

**1 Introduction**

People fly kites and get interested in kites for many reasons. The two things are different, many of us fly a kite bought casually as a toy either when a child or with a child. A few of us ‘get interested’ and buy a second kite or perhaps make one. Many people now buy a two-line kite for fun on a beach.

If you are interested then I strongly advise that you make contact with fellow enthusiasts. It may be as easy as going to the local flying spot on a Sunday — or you may decide to contact the Kite Society of Great Britain. They will put you in touch with your local kite club and give you knowledge of local events. You will find out the location of any local kite store and good kite trading websites and if there is a local gathering that attracts a kite trader..

Obviously fellow enthusiasts are the best source of information on how to get more from kites. Kite clubs add something extra as many are introducing a safety code for their members. This becomes increasingly necessary, not particularly because single line flying has become more dangerous, but because power kiting (two or four lines, buggies, boards etc.) is inherently more dangerous and however good the flier, a damaged onlooker is more likely to think of legal action nowadays than some years ago. Local authorities, who tend to be the owners of flying sites, sometimes do not distinguish between multi-line and single line kites and seek to ban the lot. Safety schemes help to preserve sites as well as reduce damage. Most clubs now arrange for insurance — check what it is from your local club, or contact the British Kite Flying Association ([www.bkfa.org.uk](http://www.bkfa.org.uk)).

My only advice on choice of kite is to get something fairly straightforward from a kite specialist so that if conditions are right it will fly. Go for nylon fabric rather than plastic. Read the rest of this chapter and the next.

**Eleven Tips for Safe and Sensible Kite Flying (Exhibit 1)**

### **Section A — Pick the right spot**

- 1 It should be a clear open space — a park, a field or a beach
- 2 Do not fly downwind of trees or buildings
- 3 Do not fly in a thunderstorm or into a rain cloud
- 4 Do not fly over roads or near cables

### **Section B — Fly Sensibly**

- 5 Have your kite under control. No kite will fly in all wind conditions
- 6 Use gloves
- 7 Have a clearly-visible fixed point on the ground but don't leave it unattended with a kite up

### **Section C — Lines are important**

- 8 The 'best' line depends on the size of the kite, the intended windspeed and, of course, how high you wish to fly
- 9 If you cross lines with another flier, walk towards the other person. As usually the kites are flying at different angles to the wind, the tangle will move down the line to the two of you and it is then easy to sort out
- 10 Don't try to fly your kite on a very short line, say less than 20m. (We are not concerned with two line kites, but if we were, the most common beginner's error is to try to fly one on anything less than all the line supplied)

### **Section D — Lastly**

- 11 Leave the site tidy – pick up line, spars etc which can be dangerous

Exhibit 1 is a version of a demo that Tony Cartwright's Skystage puts on sometimes at a festival where the points made by the commentator are illustrated to interest spectators (e.g. Point 8 a small kite struggling to fly on a length of clothesline).

The next section (2) says a little on good practice when you first get on to the field. I will then review each of the sections above in a little more detail.

- Pick the right spot
- Fly sensibly
- Lines are important
- Lastly

The approach is a brief treatment of things which seem important to me. Not a comprehensive one; I'm not going to suggest where you put your suntan cream.

## 2 First Moves

If you are new to kiteflying, fly with a friend. Give yourself a good start by putting the kite together for the first time at home. With children rehearsal is vital. All the 'bonding' and 'problem solving' is much better done from the basis of a correctly assembled complete kite. On the field you have a wind to blow the bag and instructions away and it is so much easier to lose a piece in the grass.

When the kite has been erected, hold it by its bridle point upside down so that the lowest point of the kite is just above the ground. This is easy for a single spined kite such as an Eddy or a Delta. The kite should be balanced each side of its centre spine and the angle of the rear point above the ground should be about 30 degrees (this is the angle of attack mentioned in chapter 12). In more complex kites you should still look for balance, angle, correct bridling etc. on the field.

The next stage is to check that you can give out line quickly (see Section C below). If flying by yourself, hold the kite from the bridle point and let line out slowly. It is easier if you have a friend. By-standers who are not fliers are rarely reliable, they are given to launching your new kite upside down with a reflex gesture as if it has become electrified which hurls it into the sky at a multiple of its normal flying speed. However, the friend can be asked to take out about 20m. of line downwind and let go or gently toss it up on your instructions. If all does not go well then you might be glad you read the next chapter and at least knew the first two rules of kiteflying.

### **Now we need to discuss WIND.**

Most people think of wind in terms of its direction, its strength and whether the speed is variable (gusty). Kitefliers know that the wind will also be smooth or bumpy — sometimes called 'rolling', 'full of holes' or just 'bad'. People I have asked seem to think that airflow is usually 'smooth like water in a river'. Look at a river and you will see numerous eddies and little whirlpools only some of which are obviously the result of the irregular shape of its banks. Don Dunford wrote [1]

“wind is like a large number of giant sausages that move along at different heights and at different speeds. They curl upwards and downwards when they meet obstacles, and are constantly overtaking or being overtaken by each other”. The book is called ‘Kite Cookery’. Please be assured that it is concerned with kite design and has no connection with Jamie Oliver-style activity.

Even above a smooth field the wind might be bumpy and yet in such ideal conditions the wind for the first 10m. will also be affected by the drag of the land’s surface (sometimes called ground effect and a reason why meteorological measurements are taken 10m. up). So your immediate objective is to get your kite safely up through this lower level.

If the smooth field has buildings or trees, then these will cause eddies like those next to a riverbank. The effect is felt downwind roughly ten times the height of the obstruction. I used to fly regularly on a West London common where new fliers would come with expensive new kites, set them up in the shade of one of the chestnut trees round the edge and wonder why their kite wouldn’t fly, but mine would 50m. away in the middle.

Not only is the wind more turbulent near the ground but also there is often a ‘wind gradient’, meaning that the wind 50m. up is stronger. While that might be more than your kite needs obviously if you want a stronger wind for your kite you will want to get up into it.

Three points about wind gradient:

- i) It isn’t always there and anyway isn’t a smooth continuous effect — I was once surprised to find on a transatlantic flight which gave you all sorts of info (airspeed etc.), to see windspeed at 35,000ft registered as 1 knot.
- ii) The law says that you may not fly higher than 60m. (200ft.) anywhere in the UK. Kite events not near an airport often get permission to go higher — 1,500ft. is quite common.
- iii) If all goes well your kite rises, you let out line gently and soon you are flying at 60m. What to do if instead of smooth flight something dramatic is happening will be found in Chapter 12.

But suppose that when launched it doesn’t rise except if you pull on the line resulting in it flying towards you and gradually losing height. It could be that there just isn’t enough wind. But there are things to try to see if there is enough wind ‘up there’.

Firstly, walk back slowly, not winding in, so producing the effect of a stronger wind. If this allows you to let line out and gain height to a stronger breeze then fine; if not then stop walking before you fall over something.

Secondly, you can try what is sometimes called a ‘long launch’ or ‘high start’. Your friend launches the kite at least 30m. away and you pull in the line as slowly as you can while the kite climbs. When the kite is say 5m. up, let out the line slowly hoping not to lose too much height but to have the kite drift, still low but flying say

50m. away. Now pull in the line and the kite will rise, again drift the kite downwind and this time, or the next, when you pull in on the long line the kite will rise enough to get into a stronger wind. This process can be started with a very long line if the kite has enough lift — you can even long launch by yourself. Watch another kiteflier to see how it is done.

The important point is NO RUNNING. Why not? Surely children run around with kites. It may be good exercise and it certainly wears out the kite. But consider. Few people can run backwards successfully. Even fewer can run while looking over their shoulder at the kite. If the kite will only fly at the extra, say 10mph from running, it is unlikely to keep flying when you stop. In most cases a running speed pushes the kite into a gusty windspeed with which it can't cope and it crashes. An aware backwards walk: yes. Running: no.

If your kite has more major problems then Chapter 12 might help. Now returning to Exhibit 1.

### APick the right spot

It should now be obvious why you should be clear of buildings and trees. Being down wind of even a low cliff isn't a good idea as the wind rolls over the edge like water over the lip of a basin. Turbulence is a reason why a hilltop is not a good site — but the uphill part with the wind behind you might be.

There are many cartoons on the theme of kite-eating trees. The reason why this happens is not simply that trees have a malevolent disposition towards the beautiful artefacts that fly above them. It is more because if you do fly your kite not far above the downwind side of a tree, turbulence may cause the kite to drop and it, or its line, to be caught. We have all done it; I once spent several evenings a week for 5 weeks poking a (very valuable) kite from a tree.

Check what is underfoot as you may find yourself moving fairly quickly while looking up into the sky. Frank Watlington [2] wrote 'Don't fly your kite near holes or cliffs for you may easily fall over in the excitement of getting the kite up'.

It is not sensible to be in a situation where your kite might fall across a road, or wrap itself around a telephone cable or power line. In the latter cases leave it alone and contact the power supplier or telephone company. A quote from Maxwell Eden (in such circumstances) [3] 'walk away without trying to retrieve it. Your next kite will be a better one because you will still be alive to fly it.'

The danger from a lightning strike is real. There is an argument as to whether Ben Franklin really did his famous experiment of launching a kite into a storm and producing long sparks at ground level [4]. But if he didn't —though he certainly invented the lightning conductor— others undoubtedly did.

## BFly sensibly

It may not be you, or your kite's day; but certainly if your kite is out of control it won't be the other flier's day and crashes can hurt people and not merely things.

Always have gloves in the bag. Good ones called 'riggers gloves' are often sold in bargain stores for £1. Surprisingly small kites can damage hands.

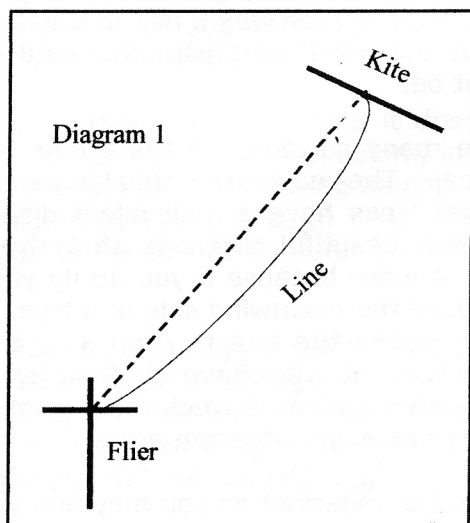
Some sort of ground anchor is a good idea and essential if you are flying alone. A popular anchor is a dog exercising screw (looks like a giant corkscrew), big kites use metal pegs and hammers, and small kites on grass can be controlled by a meat skewer. Remember to make the anchor visible (e.g. by an orange nylon streamer), make sure it is strong enough for the job and hang something on the line if you are not close to it.

### A fixed point

- allows you to rest
- gives you time to get your next kite ready
- enables you to fly two kites at once
- is vital to allow you to get a big puller down.

Again, most of us have done it. With a fixed point you can put your gloved hand over the line and walk towards the kite, bringing it down with least effort

## CLines are important



The line is the essential characteristic of a kite (see Diagram 1). Any depiction of a kite shows the line. Good lines help a kite to fly better; bad lines drag it down or break and lose it. Look at the line connecting the kite to you and it always hangs in the curve shown in the diagram. Of course if the kite is pulling hard the deviation may be very slight. Line has that shape because of its weight (pulling down) and air resistance (drag) which pulls it back. Too much of a curve shows too heavy a line for the lift from the kite. Line drag is not of great practical importance unless you are

using unusually fat line for its strength or, most significantly, when flying high. The cross section may be less than 1mm but if you have 1000m. out...

Most line supplied 'free' with a kite is inadequate in three ways:

- it is poor quality; twisted not woven
- it is too short
- the plastic winder is too small so winding in is very slow

You are looking for a line that is light and thin for its breaking strain. While you don't need some of the 'high-tec' lines that are primarily on sale for two or four

liners, you should get at least a decent woven polyester. Woven as it tangles less easily than twisted. For line strength it is best to be guided by the seller's experience.

There was an old American rule that the breaking strain (in lbs) should be 3 times the area of the kite (in sq.ft.). So if you are flying a Della Porta (Chapter 6) of 2ft x 2ft = 4 sq.ft., your line should be at least 12 lbs. I would use line 3 times that strength. Firstly kite line strengths aren't guaranteed. Secondly they have to endure considerable shocks near the kite as it responds to wind-speed changes. Thirdly you are bound to have at least one knot connecting line to bridle and many knots reduce line strength by 50%. And if you do fall foul of a tree, hard pulling might be required.

Length of line is worth some thought. There are considerable advantages in having a single length of line (if only because knots can weaken it) but why should you need more than 60m. (maximum height) + say 50m. for the flying angle and line belly? Well you might fly in circumstances where you can exceed the usual 60m and it can be nervous fun to fly 200m. up for the first time. The other reason for buying more is that if you fly frequently then it is a good idea at the end of each season to get rid of the last 10m. This has had most wear from shocks, dragging on the ground and even exposure to sunlight (some fliers simply reverse the line on the reel).

The third problem with the 'free line' is that you need something better than a fiddly small winder — a crushed drinks can is better than that. While there are beautiful handmade 'deep sky reels' available, for most purposes a winder used for fishing hand lines or one of the many versions of 'hoops' will be fine. You need something that is fairly tough (they get bounced on the ground), big enough to take the line easily (you don't want to have to look at it rather than the kite) and finally large enough that each turn takes in an appreciable length. Remember that if you wind directly on to your reel (or whatever) while the line is tight, many lines stretch under load, contract when wound and have been known to crush quite solid cores.

One feature of your kite which might cause problems is its bridles — not a simple 2-leg bridle but multiple bridles, particularly on soft kites. In the case of sparred kites you can wrap the bridles around the longest spar — the only problem can be their getting rolled over when putting the kite in a tight bag. Things can be more difficult with a soft kite where you really want to be able to hold the point where they all come together, give it a shake and the kite inflates and rises. For some designs this can be very difficult. The only help I know is when putting the kite away, tie the ring at the gathering point of the bridle to a point on the kite. Then when you open it up again, at best you can't get the bridles knotted.

## DLastly

Be responsible and leave the site clean. Spare lengths of line can trouble wild life. Some kites use carbon fibre spars — if one breaks take it home, the stuff produces non-degradable splinters.

Above all — enjoy.

It wasn't the New Zealander Peter Lynn but the American Wayne Brummitt who said “the sky is big enough for all of us”.

## **3 Bibliography**

- [1] Dunford, D. (1977) *Kite Cookery*.
- [2] Watlington, F. (1980) *Bermuda Kites*.
- [3] Eden, M. (1998) *The Magnificent Book of Kites*.
- [4] Tucker, T. (2003) *Bolt of Fate*.