Iceboats on Lake Mendota
by
Craig Wilson

LINE, TAILS & TRAINS
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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going up

As we warned you last issue, the costs of better printing are substantial, and the rates you have been paying for the aerial eye will have to increase. The new schedule is shown at left. You won’t feel it until you renew, but voluntary contributions at any time are welcome!

We can’t do it without you, so keep the pix & prose coming, as well as $$$!

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 PICT, GIF, or TIFF formats are best, but pen drawings, preferably on white paper, will work as well.

Photos may be sent as negatives, prints or slides, or by email attachments in JPEG, TIFF, or GIF formats. We can also read Kodak PhotoCD, or 3.5" high-density disks in the formats listed above. 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.
Everyone has a favorite KAP memory. The one I find myself telling people most often is the following:

In October, 1995, at the Smithsonian Air & Space Museum in Washington, DC, I assisted Brooks Leffler and Craig Wilson with a one-day KAP workshop sponsored by the Museum. The participants each built their own Picavet suspension system in a Museum classroom, and then went outside to the open area in front of the Museum to loft a disposable camera on a kiteline for their first kite aerial photographs.

Craig Wilson sent his 18-foot (5.4m) delta kite with a 100-foot (30m) tube tail up about 500 feet with his camera attached on the line. Since the Museum is located near the Washington Monument, the Capitol, and other attractions, many tourists witnessed the KAP activities. With no overhead electric or phone lines in this area, and with the Smithsonian's sponsorship, Craig felt brave enough to walk with his earthbound winder to the nearest crosswalk to join the tourists waiting for the stoplight change.

The sight of Craig waiting with a group of tourists to cross six lanes of traffic at a crosswalk in downtown Washington, DC, is forever etched in my memory. Remembering the tourists staring skyward at the huge kite in downtown Washington, and imagining Craig’s hasty explanations of his kiteflying at the crosswalk, I still can’t help grinning.

Seeing him then stride towards the Capitol Building, flying and taking pic-

Craig Wilson comments:

In the winter of 1996 I decided to make photos of the local iceboat club conducting their weekly races. I was astonished by the patterns in the ice that the camera saw from above.

That first winter I ventured out onto frozen Lake Mendota seven or eight times and never found the ice to look the same way twice. When I presented a slide show to the ice boaters themselves, they too were astonished by the ice. They spend nearly every weekend on the ice and few others would be as familiar with that surface as they, yet they almost couldn’t recognize or believe it in my images.

This shows the power of the kite aerial view, which can give a new understanding and a new appreciation for our world. This is the reason I am so taken by this method of photography. I will be out on the frozen lakes again this winter to capture more fantastic backgrounds for the ice boats, fisherman, skaters, skiers, and other people that are looking for a place to play.

Continued on page 31
stereo KAP - and the beat goes on

by BROOKS LEFFLER

Recently, Montana birdman John Carl-
son asked me to build him a stereo cam-
era rig, so he can add 3-D pictures to his
KAP studies of penguin colonies in Ant-
arctica (see ae 3.2 and 3.3). I like these
 commissions because problem-solving
always means discovery.

I studied the stereo ideas of Carl Bigras
(æ 3.2) and David Schenken (æ 3.4), and
picked Carl’s brain about his “next” ste-
reo rig. As a dedicated Picavet suspen-
sion advocate, I decided early that this
sort of large frame lent itself admirably
to the Picavet system. John didn’t want
the cameras to pan or tilt, happily, so I
approached the design as nothing more
than a large Picavet X with cameras at-
tached.

John selected the new Olympus Epic
(Mju-2) point-&-shoot cameras (æ 3.4),
which weigh just 5 oz each (152g), so we
were already on our way to a very light
system.

The rig that resulted is pictured here
(right). To our great delight, it weighs
just 29 oz (830 g), all-up, ready to fly. The
cameras are about 54” (137cm) apart, an
arbitrary distance based on Carl’s experi-
ence—and the standard length of carbon
kite spars.

The main boom is made of six 30”
(76cm) spars, braced by polyester tension
lines and separators of basswood or
model-aircraft plywood. I made the top
spar out of .1880 (4.7mm) carbon and the
lower ones out of .1580 (4mm). I could
have used the lighter material for all of
them, but my local kite shop had just
four pieces of .1580. The single cross-
spar is .2400 carbon.

The shutters of both cameras are trig-
ergged by servo-actuated fingers, both of
which are driven by the signal of a single
channel through a Y wiring harness. This
makes any mechanical linkage unneces-
sary, and synchronization is dependent
only on identical location of the micro-
servos and their fingers above each cam-
era.

With such a long boom up there blow-
ing in the breeze, rotational stability, as
Carl Bigras had discovered, was a problem to consider. Fortunately, I had had a visit from Christian Becot, one of ae’s more creative contributors, shortly before tackling this assignment.

Christian brought with him a dampened pendulum rig [left] which used a pair of small triangular sails carried on opposite sides of the rig at a 45° angle to the wind. Working against each other, they provided self-correcting dihedral stability to his rig, just like a box kite. I’ll admit that his was among the most motionless KAP cameras that I’ve ever seen. [After this grudging admission from a Picavet person, perhaps Christian will describe it for us fully in an article.]

Building on Becot, I made two similar dihedral panels for John’s stereo cradle out of 3.8-oz Dacron™ sailcloth and light carbon spars [left]. That stabilized the rotation immediately, but with the additional surface area made the rig tilt dramatically from wind pressure—not good when it’s important to look straight down. How I solved that one is the subject of another article on page 20.

Withal, I’m quite pleased with the way this stereo rig performed in my test flights [left]. However, lacking any ability to view them, I did not take any pictures with it. Though John Carlson will not be going to Antarctica this year, perhaps he can give it a good shaking down in Montana and let us know what we need to do differently.
KAPers carry around a lot of equipment. Cameras, rigs, transmitters, kites, groundstakes etc. Luckily they only need one kiteline.

This might sound crazy to kitefliers. They like to select the appropriate line for the kite they want to fly in the given windconditions.

So, what line does a KAPer need?

WEIGHT

For a kite aerial photographer the weight of the camera rig determines the required strength of the kiteline. Let me explain.

While KAPing I always look for a more or less constant pull on the kiteline. No matter what Beaufort the wind is blowing. I’m looking for a pull of the kite that keeps my rig up in a safe way. But I don’t want to be fighting the kite all the time; I don’t like to be towed in the direction the wind is blowing and suffer from pain in my muscles the day after.

What I do want is to be able to walk around while the camera is up in the air and concentrate on great photo opportunities. So by choosing the right kite I’ve a more or less constant lifting power and that’s why I can do with only one line.

I’ve been thinking about a rule of thumb. What about this one: line-strength = 100 x weight of the rig ready to fly. I have the feeling this is on the safe side. So a light 600g [21oz] point-&-shoot rig can be flown on a 60kg [132 lb] line: a 1.2 Kg (SLR) rig needs a 120 kg line. [Ed note: The 100 x formula works only in metric because the english system isn’t decimal-based, but the line strength calculated in metric seems workable after conversion. —bgl]

This strategy implies you have a kite for each windcondition: two or three at least. Or have the possibility to train kites: less wind, more kites.

COLOURS

Now that you have calculated the line-strength it is time to pick out the material it will be made of. Only the Aramid/KEvlar™ lines really have a standard colour: a pale dirty yellow-orange. All other lines are sold in white, most of time. Some kitestores can supply it in black. That is worth considering as it is slightly less visible in the picture.

Shades of blue or grey should have even better camouflage qualities. Or you might consider to dye your white line. That works rather well with polyester as a base material.

ALTITUDE

If you plan to fly your kite really high, over say 100m (which is not always legal in some countries), other line characteristics become important.

When flying high the weight of the line will cause sag due to gravity. The thickness of it causes sag due to wind-
High-tech as well are lines made of Kevlar™ (also known as Aramid). I personally dislike these lines as a kite line. They cut like a knife when under tension. Even your leather gloves can’t withstand it.

In these conditions the use of a high-tech line is necessary. These lines are made of polyethylene and are sold as Dyneema or Spectra™ or other.

We have recently been showing aerial photographs to young children, “young” in this case being three and four year olds, to see what they can make of these views of the world from an unfamiliar vantage point.

Readers of the aerial eye will probably not be surprised to hear that such youngster can not only appreciate that these are pictures of places seen from above, but can also interpret many of the constituent elements straight off, and from them, infer some of the other features represented.

This capacity for interpretation, however, goes splendidly against the canons of my home discipline, psychology, which has, since the writings of the Swiss psychologist Jean Piaget, tended to, we think, underestimate the capacities of young children. He has seen them as “egocentric”, unable to understand perspectives other than their own.

We have found to the contrary, that young children can understand the aerial perspective; and have, with colleagues in places such as rural Mexico and South Africa, shown this to occur even in places where the children will have few media-given instances of such photographs, as well as in the case of children from media-sated backgrounds.

So far, we haven’t been able to give children the chance of surveying their own area by taking their own aerials, although we know that the home area proves the most fascinating image of all to them, when we have shown them our commercially-flown images.

There must be readers of the aerial eye who have children of their own who take their turn in flying the camera, and who are as interested to view the resulting photographs as they are. We would much appreciate sharing experiences with you.

Please contact us via email:

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KAP through young eyes
by DR. CHRISTOPHER SPENCER, Sheffield, U.K.
After returning from our Easter Island KAP adventure (ae 3.3) my wife Elaine and I showed our aerial photographs to Georgia Lee, Easter Island archaeologist and editor of the *Rapa Nui Journal*. She was very pleased with them and requested several copies for the Easter Island Foundation library.

She encouraged us to submit an abstract to present our slides at a five-day symposium about Easter Island in Albuquerque, New Mexico. I was petrified at the thought of standing in front of a bunch of archaeologists and PhDs. Even so, my intrepid wife e-mailed an abstract to the symposium director, whom we had met on Easter Island, and the very next day we received a response accepting it.

SEASONED ADVICE

We started reviewing our slides and selected 100 that we thought were worth showing. We consulted a friend and seasoned lecturer for some advice. We had only 20 minutes for our presentation so he suggested cutting the number of slides down to 20 or 30. With great difficulties we reduced it to 50.

We wanted a presentation that would be entertaining as well as demonstrate the value of KAP in archaeology. Since most of the attendees had visited Easter Island, we wanted to show them the sites from a different perspective.

We arrived a few days early and rented a car to drive north to Santa Fe and Taos, hoping to photograph some Indian ruins and the countryside, but the winds were uncooperative.

When we got back to Albuquerque, we had about 95 percent of the script completed but had not done a complete rehearsal. We were scheduled to give our presentation on the third day, so we planned to spend a couple of evenings completing our presentation. This meant we had to pack a slide projector.

The first day of the symposium included an evening party with a Rapa Nui dance group performing their traditional Polynesian dances.

We enjoyed the opportunity to renew old acquaintances, including the governor of Easter Island. A special treat was our personal introduction to Thor Heyerdahl, famous archaeologist and leader of the Kon-Tiki expedition.

MIDNIGHT CONFIDENCE

At midnight the night before our presentation we did a dress rehearsal and I finally began to feel confident.

The morning of our presentation Elaine assembled our 13-foot delta-Conyne and it was on display on the stage. To begin, Elaine held one of our
rigs while I operated the transmitter from the podium. In the darkened lecture hall the camera's flash fired each time the shutter was released.

Right from the first slide the audience showed their pleasure with "ohs," "aahs" and whispers.

We had chosen slides that were of archaeological interest, low altitude verticals of a single feature showing detail, and high altitudes covering several sites. We also showed a slide of a reed boat under construction to demonstrate the value of KAP in documenting an event.

We chose to show several slides of the archaeologically rich area of La Perouse Bay where the government plans to build a container port.

We closed with the comment that "with the advances in KAP technology and enough kite line, the sky is the limit," showing a space shuttle view of Easter Island. The laughter and applause was enthusiastic.

After our presentation we handed out over 70 single-page color collages of our aerials. We received many compliments during the remaining two days of the conference.

The last night of the symposium Thor Heyerdahl gave a special evening lecture about the ocean currents of the north Pacific and how Polynesians could have migrated along a northern route. He noted similarities in the petroglyphs of the Andes and those found on Easter Island.

After the lecture several authors were available for book signing. Thor Heyerdahl's table was the most popular. Many people had brought copies of his books for him to sign, but we weren't as prepared. I was desperately looking for something Thor could sign when I remembered our KAP display board that Elaine had made. Thor graciously signed it [above] and mentioned he enjoyed our presentation. He also said he had occasionally thought of using KAP but never gotten around to doing it.

Despite my apprehension Elaine had reassured me several times that we would do just fine and our presentation would be a success.

She was right!
A while ago in conversation with friends, I mentioned my interest in kite aerial photography, and they suggested I pay a visit to their family estate. At the time I was keen to practise my skills on castles and houses and difficult subjects, and a large private house would allow me to practise techniques without an audience to watch me make embarrassing mistakes.

Breda (pronounced Briddár) estate sits on the western outskirts of Alford, in Aberdeenshire. The main house remains empty for the moment, awaiting tenants. Our friends live instead in one of the estate farmhouses just up the road. Deciding to make my first visit that same evening, I packed up the KAP equipment and drove straight down to Breda. I turned the car in past the gatehouse, and got out to open the gate for access down the leafy drive. I drove down through dense woodland, low branches swishing against the sides and roof of the car, the weeds pushing up through the cracked road surface.

After about half a mile the driveway took a left hand kink, and burst out into one of the most stunning aspects I have seen. I pulled the car up in astonishment.

Before me Breda house stood in pink granite splendour at the end of a huge well-cut lawn, with a background of dark trees. The way the driveway kept the house totally hidden until the final moment made the first sight all the more dramatic. Without doubt, the house was a KAP dream subject.

I parked the car unobtrusively in the corner of the lawn, and took out my bag of KAP gear. As I walked towards the middle of the lawn, I knew straight away that I was facing one of my ultimate KAP challenges. How could I do this house justice, as it stood empty, brooding down that huge lawn at me, an intruder from the present? This house knew only a past; it’s present was simply waiting, waiting for the life to return.

For some minutes I stood exposed on that vast lawn in front of those blank windows with not a soul in sight, the silence softened only by the soughing of the breeze in the tops of the trees. My mind’s eye could see it all so clearly: a fine winter’s morning as the postie, his steam-powered wagon, the Craigevar Express, wound its way down the snow covered driveway to the front of the house with sacks of Christmas parcels. Another time, the carriages lined up outside the house for the annual ball—the horses, harness gleaming, plumes of steam from their nostrils in the winter air, the lights from the house glowing out into the night, the life within, laughter and shrieks of women, and the skirl of the pipes. All this Breda had surely seen, and here I was, impertinently come to capture the house in its dream-
time, at its lowest point. I was to fly a kite on the lawn and take photographs using radio control? Would Breda ever allow this?

Aside from this, the practicalities were sure to be a problem. The woodland surrounding the lawn would mask any wind except from one direction. To the south the lawn gave way to a long meadow looking down to a distant vista of the highlands. With the wind in the south there was just a chance.

I drove away from Breda and back home, my mind full of the excitement, the intensity of the challenge facing me and mulling over the methods I would use to rise to the challenge. Which kite, which rig?

I awoke one morning a few days later knowing that I would take up the challenge of Breda. The weather was set fair from the south, a fresh breeze and a piercing blue sky.

As soon as I stepped onto that lonely lawn I knew that conditions were as good as they ever could be: sunshine, and a breeze with a long fetch down the field onto the lawn. Within minutes my trusty Jalbert 15 sq ft (1.4 m²) parafoil was up at about a hundred feet and pulling sweetly, and I had the rig fastened on ready to spool out.

Pre-launch tests completed, I strapped on my transmitter belt and started to pay out more line. With the kite at 200 feet and the rig about a hundred feet below it everything seemed to be fine, and I turned to the transmitter controls.

As I looked up to adjust the camera direction, I saw to my amazement the parafoil descending in a vertical power dive towards the trees. This not-unknown parafoil tendency had not yet manifested itself with this kite—until now.

I took a few rapid paces forward to give the kite its head, terrified of losing it to the trees, and the kite obediently recovered, though not before the rig had taken a heavy landing on the lawn in front of me.

I soon recovered the rig, and inspected it for damage. Clearly the tilt servo had sheared gears, as it was functioning erratically, but nevertheless, everything functioned well enough to consider carrying on.

A second launch, and I got the rig up much higher, with the kite steady as a rock in clearer air.

All the time on that open lawn alone, I felt as though I were watched, though the only eyes were the windows of the empty house blankly looking down at me. The sense, though, was palpable.

Thirty odd shots later I was packing up, feeling jittery but elated to have a full roll of film, and to have got away from Breda with no real losses.

The following morning I stood outside the photo shop leafing through the fresh prints. The first was a vertical shot of the lawn. So was the second. And the third. In all, twenty five of the shots showed nothing other than the manicured lawn. In others, the driveway or the edge of the trees were evident. About four of the

Continued on page 12
shots showed a tiny part of the house, at a crazy angle or incongruously blurred.

I sat in the car stunned. Never had I had such an overwhelming failure at a shoot. I leafed through and through the pictures, sure I had somehow missed all the good pictures in my haste, but there was nothing. The tilt servo had obviously been more damaged than I had thought. I resolved then and there to repair it quickly and go straight back to Breda and take up the gauntlet.

An hour later I was walking back across that vast lawn, the wind was still in the south, though the sun was hidden by cloud. Breda stood impassive, still watching, seemingly defiant of my attempts.

Once again, after a few minutes the kite brought the rig down, but this time more gently: there was no damage. I felt as though I was being shown that I was still there under sufferance, not in charge of the situation.

Soon however, the kite was up higher in free air and the rig was soaring over Breda. The aiming stick showed that the rig was pointing where I wanted. After about 25 shots of the house, I even dared to move my attentions away from Breda and take some shots of the surrounding countryside.

Two hours later I had the prints in my hands: Breda was mine. Twenty of the shots were clear, sharp and showed the house in all its glory. Two of them were classic KAP shots, and one was simply stunning.

When new people move in to Breda, one of the framed pictures in the hallway will be of the house, a KAP photo taken from the lawn.

You have to have stood on that vast lawn in front of those empty windows to feel what this story is about.

Continued from page 11
Flying two or more kites on one kite-line is a train. For trains I use ultralight delta-Conynes with a center hole large enough to pass my winder through. The advantages of flying trains are:

1. Better visibility to aircraft, other kite-fliers and spectators. For KAPers who sometimes fly high or near other kite-fliers, this means safer flying. For spectators, a colorful kite train can be a spectacular sight.

2. Better flying flexibility. Put one kite up to see if the wind lifts your rig. If not, add a second, a third, a fourth, etc., until you have enough pull.

3. More fun. I fly a 4-kite D-C train whenever the wind is light, and must pay close attention at lower elevations. Sometimes the three kites below the top do big circles or wander back and forth until I tighten up the line. But I’ve never had a mishap with a train; they allow me to play or perform a bit, unlike my more boring single kites.

Many kites can be flown in train, but my Devotion-to-Motion Ultralight D-Cs, with their high-cut center hole, make it easy to add more kites. If you use these D-Cs, make sure you pass the kiteline over the top of the spreader. If you pass the line under the spreader, the train will not fly right.

No matter which kites you fly in train, practice is required in varying wind conditions. Trains are more complex, and fly differently than single kites. But once you’re accustomed to them, and experience their advantages, you’ll enter a KAP dimension like no other.
Is it luck? Is it skill? Is it just a hope and a prayer? Quite obviously if you have done any KAP then you know the answer is "yes" to all of the above.

There most definitely is luck involved. As in any type of photography, luck plays a role. Just try to duplicate one of your favorite non-KAP photographs. It cannot be done. Conditions came together in a way that was just right to make lighting, color, and composition meld into a photograph which can effectively convey a mood, a story and feeling that a viewer of your photograph can enjoy and relate to.

To go back to the site of a favorite photo and try to duplicate it is impossible because conditions will not be exactly the same. You may get an equally good photo, but not one that is the same.

Luck in making a great photo plays a role but takes a back seat to your expertise in using the equipment and your artistic skills of composing a great image.

It is this confidence in the use of your equipment that must be developed, combined with a little luck of being at the right place at the right time. Together they will increase your chances of making consistently good photos.

Photographers, generally speaking, are control freaks. In KAP however we have to give up some control because we are not physically behind the camera. But we should not let surrendering control mean that we depend exclusively on luck for a good image.

We should still try to control what we can control and that primarily is ourselves. It is so very important that we have control of our emotions and actions so that we don’t sabotage our own efforts by making stupid mistakes in the heat and excitement of doing something that is a bit risky and dangerous.

Have you ever driven through an intersection in your car as the traffic light turned red? If you have, like me you may have felt your field of vision compressed as if in a tunnel, only being able to see straight ahead. My peripheral vision goes away as I know I am not in control and my mind is gripped with fear.

Going through the red light I put myself at the mercy of the odds. If a driver coming the other way were to start without looking I could be in a collision. Knowing that I am in the “wrong”, all I can think about or focus on is getting through the intersection, and looking straight ahead.

I am not comfortable being out of control, and with the mind in a state of discomfort and fear it closes itself down so that it is comfortable dealing only with the clear lane straight ahead.

This analogy is so true in KAP. Like the quarterback in a game of [U.S.] football,
they say he gets into a “zone”, where even under great pressure he can re-
main calm and “see” the entire field and even throw the ball to his teammate 
while both are surrounded by a confusing array of opposing players.

This ability comes from a tremendous amount of practice, doing something so 
often that it feels familiar and even natural even though it may be quite difficult 
or even dangerous.

In making photographs by lifting your camera with a kite you need to have this 
same calm mind to “see” the field.

The calm comes from being comfortable in a situation where you don’t have 
the same level of control that a photographer that is looking through the lens 
has. You are comfortable leaving some things to chance. Comfortable with the 
potential to damage your equipment or lose your equipment in a collision with 
the ground. Comfortable with your ability to “see” the entire field because you 
are at ease, confident, and skilled at taking risk and doing it with an audience 
watching your every move.

With practice and a carefully-followed procedure, you will be liberated from the 
encumbrances of being nervous, scared, unsure, and confused. You can be free to 
think about the photographs that you want to make and to focus on creativity, 
composition, timing, angles, and equipment choices.

You can let your excitement, enthusiasm, and confidence add to the photog-
graphic process as opposed to having trepidation detract from your creative 
vision.

*Crop Art by Stan Herd, Newberg, Wisconsin, 1995. Photo by Craig Wilson*
[left] **Brookes Biplane** by Steve
[below] **Strbra & Tatra Mountain**
by James Aber

[below left] **Mariner's Landing** by Bob Pebly
[below left] **Morey's Pier, W**
by Bob Pebly
[below] **Cold Fun** by Pete
aerial gallery

[above] Civil War Museum & Chimborazo Park, Richmond
by Wendy Martin

[below] Great Tide Pool, Monterey Bay Aquarium by Cris Benton
advent of the digital camera age
by KATSUTAKA MUROOKA, Chairman, Japan Kite Photography Association

The history of camera technology is now in a period of transition from the age of film to an age of a new digital format. Both camera makers and electronics manufacturers are rushing en masse to bring their own offerings to market.

This new tool differs from film cameras in some significant areas, and introduces a number of new elements. To list a few of the digital devices’ features:

1. Data can be stored on memory cards. In the case of the Olympus C-820-L, a 4 MB card will hold 60 pictures at normal resolution, or 8 pictures at high resolution.

2. The results of pictures taken can be viewed immediately on the miniature screen on the back of the camera.

3. The camera can be connected by cable to a number of other devices:
   a. to a television set to view the pictures on-screen
   b. to a computer to download the picture data for viewing or processing
   c. to a printer to obtain hardcopy output.

Of course, the computer and printer can be connected to process the image data first and then obtain hardcopy output.
In addition, the personal computer can be connected to a wireless cellular telephone to send the data in real time to another computer located elsewhere. All of this can be done in a very short period of time.

Kite photography using such new digital cameras should find application in a wide range of fields. It is especially effective when used for on-site investigations for academic purposes. Some examples of cases in which this technology has been employed include:

1. Archeological survey: excavation survey of the Stone Age ruins in Cagayan in the Philippines (Archeological Research Laboratory, Sophia University);
2. Architectural survey: investigation of ramparts in Jaisalmer, India (Architecture Department, School of Engineering, Tokyo Institute of Technology);
3. Oceanographic survey: survey of the coral reefs off Ishigaki Island, Okinawa (Physical Science Laboratory, University of Tokyo); and

In the first three examples, university research laboratories are now in the process of taking kite photographs, under the guidance of the author.

Of course, the camera system can also be mounted on other flying apparatuses, such as air balloons or radio-controlled helicopters.

The need for such aerial photographs is growing at a rapid pace, and the value of such photos has likewise increased. Use of the digital camera format in conjunction with the film format should make the system even more suited to application in aerial survey throughout a wide range of fields.
To most of us, a level horizon in our photographs is important. But as rigs get lighter, that goal becomes more elusive as the rig blows around more in the wind.

Some KAPers with pendulum suspensions have successfully used dampers to keep the pendulum from swinging excessively (æ 1.4), but with the very popular Picavet (pee-ka-vay) suspension, damping is almost antithetical—we want the rig to move as freely as possible.

A review of Pierre Picavet’s 1911 invention is in order; one variant is shown below. The camera cradle is held beneath an X, which is suspended by a single line connected at two points to the flying line. This line is threaded back and forth, like the Cat’s Cradle of childhood, between the anchor points, running free through eyes or blocks at the ends of each bar of the X. The system provides a very stable platform for the camera, being self-leveling as the angle of the flying line changes.

Some KAPers install a double block at each of the anchor points A & B; some tie the ends of the line at A, and place a double block only at point B. Still others (myself included), thinking the upper blocks unnecessary, have simply knotted the lines at both anchor points after the initial leveling of the cradle.

Most of us started using the Picavet system with a small X of 4 to 10 inches (10 - 25mm) span. With the lower blocks so close together, the fluctuations between line angles and leg lengths seemed insignificant, leading some of us to replace the upper blocks with knots.

I must apologize to all of my friends in Germany for insisting that they were wrong in using double blocks. In fact, to achieve a level horizon under all wind conditions, at least with a light rig, we’re ALL wrong. The lines shouldn’t run completely free, nor should they be completely restricted.

With a larger Picavet system such as John Carlson’s stereo rig [see page 4], my knots caused big problems.

Having a large, light frontal area and dihedral sails, the stereo rig has lots of windage, i.e., it blows away from the wind. With cameras pointing down, the horizon isn’t a problem, but the windage makes it impossible to keep the cameras vertical in almost any breeze.
So I experimented with how to compensate for this windage by pre-loading the rig with some tilt, similar to what Christian Becot had done with his anti-thrust pendulum (æ 3.4).

I started with my usual Picavet arrangement, with knots at points A & B. I thought I could impose some tilt by moving the center of the X away from the wind, thereby lengthening the windward arm. Wrong.

With the 30” span of this Picavet X, and the knots in place, any change in the arms of the X simply slackened six of the lines, putting all of the weight on the shortest arm and diminishing rotational stability. And there was no effect at all on fore-aft tilt.

With the knots at A & B, the lengths of all legs were frozen, and for any adjustment to take place, they needed to be free to adapt. It seems that with a big X, the line angles and leg lengths fluctuate significantly with even minor changes in the relative positions of the X and the points A & B.

But if I simply untied the knots and allowed the lines to run free, any imposed tilt would eventually work itself out or transform itself into another awkward tilt, and vertical camera placement would remain elusive.

My solution was to add what’s known as a cord lock, which is often used on the drawstring of kite bags and the like to keep them closed without tying a knot in the drawstring. From now on, I shall call this neat little device brooxes horizon helper™.

If the two loops in the suspension lines at attachment point A are threaded through the horizon helper before being connected to B, it is possible to lock the tilt of the rig into any of several positions, correcting for windage and making the horizon level.

Not only does this work perfectly on the stereo rig, which is pretty well balanced top-to-bottom due to its low profile, I have also used it successfully on my ultralight Epic rig, which like most KAP rigs is quite bottom-heavy.

I have found it easiest to lace the suspension system through the openable end of a fishing snap at B, adding the horizon helper later by simply pulling the loops at B through the hole and reconnecting them to the snap.

To put your horizon helper to work, hang your rig with the helper at lower attachment point B. Then with one hand releasing the helper, adjust the angle of your rig with the other hand to tilt the top of it a few degrees away from the wind. Release the helper, and launch your fully-compensated, otherwise-self-leveling rig.

I have experimented only with the Picavet layout most common today, with one bar of the X pointing parallel to the kite line. Whether this will work with the so-called “Rendsburg” or other configurations is for others to discover.
LINE

I usually use 160 lb. or 250 lb. braided Dacron™ on a hoop spool. I am currently working on two different fishing reels to use as winches to pull down my rigs with full strain going onto the reel.

My best find was a Penn 12-0 Senator fishing reel that I got for $20.00 at a garage sale. I believe that it will make a great kite reel for KAP close-to-the-car shoots.

These reels are made for fishing billfish and other large species. I loaded it with 170 lb. braided dacron line, and am preparing it on a plank for its first tests. The drag will be released enough to let the line out and I will tighten it upon arrival at the desired altitude. Since these reels are intended for quite heavy line, I don't expect to experience much trouble with a failure of the spool or anything like that.

The other reel, an Alvey, cost me $2.00 at a garage sale. It may not stand up as well but I intend to try it anyway; it is loaded with 200 lb. braided Kevlar™.

I have wanted to try the Kevlar for KAP for a long time because it is so thin and light. I know Kevlar may not work well because weight and line sag are, to an extent, our friends in keeping the rig more stable.

I bought the Kevlar more than 10 years ago (900 ft. of it) with the intent of using it for KAP, but needed to figure out some kind of reel arrangement so I wouldn’t be tempted to handle the line by hand (I didn’t want to amputate anything unintentionally).

TAILS

[At the Long Beach festival in August] winds were pretty steady at 20+ knots. I put up my 30 sq. ft. Flowform first with a 30 ft. tube tail. It pulled like a horse, but otherwise was flying pretty well. ...I also was flying a Brook [winged box] for quite a while with a kite bag partially filled with sand for a tail.

[More recently] I have been flying the Flowform 16 & 30 for several brief sessions. When winds are a bit stronger I
have been using a 20 ft. tubular tail for a drogue.

For lighter winds, I use either a 10 ft. [3m] double Delta-Conyne or a 14 ft. [4.2m] D-C usually without a drogue.

The only problem with D-Cs seems to be their tendency to thermal occasionally. This is not so bad as long as you have somewhere to walk to keep it from over-flying. It is a real problem when there is only water, a cliff (ridge soaring) or trees upwind of your location....

I also have a Genki Variant (14 ft.) that I made several years ago. I would like to eventually make another one using half-ounce Icarex™ and graphite spars to make a truly light wind flyer. These are amazingly steady flyers in winds up to about 12 to 15 knots, but not of much use in higher wind.

TRAINS

Another plan I have is to make a small train of kites out of plastic bags to look like a small flock of ducks or geese. My idea is to take photos of myself amid my decoys when I am duck hunting to show how obvious a hunter is to the water-fowl. I am hoping to get this done this fall; the plastic kites might even help to attract the attention of some birds.

SFAP—the symposium

by CARL BIGRAS, Carlsbad Springs, Ontario, Canada

In October, the American Society for Photogrammetry and Remote Sensing sponsored the First North American Symposium on Small Format Aerial Photography in Cloquet, Minnesota. It conflicted with the AKA convention, so Carl was the only KAPer to attend. He delivered a paper on his professional KAP work in the Arctic [æ 3.2], and shepherded our WKA/ AKA KAP exhibit. This is his report. —bgl

More than 75% of attendees were, in one way or another, from the forestry industry. The majority work in aircraft aerial photography in 35mm with 250-exposure magazines, or with 70mm roll film in normal colour and infrared false colour film. Some are experimenting with the Kodak DCS 420 and 460 CIR digital camera.

You can imagine that during some presentations, I felt a bit out of place but convinced myself that it’s just another way of doing my job. I met others who have similar work interests, especially Irene Marzolff from Germany. She has done AP from a hot air blimp built for her (approximately US$12,000). I gave her a copy of æ and I might have convinced her to try her rokkaku next time out.

I also gave a copy to Jim Walker from Brigham Young University, Provo, Utah. He does his aerials with an r/c airplane.

Continued on page 24
To stabilize my 11-ft span (3m) double Conyne kite I often use this method in stronger wind conditions, to minimise erratic flight.

The essential ingredient is the attachment's self-centreing ability. The drogue line can be quickly clipped onto any part of the wingtip line and will immediately be seen to find its own centre, always complimenting precise wind direction.

Continued from page 23

He had three planes with him and did a demo at the airport. Nice stuff.

I saw five presentations which dealt with stereo aerials using a boom and helicopter. Only one was hanging from the grab hook; the others are fixed lengthwise or widthwise. Now my mind is working overtime on a plan for my next stereo rig.

My presentation went well, even though I was nervous. I tried to base my talk on the facts, which are: very small budget, low aerial photos, small coverage, and the need to be compact. I had no questions, but no one left the room.
RODNEY

Every three months I feel anticipated joy when ae comes again. This time my joy just collapsed and I felt very, very sad when the message of Rodney Thomsen’s death dropped into my hand. [The notice was an insert with æ 3.4. —bgl]

As Brooks wrote, I met Rodney Thomsen first in July 1995 in Eureka. I’ll never forget the huge salmon steak he offered me in his great hospitality. The next day Brooks and I visited Rodney’s workshop. The photo that Brooks published documents Rodney in a wonderful true way. In the background you see his tools, placed very accurately and useful. From the ceiling there are hanging down kite lines for KAP-suspension simulation. The working-platform is clean; a portfolio is opened, filled with KAPWA-information.

Rodney was very well-prepared for questions of KAP-details. The KAPWA-magazine’s article by Michael Haugrund was open and Rodney used a magnifying-glass to see all the details shown in Michael’s photos.

From this moment, the way Rodney devoted his attention to those photos to learn by them strongly influenced my way of writing articles and preparing photos for publishing. Photos, taken thousands of miles away in Europe, became a very important source of information for Rodney. He enlightened me this way and since then I feel my responsibility to give best information, not only in the photos, but also in written words.

...I met Rodney only for some hours, but I do know this. He was a heartfelt gentleman, doing his work with the most important ingredient someone can do—LOVE. In this way I’ll remember him and his work forever.

Wolfgang Bieck
Bad Bevensen, Germany

...I was sorry to hear of the passing of Rodney Thomsen. Although I didn’t know him personally I enjoyed reading his articles and using some of his tips. After all we were both advocates of wooden rigs. ...His articles will be missed.

Don Dvorak
Santa Clara, California

I was so saddened to hear that Rodney Thomsen passed away so quickly.... I only wish I had known him better, but the distance between us made that difficult. The few times that we had visited I enjoyed; he seemed such a friendly man...a gentleman, and always full of praise for my KAP endeavors. No matter how bumbling my earlier attempts were, he never made me feel ignorant. I am so glad to have known him, even though only a little.

Henry Jebe
Douglas, Alaska

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EINEN DEUTSCHER HITCHCOCK

Since we met in Bad Bevensen, much time has gone by; much has happened. I was a beginner at FLiBB 96 without background in KAPing. This time I can say that I have been very successful. I am very proud that I got good teachers who have given me good basic info.

There was no week this year without KAPing—always I found a few hours with dry and windy (more or less) weather. I lost two rigs and broke a few kites, but it was a very intensive lesson.

My dream was, like Alfred Hitchcock, in my own pictures to play a hidden part (without visible kiteline). The photo below is titled "A Walk Through the Neighbors' Garden." You can see that from their point of view, I wasn't there.

Rainer Breuer
Emmerich-Elten, Germany

LOOKING GOOD

I just got the most recent issue of the aerial eye and wanted to commend you on the new look. I would be happy, as I would guess other subscribers would, to pay a little extra for this added quality.

Andy Kraushaar
Madison, Wisconsin

I like the new look a lot, even if it means an increase in subscription rates. I’m definitely renewing for another year. Thanks again for the great magazine.

Jon Laqua
Eagan, MN

MORE COLOR!

Printing Vol. 3 No 4—as we received it—has been the right step. Congratulations! I like the new look and (paper)-feeling. All those colorful pictures in 600 dpi added a
lot to æ readers delight. If æ’s picture pool is big enough and unless extra printing problems (and costs) occur, I would appreciate 4 instead of 2 center-pages of the “aerial gallery” very much.

Dr. Kraft Schmidt
Herscheid, Germany

In regard to the new dress [of æ] I have only a question. Would it be possible, technically and financially, to print photos on both sides of the paper in order to have more space for pictures?

Peter Bults
Holthees, The Netherlands

We’re glad you all like the improved color photos—we do too! But it would cost even more to print color on the back sides of the center pages, and we need to get the first big cost increase under control before we start spending more. Regarding our picture pool, we have lots of good stuff from a few contributors, but nothing from most of our readers, alas. —bgl

UNSTACKED FIREWOOD

As I came home yesterday, there was this envelope in the mailbox, but I had also received 3 cords of firewood beside the garage that had to be stacked, and 10 lb. of thawed tomatoes on the kitchen counter to be turned into salsa.

First things first, wasting no time, I quickly ripped open the envelope and glanced through it as a kid would open his Christmas present, then back to work. At 10:15 pm, reading in bed, well at least I read half of it before falling asleep.

As always, excellent work and the quality is superb. I hope in the case of extra cost that we will not lose any [subscribers].

Carl Bigras
Carlsbad Springs, Ontario
Canada

REBEL X

It is possible to do exposure compensation in the Portrait mode on the Canon Rebel X [see æ 3.4]. First one has to tape the DX coding on the film cassette. Then the ISO can be set manually to compensate for exposure. For Fuji Provia 100 I often set the IS0 at 160, especially if there are any dark green areas in the frame. Also, the new model Rebel has the auto-bracketing feature, which is on many of the more expensive Canons.

Peter Essick
Atlanta, Georgia

GAUL REVISITED

For those who didn’t understand [KAP- ing in Old Gaul. æ 3.4]: “Asterix” is the title of a comic printed in about 30 countries. In the year 50 B.C. Asterix and his friends lived in a small village when Gaul (France) was occupied by the Romans. It was the only one that held out against the invaders.

Looking at the KAPhotograph it reminded me of Asterix and his tiny village. The rest is my story—or a new history to be written? You never know. Well, this model-village was built by pupils, their teachers and some craftsmen guided by a museum....

Continued on page 28
I’m still working on my new rig. I’ve picked up Peter Bulst’s idea of his super SUMIPI. It will be a COMIPI (compact miniature Picavet suspension): ready built up and slim like the camera.

Ulrich Monsees
Stade, Germany

CARBON OVER PETRA

I recently decided to purchase a rig from Frank Louwers, after reading his article in the aerial eye. We received it less than two weeks ago, and I have already given it some test flying time. It works absolutely beautifully, and its carbon fibre construction makes it extremely light and very strong.

I am heading off to the middle east to take some kite photos of Petra, the rose red city carved into the side of a mountain. I will also likely go to Jerusalem and also to see the mountain where Moses received the Ten Commandments. I am very excited and have the kite and camera all packed and ready to go.

Also, per your suggestion, I have elected to mount a Yashica T4 Super camera which has produced beautiful pictures. …I just received the latest ae and already am giving it a second read.

Josh Haygood
San Francisco, California

OAHU FOR CHRISTMAS

We are leaving cold and windless Fairbanks, Alaska, November 18th to spend two weeks on the island of Oahu visiting our eldest son for Christmas. I see this as my first opportunity to do Kite Aerial Photography.

I have a Sutton Flowform 16 and wonder if...you know what kind of weight it will lift in 10 to 15 mph steady trade winds. I will build a Picavet, use rubber muffler line vibration snubbers and build two of your brooxes hangups™, hang my Ricoh FF-9 and trip its shutter with a radio command unit I have that was built to fire parachute deployment for High Power Rockets. It puts out a voltage which I use to close a relay that fires the FF-9.

I wonder if I can go to the next level and fly a Minolta SLR with a radio-controlled azimuth? Any feedback from you will help me as I have never built nor flown anything, although as you know I have all the issues of the aerial eye.

Neal B. Brown
Fairbanks, Alaska

I have used a FF16 behind a small cruise ship with no ambient wind but a hull speed of about 12 kt to lift a rig weighing just under two pounds. I use the same kite all the time to lift my 18-22 oz Yashica and Olympus Epic rigs. So I think you’ll have no trouble at all with the Ricoh unless you make your cradle out of strap iron.

An SLR is a whole different order of magnitude, however, and I’d doubt it. Why don’t you use the FF9 with r/c controlled pan? That’s been a very popular camera for KAP, especially in Europe. One recommendation: make yourself a 15 ft fuzzy tail for the Sutton, with a Y bridle. See ae 3.3. —bgl
MECHANICAL AF SWITCH?

Is there anyone who has developed a 2-step-switch for autofocus and the shutter to be managed mechanically by a spring? I’d like to use it for a very light non-r/c HoVer-rig lifted with an “endless” kiteline. I want to release the switch by a Grauppner Thermik or KSB timer (see æ 3.3 p.12). The switch will be connected to a Mju-2 (Olympus Stylus Epic) that I will convert [to electric shutter release] with an external socket.

Ulrich Monsees
Falkenweg 18
21684 Stade, Germany
airborne@privat.isp-net.de

EPIC OR MJU-2

I like the new printing in æ—looks great. That rear cover shot of the iron age village in Gaul was superb.

On the subject of the Olympus Mju-2 [as the Epic is known in Europe] which you wrote about (æ 3.4), I just thought I’d share some experience of the camera with you. I have been using one for about 10 rolls of KAP film, and have come to the decision to stop using it.

This really pains me as it is SUCH a gorgeous camera, and on a rig with micro-servos is just superb for compactness. However, in the available light conditions here in Scotland it is not performing half as well as the KAPers’ favourites.

The problem is blur, simple shutter speed blur. Whereas the Yashicas speed up the shutter in bright conditions, the Olympus with its clever brain also stops down to keep the shutter speed in mid-range at around 1/250th. It is very hard to force it out to its maximum 1/1000th. It really needs a sports mode to give it shutter priority.

I’ve been putting 400 and 800 film through it and in side-by-side comparisons with the Yashica T4 on aerial shoots here in Scotland it’s turning in about 7 pin-sharp and 17 slightly blurred. On the same shoot in same conditions the Yashica which uses shutter priority turned in one blurred on a roll of 24....

Simon Harbord
Alford, Scotland

Continued on page 30
Since writing the review, I've shot 8-10 rolls through my Epic, and except for the one time I inserted the film cassette carelessly and got a light leak, I've had excellent pictures, with none of the blur that Simon complains about. Simon has also mentioned in subsequent email that he has recently had better results too, and was continuing to use and study the camera. We'll keep you posted, but I still think it's the point-&-shoot of choice right now. —bgl

APOLOGIES

Dear Brooks,

I see that I've inadvertently ruffled some feathers. [see ae 3.4, p. 28] Please, accept my apologies!

I honestly thought that the ™ on your hangup™ was put there in the spirit of jest. You know, to give dignity to something that otherwise might seem ordinary. The only reason I added the trademark symbol to my effort was to keep the humor rolling.

Believe me, I have no investment in the word “hang-up.” As a matter of fact I thought it was a generic word...It never occurred to me that you might be seriously trying to establish legal authorship....

At any rate, please accept my apologies, and inform the readership that if it be their pleasure they may refer to the thing I built as a “Synergy’s Sky-Hook™”, or any other name that suits their fancy.

Richard Synergy
Toronto, Ontario, Canada

Hi Richard.

The feathers aren't badly ruffled, and I accept your apologies....I have no intention of going through the legal rigamarole to get my creation patented or that sort of thing, but I came up with a good, albeit derivative, device and a clever name for it, and I'd like my efforts (both in creating the device and in naming it) to be known as MY efforts, not somebody else's. ...

I've observed that kite people are pretty casual about intellectual property. Flexifoil...Sanka and Kodak and Xerox have fought valiantly—and seemingly successfully—to have their names not used generically.

I don't pretend to put my whimsical creation in the same league as all these worthies [although we all seem to have a "k" or an "x" involved somehow ;-) ] but brooxes hangup is brooxes, dammit, not the term applied to just anybody's device for hanging stuff from the kite line!...

My use of the ™ was neither in jest nor simply to “to give dignity to something that otherwise might seem ordinary.” It's not ordinary. ...

If we were talking face to face, you'd see that this isn't really the big deal you think it is with me, but I am serious to the extent that I want the name to be mine, not yours.

    chin UP
    brooks

Brooks, No problems from me in regards to your right to due credit. ...I applaud your effort!
However, the thing that puts my nose a bit out of joint is that, feeling as you do, you didn’t email me immediately when I sent you my design telling me that you’d prefer that I name it something else...

Why you elected to put this private matter in print is beyond me. I feel I’ve been centered out and made to look a fool or villain in the public eye....I certainly hope that an explanation will appear in the next issue of the aerial eye to reinstate my good name.

Best Regards
Richard

Hi Richard.

Your point is valid; I certainly could have reacted by email....I’m sorry I was not more sensitive. I have no wish to single you out and/or to ridicule you or anybody else....

I don’t think my small editorial comment will have any effect on your considerable reputation, but I'll do what you wish.

brooks

AERIAL GLOBE?

I just did the one thing that, when married people take those wedding vows, they promise they will never do to each other. I opened my spouse’s mail. Believe it or not, even I look forward to each new issue of the aerial eye, and didn’t want to wait until Craig got home to sneak a peek. I enjoy seeing some familiar names and faces and reading about adventures in far off places. I confess, however that some of those more technical articles make my eyes glaze over a bit, but all in all it’s every bit as enjoyable as is my Colonial Homes magazine.

Enough with the niceties already. I just finished reading the article by that windbag Craig Wilson. I’ve often questioned his integrity and now I have to question yours too. What kind of editor would print such inflammatory statements as are found in the final paragraphs of this article? Don’t you think you should start checking your sources a little more carefully? Or perhaps this magazine should now be entitled the aerial star or the aerial globe?

Betsy Wilson
Madison, Wisconsin

Continued from page 3

His resultant photographs, and the ones I have from my own flights that day, provide images from angles and elevations probably never taken before in history. But no matter how remarkable the photographs, the image in my mind remains even more remarkable.

in the spring issue:
HOW TO BUILD IT
Send detailed instructions on your pet KAPproject—with pictures!

AD & COPY DEADLINE:
February 1, 1998