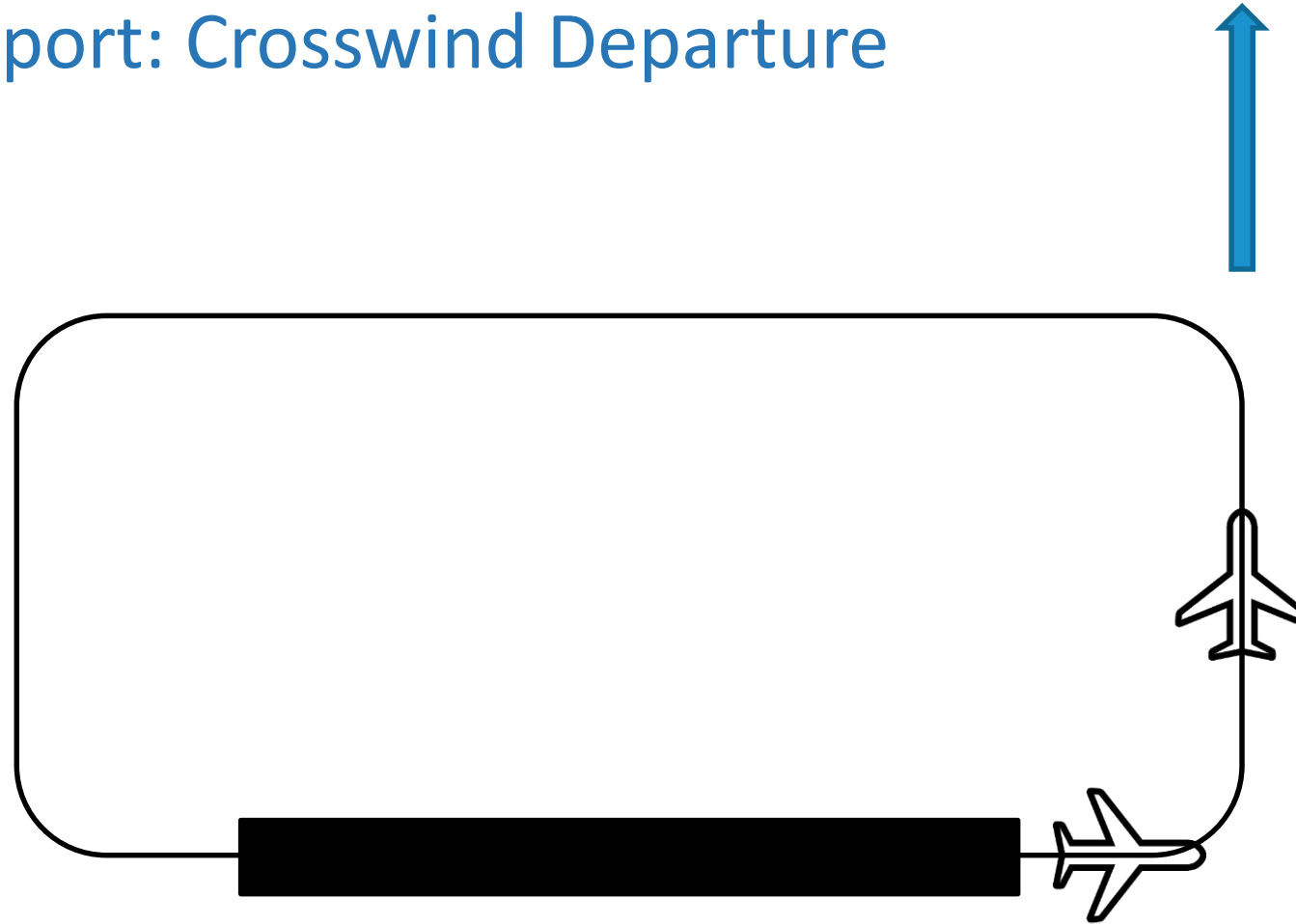
- Landing on surfaces other than the active runway:
 - Avoid the flow of fixed-wing aircraft
 - Land on a marked helipad or suitable clear area
- Sometimes, the runway is the only option:
 - Standard traffic pattern may be used if it does not conflict with any other fixed-wing traffic
- Helicopters operating in the traffic pattern when landing on the runway may:
 - Fly a pattern similar to the fixed-wing aircraft traffic pattern but at a lower altitude (500 feet AGL) and closer to the runway
 - May be on the opposite side from fixed-wing traffic only when airspeed requires, or to practice power-off landings



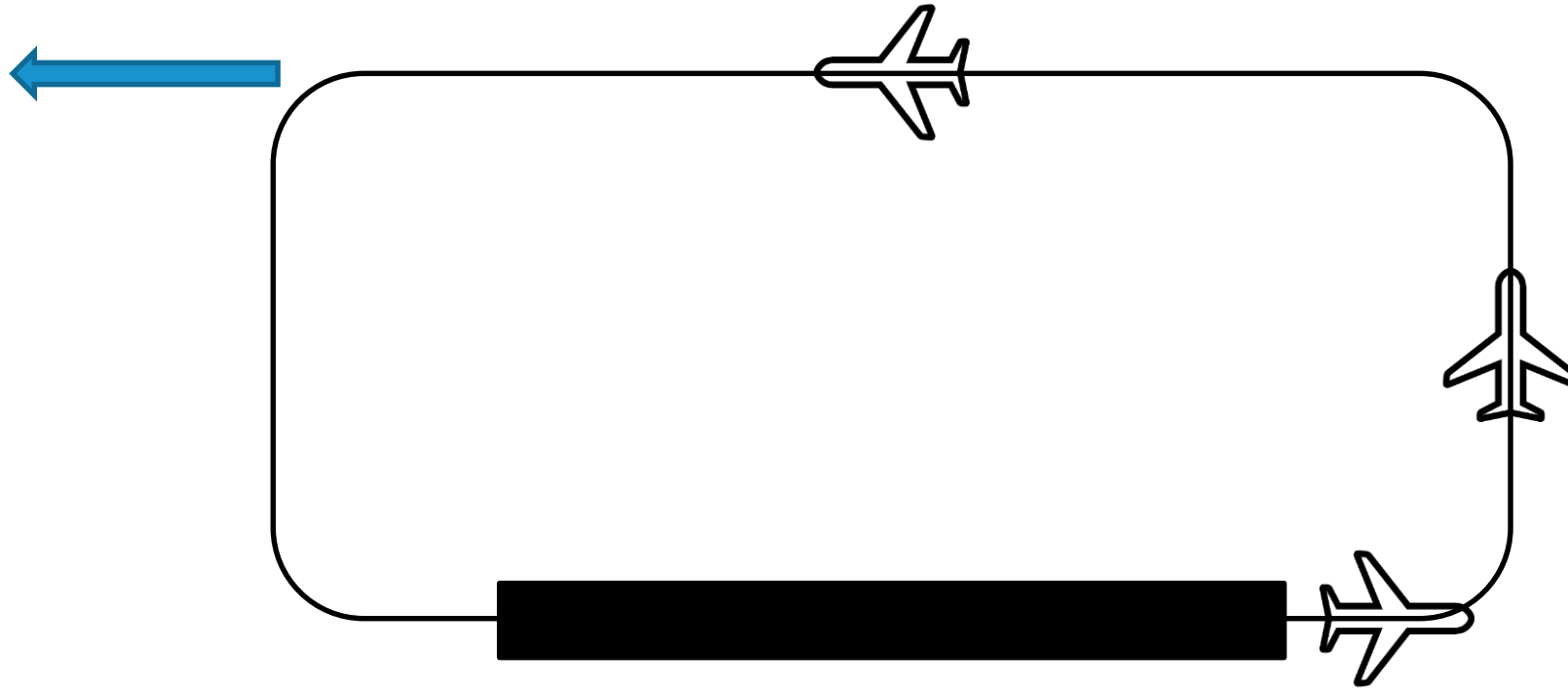
Controlled Airport: Upwind Departure



Controlled Airport: Crosswind Departure



Controlled Airport: Downwind Departure



VFR Traffic Patterns

- For more information, please see the following resources:
 - An FAA Advisory Circular on Non-Towered Airport Flight Operations: https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_90-66B.pdf
 - BVA Uncontrolled Airport Operations NOTAM: <http://forums.bvartcc.com/index.php?topic=3731.0>
 - [AIM 4-3-3](#)
 - Airplane Flying Handbook, Chapter 7: https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/09_afh_ch7.pdf
 - BVA's Pilot Ratings Program: www.bvartcc.com/prp



Thank You!

Boston Virtual ARTCC Ground School takes place every in our Member TeamSpeak.
The program is designed to help pilots of all skill levels share their knowledge and experience with members.

Ground School Curriculum

Radio Communications ✓

Weather ✓

VFR Departure and Arrival Procedures ✓

IFR Clearances - January 24, 7pm ET

Oceanic Procedures

Holds

Approach Plates – Part 1

Approach Plates – Part 2

RNAV (Area Navigation): Departures, Arrivals, and Approaches

