



the aerial eye

a quarterly publication of the aerial photography committee
of the American Kitefliers Association
volume 1 / number 3 / summer 1995

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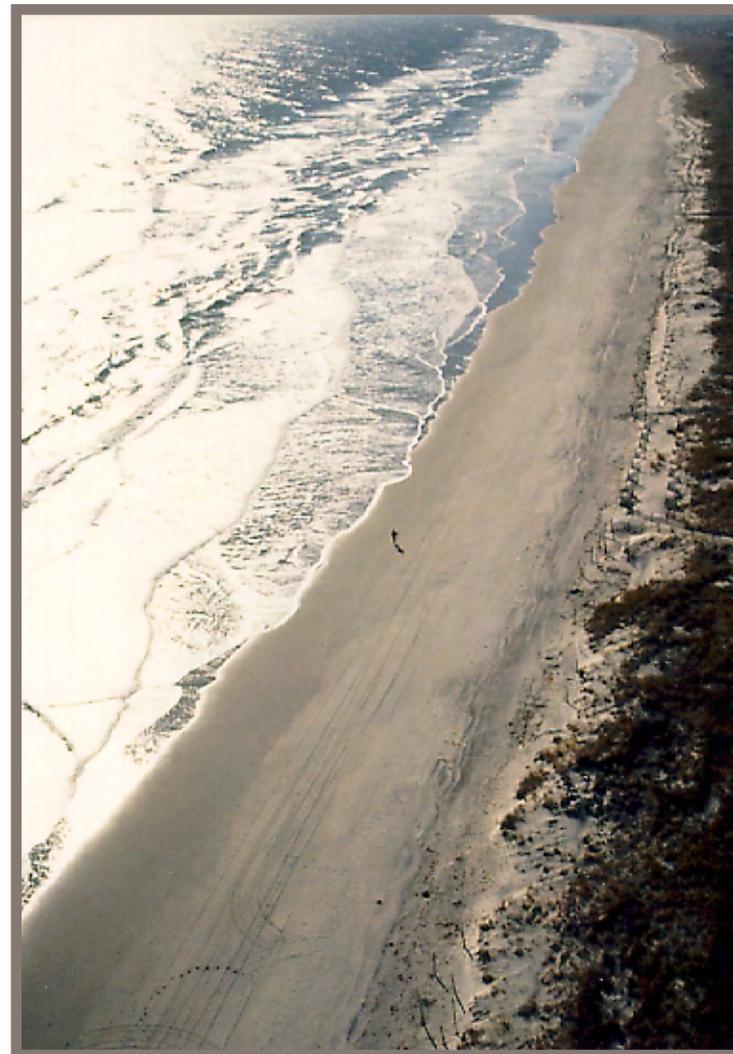
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overseas

Sunset, Whale Beach, NJ, by Steve Eisenhauer



*Beachwalker,
Avalon, NJ
by Steve
Eisenhauer*

LIFTERS AND LINE

the aerial eye

This newsletter is produced by the Aerial Photography Committee of the American Kitefliers Association. It is our goal to publish quarterly, in August, November, February, and May.

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send us your words & pix

Whether you're an AKA member or not, you are encouraged to send us articles, letters, comments, photos and sketches that pertain to kite aerial photography.

Text via Email or on 3.5" (9cm) high density disk (Mac or IBM in ASCII text format) is preferred, but typed text or handwritten letters are welcome too. Likewise, diagrams in Macintosh PICT, TIFF, or EPS formats are best, but pen drawings, preferably on white paper, or just quick sketches on the back of the proverbial napkin will work too. We're most concerned with getting information and don't want to discourage contributors.

Photos may be sent as negatives, prints or slides. We can also read Kodak PhotoCD, or Macintosh disks in EPS, PICT, or TIFF formats. We'll keep the prints unless you direct otherwise, but return all negatives, disks, CDs, and slides—eventually.

Send everything to Brooks Leffler at the address below.

**our feature this issue:
kites, line, & winders**

All my kite experience has involved searching for good aerial photography kites.

Which kite and line is best for you depends on your flying style, the weight of your rig, your cradle suspension type, wind speed, the surrounding topography and the height you fly.

The guiding principle is to find a kite/line combination that works for you, then practice until you understand how it behaves in a wide range

of wind conditions. You might have to change kites to increase or decrease sail area in very light or heavy wind conditions, but you should find a single combination that works well most of the time.

We won't try to summarize all kites and lines (an impossible task), but in the following pages you'll find the opinions of several KAPers, based on years of flying experience.

— *Steve Eisenhauer*

fly-fishing in the sky

by *STEVE EISENHAUER*

My flying style involves an attitude adjustment: I think like an aerial fly-fisherman. Using a big "Stratospool" two-speed reel that has a brake to slow down the line release, I crank my kite back in and only occasionally walk it down (see page 6). My kite bag contains one 4-foot (1.2m) FACET BOX kite and six DELTA-CONYNES: a 13' (4m), a 10' (3m), and four 8' (2.4m) kites. They're my fly-fisherman's flies.

To minimize vibration with my 250 lb (115kg) Dacron line and to make the whole experience more enjoyable, I use just enough sail area to barely lift my camera rig to the proper elevation. I prefer adding a few smaller kites to my line rather than using one really huge kite. In light winds my 13' will be

at the top with its two streamer tails, and below it will be one or two 8' kites without streamer tails or drogues. In strong winds, my 10' alone provides more than enough sail area. And in really strong winds, my 4' Italian-made facet box kite gives me enough lift. I get as much enjoyment from the act of fishing with my aerial flies as from actually catching photographs.

All spars on my delta-Conynes are fiberglass tubes. Since my kites have been purchased from mail order kite suppliers, I've had to replace some of the stock wood spars with fiberglass; the only exception is the basswood cross spar (spreader) on my 13' kite.

• *continued on next page*

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fly-fishing • continued from page 3

The spreader on my 10' kite is a fiberglass rod inserted into a fiberglass tube that is taped in place.

Any spars that are in two or three sections have been permanently epoxied together. Consequently, my kite bag is six feet (1.8m) tall. But my set-up time is reduced (just put in the cross spar and send up the kite), and I don't have to worry about whether every section is assembled properly. If you're putting up three or four kites, having single section spars simplifies the process.

FOIL FOIBLES

FOILS are particularly intriguing: they pull hard, they stuff into a small sack without any rigid spars, and some of them fly nearly vertical which means you use less line to get your camera up high. But custom parafoils are very expensive and inexpensive ones can be hard to tune. Other concerns are their near-vertical flight which provides a less stable suspension source for your camera cradle, and the tendency of parafoils to collapse when the wind dies or changes direction.

I own three foils but no longer take them from their bags. I believe they are invaluable for KAPers pressed for space, but for consistent use with an expensive camera rig I find them not as predictable as some other designs.

BIG D

Big DELTA kites are good light wind kites and, when properly outfitted with a drogue or heavy tail, can be used in higher velocity winds. Craig

Wilson describes his work with these kites on page 8. I've used small deltas only on occasion to lift my lightweight intervalometer camera rig. They don't seem to have as much lift as my delta-Conynes, nor do they "parachute" as slowly when the wind dies. But, like my delta-Conynes, they are easy to launch unassisted; you can "long line" them into the air quickly. I just wish deltas were as easy as delta-Conynes to "train".

OTHER LIFTERS

ROKKAKUS are a common lift kite for overseas KAPers. I've never flown one but understand they have a wide wind range and perform capably. CODY kites are also good lift kites in higher wind velocities. I used a 6-foot (1.8m) Cody for awhile and was pleased with its stability. It is a high angle flier in high winds (although this probably can be adjusted by changing the bridle) so my cradle was a little fidgety hanging from the line. Codys have more spars and are more difficult to set up. But for winds beyond the range of my current kites, I'll probably soon buy or build a fiberglass-tube-sparred Cody. It's a time-tested design.

LINE FLIES TOO

Kites fly differently with 250 lb (115kg) Dacron polyester than with 200 lb (90kg) Kevlar® aramid. I almost always use 250 lb Dacron so it's become my standard of comparison. It is heavier and thicker than Kevlar, so gravity pulls it down more and the wind pushes it back more. Put 1000' (300m) of both Kevlar and Dacron in the air and the differences are quite

noticeable. A thousand feet of 250 lb Dacron weighs about 32 oz (900g); the same amount of 200 lb Kevlar weighs about 12 oz (340g). This difference is a lot of weight. The reason I compare 250 lb Dacron with 200 lb Kevlar is that line is only as strong as its weakest link — its knots — and all kitelines have at least one knot. Dacron knots are reputed to maintain 80 percent of their strength when knotted, hence the effective working strength is 200 lb (90kg). Sleeved Kevlar knots should maintain 95 percent of their strength, for about the same working strength.

Whether these line differences keep me from getting the same photographs is an arguable point. I prefer Dacron since it feels better in my fingers, it lets me quickly tie/untie knots, and it forces my delta-Conynes to fly at lower angles because of the extra wind/gravity forces. Kevlar is abrasive and can cut like a knife, but it does allow you to lift more weight with your kite or use less sail area to lift the same weight. It's also smaller in diameter than equivalent-strength Dacron, so it's less visible in photos.

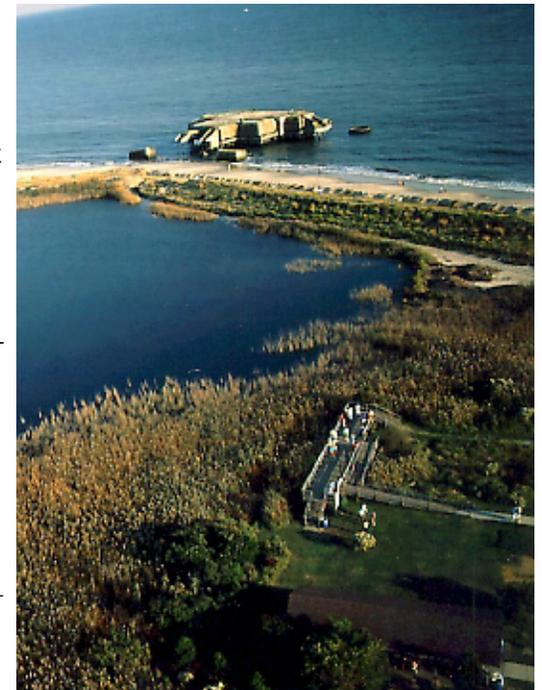
LINE LOADING

Regarding line strength, there are rare times I fly more than 100 sq ft (9m²) of sail area on 200 lb line, and other times 40

sq ft (3.7m²) on 250 lb line. If you're flying near houses, highways, power lines and people, or you're a novice flyer, try not to exceed a 6:1 ratio of square feet of sail to line strength. If you're confident of your skills and equipment, you can push this ratio during light wind conditions. Remember, a good flyfisherman uses 5 lb (2kg) line to bring in an 8 lb (4kg) fish.

But also remember that if your line breaks or you drop your winder then your camera-carrying kite might end up in the next county or in the path of an airport landing runway. A lightweight kite can fly many miles, and you might not have enough insurance if it lands on a busy highway.

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Cape May Point, NJ, by Steve Eisenhauer. WWII fortification and hawk-watch platform.

and for my fly rod & reel . . .

text and photo by STEVE EISENHAUER

A good winder should be capable of letting out line smoothly and quickly. I believe it should be a reel with a crank, with two speeds: a slow speed with a lot of leverage, and a fast speed for quick retrievals. It should also have a brake to slow it down and stop it. If you enjoy strenuous physical exercise many types of winders are available for you. If you're a little lazy, like me, your selection is pretty narrow.

I first used one-speed H-shaped fiberglass bobbin reels (don't buy plastic: tightly wound line can crush them). These reels are available in many different sizes and styles, and in one or two-speed versions made of wood or fiberglass. I still use them to store extra lengths of line. They are also handy for backpackers, bicyclists, motorcyclists or anyone who needs a compact, lightweight reel. When used with a parafoil or a kite with spars cut into 4 or 5 fitted sections, all the equipment needed for kite aerial photography will fit into a small bag.

These reels are inexpensive and, with a little practice, will let line out in a controlled fashion. Reeling in 1000 ft (300m) of line is different: it can be a long arduous chore.

I now use "Stratospool" reels exclusively. My Stratospool #24 is 33 inches long (86cm), weighs 6 pounds (2.7kg), holds 1600 ft (490m) of line, and costs about \$95.00. I have it loaded with 600 ft (180m) of 250 lb (115kg) Dacron

at top, 1000 ft (310m) of 300 lb (135kg) Kevlar at bottom.

My Stratospool #16 is smaller and lighter, holds 1200 ft (365m) of Kevlar line, and costs about \$80.00. Both reels are wooden (so they float in water), both take up 16 inches (40cm) of line per revolution, have a dual-lever brake bar for slowing or stopping revolutions, a two-speed crank handle, and a strap to lock the crank in place.

I use the Stratospool 24 most of the time. Its longer crank gives me more torque when taking in line, and the Dacron line at the top is softer and safer than Kevlar. Dacron line has more stretch than Kevlar (the kite and camera cradle are not as responsive and bounce up and down a little more), but in most wind conditions I can get the same pictures using either line.

For safety reasons I try to avoid flying above 500 ft (150m) so I rarely use the Kevlar line at the bottom of the reel. When I do fly high, the reduced weight and stretch of Kevlar is desirable.

The Stratospool 16 (equipped with all Kevlar line) is used for light winds or for high winds with a smaller kite. I never use Kevlar line when people are on the ground below my flight path: if the kite comes down the Kevlar line can cause severe cuts. Although the Stratospool 16 does not have the torque of the Stratospool 24, it is more manageable for smaller people who

are careful not to fly too big a kite. As I become more advanced in my kiteflying skills, I expect to use the Stratospool 16 more. My fascination with flying high has been tempered by safety concerns and my desire for more controlled and haze-free pictures from lower altitudes. I will probably put 500 ft (150m) of Dacron line on the top of this reel's line, similar to what I've done with my Stratospool 24.

One potential problem with Stratospool reels is the danger of the spinning crank when line is let out quickly. Until I learned to be careful, the spinning crank occasionally hit and bruised my right wrist. The wooden crank arm on the Stratospool 24 extends 10 inches (25cm) from the spool center. I'm convinced you'll be knocked unconscious if your head gets in the way of the spinning crank arm. Don't let your children use this reel unless they're properly trained and advised of the danger.

The only change I've made to my Stratospool reels is the addition of a safety line. This line is fastened to my belt (or my canoe's seat if I'm on the

water) when I need both hands for a task such as reloading film or changing batteries. Obviously, you should never use this safety line to fly your kite unattended, and you should not be attached to your kite if the wind is strong and your kite is large.

Although I constantly consider changing kites, cameras, cradles and lines, I never think of changing my Stratospool reel. In my hands this



A happy Stratospool user.

well-crafted wood reel feels like my well-crafted wood canoe paddle. My camera, cradle, kite and lines are made of plastic, aluminum and synthetic fabrics; my canoe is made of fiberglass and aluminum.

Wood buffers me from all the technology and artificial materials. In winter, wood never feels too cold to touch; in summer, it never gets too hot, even if left in direct sunlight.

My wood reel looks good, works great, lasts a long time, is repairable, and connects me to my ancestors. I'm sure Arthur Batut in 1888 used a wood reel when he took the first kite aerial photographs. If alive today, his grip would still be on wood.

play techs . . . lift & separate

text and photos (and headline) by CRAIG WILSON

In kite aerial photography the fundamental ingredient is the kite. The kite is what provides the power to lift your camera into the air, separating it from the creative barriers of the human eye that are formed and reinforced over your entire lifetime. By separating the camera eyepiece from your eye you are using a different creative process to make photographs.

The brain's system of evaluating what the eye is seeing and then telling the finger to push the button is changed in kite aerial photography to include imagination, judgment of distances, perspective, and composition, and complex guesswork. It is a different creative process, and it is the inclusion of these variables that make the images generated with a kite so strong and refreshing.

The challenge of creating and using the equipment well, this technical

play, is one of the reasons that kite aerial photography is so addictive. I often find myself in a funk when I haven't gotten my dose of kiting over the course of a weekend.

The particular kite that you use to provide the lifting power is up to you. It needs to be your best-flying, well-constructed kite with enough pull to lift the weight of your equipment. Too large a kite will make work out of lifting a camera and will pull the line so tight that kite and line motions are transferred to the camera causing blurred photos and stress to your rig. You should select a kite that has just enough pull to lift the camera plus a bit left over for insurance.

The ideal situation is to have a relaxed flying line, rather than a line being pulled taut by too much kite. The line should have a nice bow in it as it goes up to the camera and then to the kite. A relaxed line acts as a shock absorber, protecting your rig and resulting photos from line vibration and sudden pulls or motions as the kite moves or you move to different vantage points.

I have two deltas that I use for lifting my 3-pound (1.4kg) camera rig. I use

*Harley-Davidson Rally
Milwaukee, Wisconsin, 1993*



an 18-footer (5.5m) in winds of about 8-13 mph (Bft 3) and switch to a 15-footer (4.5m) that has some modifications from a typical delta in winds from 13-18 (Bft 4).

I will not say that the delta is the best kite for this purpose but I like it for a number of reasons. Once a delta is built and properly broken in, it flies beautifully and predictably every time I use it. There are no bridle lines to tangle or stretch, nothing goes out of adjustment after it lands in the wet, dewy grass.

Another benefit of the big delta is when the wind dies suddenly the kite above the camera acts as a parachute. If the wind quits on you entirely the weight of the camera below the delta will pull straight down and the large delta offers much resistance to this pull even with no wind. This parachuting effect gives me time to reel in line to catch up with the sagging camera rig. If enough line has been brought in so the camera is at my hand, the delta no longer has to lift the camera and rig and usually can resume stable flight. As the wind picks back up I send the kite higher once again taking the camera along.

I have built and flown my deltas over 14 years of kiting. I can trust my them and that is a key element. If you are working with a kite that you feel you can never turn your back on, then you need to either find another kite design or go to work tuning and refining what you have.

In kite aerial photography the kiting part needs to be automatic. The kite

has to be so reliable that you don't have to worry or think about it and can concentrate on the photography, not the kite flying.

I have in the past used Cody box kites to lift my camera and have found them to be satisfactory in some cases but I have also had to scramble to get my stuff back down safely. The Cody did allow me to fly my camera in higher winds than the deltas but I find that the pictures I have made when the winds are above 18-20 mph (Bft 5) are not to my liking. The grass, trees, hats, hair, and picnic tables are being blown around so much that it detracts from the style of photography that I try to do. The wind range that my deltas and I work in is all that I desire, allowing me to photograph in the very calm conditions of low winds, eavesdropping on the world, capturing dream-like images.

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HOT NEWS! WORLD KITE MUSEUM AERIAL PHOTO CONTEST WINNERS

GRAND PRIZE

Fanø by Wolfgang Bieck
Bad Bevensen, Germany

HONORABLE MENTION

Chairs by Craig Wilson, USA
Canoes by Craig Wilson, USA
Lighthouse by M. Nakajima, Japan
Submissions included 74 photos by
21 photographers from 6 countries.

WE HOPE TO PRINT THE WINNING
IMAGES IN THE FALL ISSUE.

kites, line, & winders: other views

from **RODNEY THOMSEN, DAVID MCCUISTION, HENRY JEBE, & BROOKS LEFFLER**

In addition to the articles preceding, we've heard less voluminously from others. Here's what they have to say:

KITES

Rodney Thomsen/California: The first kite that I built expressly for AP was a STUBWING BOX to Walter Scott's "Doll" design. The longerons were ripped from douglas fir and the spars and braces were hardwood dowels. The cell braces were attached by removing the head from an 18 ga. wire nail, chucking it in a drill and drilling it into the end of the brace leaving a 1/4" (6mm) projection which fit into a hole in the longeron. The system works well for kites framed in wood. Although box kites are steady fliers in a good wind, when the wind drops, so do they, which is not the best situation for a camera dangling from the kite line.

The next kite that I built as a lifter

was a PETER LYNN TRI-D BOX based on 30" (76cm) squares as described by Mark Cottrell in his book, *Kite Aerial Photography*. I sparred mine with 7/16" (11mm) dowel instead of the 1/2" (12mm) suggested. The lighter spars have never given me a problem. I also cut a set of 120-degree spars for the wider configuration, which I painted green. The high wind 90-degree spars I painted red so as to avoid mixing the two sets. Here again, the Tri-D is a good choice for steady winds but under variable conditions leaves something to be desired.

In the past I have also used a 6 ft (1.8m) and an 8 ft (2.4m) ROKKAKU but the kite that I have found to be better suited to my needs is the DELTA-CONYNE. I presently have a 10' (3m) and a 14' (4.3m) D.C. I built the 10-footer and the 14-footer is from Devotion to Motion of Otis, Oregon.

Besides the ease of setup with its single cross spar, it's more adaptable to a variety of wind conditions, and as a deterrent to its overfly tendencies, I use a 4" by 50 ft (10cm x 15m) tube tail which helps to solve the problem.

**David McCuiston/
Kansas:** ROKKAKU, DELTA-

*David McCuiston's
Delta-Conyne*

CONYNE, and FRENCH MILITARY BOX kites span the kite aerial photographer's usable wind range. These three wind engines provide an aerial platform in wind speeds from 6 to 30 mph (Bft 2-7). The Rokkaku is the steadiest of the three designs, flying in winds of 6 through 15 mph (Bft 2-4). The Delta-Conyne is great from 10 - 20 mph (Bft 4-5). The French Military Box takes over lifting duties at higher wind speeds.

Adjust bridles just short of a stall. This adjustment prevents overflying. Overflying can cause the kite to dive. Test a kite's flight pattern by attaching a weight that equals the combined weight of your camera equipment package.

Henry Jebe/Alaska: I am mostly using a DELTA-CONYNE for a kite, in either an 8 ft (2.4m) or 14 ft (4.3m) wingspan. The size depends on wind velocity and/or the type of camera or cradle assembly I am flying at the time. The video camera only goes up in the best of conditions with the 14-footer.

I am hoping to make a BROOK soon, as I am under the impression that they are suitable for fairly high wind conditions. I do have intentions of shooting photos in more blustery conditions; the results may be worthwhile. [The Brook (no relation) is a 3-sided box kite with four stubby triangular winglets. — ed.]

Brooks Leffler: I've had good luck with my Cloud Pleasers MARSHALL DELTA-CONYNE, a Greens CODY I, and a home-

built 5-ft (1.5m) ROKKAKU, but the kite I use most of the time now is a SUTTON FLOWFORM 16. It's light, strong, manageable, and best of all, folds into a bag just 6" x 12" (15cm x 30cm) and sets up instantly. It does need a 20-ft (6m) tube tail for higher winds.

Anne's article (page 17) prompted me to try John Verheij's DOUBLE PARASLED; last week I built a half-size one (4.5 x 8 ft or 1.5 x 2.5 m). It will lift my "heavy" (2lb/1kg) rig in lighter air than any other kite in my bag, but the spars make it less portable than the FlowForm. I think we'll hear more about this design for KAP.

KITE LINE & WINDERS

David: I fly with polyester and aramid [generic for Kevlar® - ed.] kite line. One hundred fifty (68kg) and two hundred pound (90kg) polyester, and three hundred pound (135kg) aramid is spooled onto plastic hoops.

(continued on page 18)



Rodney Thomsen's Winged Box



④ *Tracks , Kansas 1995, by David McCuiston*
 ▼ *WW II Gun Emplacement, Marin Headlands, California 1995, by Cris Benton*

aerial gallery



▼ *Froggy & Rainbow, Berck-sur-Mer, France 1994, by José Wallois*

▼ *Drake's Beach Sand Castle Contest, Pt. Reyes, California 1994, by Anne Rock*

Gary Williams bugging ▼ by Randy Bollinger



the progeny of silas j. conyne

text & drawings by **BROOKS LEFFLER**

In 1902, an American by the name of Silas J. Conyne patented a winged box kite, which he hoped would have use as a means of lifting advertising matter. It was a simple diamond kite with a three-sided box grafted in between the wings. It worked, and well.

Since then, his design has been stretched, compressed, added to, subtracted from, multiplied, divided — and usually misspelled. In nearly all forms, it's been a strong, steady, stable flier, ergo the kite of choice, since way back then, for any number of aerial photographers.*

Let's get the spelling right off the top: Silas had two Ns in his last name. It's pronounced co-need or co-nine (with the former preferred by some scholars), not coin.

The French army used the design for a while, and the name French Military is the one most often applied to the basic kite today. And in Britain, it's called the Pilot.

A logical extension of the initial design was the

*see *KiteLines*, Fall 1994, for Simon Baker's excellent article about one of them, George Lawrence.

Double Conyne, which simply repeats the basic module, with a considerable increase in power. And of course the basic module may be further multiplied vertically or horizontally.

In the 1970s, several American kite-fliers, most notably the late great Hod Taylor, experimented by marrying Conyne's 3-sided box with the broad wings of the delta, and the product that resulted may be the best of the breed: the Delta-Conyne, or D-C.

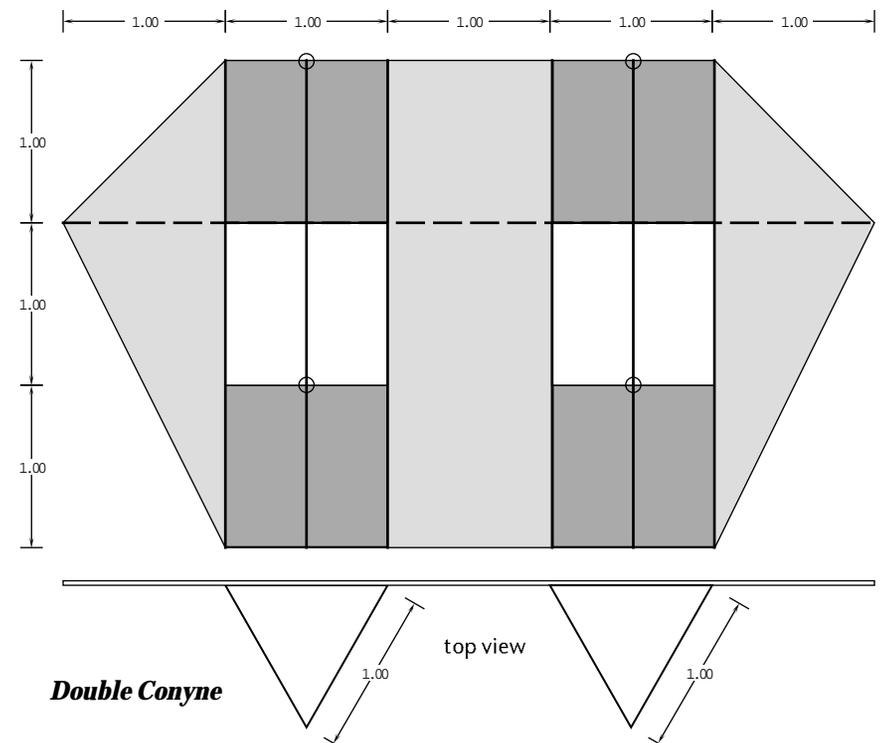
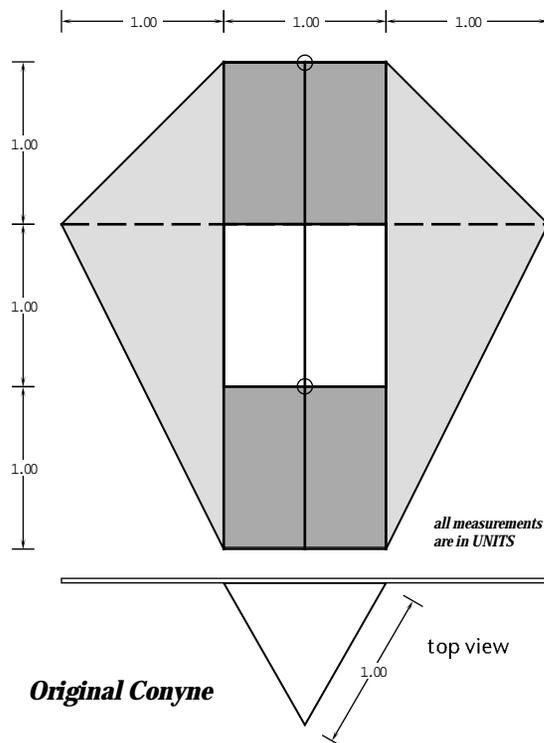
The basic D-C is simplicity itself: all symmetrical measurements and 45-degree and right angles. It is now widely available from several manufacturers (International Connections, Into the Wind, and Sun Oak, to name three) in a range of sizes from six to 14 feet (1.8 - 4.3m).

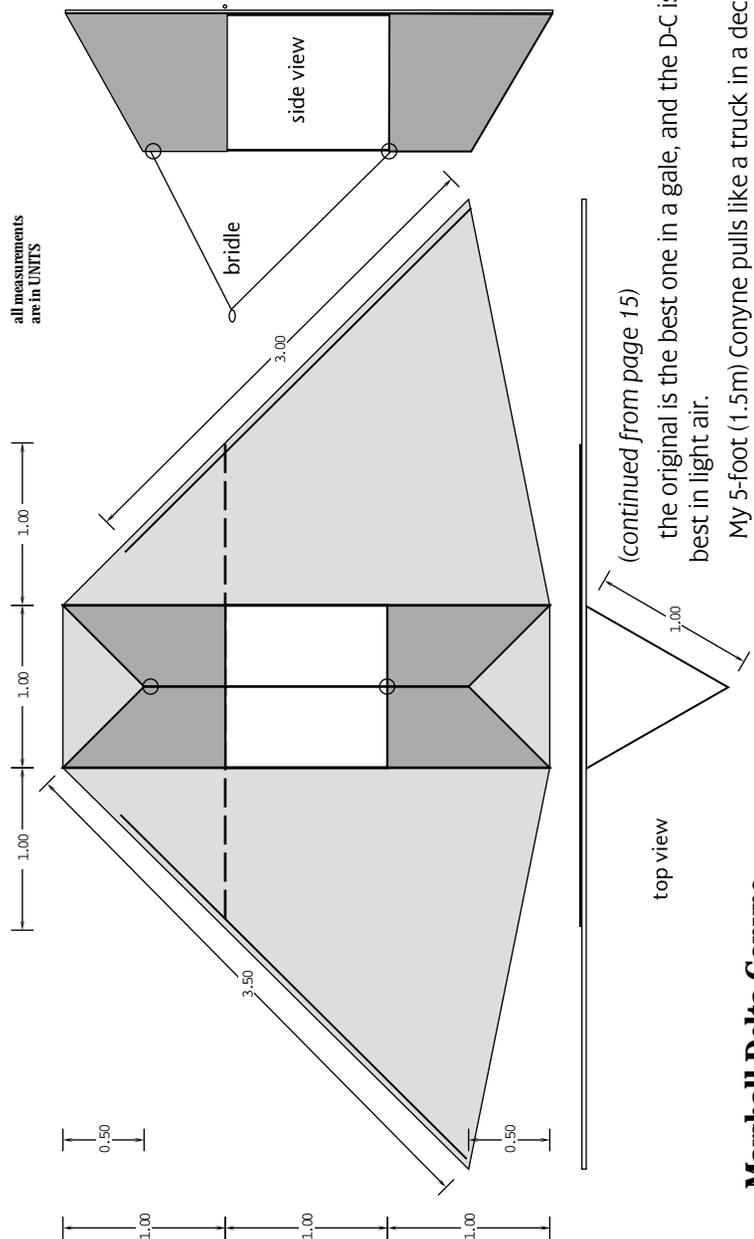
The first D-C commercially available, to my knowledge, was the Cloud Pleasers Marshall M-41, designed by Curtis Marshall of Baltimore. Curt's design modified the geometric simplicity of the early D-Cs by tapering the leading and trailing edges of the box section and sweeping the wingtips forward.

The Marshall design looks great, I believe, and is illustrated on the next page. Since Curt gave AKA permission to publish his design in 1981, I've built many of them, in wingspans from four to 20 feet (1.2 - 6m).

All of the Conyne progeny have favorable characteristics for AP: high flight angle, great stability, and strong pull. The original design seldom overflies; when the wind dies, it falls back. The Double Conyne and the D-C sometimes benefit from some drag from a drogue or tube tail to keep them on their best behavior for AP. Obviously,

(continued next page.)





Marshall Delta-Conyne

(continued from page 15)

the original is the best one in a gale, and the D-C is best in light air.

My 5-foot (1.5m) Conyne pulls like a truck in a decent breeze; a 4-footer (1.2m) would be enough for my ultralight rig, which weighs a pound (460g). My 8' x 15' (2.4 x 4.6m) Delta-Conyne will lift almost any camera one might wish to hang on it.

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basics for beginners: kites

by ANNE ROCK

Visions of sugarplums dance through Clara's dreams in the Nutcracker ballet, but as I think about this article, visions of kites I have seen and kites I want to make float through my mind.

Tradition requires that one use a kite while participating in kite aerial photography. Which kite? Some people work with only one or two kites; others enjoy the enormous variety of kites suitable for KAP and have a mix-and-match collection of different kites and rigs for different conditions.

ROKKAKUS, DELTAS, BOX KITES, and PARAFOLS have long been popular and successful kites for lifting cameras and other objects, but many other kites are excellent lifters.

WHAT TO LOOK FOR

What characteristics does a good lifting kite have? Stability is the most important characteristic, both "nailed in the sky" steadiness and the ability to handle changes in wind speed within the kite's wind range. I have a strong preference for sparred kites, on the theory that if the wind drops, there's a good chance I can pull the kite down and gracefully retrieve my rig (and the accompanying prejudice is that it is often difficult to reinflate a collapsed soft kite).

Other desirable characteristics are wide wind range and high flight angle. Wouldn't it be great to have a kite that could lift 2.5 pounds (1.1kg) in

winds from 3-25 mph (Bft 2-6) and was easy to handle at 25 mph? Reducing the weight of the kite by using graphite spars, minimal reinforcements, lighter cloth, etc., will extend the lower wind range — my partner Steve spends considerable time trying to shave fractions of ounces off the rigs he makes for me and would like to see similar efforts in my kitebuilding, as well as a reduction in weight of kite line.

A higher flight angle (the angle created by the kite line and a horizontal line) means less line out to reach a specific height, a kite that can launch and fly in more restricted spaces, and in some cases reach a desired height without the risk of flying over hazards or obstacles. (There isn't much published information on flight angles and wind range, although this information is listed for most of the kites in Maxwell Eden's *Kiteworks*.)

CHECK 'EM OUT

Wherever you see kites flying, observe the flying characteristics of interesting ones. Is it stable? How does it handle gusts and sudden drops in wind speed? What's the angle? Give a tug on the line ... if you've been tugging your own line, you'll start to develop a sense of whether another kite could lift your rig. Ask the kiteflier about her kite. If you hear the words

(continued on page 19)

other views • continued from page 11

The light polyester is for light winds only. Polyester's stretch makes flying large kites more comfortable. My 56 sq ft (5.2 m²) Rokkaku when hit by a gust of wind transfers less of the impact through a polyester line. Aramid inspires confidence; I use it for high altitude work.

Rodney: I have never used anything except braided Dacron polyester. I know there are other high-tech lines that develop less stretch but for me the increased cost is not offset by any great increase in performance. Perhaps for someone engaged in AP professionally there would be some advantage, but as a hobbyist, I'll stick with Dacron.

Henry: The line I use is mostly 250 lb (115kg) braided Dacron, though I have tried some 300 lb (135kg) Kevlar that I have had for several years. The Kevlar would allow me to reduce weight and drag from the line enough to shoot photos in more marginal conditions.

I would like to come up with an alternative to a lark's head knot for attaching the cradle to the Kevlar line though, as I don't trust it not to slip and cut the loop line. The other drawback with Kevlar is that it pretty much requires the use of a reel or winch capable of a fast pickup rate for lulls in the wind. Since Kevlar cuts so quickly, hand hauling is kind of out of the question. Between lulls and gusts you could bleed to death or lose your gear.



Sutton FlowForm 16

With braided Dacron I don't usually use gloves, though I usually have them with me. I have found I can't feel the line when using gloves and hauling in in an emergency situation; I sometimes don't realize when I have dropped the line during a lull in the wind. When shooting photos of the ship I work on underway, I can't afford the luxury of using gloves. When the kite or camera hits the water at 15+ knots (28km/h) of ship speed the whole rig is gone forever.

Brooks: Dacron has been the work-horse, though I've got one hoop wound with 300 lb (135kg) Spectra because I can get a lot of it in the space available. But with a strong-pulling kite, it's so slippery I often need help to recover it fast.

Rodney: I have made many reel-type winders and while they work well for letting line out, if you wind in under tension there's a strong possibility of popping the sides off. For this reason I find bobbin-style winders to be simpler and more compact, and for



Rodney Thomsen's Bobbin Winders

the strong-pulling kites necessary for AP they offer the better choice.

The line retrieval system that I use is to pull the line in hand over hand, spreading it out on the ground so as not to tangle it, then figure-eighting it onto the bobbin once the kite and camera are safely on the ground.

Brooks: I've used plastic Halo hoop winders for years. They're inexpensive, simple, compact, lightweight, and launch and recover line quickly. Despite what the label says, they are not unbreakable, but will give good performance if you ease the tension before wrapping the line.

When I have needed something even more compact to fit into a crowded kite bag, I have wound all but my lightest line on long, skinny wood bobbins. Better for travel, but not as easy for line handling.

beginners • continued from page 17

"usually" or "except" be cautious in accepting that kite into your bag ("My kite usually flies well except when it suddenly collapses...").

While one need look no farther than the deltas (my current favorite), ro-kakkus, etc., to find a good lifter, keep an open mind to other possibilities.

A 3-stick BARN DOOR kite, with extremely long tails, flew solidly in very high winds at the '93 Berkeley Kite Festival. Every other single-line kite was down, but this one, built by Tom Caldwell out of dowels and brown paper, handled the wind beautifully. Scott Skinner's KIMONO or SODE kites generate good pull.

This year I'd like to make a FLOW-FORM, and work on reducing my prejudice about soft kites, but tops on the list is the DOUBLE PARASLED featured in the Fall 1994 issue of *KiteLines*. It handles high winds well, and the few times I've seen one flying, it has been very stable.

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in the fall issue:
**GIMMICKS,
GADGETS, &
TRICK DEVICES**

*Here's your chance to show off
your creative genius.
Send us sketches and/or photos
of your clever solution(s)
to a KAP problem.*

COPY DEADLINE AUGUST 1

• æ

aerialletters

WAY WAY UP

It is not exactly kite related but your readers might be interested in the camera activities of the amateur balloon community... Amateur radio operators have been sending still and video cameras to altitudes of 50 and 100 thousand feet...

Keep up the great work with the newsletter!

Will Marchant
Marshall, WV

TOUGH T3

Enclosed are photos (see below) of a friend's double pilot 10' (3m) span tak-

en in flight from my own pendulum mounted camera fixed to the line of my own double pilot 11' (3.4m) span.

Soon after these shots were taken my camera Yashica T3 parted company with the pendulum, falling some 200' (60m) into soggy wet soft turf, leaving a neat photo image of a different kind on the earth's surface.

The failed component was rigid plastic tube from my scrap box which will now be replaced by aluminium tube, a lesson well learnt causing no injury save that of dented pride. You may be surprised to learn, the T3 continues to work and R.C. rig needs little repair.



My third rig is nearing completion and features a CCD TV camera, optionally removable, in tandem with the T3, radio controlled rotation, tilt, vertical/horizontal format, shutter release, and TV camera on/off, weighing about 3.5 lbs (1.6kg) including integral video sender PCB wired into TV camera circuit, the latter having been flown and successfully tested on a double pilot kite.

I would be interested to hear of any similar set up and what TV receiver can be used. I am using a "tube" TV but it is not very portable, 10" (25cm) tube, and my 2 1/2" (6.4cm) LCD TV receiver is just not visible in daylight.

Can anyone also source any detailed information on the Picavet self leveling frame, as the one I have built only levels horizon but not tilt.

I am currently working on mercury switches for self levelling. I will let you know if I am successful.

Thanks for a good magazine, may its life be a long one....

Rob Green
Newbury, England

• Rob has the honor of being our first paid-up subscriber, as well as our first from overseas. Thanks, Rob, and welcome! The kites he calls "double pilots" look to me to be double Conynes (see page 15). Note the PVC tube in the photo — looks like a spreader to keep the two keels in place. Also note that the kite's center hole has been filled with a cloth panel, which appears to be removable, probably in stronger winds.

This letter crossed our Spring issue in the mail; in that issue Randy Bollinger discussed micro- video equipment.

Regarding Picavet suspension, if the lines are free to run, it will auto-level for string angle as well as horizon, but no system, to my knowledge, will auto-level for sideways swing. We'll review the amazing Picavet suspension in the next issue.

—bgl

I've tried to use mercury switches to get level photos. Mercury tends to roll back and forth in its glass tube very quickly, and I was not able to control this movement to allow the shutter to be tripped when the camera was level. I did devise a leveling switch, wired into the camera's shutter circuitry, that uses a small fishing weight on a pendulum that allows an electrical contact only when it hangs level. I'm still developing this system, but I'll send you a diagram.

—steve eisenhauer

MARK VI MARK II

Just a note to say that I've built your "brooxes better brownie box, Mark VI" as described in the first edition of **the aerial eye** and it performs wonderfully [See page 13.- ed.]. I greatly appreciate your sharing of advice, particularly the clear diagram and suggestions regarding the Minolta Freedom Vista and the 110 mAh battery. I made my Picavet 'X' from 1/16" (1.6mm) thick aluminum U-channel and this seems both light and stiff.

Cris Benton
Berkeley, CA

aerialletters . . . continued.

HI-TEC FOR LO-TEC BUDGET

In the spring issue of the aerial eye, I gave an explanation of the benefits to using video components for precise framing at low altitude.

This equipment will work, but the expense may overrule your desires. Now at a fraction of the cost, you can do the same along with your rubber bands, dowels & duck tape.

As a vet, I know that the military has been using lasers for years. Drop ceiling installers use lasers for lineup of the tracking along walls. Executives use laser pointers at board meetings.

A lot of advancements have been made in laser technologies, which means that the cost has gone down.

You can purchase a pocket pointer laser for \$60 and up at most office supply outlets. Strap it on your cradle, and you're shooting at pin point accuracy for 150-200 feet (45-60m).

For the more advanced servo-laden techno-geeks, most gun shops carry laser sights, priced from \$125 to over \$1,000 with intensity reaching over 100 yards (90m) in sunlight. I've seen a demo of a laser sight light up a fluorescent bulb at 1000 yards (900m).

Keep in mind that the higher the price, the bigger and heavier the amplifier, and the more danger there is to someone's eyes.

The only disadvantage in using the higher intensity lasers is that you will

need to use a third or fourth servo to shut it off prior to taking the picture.

— Randy Bollinger
Ferguson, MO

AND FROM GERMANY

I've just read the second aerial eye. I think you are on the right way....

I think each [piece] of equipment for KAP is a compromise. There is no perfect equipment and there will never be. You can just say this is an easy one, this is a heavy one...And if completely different systems make you re-think your [way of] doing it, it is good. New ideas were born this way....

Wolfgang Bieck and I had some articles in *Sport & Design Drachen*....In the next issue there is my *DOPERO*. That's the kite I use for KAP yet. [see next page.]

...Since the KAPWA-meeting in Bad Bevensen in 1993, Otto Böhnke and I use the Picavet [suspension] only....I tried some other shapes. Otto and Wolfgang tried to make it smaller.... We use rolls, some ball-bearing... better [than] simple eyes. Important is the way you thread the line....I will make drawings of all Picavet-systems and send them to you next time. Greetings to all KAPers, always enough wind and film.

—Ralf Beutnagel
Braunschweig,
Germany • æ

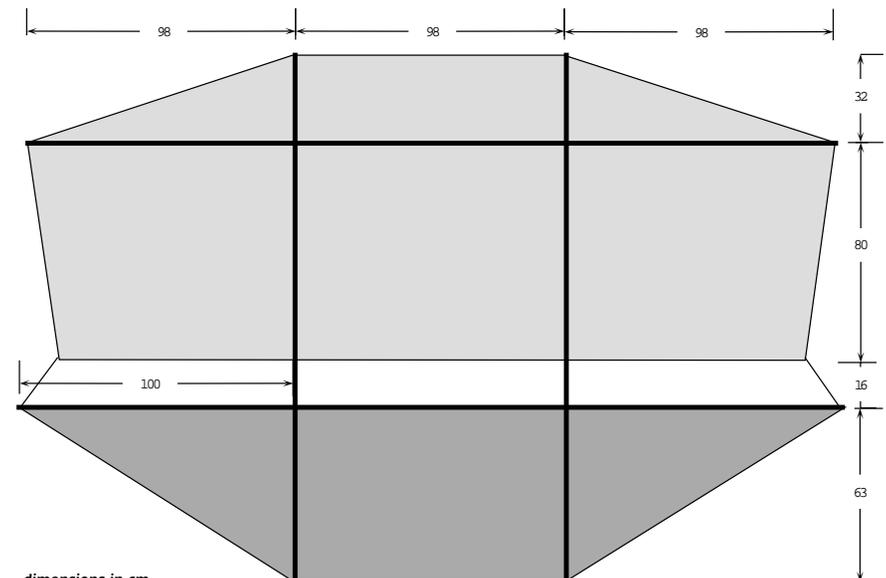
the dopero

by RALF BEUTNAGEL, Artusstrasse 9, 38112 Braunschweig, Germany



This design was first published in the German kite magazine *Sport & Design Drachen*. In the photo it looks like two kites, but it's really just one super-wide roloplan or roller. I've adapted and simplified the diagram from Ralf's fax, which doesn't show the typical roller keels on the lower sail, but they are visible in the photo.

— bgl



dimensions in cm.