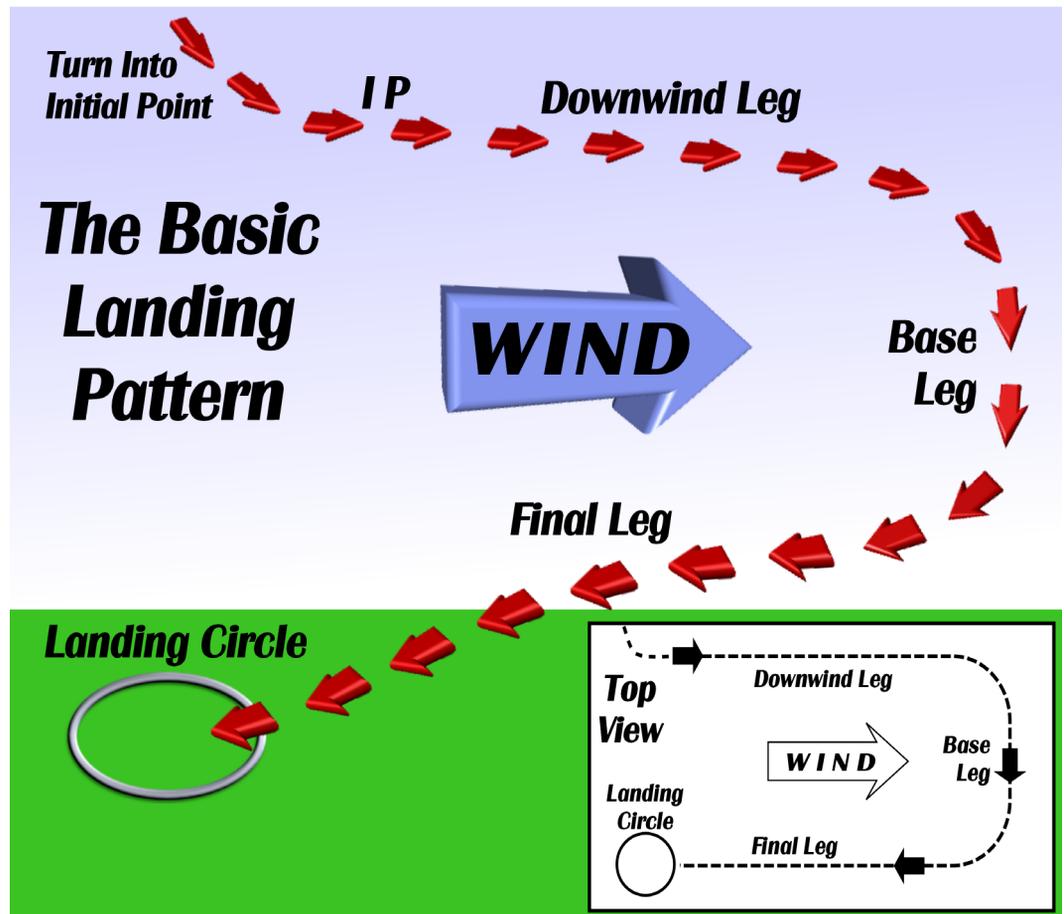


The Landing Pattern: Basics

To make a good landing you need to learn and practice the basic parts of the landing pattern. The landing pattern is easily repeatable for different flying sites and wind conditions. The pilot needs to learn to identify how variations in the wind affect the behavior of the plane. The **Basic Landing Pattern** is illustrated in the accompanying figure.

Try to arrive at the edge of the landing circle well before the model arrives at the **Initial Point (IP)**. As you start to practice your landings, fly the airplane so that it starts the landing with sufficient altitude to hit the **IP**. The model needs to be flying downwind at the **IP**. As the **downwind leg** is flown approximately one-third of the altitude is lost. On the **base leg** the model loses another third. The model rolls out into the **final leg** at about one-third of the **IP** altitude.



If low at this point, turn directly to the landing spot, retract the spoilers (raise the flaps) and keep the nose down. Raising the nose slows the model AND shortens the distance flown before touchdown. If a little high at this point open the spoilers or lower the flaps. The speed is held constant by lowering the nose slightly.

Cross the edge of the landing circle at about 3 feet. Adjust the speed by extending or retracting spoilers (raising or lowering the flaps). Make final, slight, turns to line up the plane with the landing tape. Just prior to touchdown extend the spoilers (lower flaps) and lower the nose, hopefully, down on the "spot". Avoid turning your plane into a "lawn dart", no trophy is worth a broken plane. Shed parts or inverted landings give zero points.

Corrections for winds are made by increasing or decreasing the total time on downwind and final legs.

Several methods may be used to score landings. The simplest is a landing circle measured with a tape staked at the center. The landing score is measured from the nose of the airplane after it has come to a complete rest.

This traffic pattern works for models without spoilers but it makes the task more difficult. Altitude and airspeed adjustments will have to be made by "s" turns, overshooting or undershooting the turns, and pitch changes. Just remember that if you are anywhere near the target time, you can usually gain more points by forgetting the time and concentrating on hitting the spot.

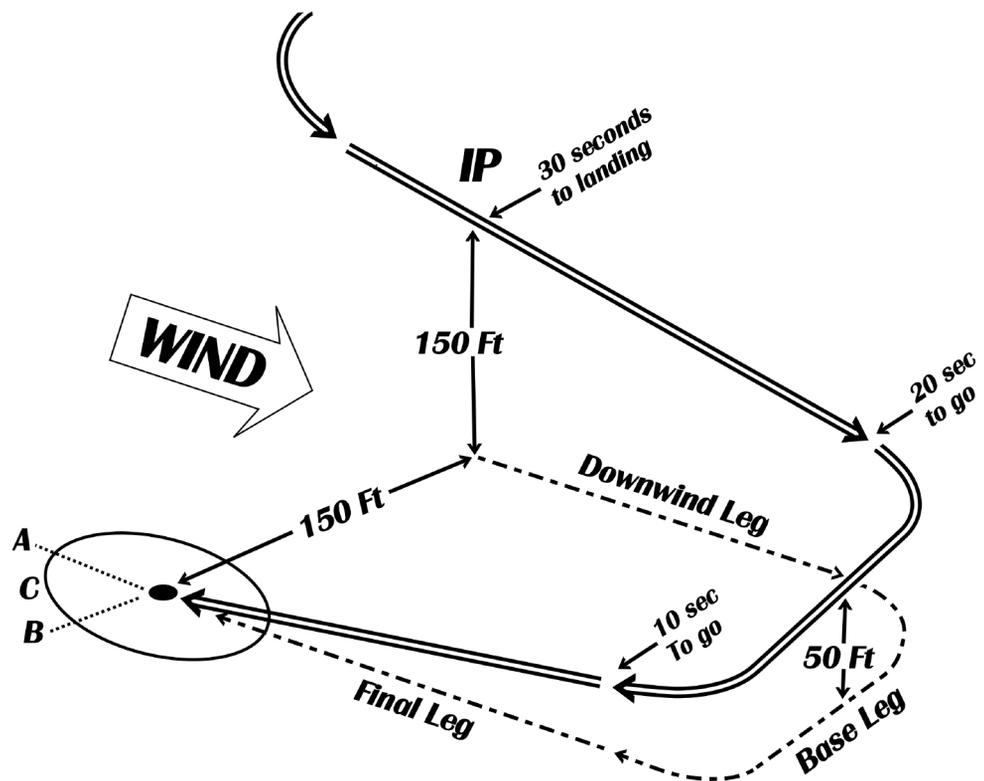
Practice! Practice! Practice! With practice you will get the "feel" for your plane and how it moves through the landing pattern.

The Landing Pattern: Mastering the Spot Landing

Thermal duration contests require landing at a specific spot and in a specific time in order to achieve a maximum score. One bit of strategy: a good landing can be worth almost two minutes of flight time. The most common mistake is to try for a few extra seconds of flight time and blow the landing.

As you continue to practice your landings, fly the airplane so that it enters the landing pattern two minutes prior to landing with sufficient altitude to hit the initial point, normal launch attitude, or slightly higher. Start your countdown exactly two minutes prior to the target landing time with the airplane upwind of the IP trimmed for landing. Try to be at the edge of the landing circle about one minute into the countdown.

Most modelers stand directly upwind of the spot to ensure good alignment on final approach (position A in the illustration). If your depth perception isn't good enough to accurately judge the final descent from this position stand to the side of the point (position B). This helps to avoid undershooting or overshooting but at the expense of some accuracy in alignment. You can cheat a little here and compromise between the two positions (position C). This gives better longitudinal accuracy than upwind and better lateral position than on the side. You should try several landings from each position and select the one that gives the best results. Wherever you stand, be in position well before the model arrives at the IP. The model enters the traffic pattern downwind at the IP. The exact location of the IP will depend on the model characteristics and will have to be determined by trial and error. The **downwind leg** is flown for about 10 seconds (with no wind) during which approximately one-third of the altitude is lost. The turn to the base leg, **base leg**, and turn to final leg should take another 10 seconds with the model rolling out on the **final leg** at about one-third of the IP altitude. Note that if you can hit the IP at the correct altitude, the turn to the **base leg** and rollout on the **final leg** come 10 and 20 seconds after the IP (assuming no wind).



This traffic pattern also assumes that the airspeed is held constant until just before touchdown. The easiest way to do this is to run in just enough down trim to increase airspeed slightly above normal thermaling speed before entering the traffic pattern. Don't use any elevator except in turns.

The model should be half way across **base leg** with 15 seconds to go at about half the altitude at the **IP**. If late or low at this point, turn directly to the **landing spot** and keep the nose down (raising the nose slows the model AND shortens the distance flown before touchdown). If early, overshoot the final turn slightly. Try to be a little high at this point so that you have the option of using the flaps. The speed is held constant by lowering the nose slightly.

The rollout to final approach should be completed with 10 seconds to go. If early or too close use more spoiler or flap to slow the model. Final descent is delayed until near the landing circle where the flaps are fully extended for a steep descent. If high, fully extend flaps and drop nose to hold speed constant. If late, retract spoilers and lower nose to increase speed. If low, retract flaps, keep the nose down for maximum distance and pray. No further time adjustments can make any significant difference so from here on in, so, concentrate on hitting the landing spot.

Cross the edge of the landing circle at about 3 feet. Adjust speed by extending or retracting flaps. Make final SLIGHT turns to line up if required. Just prior to touchdown extend flaps, lower the nose, and aim for the landing spot.



The timer is allowed to help the pilot during the flight. Each pilot has a preference, but typical is to give a notice when there are two minutes left. Pilots want an update every 10 seconds. This is usually when they are planning their landing. During the last minute the pilot wants an update every 5 seconds and to have the last 10 seconds counted down. In most cases, time stops when the plane touches any earth bound material such as a branch, grass, or the ground itself. The timer's job is to record the duration of the flight as well as any landing points.

Correction for winds are made by adjusting the time over the **IP** and, for high winds, moving the **IP** closer to the landing spot. Subtracting half the surface wind speed from the **IP** time usually works reasonably well except in very high winds. For example, 5 seconds would be subtracted from the **IP** time (25 seconds to go) for a 10 MPH wind. A similar correction can be made to the time for the base leg, turn to

compensate for early or late arrival at the **IP**. Subtract half the time late or add half the time early at the **IP** to the time for the turn on the **base leg**. A 5 second late arrival at the **IP** (35 seconds to go) would give a 2 to 3 second reduction in the **base leg** time (18 to 17 seconds to go). Correcting for the wind decreases or increases the total time on the **downwind leg** and **final leg** by the amount early or late at the **IP**. However the total correction is limited by the amount that the glide slope can be stretched or steepened.

Well, you now have a traffic pattern that will work **IF YOU PRACTICE ENOUGH**.