

## VII.J. Soft Field Approach and Landing

**About:** Landing on fields that are rough or have soft surfaces such as snow, sand, mud, or tall grass. The objective is to touch down as smooth as possible at the slowest possible landing speed.

**TSW:** Control the airplane in a manner in which the wings support the weight of the airplane as long as practical to minimize drag and stress on the landing gear.

**How:** Performing a full flap landing, touching down at minimum speed, and using full back elevator to hold nose off runway to provide aerodynamic braking.

### Procedure (C172):

#### **Downwind**

1. Carb heat, mixture rich
2. Abeam touchdown point (power 1500rpm, 10° flaps in white arc)
3. Hold same level attitude- TRIM 80 MPH
4. When touchdown point is 45° off shoulder turn base (< 30° bank)

#### **Base**

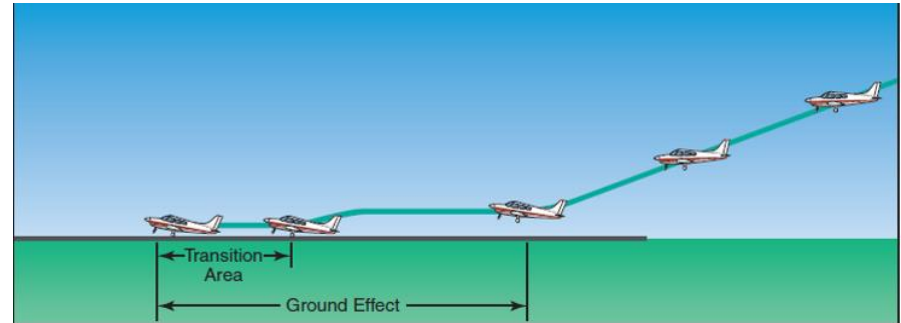
5. Apply 20° flaps, if trimmed correctly AS will slow to 75 MPH.
6. Check for traffic on final, Turn final (< 30° bank)

#### **Final Approach**

7. Apply 30° flaps, if trimmed correctly AS will slow to 70 MPH
8. Approaching touchdown, begin flare, **using power to minimize sink rate**
  - a. Touchdown as gently as possible
9. **Apply full back pressure on yoke** to keep weight off nose wheel
10. Keep flaps down, use aerodynamic braking only

### Discussion Points:

11. **Round out:** Stop the decent rate by starting to pull back on the elevator
  - a. Progressively raise the nose to hold the airplane just above the runway (1-2 ft) as airspeed slows to approx. stalling speed
12. **Touchdown:** Transition the weight of the airplane from the wings to the wheels at the slowest possible speed.
  - a. Touchdown with mains first and hold nose off with **back elevator pressure and power.**
13. Use power to keep airplane moving in order to taxi without getting stuck.
  - a. No breaks



### Common errors:

14. Not establishing the correct airspeeds for downwind, base, and final segments. **(Not trimming appropriately)**
15. Failure to consider the effect of wind and landing surface:
16. Improper procedure in use of power, wing flaps, and trim:
17. Inappropriate removal of hand from throttle
18. **Rounding out too late:** A hard landing followed by a bounce and a stall and another hard landing.
19. **Rounding out too high:** Loss of airspeed followed by a high sink rate and a hard landing.
20. **Ballooning:** caused by misjudging the rate of descent and over-controlling.
21. **Floating:** excessive airspeed on final.
22. Failure to hold back elevator pressure after touchdown.
23. Not maintaining some power to keep aircraft moving and prevent it from being stuck.
24. Allowing touchdown while in a crab.
25. Over-controlling with rudder.
26. Not using aerodynamic braking
27. Excessive use of brakes

### Evaluations/ Standards:

28. Considers the wind conditions, landing surface, obstructions, and selects the most suitable touchdown point.
29. Establishes the recommended approach and landing configuration and airspeed; adjusts pitch attitude and power. Maint stable approach.
30. Makes smooth, timely, and correct control application during the round-out and touchdown.
31. Touches down softly, with no drift, and with the airplane's longitudinal axis aligned with the landing surface.
32. Completes appropriate checklist.