

TABLE OF CONTENTS

Runway Incursion Avoidance	3
Normal and Crosswind Takeoff	4
Traffic Patterns	5
Traffic Patterns with Extended Downwind (Long Final)	9
Normal and Crosswind Approach and Landing	11
Soft-Field Takeoff and Climb	13
Soft-Field Approach and Landing	14
Short-Field Takeoff and Maximum Performance Climb	15
Short-Field Approach and Landing	16
Forward Slip to a Landing	17
Go Around	18
Maneuvering during Slow Flight	19
Power-off Stalls	21
Power-on Stalls	22
Steep Turns	23
Turns around a Point	24
Rectangular Course	26
S-Turns	28

Traffic Patterns

Traffic pattern is an orderly flow of traffic to ensure smooth and expeditious flow, and collision avoidance. Turns in a standard traffic pattern are to the left.

- Operations at airports with and without operating control towers.
 1. At controlled airports, the tower will direct when and where you should enter the pattern, the direction of departure and direction of turns.
 2. At uncontrolled fields, observe the pattern and conform to the pattern in use. If there are no other aircraft in the pattern, check wind and traffic indicators (L-shaped indicators in a segmented circle) at a distance **well away** from the pattern or by overflying the field at a **safe altitude well above the pattern altitude** (*500 – 1000 ft above the pattern altitude*). Descend to the pattern altitude outside the pattern and enter at a 45° angle to the downwind leg at the midpoint of the runway at traffic pattern altitude (TPA), normally 1,000 feet AGL.
- Traffic pattern procedures.
 1. Upwind. Maintain V_Y all the way to the TPA. Maintain direction over the extended runway centerline by reference to ground references and heading indicator. Too much drift may put you on the collision course with the downwind traffic.
 2. Turn to crosswind.
 - Make a turn to crosswind at 300 feet below TPA or above.
 - Do not exceed 30° of bank.
 - Use the heading indicator to complete a 90° turn. Continue the turn until the runway direction is on the left or right 90° mark. Lead the roll-out as necessary.
 - Level the wings and pick at least two objects aligned in front of you. Establish wind correction as necessary to maintain their visual alignment.
 - Continue climbing to TPA.
 3. Reaching TPA. Smoothly set power to 2,000 – 2,200 RPM and decrease pitch to a level attitude.
 4. Turn to downwind.
 - Start the turn when approaching ½ to 1 mile distance from the runway edge.
 - Do not exceed 30° of bank.
 - Use the heading indicator to complete a 90° turn. Continue the turn until the runway direction is on the 180° mark. Lead the roll-out as necessary.
 - Level the wings.
 - Let the airplane stabilize and align the heading indicator with the compass. Adjust the direction of flight to opposite of the runway direction.

- Pick at least two objects aligned in front of you. Establish wind correction as necessary to maintain their visual alignment.
5. Downwind.
- Position at ½ to 1 mile from the runway. Use the position of the runway relatively to your wing or a wing strut to judge the distance. Adjust accordingly.
 - Establish a wind correction. As you fly over the selected ground references, keep picking new ones on the same line. Use the heading indicator for backup. This is extremely important especially on extended downwind legs as this may become your only reference to alignment with the downwind leg. Extreme drift will put you on the collision course with the traffic on final.
 - Complete the before landing checklist.
 - Extend first notch of flaps if necessary. This should slow the aircraft down to 85 kts.
 - At the midfield point, call tower for landing instructions, if at the airport with a control tower.
 - Abeam the runway threshold, reduce power to 1500-1700 RPM and start the descent at 500 fpm while still maintaining 85 kts.
 - By the turn to base you will have descended about 200-300 feet.
6. Turn to base
- Start the turn at 45° from the approach end of the runway but no farther than abeam the 1 mile final.
 - Do not exceed 30° of bank.
 - Use the heading indicator to complete a 90° turn. Continue the turn until the runway direction is on the left or right 90° mark. Lead the roll-out as necessary.
 - Level the wings and pick at least two objects aligned in front of you. Establish wind correction as necessary to maintain their visual alignment. This will maintain ground track perpendicular to the runway extended centerline.
7. Base.
- Extend flaps as necessary.
 - Slow down to 75 kts
 - Continue descending at 500 fpm.
 - Adjust the power for the descent rate to approach the turn to final at approximately 500 feet AGL.
8. Turn to final.
- Visually clear the final. Traffic on final has the right of way. (*Turn to final no closer than ¼ of a mile to the threshold.*)

