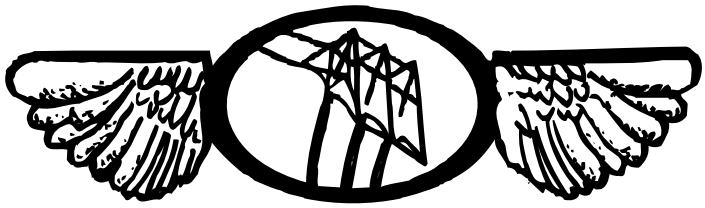
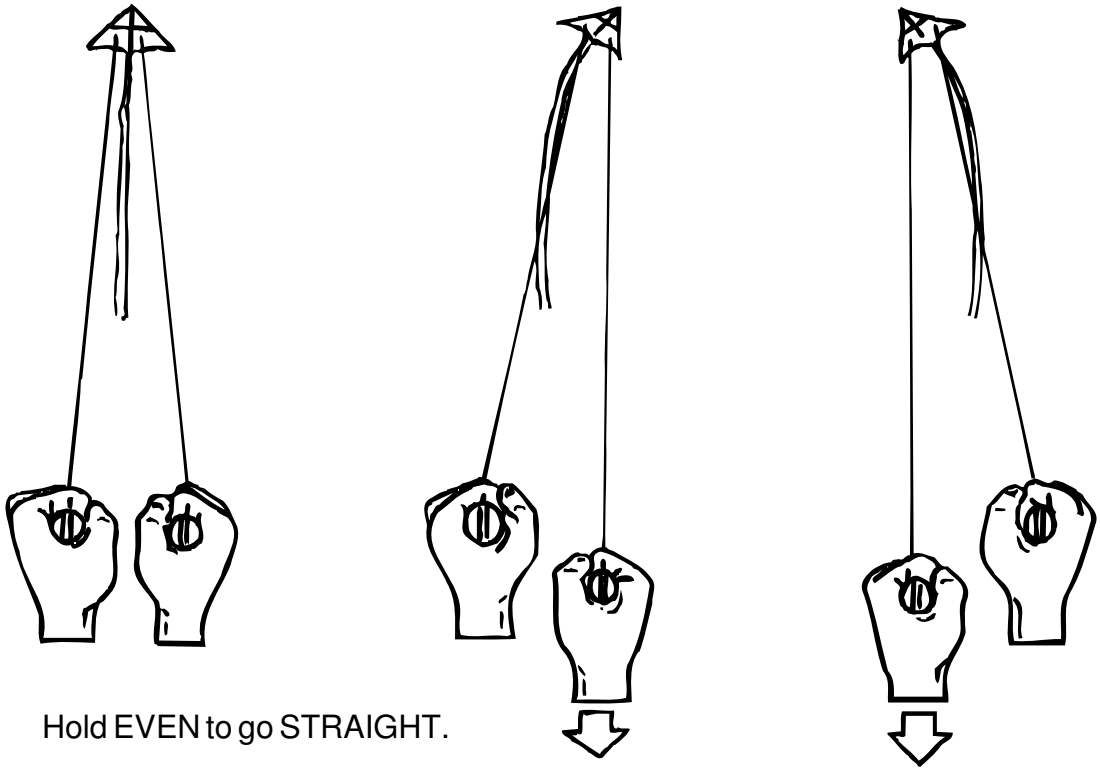
CHAPTER THREE: PILOTING BASICS



STEERING

All right! Now let's fly. Here's how to steer:



Hold EVEN to go STRAIGHT.

PULL RIGHT to turn RIGHT.

PULL LEFT to turn LEFT.

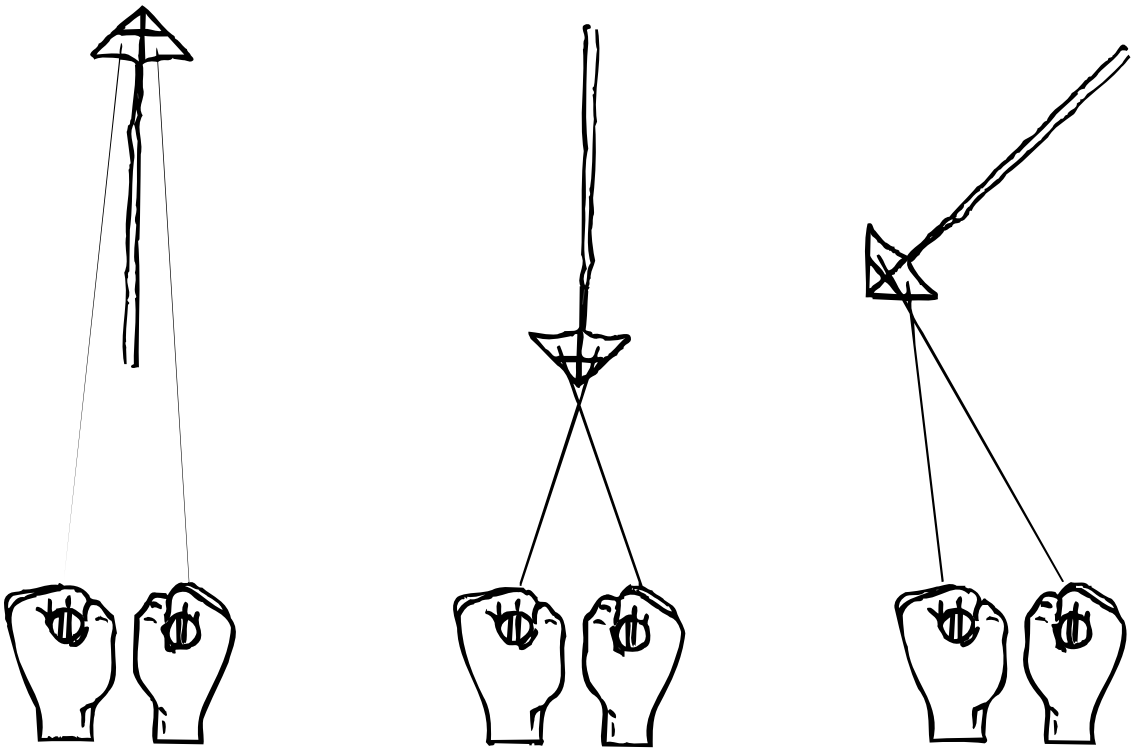
And that's all there is to it! There are three and only three basic steering movements. Any maneuver you do, from the simplest to the most complex, will just be a combination of Left Turns, Right Turns, and Straight Lines.

> *If your lines are the same length and your kite is properly tuned, the kite will respond as shown. If one line is shorter and you hold your handles together, the kite thinks you're puling on the shorter line.*
>
> ***Corey Jensen***
> ***Monterey, California***

Now let's talk about each of these basic steering movements.

STRAIGHT doesn't necessarily mean straight UP. Your kite is flying "straight" when it is traveling in a straight line across the sky IN ANY DIRECTION.

These kites are all flying STRAIGHT.



Notice that in each case, the flyer's hands are even.

Many new flyers think that if they bring the lines even, the kite will go up. It won't. Just as a car has no natural inclination to go North, a stunt kite has no natural tendency to go in any particular direction. It does what you tell it to do.

Some types of stunt kites are better for certain types of flying than others. Certain models are superior for flying straight, turning sharp corners, doing loops, pulling tails, or going fast. Similarly, some are better in different types of wind than others.

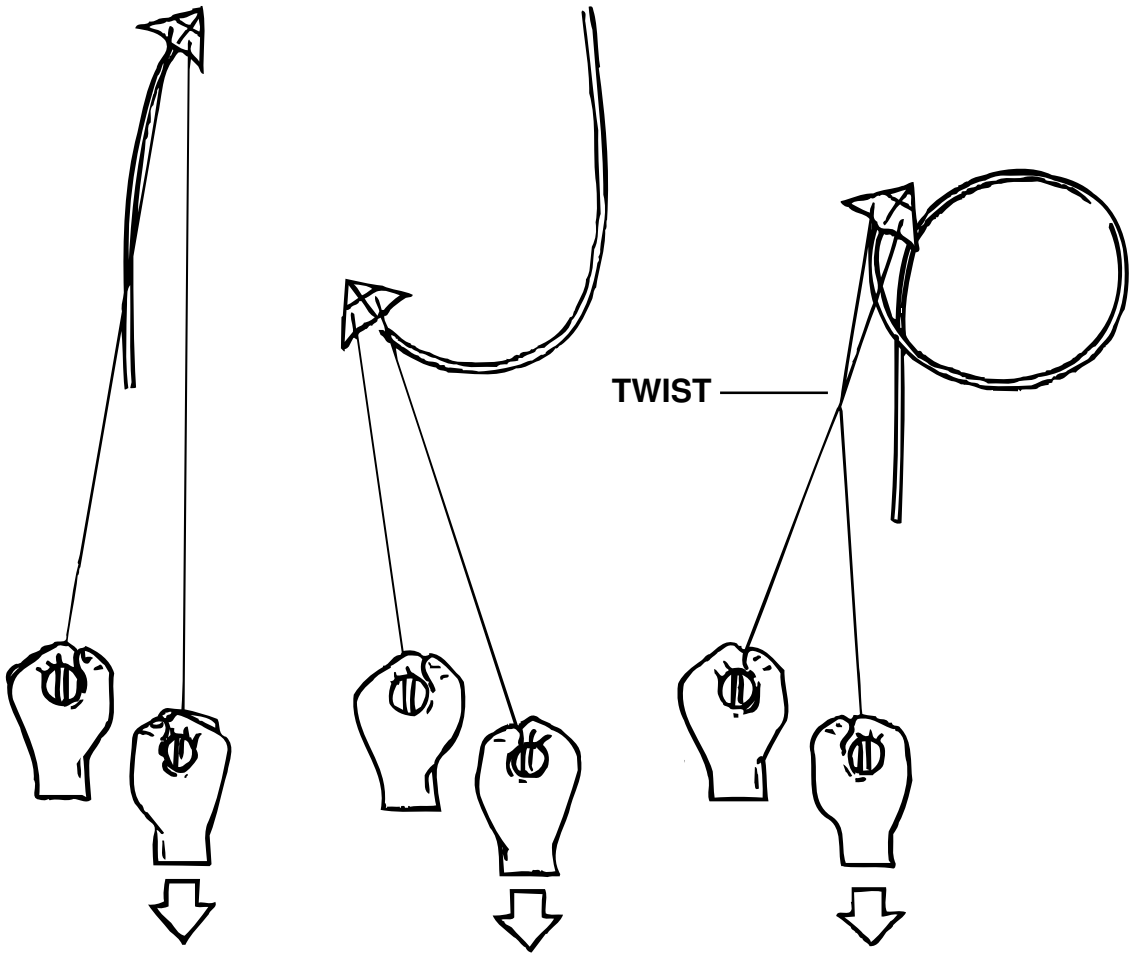
This isn't just a question of whether you are flying a Delta Wing, Diamond, or Foil. Some Deltas perform certain maneuvers better than other Deltas.

The best thing you can do is experiment with different types and brands of kites.

Some stores allow customers to "test fly" products. Some flyers even let people try out their kites (although it's sometimes asking a lot to let a stranger experiment with your expensive stunter). If all else fails, try watching other kites and comparing how they behave under different conditions. And don't forget to ask other flyers what they think.

Now about turns ... When you pull with your right hand, the kite turns to its right. Notice that it doesn't necessarily go towards the right side of the sky.

In each of these illustrations, the kite is turning to its right. Left turns work exactly the same way.



In one figure, the flyer has held right while the kite completed a full circle and the lines have twisted over each other. There are three things to remember about twisted lines:

1. As far as the kite is concerned, it has just done a "right turn". Nothing unusual has happened.

2. As far as you are concerned, the fact that the lines have twisted has ABSOLUTELY NO EFFECT on the way the kite now flies. Right is still right. Left is still left. You can keep right on flying.

3. To get rid of the twists — just turn the other direction! The important thing to try and keep track of is which way you turned to get the twist in the first place. It also helps to remember how many twists you put in the line.

Your head may have a little trouble with this at first, but it soon goes away.

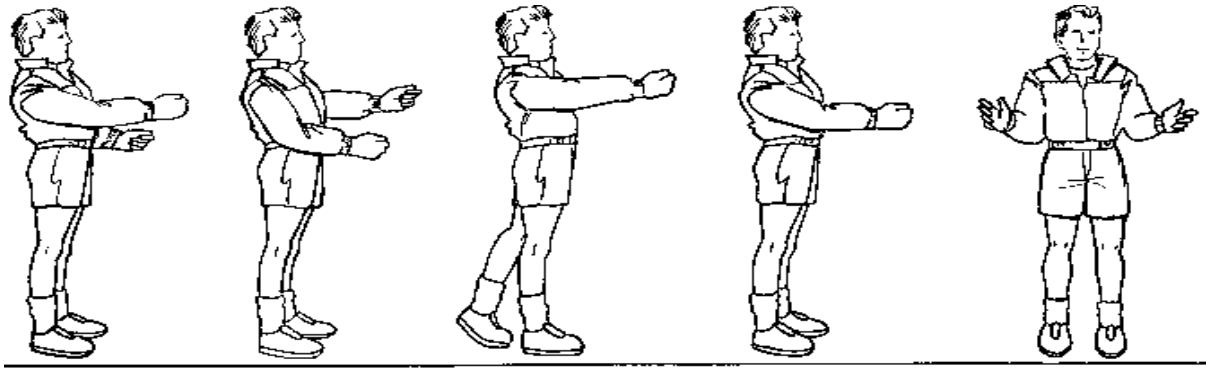
You can easily fly with as many as 5 or 10 twists in the line and the kite will still control just fine. If you make several turns and find that "resistance" is starting to build up on the line, don't worry. The kite is just trying to tell you that, maybe, you should start thinking about turning the other way ...

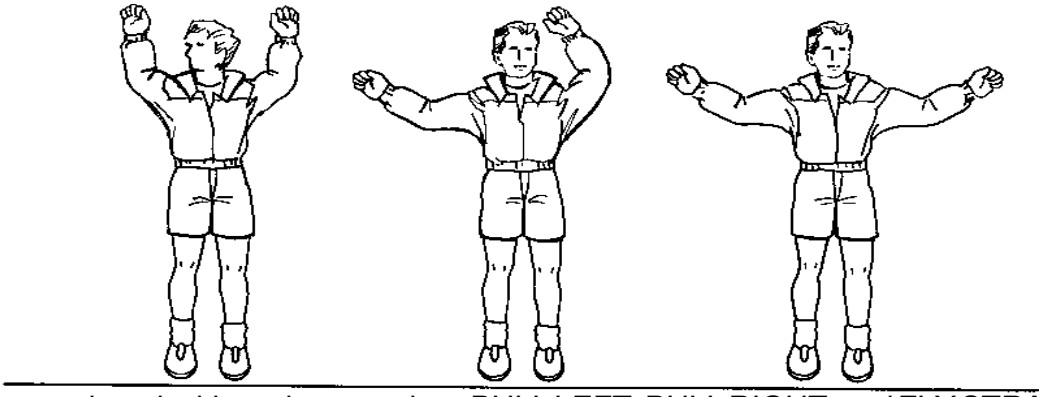
BODY POSITIONS

You can make flying easier on yourself if you relax.

Keep your arms at your sides, your elbows tucked in, and your hands fairly close together. And keep your eyes on your kite. In other words, **fly like THIS**:

NOT like this:





Remember, the kite only recognizes PULL LEFT, PULL RIGHT, and FLY STRAIGHT. Everything else is wasted energy.

Holding your arms higher doesn't make the kite go up!
Squeezing the handles tighter doesn't increase control!
Moving your hips doesn't move the kite!
Holding your hands farther apart makes control more difficult!
Waving your arms makes them tired quicker!
Jerking on the lines will make the kite go faster -- and probably crash harder!

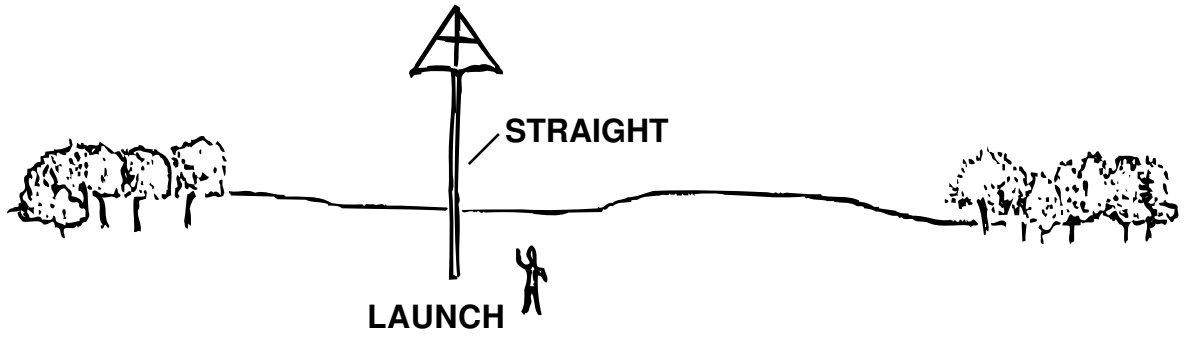
Focus on your flying. Keep your movements smooth and your arms under control. Any extra effort won't improve your flying and will only attract more attention.

In future sections about advanced flying techniques, we'll talk about how to use your arms and body to enhance your flying. For now relax, keep your arms by your sides, and let the kite do the flying while you just steer.

And remember to smile a little! This is supposed to be fun!

FIRST MANEUVER

Let's go back to the moment just after you've launched, and do your first maneuver. Master this one flying sequence, and you'll be well on your way to becoming an accomplished stunt kite pilot.
Immediately after launch, fly the kite straight up. You'll be holding the flylines at equal

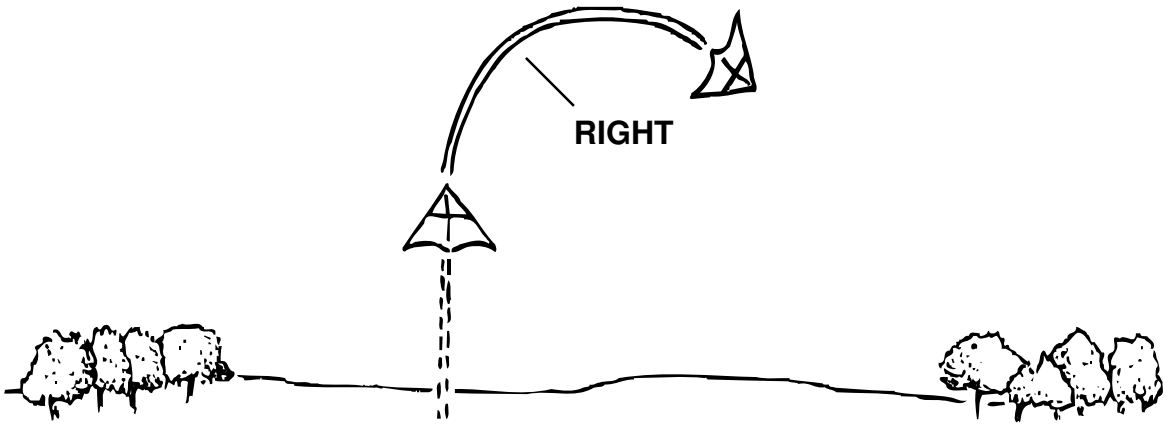


tension. If the kite veers to one side, add a little tension to the opposite line.

If the kite veers LEFT, pull a little RIGHT.
If it veers RIGHT, pull a little LEFT.

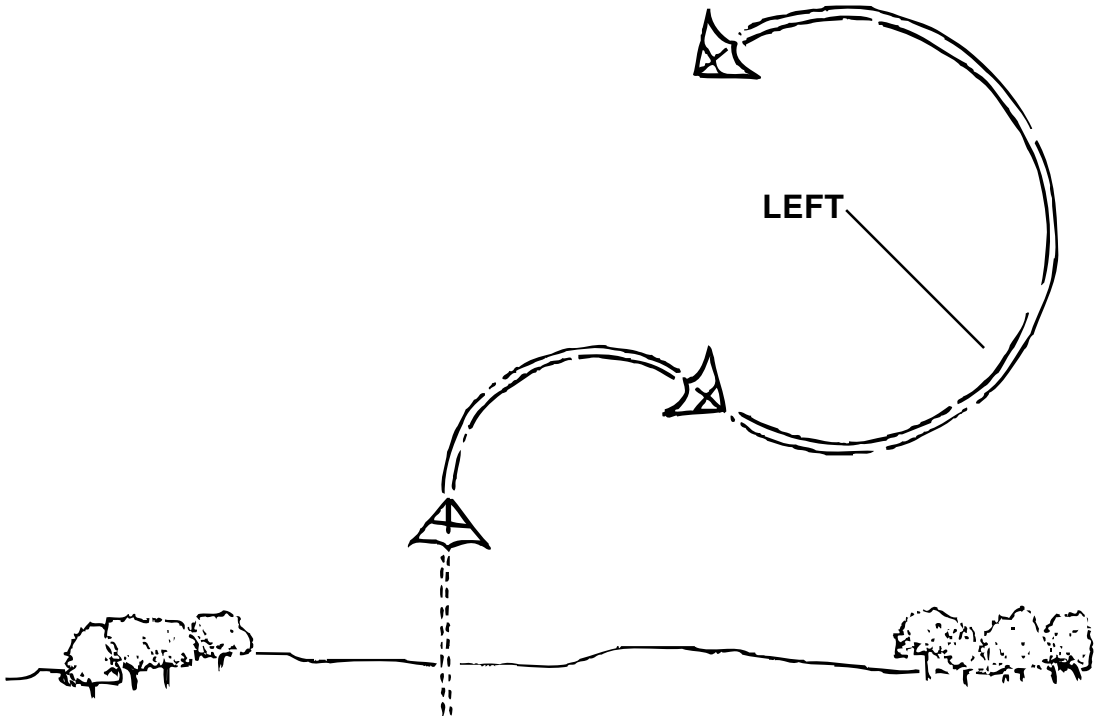
Let the kite fly up 30 or 40 feet, to an angle of 30 degrees or so. Don't let it fly up too high just yet. The higher it goes, the slower it goes, and right now you want speed and maneuverability.

When it reaches a comfortable altitude, PULL RIGHT.
The kite will turn right. You don't have to pull very hard or very far. Pull gently and the kite



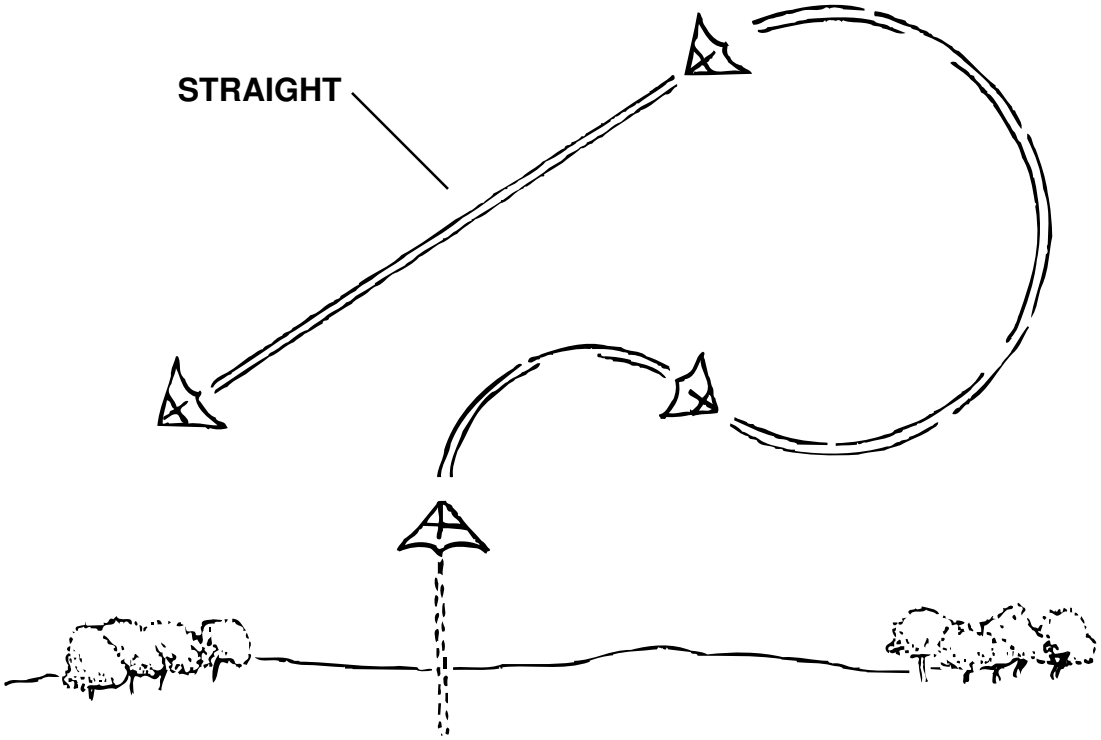
will enter a nice, comfortable turn. Let it turn until it has just passed horizontal.
Then . . . . PULL LEFT.

PULL GENTLY, and the kite will enter a left turn. Let it turn until it has gone all the way

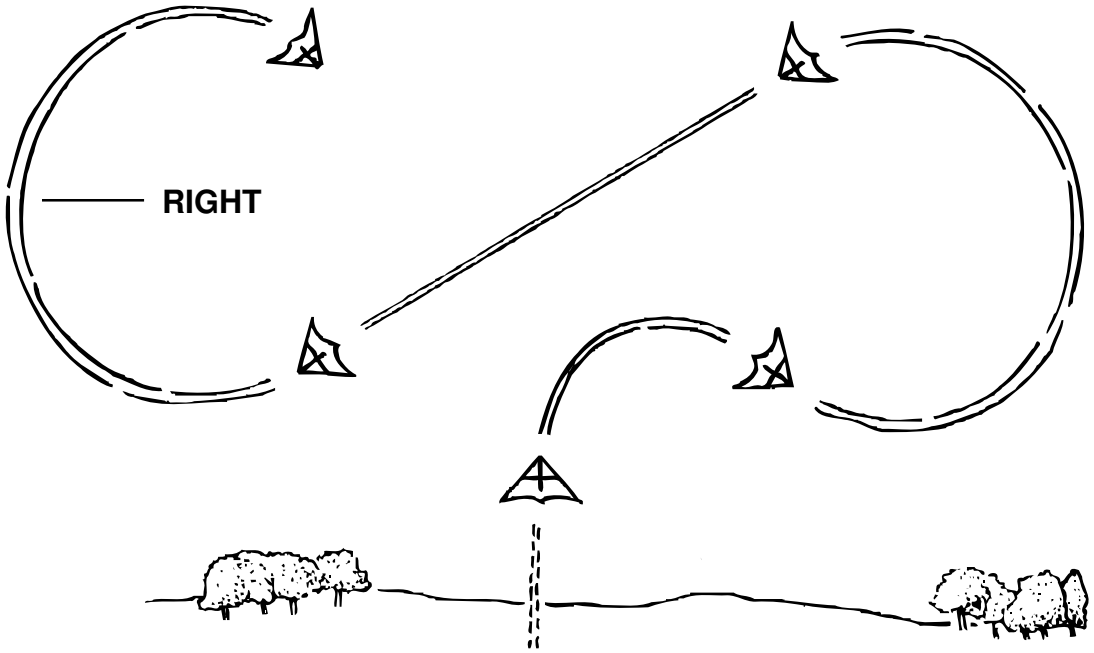


around to just past horizontal again.

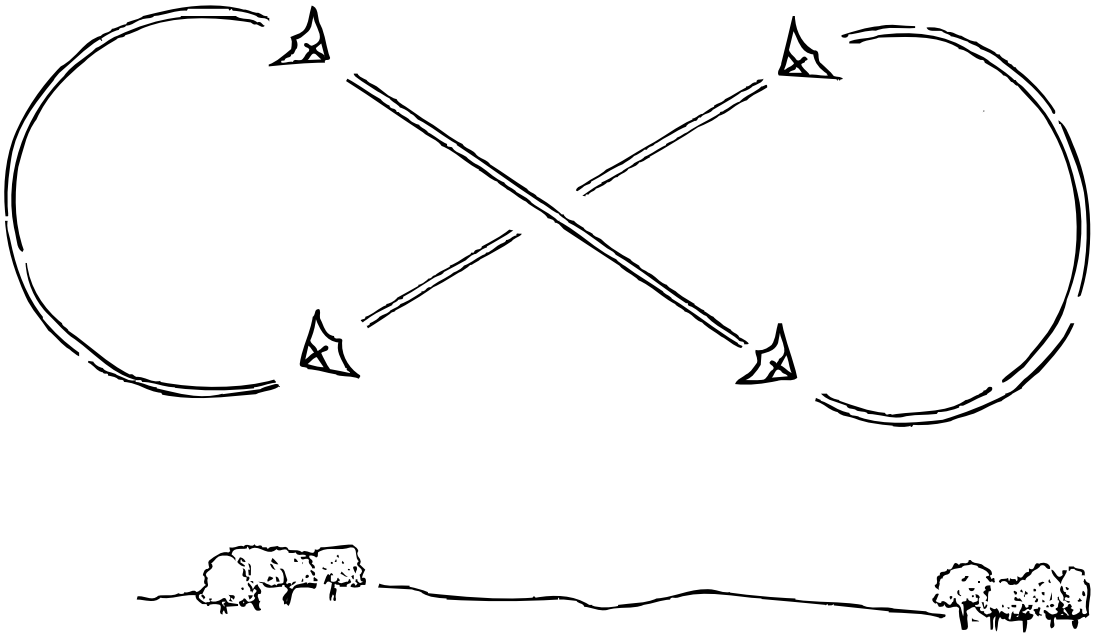
Then .... GO STRAIGHT.
Now .... PULL RIGHT again.



Then .... GO STRAIGHT.



CONGRATULATIONS!! You've just done a horizontal figure eight. Now do it again.



Pull left, straight, pull right, straight.
Left, straight, right, straight.
Notice that what you're doing with your hands "feels" like "left, right, left, right ..." instead

of “left, straight, right, straight...”. That’s perfectly normal. We’ll come across other cases where what you “feel” is different from what you’re actually doing as we get deeper into the flying process.

The quickest way to get comfortable with flying a stunt kite is to fly horizontal eights over and over, testing the control response and the reaction of the kite to the wind.

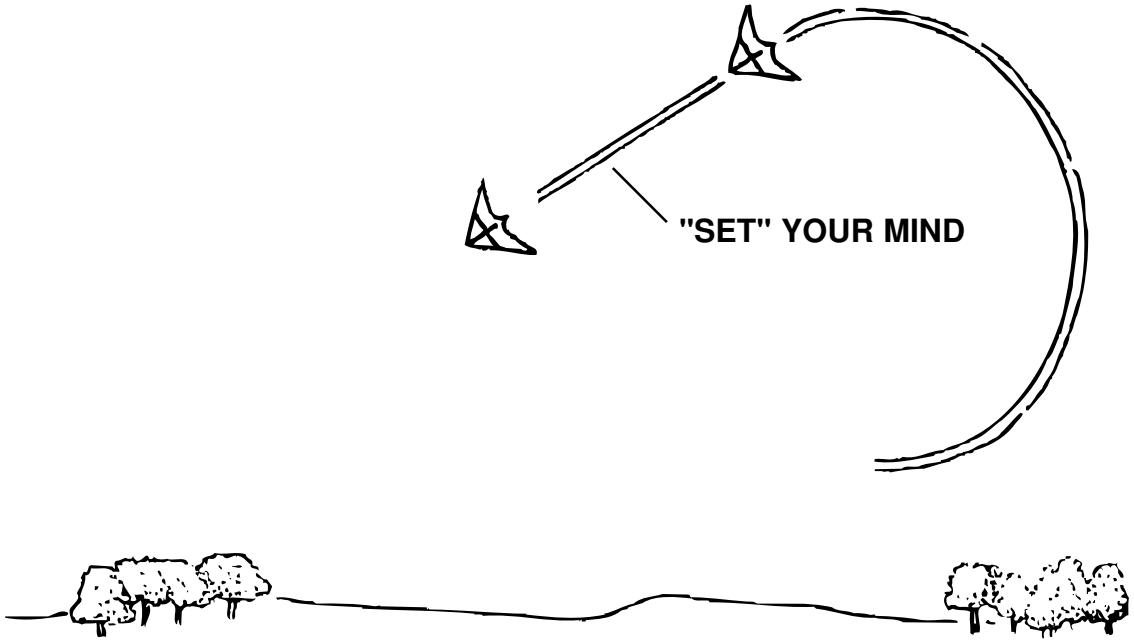
Try making your turns bigger and smaller. The harder you pull, the tighter the turn, up to a point. Your kite reacts just like a car. If you try to turn too tightly at too high a speed, you’ll skid. Try pulling hard, and watch what happens.

We’ll be telling you over and over that the best flying techniques are **finesse, precision,** and **delicacy of control** rather than brute force. Racing drivers don’t force the issue. Neither do expert stunt kiters.

Try flying farther out to the left and right. Notice that, as the kite gets farther out to the side, it loses drive and goes slower. For now, be sure to turn back towards the center before the kite loses too much speed. We’ll talk about what to do out at the edges of your flight envelope later.

SECOND MANEUVER

Have you done lots of horizontal eights? Had your kite airborne for five minutes at a time without a crash? Great! Let’s do a loop.
Loops are easy to do. But sometimes, the first few times, a new flyer will unconsciously

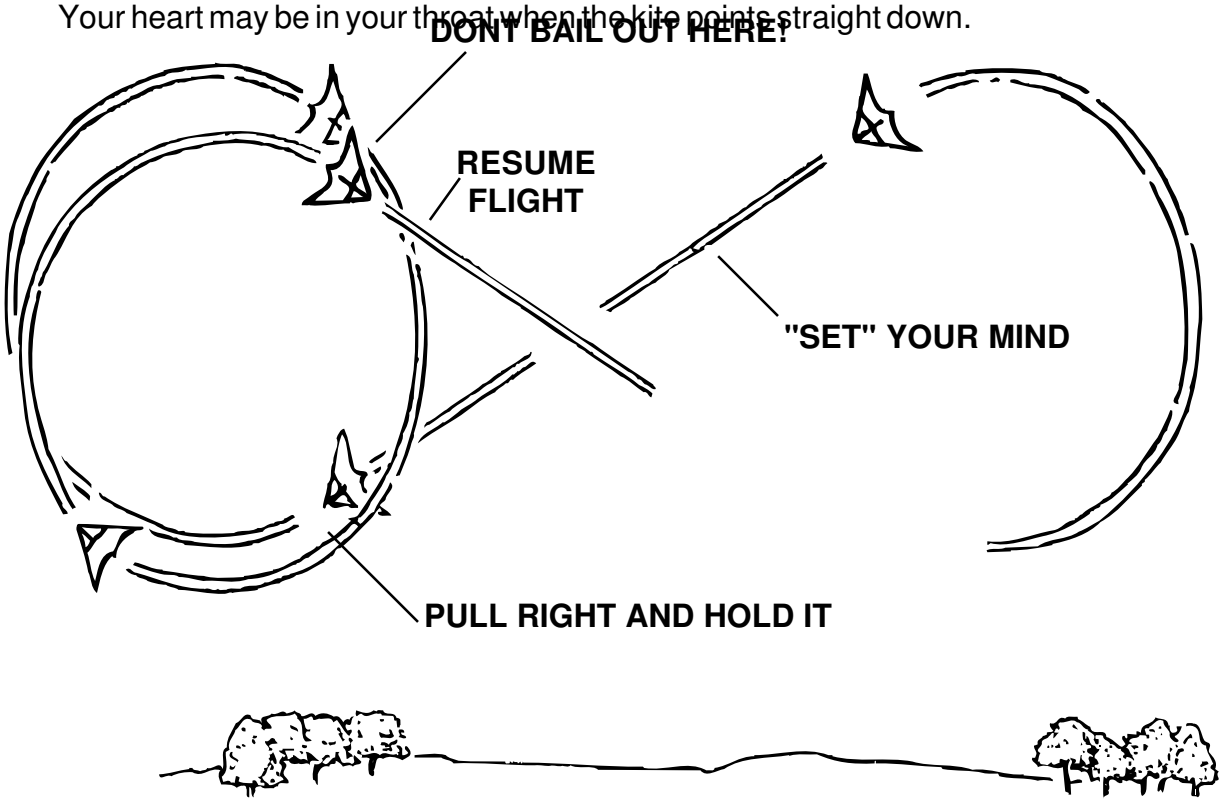


bring their hands together as soon as the kite points at the ground. This is a holdover from the common thought that holding the lines even makes the kite “go up”. It results in a crash.

To avoid that problem, start when the kite is in the position shown. Concentrate on your hands, and "set" your mind with the thought that you are going to PULL RIGHT and HOLD RIGHT NO MATTER WHAT.

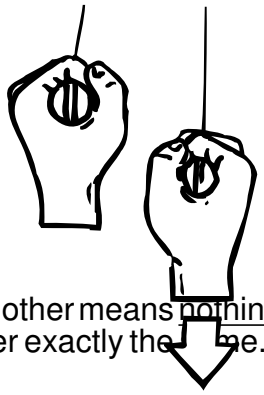
Then do it ...

Your heart may be in your throat when the kite points straight down.



(That's why the drawing says, "DON'T BAIL OUT HERE!")

Keep thinking PULL RIGHT and put this picture in your mind:



Hold right until the kite flies all the way around in a full loop. Then resume your normal horizontal eights.

Wasn't so bad, was it?

Remember, the fact that the lines are now twisted over each other means nothing at all as far as controlling the kite is concerned. It will fly and steer exactly the same.

Continue those horizontal eights until you're ready, then try a loop the other direction. Everything will work the same. You'll PULL LEFT and hold it until the kite flies all the way around.

And the lines will untwist!

LANDING

There are three kinds of stunt kite landings: Accidental, Normal, and something we call "The Eagle Has Landed". The "Eagle" is one of the more difficult maneuvers you'll do, and requires a fair amount of skill and practice. We'll save talking about it for the Advanced Techniques section, and concentrate of the first two types here.

ACCIDENTAL LANDINGS — Accidental landings WILL happen. (Some people insist on calling them "crashes") We like to say that, "If you don't crash, you're not trying hard enough!"

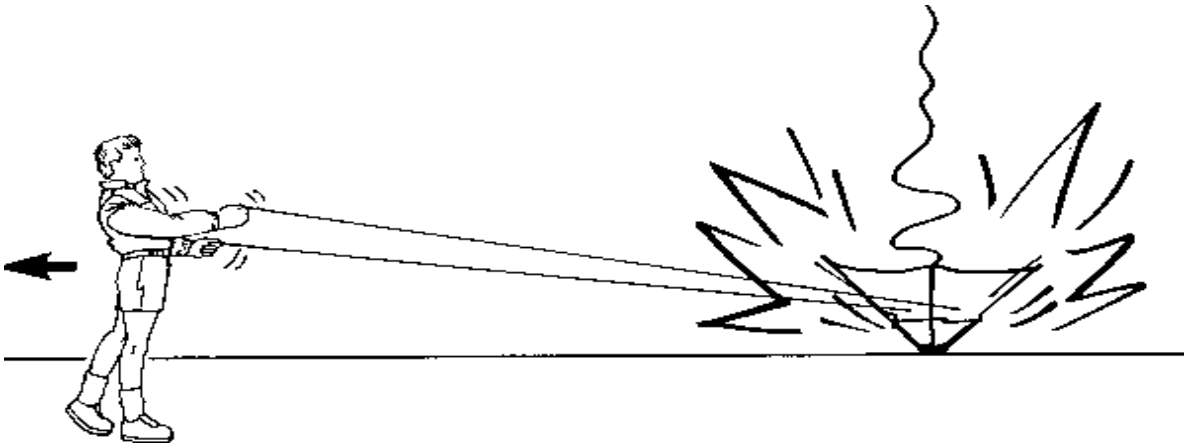
Follow proper procedures, and crashing is not likely to hurt your kite or anything else. At worst, you may break a spar or strut which is fairly easy to replace. The impact on your ego is usually the worst part.

Here are a few tips that will minimize any real damage:

1. Make sure, as part of your Pre-launch Checklist, that you aren't flying over anything that's living, expensive, or tall.

2. If you find yourself in trouble, and the ground is getting closer, or your kite is in danger of hitting someone, MOVE FORWARD to reduce the kite's speed.

Your normal reaction in a crash situation will be to hold the handles tighter and to pull back on them to try to save the situation. That is exactly the wrong thing to do. Pulling the handles will cause the kite to accelerate and hit the ground harder than if you had done nothing. Like this:



A stunt kite depends on line tension to fly. No tension — no flying. If you let go, your kite will stop almost instantly in midair and then float down like a leaf. It will not "fly away" like a traditional kite, because without line tension it has no aerodynamic ability at all.

If you have time, reduce line tension by walking quickly or running towards the kite.

Never throw your handles in the air, and try not to lose them both. Without your handles, you have no control at all. If you are flying a strong pulling kite, or if the wind is blowing hard, RUN toward the kite to reduce its speed or avoid an accident.

Some stunt kites - particularly the Foil designs - are capable of going a long way on their own if you release both handles. The drag of the lines or handles may provide enough line tension to keep the kite airborne. You can damage those expensive lines. And remember, flying handles can be dangerous!

Moving toward the kite reduces speed and lets things happen gently without the possibility of tangling the kite up. It's the SAFEST, SUREST WAY to save a potentially bad situation!

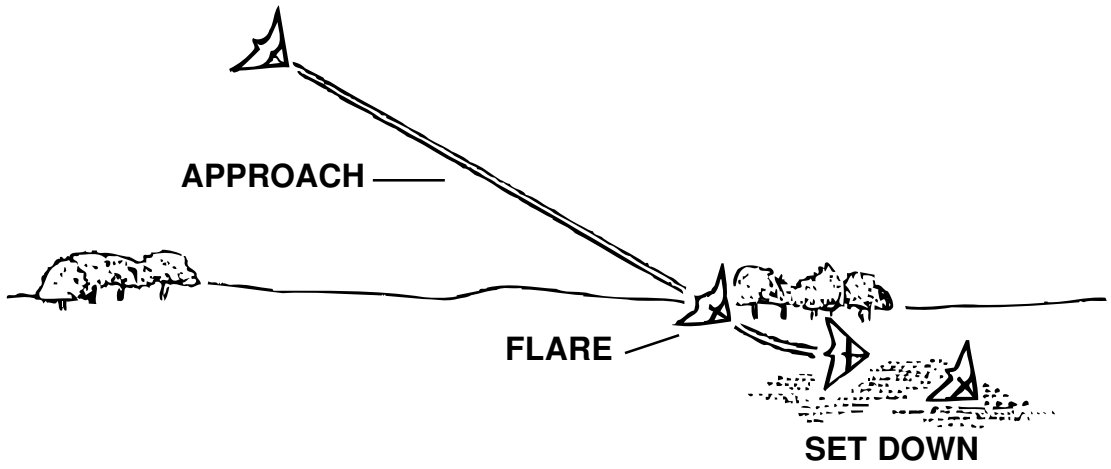
You may still hit something or someone, but at least you won't hit them hard.

> *If one flyline breaks in mid-flight, the kite will receive the message that one line is being pulled hard and the other has gone slack. The result is a series of uncontrolled, very tight loops that are both dangerous and a bit frightening.*
>
> *Hang on for a moment to keep the kite airborne, warn people as loudly as you can, and then bring the kite down by letting go or running toward it. This will bring the kite down fast and soft, and limit line twists.*
>
> *Running toward the kite gives you maximum control in a bad situation.*

NORMAL LANDINGS — A normal, planned landing takes advantage of the fact that, as the kite flies farther "out" to the right or left, it loses drive and speed. A landing is, simply, flying the kite to the point where it runs out of forward drive at the same time it reaches the ground.

Here's how it works ... We've shown a landing to the right, but you can land to either side.

APPROACH - Start from medium altitude, to the left of center. Fly down towards the ground at a shallow angle, as shown. This will take your kite out to the right.



FLARE - When the kite reaches an altitude of four feet or so, make a gentle left turn or "flare". This will bring the kite parallel to the ground. When the kite turns horizontal, it should be about a foot above the ground. If you are far enough to the right, the kite will be just barely moving.

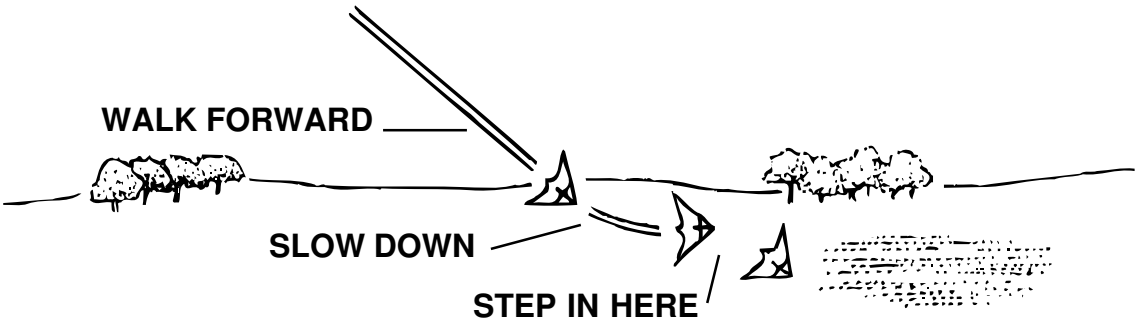
SET DOWN - The kite should practically land itself now. Make a very gentle RIGHT turn, and the kite will settle onto the ground. For the gentlest possible landing, touch the wingtip to the ground, and the kite will settle gracefully onto its nose.

Landing complete ...

BETTER NORMAL LANDINGS — After you've done a few successful Normal Landings, try this:

Most flyers land at the far right or left "edge" of the wind and then set up for a re-launch in the same area. Remember that a launch will be easier if you reposition yourself or move the kite back toward the center of the wind.

As you start your Approach, begin walking towards the point where the kite will land. When the kite enters the Boundary Layer, and it's time to flare, slow down, but keep walking.



To set down, just take a couple of steps forward at your normal rate. The kite will set down like a feather. Easier, isn't it?

What you've just done is also a good exercise in throttle control. You have SUBTRACTED your walking speed from the wind speed — allowing better control over your landing approach and the transition into the Boundary Layer. When you ran toward the kite to avoid an accident, you were using throttle control to reduce the kite's speed. This is just like cutting the throttle on an airplane to land!

You'll find that, with practice, you can pick your landing spot anywhere within a wide area, and set down precisely on it.

PACKING UP

When you're finished flying for the day, take a few minutes to pack your kite properly.

Occasionally, for something completely different, we absolutely astound spectators by diving our kites into and under the water -- and flying them back out! Providing that you have enough wind and do not use a tail, it really is no problem.

When the kite is submerged, put a little tension on one line to turn it underwater until the nose begins to emerge. The wind will then catch it, just like board sailing, and it will take off straight into the air again. DO NOT PULL TOO HARD. Use just a little tension.

We should also point out that this is a completely crazy thing to do. You could lose both your kite and your investment. We suppose that's why spectators like it so much.

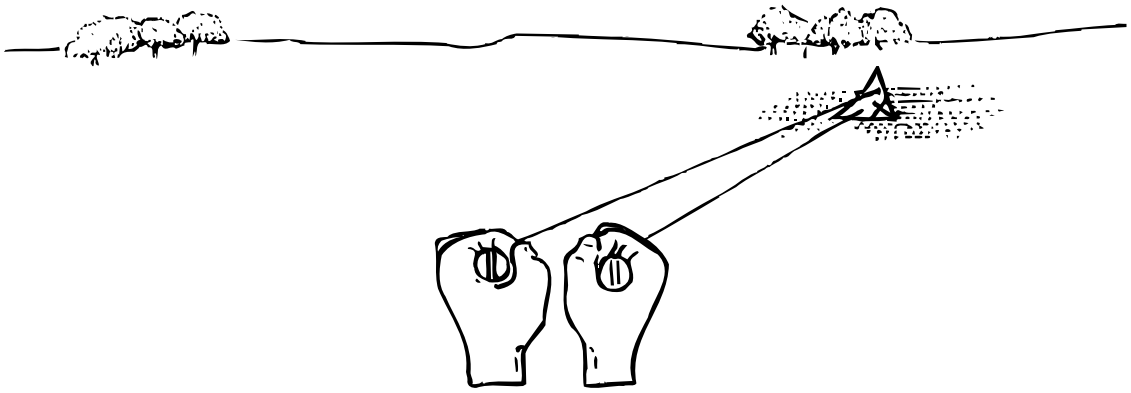
Never clean your stunt kite with anything stronger than water! Strong solvents will remove the nylon coating and make the sail more porous.

OOPS! Already ruined your kite by cleaning it with a commercial solvent? Spray the skin with Scotchguard. It will coat the fabric and help save the ruined kite. This is not a permanent method, but it will save or rejuvenate old, windworn sails.

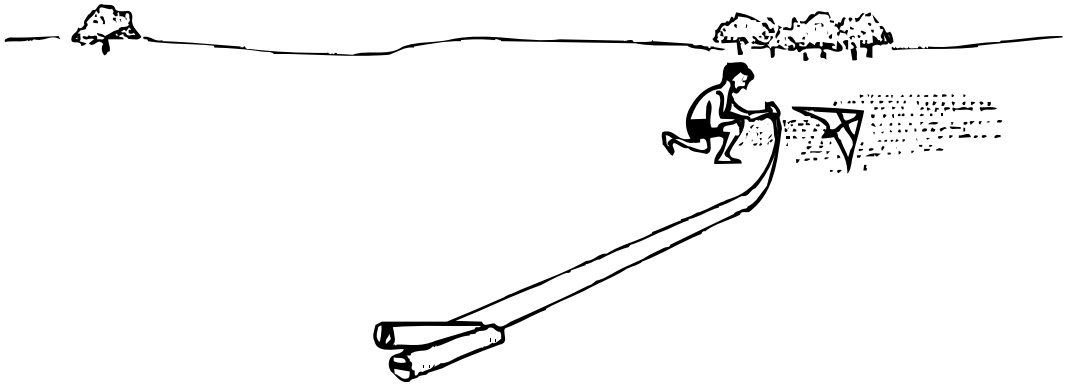
It will help prevent damage to the kite, and will save you a lot of grief the next time you go out to fly.

The first thing to do is land. It will help a lot if the lines are not crossed, so take the time to untwist while you are still in the air.

Put the handles down right where you are. Don't take them with you, or you'll be untangling flyline for a week! Disconnect the lines from the kite. Put the ends of the lines down where they are, and leave the lines stretched out on the field for now.



If you're flying a single Delta or "Swept Wing" kite, remove all the spreader struts from their vinyl or metal connectors. Fold the kite carefully, making certain not to wrap the fabric around any metal fittings. Put the kite and all the spars away in their bag where they won't get lost.



NOW, wind up your flylines. Incidentally, this is a good time to check your lines to make sure they are still the same length. After several hours of heavy flying, some flylines may stretch. If you measure them now, you'll be ready to start right in when you set-up next time.

DON'T wind both lines onto one handle in a way that will twist the lines around each other. Otherwise, you'll find all those twists still there the next time you take the lines out.

DON'T walk towards the far end of the line as you wind it up! Let it drag towards you while you stand in one place. That way, any twist in the line will have a chance to work itself out while you wind.

Besides being a mess to untangle, one other reason you don't want to twist the lines is that twisted lines stretch more, slowing control response.

The best approach at first is to wind up the lines one at a time. Then pick up any stray stuff you may have left on the flying field — and you're done until next time.

Tired of wrapping your flying lines up one at a time? Wrap them both on the same handle or winder ... just make sure that the lines wrap and unwrap from the same side of the handle or spool. If you unwrap from the wrong side, you will suffer the "curse of a million wraps"!

Lee Sedgwick
Erie, Pennsylvania

REPAIRS

Accidents occasionally happen. And unfortunately, those accidents sometimes result in punctures or tears in the stunter's sails, or in broken spars.

The best material for repairing nylon sails is ripstop nylon tape. Made of the same material as your kite, it is available in many kite supply outlets and comes in a variety of colors. Buy a few pieces that match your kite's colors and have them ready for when that accident happens. You can make quick repairs and go right on flying.

Replacement spars can also be bought from kite stores or manufacturers. Again, it helps to have a few on hand for when the inevitable happens. Remember to use the same type of spar, and particularly, the same weight, thickness, and length as the original.

A note on relative durability... If your kite rips - you can't fly. If your line breaks - you can't fly. If you spar breaks, you can insert a new spar.

Spar replacement is the least expensive way to absorb stress without long term damage. As in life, you can ignore stress but it doesn't go away. Spars bend and recover. Nylon just stretches out of shape.

Corey Jensen
Monterey, California