

# FIGHTER KITE BRIDLES & HOW TO MAKE THEM

A fighter kite can have any number of bridle arrangements and each of them will work just fine. It is often a personal preference of the kite maker or designer that determines the specific bridle arrangement for a specific kite. After making a few different bridles, if you prefer one over others, you may want to use your preferred bridle arrangement for all fighter kites you make regardless of what is recommended by the kite designer.

A bridle is usually identified by the number of connection points it makes to the kite frame; for example, a 2-point bridle is connected to the kite frame at two different points, a 5-point bridle is connected to the kite frame at five different points. The bridle connections are made to either to the bow or to the spine or in some cases both.

**Why would you choose a 3-point bridle instead of a 2-point bridle?** The difference between the two is the degree of adjustment you have. A 2-point bridle has a very limited range of adjustability regarding the right/left balance. The right/left balance adjustment is how you adjust the kite so it will fly in a straight path. So if your kite is turning or veering to the right all the time, for example, with a 2-point bridle you may not be able to correct this imbalance with the bridle alone. It probably will not have enough adjustment range.

With a 3-point bridle you have much more adjustment range for the right/left balancing of the kite. So if your kite is veering or turning to the right all the time, as in the above example, the 3-point bridle will more than likely have enough adjustment range to allow you to completely correct this imbalance using the bridle adjustment alone. This added adjustment range is the primary reason the 3-point bridle is the most popular among makers of American style fighter kites.

**Traditional bamboo/paper fighter kites typically use a 2-point bridle; most American fighter kites use a 3-point bridle.**

**Bridle line** can be almost any line you want to use, however the most popular are cotton flying line, braided Dacron and braided Spectra. The cotton can be heavy cotton flying line such as Panda 8 or T13. Braided Dacron and Spectra are usually bought as fishing line around the 12# to 20# test strength. Some kite makers wax the bridle lines, others don't.

**Poking holes** in the kite skin or sail is required to allow the bridle line to attach to the bow or spine of the kite. There are two popular methods for creating the holes in the skin; one is to use a large eyed needle and thread the bridle line through the skin and around the bow or spine; the other is to melt a bridle line hole in the skin with a small diameter soldering iron and then feed the bridle line through the hole.

For American style fighter kites the most popular method is to melt a small hole in the skin of the kite because the skin materials are typically plastic film or polyester or nylon ripstop which easily melt. Since traditional fighter kites are made of paper/bamboo, and paper doesn't melt, a needle is used.

## MAKING A 2-POINT BRIDLE

The simplest and easiest bridle to make for fighter kites is the 2-point bridle. It consists of two pieces of bridle line; one about 30" long, the main bridle line and one about 7" long which becomes the tow connection loop.

One end of the long main bridle line is tied to the crossing point of the bow and the spine; it is tied so that it ties the bow and spine together. The other end is tied to the spine about 6" from the tail of the spine.

The exact finished length of the main bridle line may vary a little based on the specific kite, but a good rule of thumb is to make it long enough to reach within ½" of the wingtip but not long enough to extend beyond it. After determining its proper length, then tie it to the spine.

After the main bridle line is tied at both ends to the kite, cut another piece of bridle line about 7" long; fold it in half and tie the loose ends together forming a loop approximately 3" long.

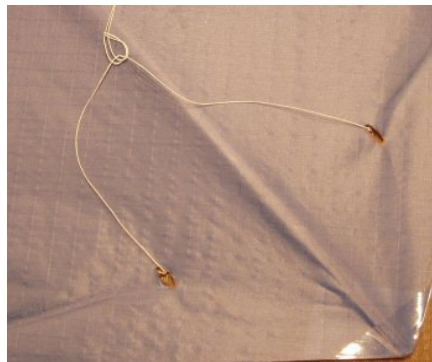
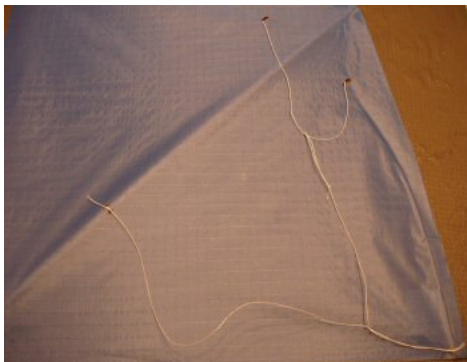
Use a larks head knot to attach the loop to the bridle line. This loop is the tow connection loop; it is where you attach your flying line to the kite. A larkshead knot is used to attach it to the main bridle line because the larkshead knot is an adjustable knot. It will lock in position and can be easily unlocked, moved and relocked.

## MAKING A 3-POINT BRIDLE

Making a 3-point bridle requires 3 pieces of bridle line; one about 12" long called the upper bridle yoke, one about 28" long called the lower bridle line and one about 7" long which will become the tow connection loop.

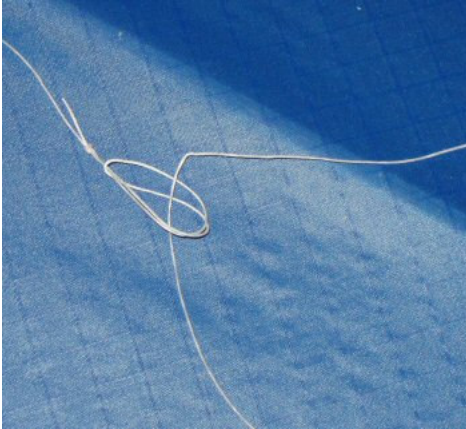
A 3-point bridle is connected to the kite frame in three places. Two bridle connections are made directly on the bow; one connection point is on the right side of the spine and one on the left side; each and both are equidistant from the spine. The third connection is made to the spine about 6" from the tail.

After melting holes in the skin for the bridle connections, tie one end of the upper bridle yoke line to



the bow, make sure the remainder of the line is on the front face of the kite, tie the other end to the bow on the other side of the spine. When finished tying the upper bridle yoke, you should have a loop or yoke of line on the front face of the kite.

At one end of the lower bridle line fold over about 5" and make an overhand or figure eight knot to make a loop about 3" long.



Attach the loop on the lower bridle to the upper bridle yoke using a larkshead knot. Tighten the larkshead knot so it is positioned in the center of the upper bridle yoke. You will next tie the loose end to the spine, but you want the finished length so it won't extend beyond a wingtip if pulled toward the wingtip.

The most common method for determining where on the spine the lower bridle connection should be tied is to measure from the tail of the spine  $\frac{1}{3}$  the total length of the spine and make a mark on the spine. This is the lower connection point for your lower bridle line. For example, if the spine of the kite is 18" long, then you would measure 6" from the tail end of the spine and that

would be the lower bridle connection point.

Poke one end of the lower bridle line through the skin, bring it around the back of the spine and poke it through the skin and tie. However, before tying the lower bridle connection, hold the loose end of the lower bridle line while you gently pull the lower bridle line toward one wingtip. Allow the length of the lower bridle line to be long enough to reach within about  $\frac{1}{2}$ " of the wingtip, then tie the loose end of the lower bridle line to the spine. You don't want the bridle line to be long enough to wrap around a wingtip while your flying the kite, it will more than likely cause a crash.

Fold over the tow connection loop line and tie the loose ends together forming a loop approximately 3" long. Using a larkshead knot attach it to the lower bridle line.

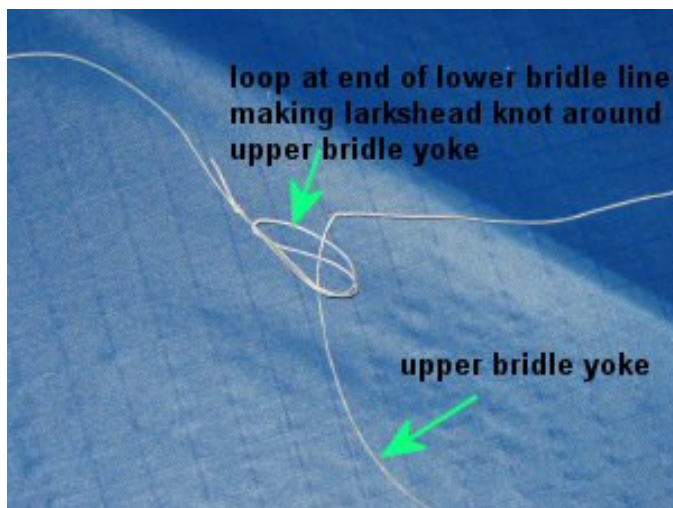
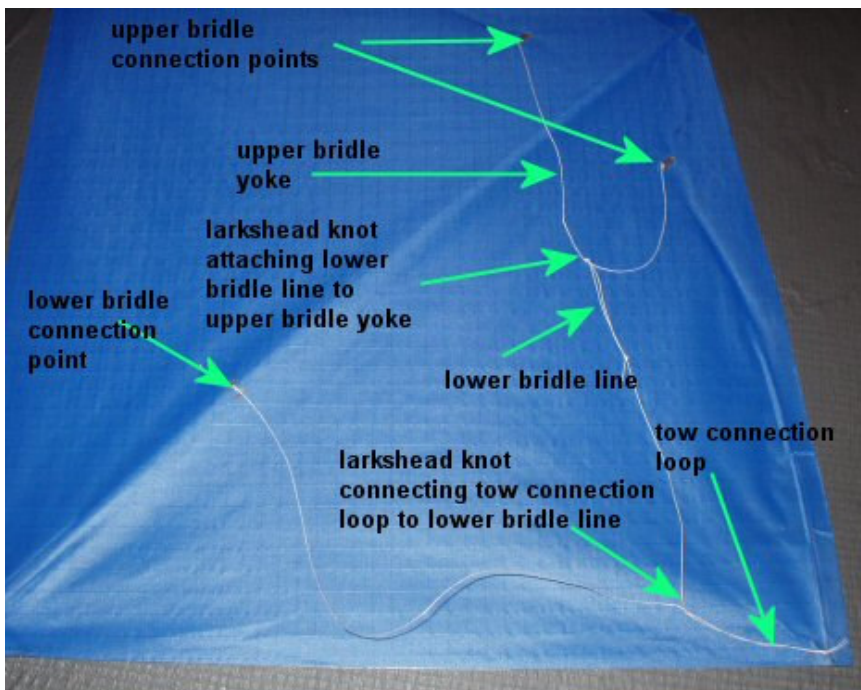


To correctly position the tow connection loop on the lower bridle line hold the kite by the tow connection loop. Slide the tow connection loop along the lower bridle line until the nose of the kite is about 1-1/2" – 2" above a table top when the tail of the kite is just touching the top of the table. The kite is at an angle with the nose being about 1-1/2" higher than the tail. Lock the larkshead knot in this position.

With the tow connection loop in this position, you have the best chance of having a successful first flight with your kite. However, don't be afraid or hesitant to move the tow connection loop either direction to see what difference it makes to the flight of your kite. You may prefer the feeling and performance of the kite when the tow connection loop is in a different position than is mentioned above.

As the wind speed changes during your flying session, you'll probably want to move the tow connection loop as well. These adjustments are a normal part of fighter kite flying....adjusting the bridle to make the kite perform as close to the way you want it to as possible. This is the reason the bridle has adjustments.

NOTE: The photos below show the names of the bridle parts as a reference:



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