

# Fighter Kite Tuning & Adjusting

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The following information will assist in tuning a North American style fighter kite that has a bamboo spine and a 3 point bridle.

**First check the balance of your kite.** Place a straight edge on the back side of the kite connecting the two wingtips and make a mark on the spine where the line connecting the wingtips crosses the spine, let's call this mark the 'wingtip line mark'. Now place your kite's spine on your fingertip or the eraser end of a pencil and adjust its position until it is balanced, in the nose to tail direction. Make a mark on the spine at the balance point.

Typically the location of the balance point is toward the nose of the kite from the 'wingtip line mark'. If the location of the balance point is located more than 1.25" (32mm) toward the nose from the wingtip line mark, the kite will not easily enter into a spin and will spin slowly, the kite will be more stable in its flight path.

As the balance point moves closer to the 'wingtip line mark', the kite's spinning and its willingness to enter into a spin will increase.

If the balance point is located toward the tail from the wingtip line mark, the kite will spin in a lopsided circle that has the tail of the kite at the center of the spin.

The balance point of a kite is determined by the construction of the kite. However, it is very easy to change the location of the balance point with the addition of putty. Add small amounts of putty to the nose or tail of the kite, depending on which direction you want to move the balance point. Place the balance point where you think the spinning characteristics of the kite fit your preferences. Once you fly the kite, you may want to change the location of the balance point, if so, using putty makes it easy.

**Check the curvature of the kite's spine.** For the kite to fly as it was designed, the spine must have a slight "rocker" or bend in it. The location of the spine's bend is important for predictable kite performance.

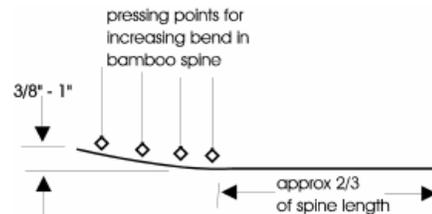
The bend should be uniform and begin at the nose of the kite and extend along the spine to a point about 1" (25mm) toward the nose of the kite from the 'wingtip line mark', or to the balance point.

The direction of the spine's bend must be outward; the curved portion of the spine needs to push the kite's skin toward the front of the kite. When you look at the front of the kite, the bend of the spine is projecting toward the front of the kite.

If the spine has no curve or bend, or the bend is not sufficient, the kite won't spin or fly as it was intended; it will fly more like a static single line kite.

To increase the spine's bend place the front face of the kite against your stomach and gently press the backside of the spine into your stomach and at the same time gently push the nose of the kite about 1"-2" (25-50mm) away from your stomach. The heat from your body

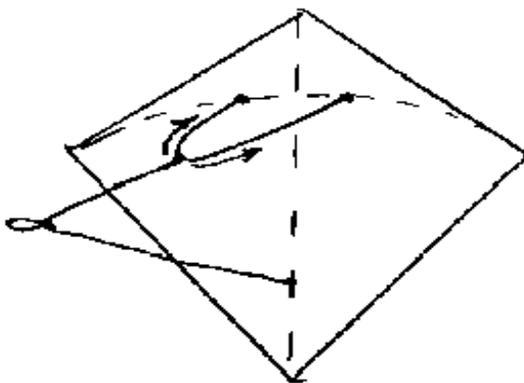
together with your gentle pressing on the backside of the spine will create a slight curve or bend in the spine. **CAUTION: Bamboo can be broken if you try to bend it sharply at one spot.** Gently press on various points along the back of the spine in the bend area of the spine, beginning at the nose. This will produce the modest “rocker” bend that is ideal. The remaining portion of the spine that is from the 'wingtip line mark' toward the tail should be arrow straight.



Amount and Location of Spine Bend

**Next check the location of the Tow Connection Loop on the lower bridle.** When the kite is hanging, indoors or in no wind, held by the Tow Connection Loop, the nose of the kite should be elevated about 1.5"-3" (35-75mm) above the tail of the kite. If it's not, slide the Tow Connection Loop along the Lower Bridle leg until the nose is elevated 1.5"-3" (35-75mm) above the tail. During flying, you will probably adjust the Tow Connection Loop several times before it is “just right” for your flying preferences. This is just an initial starting point that will position the kite so it will fly.

**What to do If Your Kite Doesn't Fly Straight.** While flying your kite, if it consistently curves, spins or veers to one side, and won't fly straight, your kite's bridle needs a small adjustment. You adjust the 'right-left' balancing adjustment of the bridle. The 'right-left' balancing adjustment is the adjustable larkshead knot on the upper bridle leg or 'yoke'.



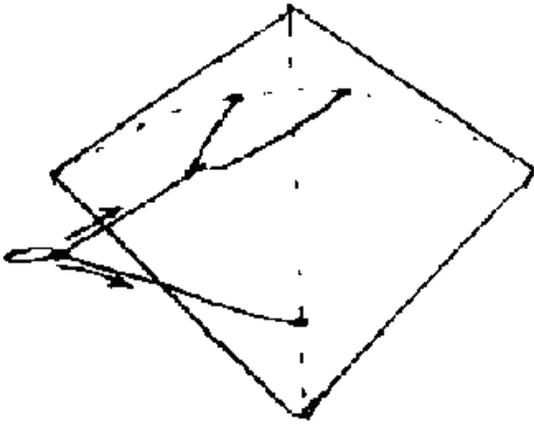
**Here's what to do.** If the kite is spinning or turning constantly to the right side, it is telling you the length of bridle line on the right side is too short. So move the **knot** on the 'yoke' to the left, this lengthens the right portion of the bridle yoke.

If the kite is constantly turning or spinning to the left, move the **knot** on the 'yoke' to the right.

This 'right-left' balance is a very sensitive adjustment. Move the knot only about 1/64"

(0.5mm) at a time, then fly the kite to see the results of your adjustment. Continue with this procedure until the kite is flying straight.

**NOTE:** All the references to right and left are based on positioning the front face of the kite so it is facing you, like it would be when you are flying it.



**Controlling Your Fighter Kite's Spin.** The Tow Point adjustment is the bridle adjustment that determines the kite's tendency to spin. The spin rate itself is controlled more by the curve of the spine and the balance of the kite.

Moving or sliding the tow connection loop's larkshhead knot along the lower bridle line toward the tail of the kite will reduce the kite's tendency to spin and make the kite more stable. Moving the tow connection loop larkshhead knot toward the nose of the kite will increase the kite's tendency to spin.

Positioning the tow connection at an extreme position; whether nearer the nose end or nearer the tail end of the lower bridle leg, will create a bridle setting that may not allow the kite to fly.

**If you are new to flying fighter kites**, attaching a temporary tail made of plastic or ribbon approximately 1" (25mm) wide x 4' (1.2m) long to the tail of the kite's spine slows the kite's forward speed and reduces its tendency to spin. This is a great aide in learning to control a fighter kite. After you gain control over the kite's behavior with the tail, remove about 1/3 of the tail's length, this will make the kite livelier. Fly the kite until you feel in control again, then reduce the tails length again. By the time you remove the temporary tail completely; you won't be so surprised by the actions of the kite and will have much more confidence controlling it. To attach a temporary tail to your fighter kite, use a small piece of masking tape and tape the tail to the backside of the spine at or near the tail of the kite.

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