

# Circuit Procedure



# Flight Break Off and Circuit Joining

- Depending on the local conditions and the wind, we start on a downwind leg at a height of +/- 700-800 ft above the airfield. From this point onwards we no longer look at the altimeter. Instead, our landing area now determines how we further divide the circuit. The area where we enter the downwind leg is called the Circuit Joining or high "key" area. We make the first important decisions here, e.g. how to fly the circuit, where to make the turns, where to land and what speed to fly ( $1.5V + \frac{1}{2}$  the wind speed) in the circuit.
- Now is also the time to pack away loose items and prepare the glider for landing. It is good practice to go through the pre landing checklist (FUST) before entering the circuit for landing. That way, you can fully concentrate on the correct landing procedure while flying the circuit. The ideal situation is once flight break off has been decided the pre landing checks are completed between flight break off point and circuit joining.

**FLIGHT BREAK OFF**

**CIRCUIT JOINING**

1

2

3



- **The normal circuit (landing procedure) is a predictable traffic pattern to safely organize and distribute the flow of incoming aircraft**
- **The purpose of the circuit is to arrive at final approach in the right place, at a safe height and at the right airspeed**
- **In a circuit, the height, distance and angle to your landing area should be correct. If they are not, make active corrections**
- A safe landing starts with a correct planning of the circuit. This starts with a flight break off prior to joining the circuit. Please remember you can deviate from the prescribed procedure at any time for safety reasons. A circuit consist of several “legs.” Adhering to the circuit contributes to a safe landing.
- The next slide is an illustration of what a circuit should look like. First you line up for landing on a parallel leg (downwind leg). You have to make sure that there is sufficient space between your glider and the other gliders joining the circuit. Circuits can get very busy; it is therefore very important to keep a good lookout during the circuit. Think of the scan cycle: Nose Attitude- Airspeed-Angle To The Runway-Lookout (AAAL).

**Circuit  
Joining**

High key  
area

Downwind leg

Low key  
area

Diagonal leg

Base leg

700 -800 ft

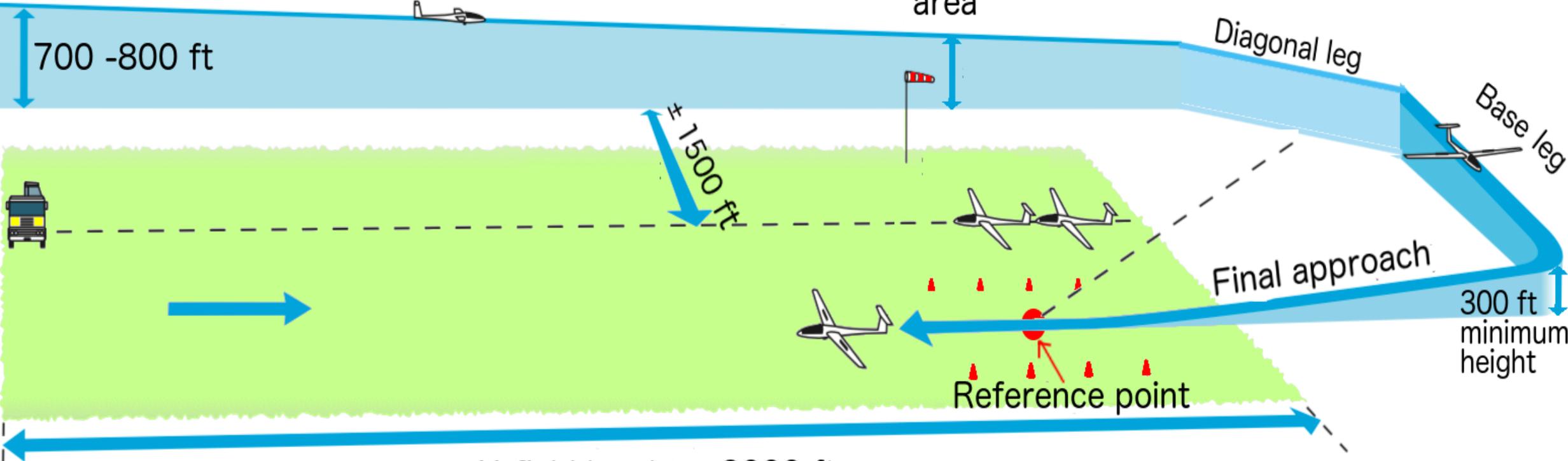
± 1500 ft

Final approach

300 ft  
minimum  
height

Reference point

Airfield length ± 3000 ft



- **THE DOWNWIND LEG**

On this first leg we prepare for the landing. Make sure the glider is trimmed for the approach. Make a radio call to announce your position and intentions and have a thorough lookout for other gliders/aircraft in the circuit and on the airfield (AAAL).

- It is important to constantly estimate the flight altitude and your position in relation to your reference/aiming point. When the landing field appears low in your canopy, you are either very close to it or too high. When the landing field appears high in your canopy, you are either low or far away.
- **It's easily done: staring at your reference point when flying the circuit. For that reason, an important safety instruction when making turns in the circuit is to look over the nose of your glider to initiate and make a coordinated turn. Try not to stare at your reference point!**

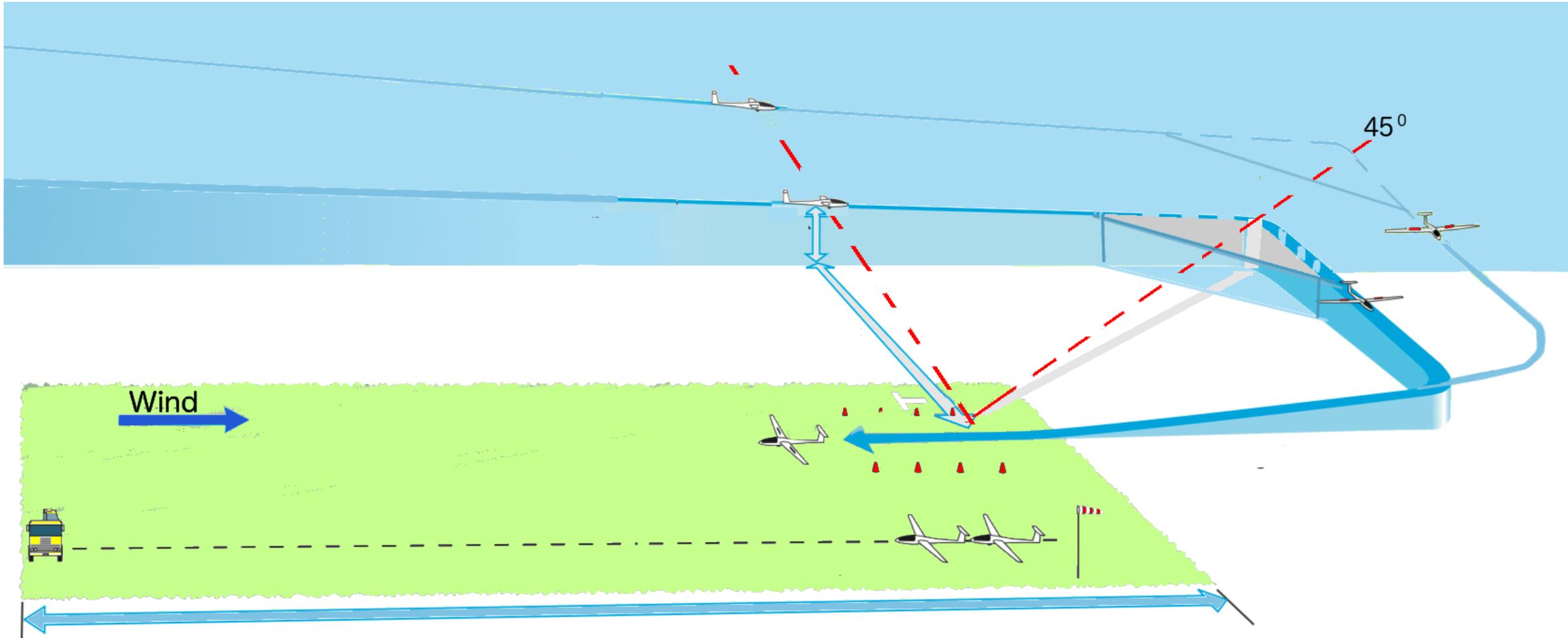
- **LOW KEY AREA ABEAM AIMING/REFERENCE POINT**

When we fly past our reference/aiming point we enter the low key area. We now need to decide when to turn onto the diagonal leg and base leg. The turn to the diagonal leg is flexible; the main goal is to reach the final turn at the correct height and distance from the landing area. Remember you are flying down-wind and if the wind is strong you will be moving away from your airfield quickly.

- **THE BASE LEG**

If you do not fly a diagonal leg, a good moment to make the turn to base leg is just before your reference point is at a 45° angle diagonally behind you. If this is needed, you can still lose some height during the base leg by using the airbrakes. It is good practice to check airbrakes blue handle identified. The goal is to reach the final turn at the right height, distance and angle towards the landing area. Ideally, fly the final approach with the airbrakes extended by half to two-thirds. But do not extend them during the turn! Concentrate on making a perfectly coordinated turn. While you are on the base leg you need to look straight ahead for traffic approaching on an opposite circuit and away from the airfield along the final approach leg for traffic approaching from outside the circuit on a "long final".

- *Circuit Planning*
- *In a circuit, the height, distance and angle to your landing area should be correct. If they are not correct, you will have to make active corrections. If you are too high and too close, move out of the circuit until the angle with the airfield is correct. If you are too low and too far away, move in.*



## • FINAL APPROACH

- The final approach is the last leg of the circuit. We aim for a positive overshoot of the reference/aiming point and control the approach angle (also called 'glide path') with the airbrakes and the airspeed with the stick. On final approach we regularly keep an eye on the approach speed, the yaw string and the reference point. If the reference/aiming point moves down in the canopy (it appears as if you are looking further down) you are not descending fast enough and you will have to extend the airbrakes further.
- On the other hand, when the reference/aiming point moves up in the canopy, the approach becomes too shallow and you should apply less airbrakes and if needed put the airbrakes fully away until a positive overshoot is established again and then reapply the correct amount of airbrake.
- Estimating your height, distance and angle towards the landing area requires a lot of practice. Unfortunately we can only practice one circuit and landing each flight. But rest assured that practice makes perfect; before too long, you will be flying a perfect circuit.

- 300' turn to final – YLEG RWY 04



- **300' turn to final – YLEG RWY 18**



# Effect Of Airbrakes

(1) No airbrake and positive overshoot

(2) Half airbrake approach to landing

Once airbrakes are deployed the extra drag increases sink rate and reduces airspeed on the glider. To overcome the airspeed reduction a very slight forward pressure is required on the stick to maintain your nominated nose attitude and airspeed.

