

TAKEOFFS, TRAFFIC PATTERN, AND LANDINGS (C-177RG) (ASEL and ASES)

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WHAT: The basic rectangular traffic pattern guarantees that air traffic flows into and out of an airport in an orderly manner. Things happen faster in complex airplanes.

WHY: *Statistics show that a majority of midair collisions occur in the vicinity of an uncontrolled airport. They also show inadequate use of cockpit management and checklists result in pilots falling behind the airplane and gear up landings.*

HOW: We will incorporate the proper use of Triggers and Responses, and establish a standard by which the complex airplane pilot will habitually abide by.

Key Elements: Triggers and Responses are habitual and consistent.

TAKEOFF & CLIMB

- 1) Insufficient Runway “PositiveRateTapBrakesGearUp”
- 2) 1000 feet “FlapsUpClimbChecklist”
- 3) Monitor CHT and Oil Temps through out the climb.
- 4) MP decreases one inch per 1000 feet in the climb.

DESCENT PLANNING

- 1) Plan to arrive at the traffic pattern altitude using a 500 fpm rate of descent.
- 2) Prevent shock-cooling by reducing power one inch of MP per minute until reaching 20” of MP.
- 3) Manifold Pressure will increase one inch per 1000 feet in the descent.

LANDING – Configuration changes: FLAPS (10°) – GEAR (down) – FLAPS (20°) – FLAPS (30°).

- 1) “SpeedChecksFlaps10”
- 2) 1000 Feet “SpeedChecksGearDownBeforeLandingChecklist”
- 3) Short Final “ThreeGreenClearedToLand”

GO-AROUND – Configuration changes: FLAPS (20°) – GEAR (up) – FLAPS (10°) – FLAPS (up) – COWL FLAPS.

- 1) **Power Up** (Mixture, Prop, Throttle - FULL FORWARD in that order)
- 2) **Clean Up** (Immediately – FLAPS 20°)
- 3) “PositiveRateTapBrakesGearUp”
- 4) “75mph – Flaps 10°”
- 5) 1000 feet “FlapsUpClimbChecklist”

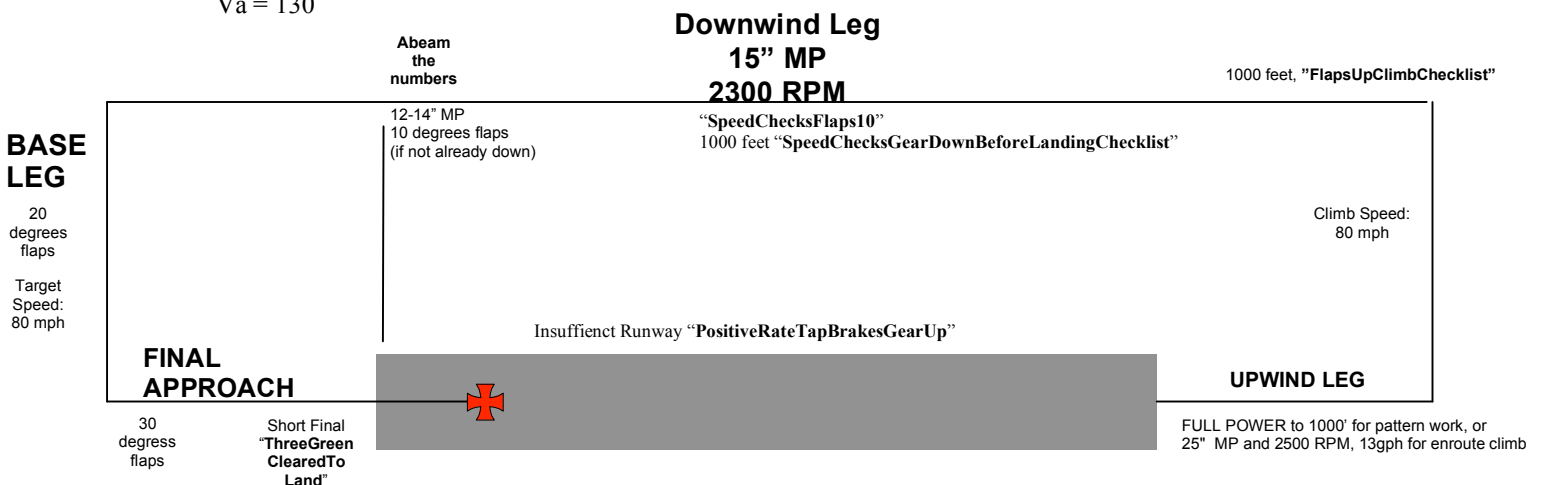
ALL SPEEDS ARE MPH

Vso = 57
 Vs = 66
 Vr = 65 (60 for Short Field T/O)
 Vx = 70
 Vy = 95
 Vl/d = 85 (80 with any flaps extended)
 Vfe = 110 (10° – 30°)
 Va = 130

Vle & Vlo = 140
 Vfe = 150 (0° – 10°)
 Vno = 160
 Vne = 195

OTHER SPEEDS:

In a Go-Around, Flaps from 20° to 10° = 75
 Anytime the Flaps are raised from 10° to 0° = 80



COMMON ERRORS:

- 1) Improper runway incursion avoidance procedures.
- 2) Improper use of controls during a normal or crosswind takeoff.
- 3) Inappropriate lift-off procedures.
- 4) Improper climb attitude, power setting and airspeed (V_Y).
- 5) Improper use of checklist.
- 6) Failure to comply with traffic pattern instructions, procedures, and rules.
- 7) Improper correction for wind drift.
- 8) Inadequate spacing from other traffic and their wake turbulence.
- 9) Poor altitude and airspeed control.
- 10) Improper use of landing performance data and limitations.
- 11) Failure to establish approach and landing configuration at appropriate time or in proper sequence.
- 12) Failure to establish and maintain a stabilized approach.
- 13) Inappropriate removal of hand from throttle.
- 14) Improper procedure during roundout and touchdown.
- 15) Poor directional control after touchdown.
- 16) Improper use of brakes (ASEL).

COMMERCIAL PILOT COMPLETION STANDARDS:

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: FAA-H-8083-3; POH/AFM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind takeoff, climb operations and rejected takeoff procedures.
2. Positions the flight controls for the existing wind conditions.
3. Clears the area, taxis onto the takeoff surface and aligns the airplane on the runway center/takeoff path.
4. Retracts the water rudders as appropriate (ASES), and advances the throttle smoothly to takeoff power.
5. Establishes and maintains the most efficient planing/lift off attitude and corrects for porpoising and skipping (ASES).
6. Lifts off at the recommended airspeed, and accelerates to V_Y .
7. Establishes a pitch attitude that will maintain $V_Y, \pm 5$ knots.
8. Retracts the landing gear if appropriate, and flaps after a positive rate of climb is established.
9. Maintains takeoff power and $V_Y \pm 5$ knots to a safe maneuvering altitude.
10. Maintains directional control, proper wind-drift correction throughout the takeoff and climb.
11. Complies with noise abatement procedures.
12. Completes appropriate checklists.

B. TASK: TRAFFIC PATTERNS (ASEL and ASES)

REFERENCES: FAA-H-8083-3, AC 61-23/FAA-H-8083-25, AC 90-66; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns.
2. This shall include procedures at airports with and without operating control towers, prevention of runway incursions, collision avoidance, wake turbulence avoidance, and wind shear.
3. Complies with proper traffic pattern procedures.
4. Maintains proper spacing from other aircraft.
5. Corrects for wind-drift to maintain proper ground track.
6. Maintains orientation with runway/landing area in use.
7. Maintains traffic pattern altitude ± 100 feet (30 meters), and appropriate airspeed ± 10 knots.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

NOTE: If a crosswind condition does not exist, the applicant's knowledge of the crosswind elements shall be evaluated through oral testing.

REFERENCES: FAA-H-8083-3; POH/AFM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind approach and landing.
2. Adequately surveys the intended landing area (ASES).
3. Considers the wind conditions, landing surface, obstructions, and selects a suitable touchdown point.
4. Establishes the recommended approach and landing configuration and airspeed and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach and recommended airspeed, or in its absence, not more than $1.3 V_{S_0}$, ± 5 knots, with wind gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water at the proper pitch attitude (ASES).
8. Touches down smoothly at approximate stalling speed (ASEL).
9. Touches down at or within 200 feet (60 meters) beyond a specified point, with no drift, and with the airplane's longitudinal axis aligned with and over the runway center/landing path.
10. Maintains crosswind correction and directional control throughout the approach and landing sequence.
11. Completes appropriate checklist.