Badger Aviators Ground School
Airports, Airspace, & Airport Ops
Airports

1. There are about 5,200 airports in the US (with paved runways)
2. Private/Public
3. Runways range from 1,000ft-16,0000 ft
Towered vs. Non-Towered

1. Airports are classified by whether or not a control tower exists
2. Towered Fields
   a. ATC controls all operations on the ground and within airspace
3. Non-Towered Fields
   a. Pilots communicate with each other to ensure safe operations
Classification by Airspace

1. Towered
   a. Bravo - largest busiest airports
   b. Charlie - moderately sized airports
   c. Delta - smaller airports that still require a tower

2. Non-Towered
   a. Echo
   b. Gulf
Runways & Taxiways

1. A runway is the surface used for takeoff and landings
2. Taxiways are used for aircraft taxiing to and from the ramp to the runways
Runways

1. Every runway has a name
   a. The number indicates the magnetic heading of the runway
2. Taxiways are also given names
Parallel Runways

If runways are named off of the direction that they are going, how might we distinguish between 2 runways going in the same direction? What about 3 going in the same direction? 4?
Parallel Runways
Taxiway Naming
More than 26 taxiways?
Sources of Airport Data

1. Airport Facility Directory
2. Aviation Charts
3. Digital Methods (most common)
   a. AOPA
   b. Foreflight
Airport Markings and Signs
Taxiway/Runway Location

Tells you the name of the taxiway/runway you are currently on
Taxiway Direction
Runway Hold Position
Runway Safety Zone Markings
Runway Approach Hold Position
ILS Critical Area Boundary
No Entry
Runway Distance Remaining

Shows the distance in thousands of feet that remain of the runway.
1. Also called non-movement area
2. Displayed on airport diagram as dark gray area with crosses
3. No-permission needed to taxi in these areas
Runway Markings: Thresholds

- **Permanently displaced (pre threshold area fit for aircraft movement)**
- **Temporarily displaced for 6 months or less (runway designator is not moved)**
- **Pre threshold area not fit for aircraft movement**
- **Pre threshold area fit for use by aircraft as a stopway only**
Closed Runways

Xs on the runway indicate that it is closed and may not be used.
Wind Indicators

- Wind Sock or Cone
- Tetrahedron
- Wind Tee
Airport Lighting

1. Airport lighting can range from extremely simplistic to very complex
2. Taxiway lights = blue
3. Runway lights = white
Pilot Controlled Lighting

1. Pilot can activate lighting by keying the radio in their airplane
   a. 3 times = Low-intensity
   b. 5 times = Medium-intensity
   c. 7 times = High-intensity
   d. Usually uses the airports CTAF frequency
Airport Beacons

1. Beacons are a rotating light that allows pilots to identify an airport

2. The color of the alternating lights tells us about the airport
   a. White/Green = Civilian Airport
   b. White/Yellow = Seaport
   c. White/White/Green = Military
   d. White/Yellow/Green = Heliport
Visual Glideslope Indicators

PAPI

Two-Bar VASI
Visual Glideslope Indicators

Tri-Color VASI

Three-Bar VASI
Traffic Patterns
Traffic Patterns

Discuss in groups on why traffic patterns are helpful when used at non-towered fields.
Traffic Patterns

1. Standard patterns are left-traffic
2. The traffic pattern makes it easier to spot traffic that is at an airport and sequence yourself for landing
3. Pattern entries and departures are specified in the AIM which should be followed, but is not technically law
Questions?
Next Time

1. Tuesday, November 1st @ 6:00 p.m.
2. Topic: Airports/Airspace/Airport Operations cont’d