Chapter 9: A Smaller Stage: Indoor Flying

There is a breed of fliers who are driven to perform. They experiment. They innovate. They use their imagination to find a way around barriers no matter what conditions, space restrictions, or weather they face.

If the flying space is limited, they use shorter lines. If the weather is wet, they fly under bridges. If there is no wind, they learn to fly without it. And if they have to deal with all three, they move indoors.

Windless indoor flying is the newest sport kite rage. This passion to fly - and to fly anywhere - is largely responsible for the indoor flying movement. With the skills and knowledge you have already developed, you are ready to join the revolution.

Extreme flying is an exercise in finesse. With no wind, it can be like flying in slow motion. The flier must "feel" where the kite wants to go in its search for air.

Use large, grand arm and body movements. Quick jerky moves have a place, but a small one. Generally, they only succeed in pulling the kite from the air or drastically out of position.

Indoor Equipment

There is a difference between an ultra-light kite used outdoors in low-wind situations, and a "feather-weight" kite designed specifically for indoor flying.

Lighter kites can be used, but they won't perform as well. Indoor kites often weigh fifty-percent less and have design features that allow them to hold air longer, float, and glide better than their heavier counterparts.

But indoor kites are also much more fragile.

Sails easily puncture if they collide with solid objects.

Patches and repairs add weight.

Spars and fittings are so thin that they may crack in a crash.

Lightweight lines easily break.

All this means that indoor kites require special care and handling.

Flying lines also require some special considerations.

The maximum length for most indoor applications is between 9 and 15 feet of very lightweight line. This range is obviously governed by the ceiling height, and also by the fact that shorter lines reduce drag and allow more responsive maneuvers. As we explained earlier, light wind maneuvers like the 360 are much easier on shorter lines.

If you are used to flying with handles, consider another alternative. "Feel" is especially critical indoors, and anything that insulates you from your kite may be doing you a disservice. Try keeping a finger or two directly on the lines to monitor any subtle differences in pull.

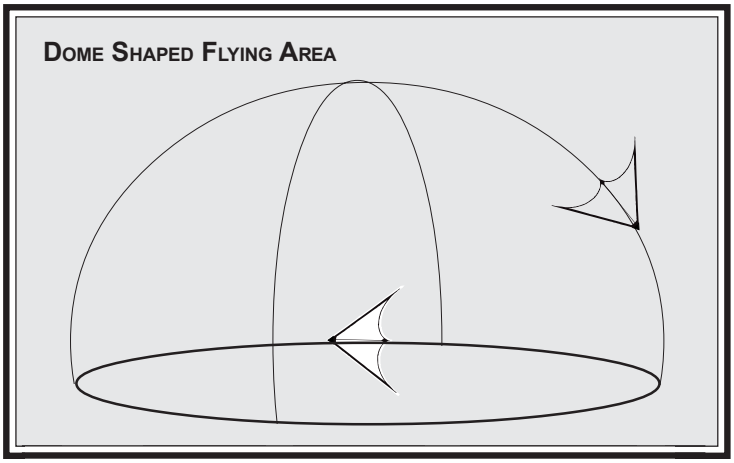
Anything that puts the flier in greater contact with the kite is worth exploring.

Some fliers have experimented with a "lone line" technique. One single line is attached between the bridle points and the flier manipulates the kite from the center of this loop without handles. You can play the line out or pull it back in to adjust length.

Lone lining is not recommended in stronger pulling situations since you can injure your hands. For indoor flying, the main safety concern is tangling yourself on loose line around your feet.

Tuning

In Chapter 6, you learned the importance of tuning for different flying conditions. Moving the tow-point toward the nose allowed better light wind flying. But at some point, you reached a “maximum high” where the kite tended to overclimb and turn under the wind at the top of the window.



Forget about the wind window. When you are inside with no wind, there is no wind window. You can use the extra lift from tuning “ultra-high” to sustain forward motion. And since there is no wind for you to turn under, you can use the tendency of an over-tuned kite to turn or fly Up and Over maneuvers more easily.

Think of your indoor flying space, not as a window, but as a dome. In this environment, overclimb is good.

Bridle adjustments of over four inches on your tow points are not unthinkable. Don’t be afraid to experiment. If the adjustment doesn’t work, just go back to the original setting.

> *Many of the rules you learned for outdoor flying just don’t work indoors. The wind is gone. The window is gone. Hand motions change. Push turns don’t work.*
>
> *If you are ready to fly indoors, be ready to adjust your thinking. Experimentation is very important. Learn new skills that you can take outdoors on the next light wind afternoon.*

No Wind Launching

Remember the Pre-launch Checklist?

Safety considerations are paramount for indoor flying. Most of the time you will be moving backwards, so you need to be aware of the boundaries of your space, and of any obstructions it is possible to walk into. If there are other fliers in the area, they are likely to be moving about as well. Decide in advance how to avoid space conflicts and accidents.

Overhead space is also a concern. This isn’t simply a matter of banging a fragile kite on the ceiling. Light fixtures are easy to snag and difficult to untangle from. And then, there is the issue of electricity...

Once you have checked your flying space for potential problems, you can begin to plan out your flight program. Lean your kite against a wall or chair in launch position. Then take a moment to mentally prepare your first few moves.

Most fliers find the launch the most difficult part of indoor flying.

For outdoor launches, you normally pull on both lines as you step back to lift the kite into the wind. As the kite begins to pull, you return your hands to the “normal” flying position.

But for indoor flying, the kite isn’t going to pull. If you bring your hands back, the only control you will have left is pushing - which doesn’t work well inside. Use your feet instead.

Keep your hands slightly extended and move back smoothly to generate lift. For every action, there is an equal and opposite reaction. This means you will need to keep moving to maintain lift. Whichever direction the kite is flying - left, right, and even up and down - you need to exert force in the opposite direction. As soon as you release tension on the flying lines, the kite is going to stall and fall out of the air.

After the stall, you can practice another launch.

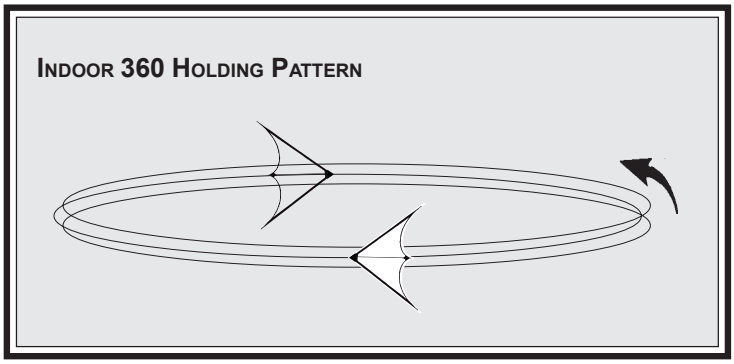
Maneuvers Using Motion

There are advantages to flying indoors. You control the wind. You actually generate wind by moving back against the kite. And this means that you decide what happens.

There are three basic maneuvers that provide the foundation of an indoor routine. Fortunately, you learned each of them earlier as light wind tricks. Now you just need to relearn these techniques as no wind tricks.

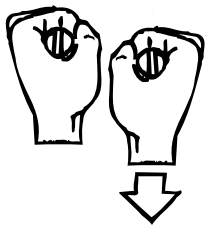
> *Try throwing your kite around the room without lines on it. This sounds radical, but is actually a good learning opportunity.*
>
> *Watch what happens. How does the kite fall? Which way does it tumble? How does it glide?*
>
> *You can use these observations to extend your flying time, improve maneuvers, or save yourself in an unintended stall.*

Indoor 360: The 360 is your basic indoor holding pattern. This is the maneuver you execute maneuvers from, and return to when maneuvers are finished. The only difference between the indoor and outdoor maneuver is that inside, you have no downwind arc in which to relax or build power. You need to keep moving constantly.



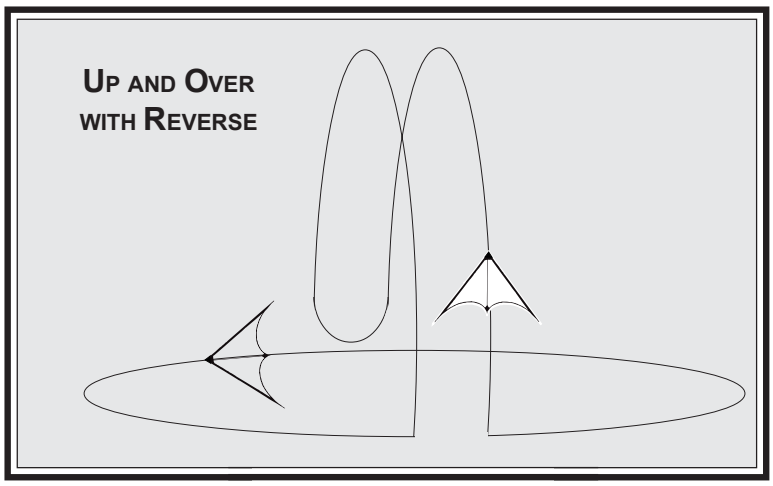
Start in a horizontal position, and move quickly away from the kite in a circular path. See how quickly you can bring the kite around. As you build confidence and competence, slow your pace until you are walking quite slowly and the kite is hardly moving at all.

Remember to keep the nose of the kite pointed slightly up. This will help maintain lift and keep you from crashing if your pace slows too much. If you begin to get dizzy from constantly walking in circles, try focusing on the kite or reversing direction.



HOLD THE UPPER LINE BACK SLIGHTLY IN A 360

Up and Over: When you move against a kite flying horizontally, you produce a 360. When you move against a kite flying vertically, you produce an Up and Over.



Usually, you enter the maneuver from a straight launch, or turn into it from a horizontal pass. Keep moving back through the climb, and as the kite reaches the top of its flying arc, reverse direction and move back against the dive.

Normally, this involves turning around which produces a twist in your flying lines. At the bottom of the dive, you can turn the kite about and begin another climb. By turning the opposite direction, you untwist the line.

Glides, Slides, Stalls and Floats: The Glide and Float are good maneuvers to add to an Up and Over.

In a Glide, the kite lays almost flat in the air, nose away from you. In a Float, the nose points toward you. Give the lines some slack and the kite coasts away. All you need to do is follow it down, maintain balance, and then reassert control at the appropriate time.

To Stall outdoors, you turn the kite so its trailing edge is parallel to the ground, and then push-forward on both lines. But indoors, that doesn't work. There is nothing to "push" against.

Instead, from a vertical climb or a Float, you simply stop moving. The kite will stop too. Then you should immediately resume moving slowly back to hold position.

If instead of moving straight, you move sideways, the kite will edge in the opposite direction. And of course, we call that a side slip or a Slide.

Falling and stalling maneuvers, including the Axel, will be easier indoors. Any hesitation in your backward movement against the kite will have the same results as a push would in the wind. Stopping your movements will drop the kite; slowing will stall it.

Maneuvers Using Turns

The rules for hand movements indoors are almost completely different than for outdoor flying. In the wind, we advise you to keep you arms close together in front of you, never widely spread apart, and never, never over your head.

But consider the indoor Up and Over. As the kite goes over the top, you need to keep pulling against it to generate thrust. You can't move back "through" the floor. So instead, you extend your arms during the climb, and as the kite peaks, you pull them from well over your head back down toward the floor.

This is a good example of the need for big, smooth arm movements in no wind flying.

Turns, on the other hand, need to be as tight as possible. Most indoor fliers prefer larger kites because they provide more sail surface. But kites in this size usually have a width at the trailing edge of over eight feet. If you are flying on lines of less than twenty feet, you have little altitude for the sixteen feet that the kite needs to turn on a wingtip. One alternative is to switch to the smaller sized indoor kites.

> *Indoor flying has grown in popularity to the point where organized exhibitions or competitions are regularly held. Ballet events with rules similar to outdoor contests are evolving.*
>
> *To fly indoors for any length of time takes stamina and skill. But sustained flight can be maintained for a surprisingly long time. The current record for uninterrupted and continuous indoor flying by one person is over four hours.*

Turns in no wind take practice.

To compensate for the lack of space, you can use a pull-push, with your hands widely separated, for the tightest possible turn.

To reverse a horizontal pass, always turn up and over rather than trying to fly under.

When possible, use a pull-pull technique to power in and out of turns. Step back a little faster to add power.

Spins are difficult. Flat and falling turns, like the Axel and Helicopter, are easier.

Indoor flying isn't for everyone. It takes a special touch and focused concentration. Some fliers never get it. Others think of little else.

Probably the best part of indoor flying is showing off in front of an unsuspecting audience or just telling your friends what you've been up to.

Kite Flying? In no wind?? That's impossible!

No it isn't. It's just ***magic***...