Kite Design Preliminary Report

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Parts of a Kite

Sail or Cover:
- front, decorated part of the kite
- made of paper, silk, nylon or other manmade material

Spars:
- spars create support and shape the kite and can be bended or straight
- spars can only provide support for the kite cover or go all the way around the outer edges of the kite
- made of bamboo, fiberglass, plastic or other lightweight material

Tails and Drogues:
- without tails or drogues a kite could spin, twist or dive out of control
- hung along the kite wherever extra weight is needed
- made of cloth, paper, plastic or just about any other lightweight material
Parts of a Kite

Keels and flaps:
- three or four sided geometric shapes attached to the kite cover, usually at the center or at the bottom of the kite
- give kites greater stability and control in varying wind conditions

Bridle Lines, Flying Lines and Towing Point:
- strings or lines that are attached to the kite cover, spars or keels
- one of the most common ways to tie the strings it to attack it to a ring with a bowline knot
Diamond Kite

- Most simplistic and oldest kite. One book from 1618 illustrates children playing with diamond kites.

- The diamond kite is created by using two sticks laid perpendicular to each other which creates the spar of the kite.

- Sails are usually made from paper or nylon and are laid on top of the sticks to create the Diamond shape.

- Diamond Kites have been used for, aerial photography, meteorological observations and the transmission of long-range radio signals.

- Box Kites proved to be much more effective at all of these things but were invented much later in history.
Box Kite

- Designed by Lawrence Hargrave
- Develops the most lift out of all of the other models
  - Used to list a human in testing
- Meant to reach a larger height
  - Military used to observe threats at distances
  - Pilots in military used to transmit radio signals when emergency arose
  - Used for measuring atmospheric conditions
- Several can be linked together for more lift
- One kite reported to go over 2000 feet into the air
Delta Kite

Origin:
- Delta kite is a copy of the Chinese bird kite, created in the 1940s
- architect named Wilbur Green made the first prototype

Appearance:
- delta kite is a triangular kite, bat/bird shape
- delta kite is an isosceles triangle with a very long base and sometimes a smaller triangle is added to the tail to give it more support

Functions:
- can be flown for long time periods with little wind due to thermal lift, the kite glides similar to a bird
- delta fishing kite
  - specially designed fishing deltas have extra large wind ranges and the best tacking ability of any other type of fishing kite
Sled Kite

- Invented in the 1950s by William Allison
- Has been changed many times since the original design.
- One of the most popular kites along with the diamond and delta.
- Contains two straight spars running from the front of the kite to the back, along with a tail hanging off each spar.
- Most Sled Kites are smaller in size for more stability.
- Can be used in kite fishing but mostly used for recreation.
- Fishing Sled kites are designed to fly low so they can take the line far away.