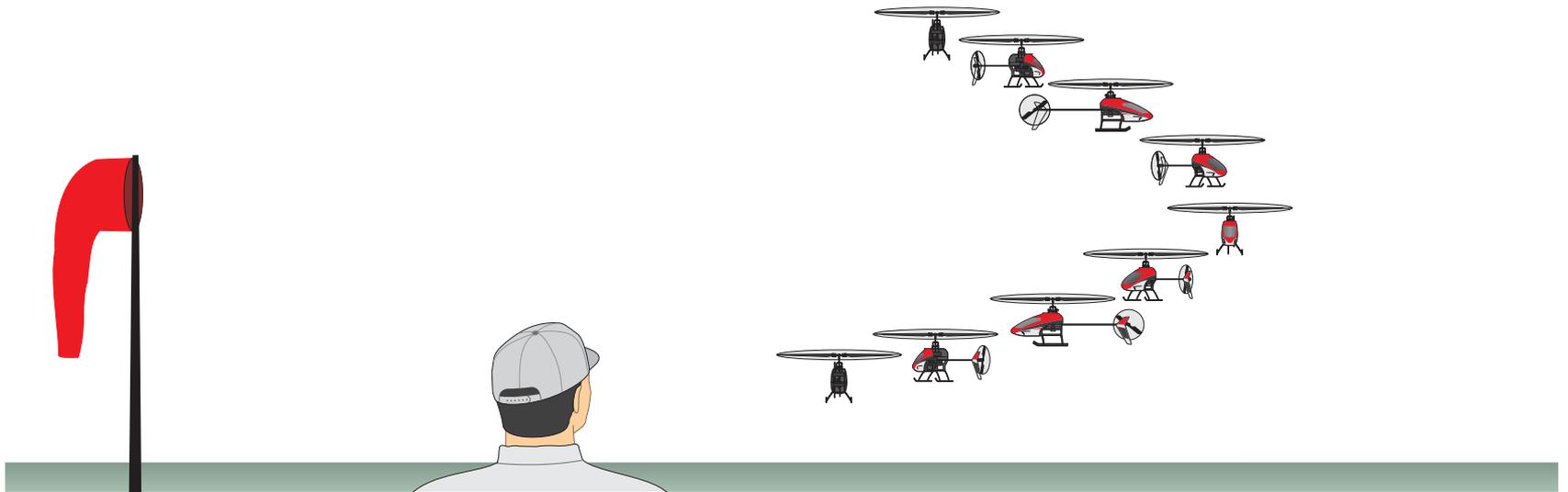


Real World First Flights

First Flight Tips Wind Technique Trimming & Gyro Tuning Optimizing Practice



First Flights Considerations

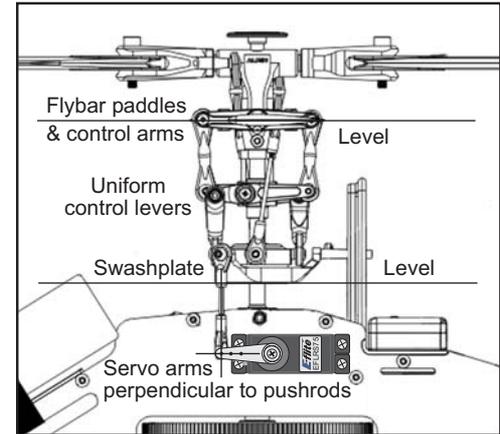
The obvious agenda entering your first flights should be to repeat the lessons that you practiced on the simulator in the same order. If you developed decent proficiency on the simulator, it won't take long to achieve the same level of success in the real world assuming you pace yourself and your heli is set up correctly.

It's often said that everything in aviation is a tradeoff, and the tradeoff for any part of the heli setup that falls short of optimum is that it will show up in flight as unusual tendencies that'll make the heli more demanding to fly. With all the setup resources available, including those provided by the heli and radio manufacturers, a less than optimum setup usually has less to do with not knowing how to set up a helicopter, but is the result of not taking the time to fine tune the setup as good as it can be.

There's not much adjusting that can be done to an entry level fixed pitch heli, but a collective pitch heli must be setup with the swashplate perfectly level and ALL the servo arms perpendicular to the pushrods, thereby helping to ensure that the swashplate remains level throughout the full range of travel. Furthermore, the flybar paddles and control arms must be parallel with the swashplate, all the control levers must be uniform, and the main rotor blades must be uniform and precisely match the manufacturer's specs. Finally, there cannot be any binding anywhere throughout the setup.

Although it might be a bit of a pain to have to keep trying different servo arms and adjusting pushrods linkages (rather than relying on sub trim) to square up everything in all directions, you must ask yourself, "Will it be easier to make adjustments at home, or, deal with a less than optimum setup at the flying field?!" Of course, the answer is that it's a lot easier to set things up correctly to start with and then be rewarded with a more honest flying heli compared to trying to diagnose why your real world heli is a lot harder to fly than the sim.

The next step to improve your odds of success is to initially fly only on calm days. While most manufacturers' claim that some of their fixed pitch helis can be flown in light winds, it's extremely challenging and risky. Indeed, attempting to fly a fixed pitch heli in wind will probably cause you to question whether you or the wind is controlling the heli more. Thus, despite the optimistic claims of the manufacturers, flying fixed pitch helis in even the slightest wind should be avoided. Collective pitch helis handle wind much better, but it's still recommended that you avoid flying in wind until you get several dozen successful flights under your belt.



While it can be time consuming to achieve, you will be rewarded with a more honest easier to fly helicopter after making sure that the centerline of each servo arm is perpendicular to the pushrod, the swashplate, flybar paddles and control arms are all perfectly level, and the control levers are uniform. If any of these components are even slightly off, or if there's any binding in the setup, the heli will exhibit erratic tendencies that will make it more demanding to fly.

The smaller the helicopter, the more it is effected by wind, hence, small fixed pitch heli's tend to be extremely hard to control in wind and should therefore only be flown in calm conditions.



First Flights & Wind Considerations

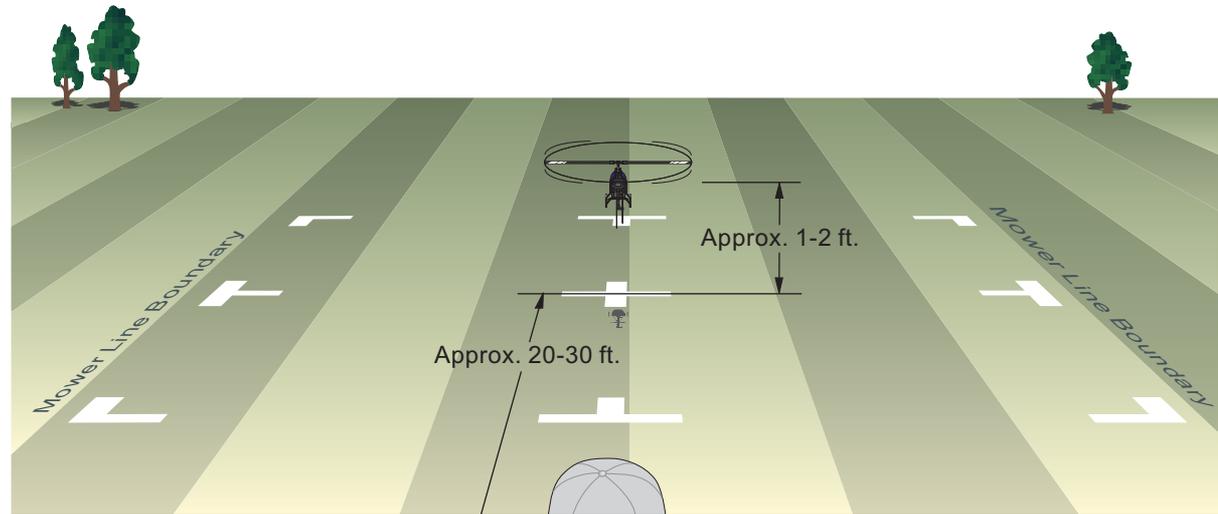


Even a small heli can quickly cover a lot of ground and cause your practice area seem a lot smaller than it did before you started flying, so hopefully you've chosen a large open area for your first flights and have identified some ground features to mark the practice box boundaries to help you keep the heli in comfortable view.

The first flights will start out with a stationary tail-in hover directly out in front of you. For safety, you should stand a minimum of 30 feet (10 meters) behind the heli. Remember to spool up slowly, and once airborne, the name of the game is to continually think “tiny-tiny-brief-brief-tiny-brief-tiny-brief...inputs”

When you fly in wind for the first time, start with the heli pointing directly into the wind. As you throttle up and lift off, push forward elevator into the wind to avoid drifting downwind when the heli becomes airborne, then continue making tiny corrections to remain over the same spot. While you should be watching the body or “heli a whole” to detect any movement at the instant it starts, you'll probably notice that the main rotor disk ends up slightly tilted into the wind while maintaining a stationary hover. If you choose to fly in a crosswind, you'll need to hold in a little aileron into the wind as the heli lifts off the ground to prevent wind drift. If it's a quartering crosswind, apply both aileron and elevator into the wind. Then be ready to make a lot more adjustments (especially throttle) compared to flying in calm conditions. Case in point: When you start practicing forward flight procedure turns, the heli will drop sharply when turning downwind unless you're quick to add more power.

Identify some ground features that mark your practice box boundaries beforehand, then stand a safe distance behind the heli. Practice a stationary tail-in hover at center box initially in zero wind. Otherwise, start with the nose pointing into the wind and hold in a little forward elevator as the heli lift's off to prevent wind drift. If there's a partial crosswind, hold both aileron and elevator into the wind as the heli lift's off.



KPTR: A successful first flight hinges on benign conditions and keeping all your aileron and elevator inputs brief.
(Note that flying in a 5 mph wind requires nearly twice as many control inputs compared to calm air.)