

Safety of flight

Topics:

- Collision Avoidance and Visual Scanning
- Airport Operations
- Right of Way Rules
- Minimum Safe Altitudes
- Taxing in Wind
- Positive Exchange of Flight controls

Collision Avoidance:

- 78% of collisions occurring in vicinity of airports occurred at non-tower airports.
- The vast majority of mid-air collisions occur:
 1. During daylight hours
 2. Below 3,000 feet agl
 3. Within 10 miles of an airport
 4. On weekend days
- **See and be Seen Concept:**
 - Must clear area for traffic
 - Must be constantly scanning for traffic
- **Blind Spots:**
 - In front of the airplane
 - Under or above the wing
 - Behind and under
- **Empty Field Myopia:**
 - Limitation of the eye
 - Eyes focus about 12ft in front of you (normal focus)
 - Must change focus to the horizon
 - Change focus as you are scanning
- **Segmenting the Sky:**
 - Divide the sky in front of you into 10-degree increments
 - Move eyes left to right and right to left while pausing
 - Up and down also
 - Takes several seconds to find the threats.
- **Critical Areas:**
 - Airport Traffic Pattern
 - 80% on final approach
 - Vicinity of VORs
 - Clear Sunny Days in the Practice Area
 - Uncontrolled fields.

Airport Operations:

- Most accidents occur on final approach

- Critical areas:
 - Entering the traffic pattern
 - Below 3000 at non-towered airports
 - Final Approach
 - Turning crosswind

Right of Way Rules:

- Approaching head on: Turn to the right
- Aircraft overtaking: overtake on the right
- Aircraft being overtaken has the right of way.
- Landing aircraft have the right of way over other aircraft on the ground and in the traffic pattern
- See Far 91 for additional regulations

Minimum Safe Altitudes:

- Specific regulations concerning minimum altitudes for flight
- Pilot must fly at an altitude that in the event of an engine failure the pilot can land without damage to property or people on the ground.
- Congested Area: 1000ft AGL above the highest structure
- Uncongested Area: Not less than 500ft above any vessel or structure.
- Notams: do not fly below 3000ft above a gathering of people.

Taxing in Wind:

- Note wind direction and strength
- Make control inputs to counter wind effect.
 - Left/Right quartering headwind:
 - Ailerons into the Wind
 - Elevator Neutral
 - Left/Right quartering tailwind:
 - Dive away - Ailerons away from the wind
 - Yoke forward to place elevator down.
 - Reduce power
- Weather Vane tendency
 - Airplane will attempt to line up with the wind

Positive exchange of Flight Controls:

- Know who's flying the airplane
- Three step process:
 - You have the controls
 - I have the controls
 - You have the controls.