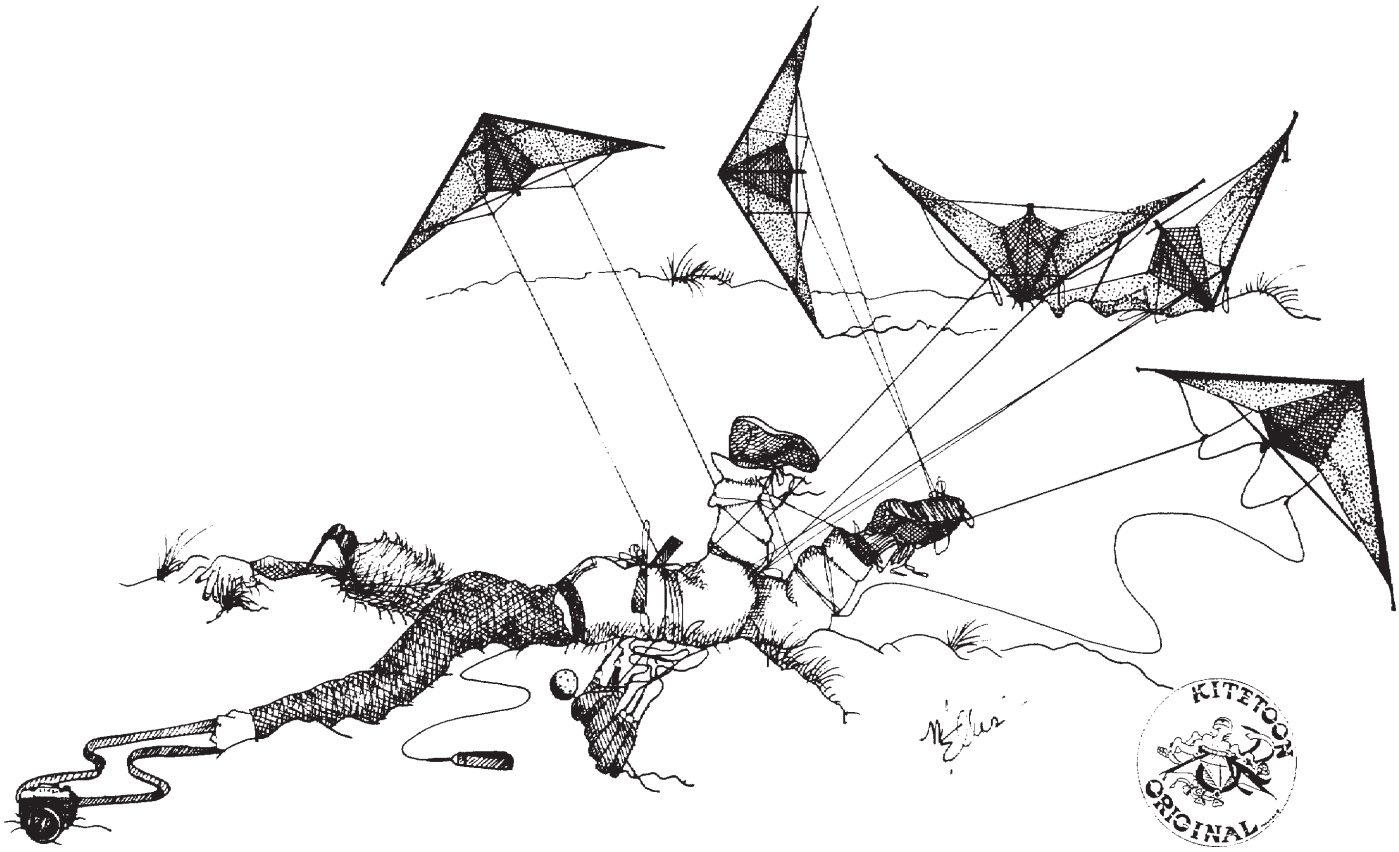


Chapter 2: Setting Up for the Show

Precision flying means that you need to fly - precisely.

Straight lines should be straight, circles round, and squares need even sides with good, sharp corners. It isn't as easy as it sounds, but with practice, it isn't that hard either.

The real test of a precision flier is not just the ability to fly straight lines and crisp angles, but to put them into defined maneuvers. The International Sport Kite Competition Rules (Third Edition) lays out over thirty of these maneuvers for individual fliers. If you choose to explore competition, you will need to know how to fly them. But even if you never go near a panel of judges and their clipboards, mastering precision maneuvers can bring you a great deal of satisfaction.

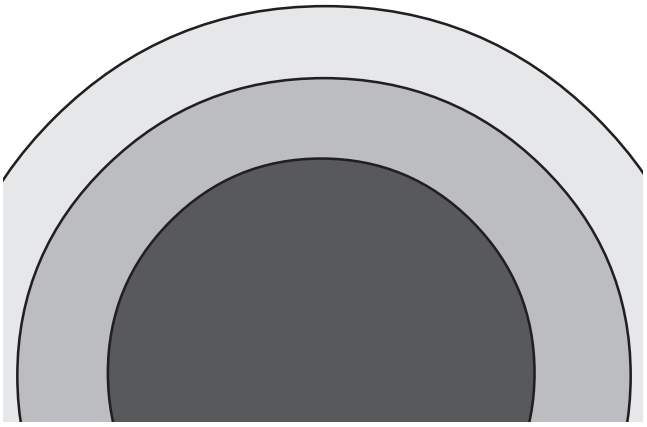
In upcoming chapters, we'll go through and analyze each of the compulsory figures from the rule book. But first, we need to discuss a few guidelines about precision flying in general and how to read these figures.

The Wind Window

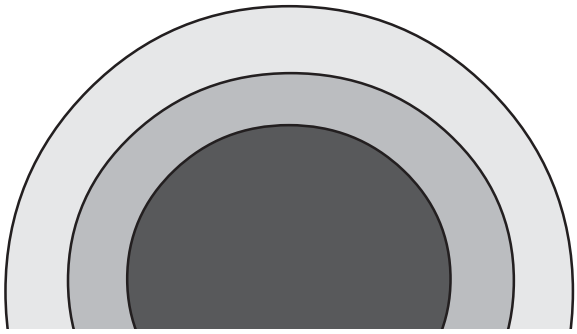
The sky where your kite flies is referred to as the wind “window”. In the center of the window is the area we call the “power zone”. The kite pulls harder and moves faster. As you move farther from the center and closer to “the edge” of the window, pull and speed decline.

Three things affect the size of the window - the strength of the wind, the efficiency or tuning of your kite, and the length of your flying lines.

In strong winds, the kite will fly over an angle of 120 degrees or more. In lighter winds, that angle shrinks to as little as 45 degrees or less. So in stronger winds, the window will be significantly larger.



Stronger Wind
larger wind window

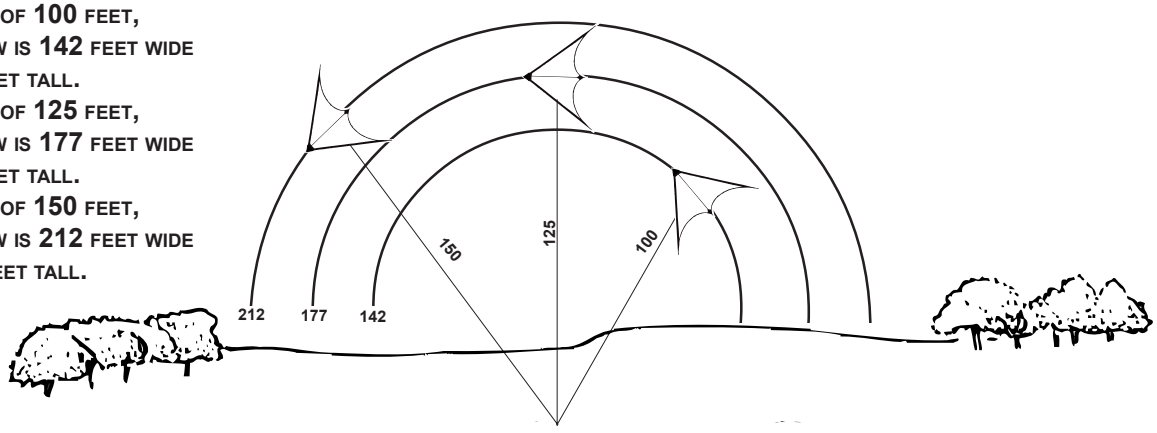


Lighter Wind
smaller wind window

You can artificially adjust wind speed by physically moving in and out on the field. As we said earlier, you are subtracting or adding your own movement from the force of the wind. Switching to light wind kites, or adjusting your tuning will also allow the kite to push out further to the edge, extending the size of the window.

Another important consideration is the length of your flying lines. By changing the length of your lines, you can offset the effect of wind strength on the window. Shorter lines make the window smaller; longer lines make it larger. Changing from 100 to 150 foot lines will change the size of the wind window by a full one-third.

With a line length of 100 feet,
the window is 142 feet wide
and 70 feet tall.
With a line length of 125 feet,
the window is 177 feet wide
and 87 feet tall.
With a line length of 150 feet,
the window is 212 feet wide
and 105 feet tall.



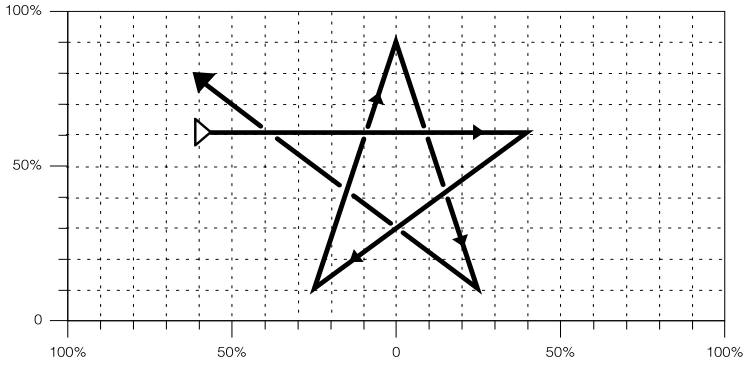
Precision maneuvers are usually easier to complete when flown big and slowly. In smooth winds, longer lines give you more time to prepare for the next turn. On the other hand, if the winds are gusty, long sweeping passes may appear jerky or uneven. Shorter lines will get the maneuver over with more quickly.

> *No matter what the wind speed, most fliers will try to make maneuvers larger by pushing the kite out to the edge.*
>
> *Judges and spectators tend to like larger figures, as opposed to smaller ones. This means that longer lines may tend to provide a slight advantage in precision competition. Just remember to keep your line short enough to stay inside the competition field boundaries.*

The Maneuver "Grid"

The backdrop for each precision figure is an imaginary grid which is ten units tall and twenty units wide. It is important to remember that these "units" are not necessarily feet or meters. Instead, the grid covers the total wind window, and breaks it into ten percent increments from the center.

In other words, the grid is as tall and wide as the wind window for each flier, based on wind strength and line length. The diagram shows where in the window each figure starts, the height and width of the figure, and where to finish. **In an average wind, on line of 130 feet, each percentage point on the grid is designed to measure one foot, which means that each ten percent square is ten feet.**



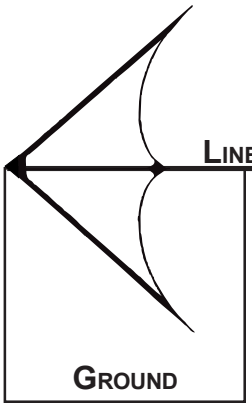
Your goal as a flier, is to duplicate the drawing as perfectly as possible in the sky. Proportions of the figure, as well as direction, count.

Now, the actual sky where you fly is not flat like the grid. As your kite travels across the window from one side to the other, it completes an arc. But the figures are all drawn as if the kite were flying a straight line.

The important thing to remember is that all illustrations are drawn from the flier's perspective. Fly those "straight" lines so they look straight from where you are standing. The judges will hover just behind you to keep the same view.

Some kite designs are better than others for precision flying. The judges are specifically told not to consider the type of kite you are flying when they evaluate your flying. But one thing you should consider is the size of your kite.

Most performance sport kites are seven or more feet wide. In a lighter wind, each square on the figure grid is less than ten feet tall. Since the figures require the spine of your kite to track along the line shown, a wingtip will often be quite close to the ground. This is a dangerous place to be, since you get penalty points for unintentional ground touches - no matter how minor.



RULE BOOK FIGURES WILL OFTEN BRING YOU WITHIN THREE FEET OF THE GROUND

To avoid this problem, competition maneuvers are often flown slightly higher than the way figures are drawn in the rule book. Ask the judges about this before you perform, and watch to see what other fliers do.

Depending on the length of your flying line, and the strength of the wind, the window may shrink to the point where it is difficult or even impossible to fly at "ten percent" above the ground. If the center of the kite is at ten percent altitude, the wingtip may well be dragging. And if it isn't dragging, it may well be in danger of snagging any bumps on the ground or taller turfs of grass.

In competition, any ground touch gets you a penalty and a crash gets you a zero. But even when you are flying for fun, a crash or even a touch looks sloppy.

Adjust your figures so the kite won't contact the ground unless you make a real mistake. But don't just change the bottom line. Change the proportions of the whole figure. That way, the maneuver will look the same - but without the crash.

Pace - the Speed of a Maneuver

Whether you are flying up or down, or in and out of the power zone, you're expected to maintain a constant speed throughout the maneuver. We call that speed the "pace" of the maneuver.

Pace is particularly important in precision moves because compulsory figures require you to move across the entire window, diagonally through the power zone, or back and forth in controlled dives and climbs. On gusty days, holding a constant speed may prove nearly impossible, but even in perfect flying conditions, you will need to concentrate on the pace of your maneuver by stepping forward during a dive or backing up during a climb. Fine tuning your flight with hand movements as you progress across the wind window is another important technique to offset changes as you move through the center of the wind.

As we said earlier, precision maneuvers that change pace - that speed up and slow down as they progress - look sloppy and unplanned. To adjust your pace, use your feet! Move forward and back to keep the kite flying at one consistent speed throughout an entire maneuver.

Positioning

The most important thing you can do to get ready for a maneuver, aside from practicing it over and over, is to put yourself in the right place for an effective start. This means you need to properly position the kite for the maneuver, and you also need to position yourself in the field.

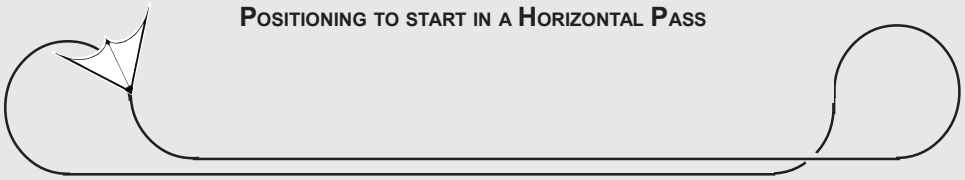
Give some thought to how you may need to move during a figure. Are the winds light? Stand downfield so you can step back. Are the winds heavy? Begin at the upwind edge of the field so you have room to move forward. Place yourself so you have room to move. And remember that your kite and your body need to stay inside the marked flying area.

Watch the other fliers. See how the wind affects their kite and how they position themselves in the field. Not everyone will make the best choices. You don't have to stand in the same place as everyone else. Learn from their mistakes. And don't be intimidated if the judges are standing in the "wrong" place. Set up where you think is best and let them come to you.

Once you are in position, take a good look at the wind window where you will be flying. Determine right away where the center, top and edges are. Each of your maneuvers will be based around those parameters. The center is particularly important. As you look at the flying field, draw two imaginary lines dividing it horizontally and vertically. Now fix those imaginary lines in your mind.

Most figures start in a horizontal pass near the top or bottom of the window. Many of the others begin in a vertical dive from the top of the grid, which is most easily reached by turning down from a horizontal pass. Your job is to get the kite to that entry point as smoothly and quickly as possible, and to be able to start the maneuver in a way that will maximize your chances of flying it well.

The best way to position for a horizontal pass is usually to loop back and forth at the outside edges until you are ready to begin.



POSITIONING TO START IN A HORIZONTAL PASS

When you are ready to start, turn into your maneuver and call “IN” as loudly as you can. The judges need to know where you think the figure started. As you finish, wait until your kite is exactly where the diagram says the figure ends, and call “OUT”.

Don't take too much time setting up between maneuvers. Being considerate of the judges is more than good manners. It's good strategy too. A judging “heat” usually lasts over an hour which means that judges get tired. Impatient and bored judges give lower scores. And endless passes by a competitor who isn't ready to start show a lack of confidence.