This device is an inflatable elbow strut for a kite that becomes substantially rigid when inflated, and pliable when deflated. This elbow strut is integrally formed with an inflatable leading edge of the kite and extends rearwardly towards the trailing edge of the kite. This inflatable elbow strut increases kite steering responsiveness which providing a safer design than a fixed rigid structure.
ELBOW STRUT (VORTEX STABILIZER)

[0001] The elbow strut invention is novel kite wingtip construction. The uniqueness of this construction is that the leading edge bladder is bent at a sharp angle at the kite wingtip so that the inflated structure of the leading edge continues along the wingtip to the trailing edge of the kite canopy. This inflated cylinder that runs along the kite’s wingtip provides for rigidity in the wingtip when the cylinder is inflated, but the kite can fold into a small package when it is deflated. A rigid wingtip is advantageous to the user because it makes the kite steer more responsively, and over sheet more effectively. The elbow strut was designed to replace a rigid, hard fiberglass batten. The advantages of the elbow strut is that the cylinder remains rigid because of its inflated structure, but has no hard surface that may impact someone. The elbow strut increases user friendliness because the elbow strut’s bladder is part of the leading edge bladder, and it inflates as you pump up the leading edge. It also reduces rigging/de-rigging time and eases handling of a deflated kite because the cylinder deflates and the kite can roll up smaller and easier as compared to a kite with a rigid fiberglass batten.

[0002] FIG. 1 shows:
[0003] 1. Inflated leading edge
[0004] 2. Inflated body strut
[0005] 3. Inflated elbow strut
[0006] 4. Kite canopy
[0007] 5. Abrasive resistant pad which protects against wear and tear
[0008] 6. Trailig edge of the kite
[0009] 7. Kite lines which control kite

[0010] FIG. 2 shows:
[0011] 1. Leading edge
[0012] 2. Skin of kite canopy
[0013] 3. Trailing edge
[0015] 5. Abrasive resistant pad which protects against wear and tear
[0016] 6. Velcro® closure access point which aides in replacing internal bladder

[0017] FIG. 3 shows:
[0018] 1. Inflated cylinder of elbow strut
[0019] 2. Hook velcro® side of bladder access opening
[0020] 3. Abrasive resistant pad which protects against wear and tear
[0021] 4. Leading edge bladder
[0022] 5. Skin of kite canopy
[0023] 6. Loop side of velcro® closure for bladder access opening
[0024] 7. Velcro closure access point which aides in replacing internal bladder

1. A kite device, comprising:
   a kite structure having an inflatable leading edge and a trailing edge, said leading edge having right and left ends defining right and left wingtips;
   inflatable elbow struts extending rearwardly from each of said ends at a strut angle to said trailing edge;
   wherein each of said inflatable elbow struts is integrally formed with said inflatable leading edge;
   wherein said strut angle is less than or equal to ninety degrees;
   whereby said elbow strut is substantially rigid when inflated, and becomes pliable when deflated.

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